7 OBESITY

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SUMMARY

- Mean BMI was approximately the same for both sexes aged 16-64: 26.0 kg/m^2 in men and 25.7 kg/m^2 in women. Mean BMI increased with age in both sexes.
- Overall, 56% of men and 47% of women were either overweight (BMI over 25-30 kg/m^2) or obese (BMI greater than 30 kg/m^2). A greater proportion of men (40%) than women (30%) were overweight, but there was no difference in terms of obesity with 16% of men and 17% of women classified as obese.
- The prevalence of obesity was slightly higher in Scotland than in England (16% versus 13% for men and 17% versus 16% for women). Scottish men were 1.3 times more likely to be obese than English men, after adjustment for age.
- The prevalence of age-adjusted obesity among women varied significantly between regions. Women in Greater Glasgow were significantly less likely to be obese than Scottish women in general. No significant regional variations were apparent among men.
- The age standardised prevalence of obesity among men in Social Class I was less than half that observed in the other social classes, all of which tended to have a similar prevalence. Among women the prevalence was lower in the non-manual (I, II, IIINM) than the manual (IIIM, IV, V) social classes.
- Mean waist-hip ratio (WHR) was 0.89 in men and 0.78 in women. Overall, 20% of men had a WHR of 0.95 or more, and 14% of women had a WHR of 0.85 or more.
- The variation between regions in mean age-adjusted WHR was statistically significant in men but not in women.
- Mean age-adjusted WHR varied significantly between social classes in both men and women. Among men, mean WHR in Social Classes II to V were all significantly higher than those in Social Class I. In women mean WHR increased from Social Classes I to V.

7.1 INTRODUCTION

Obesity is associated with several adverse health outcomes, including ischaemic heart disease, stroke and other cardiovascular diseases.[1,2] These diseases contribute to the majority of deaths, particularly in middle and old age, in Scotland. Of those who died below the age of 65 in 1990, over a third died from circulatory diseases including heart disease and stroke.[3]

Over the past decade, the prevalence of obesity has been rising in countries such as England,[4] USA,[5] Germany,[6] and Scandinavia.[7,8] Similar data on trends in the prevalence of obesity are, however, not available for Scotland, and this chapter aims to provide baseline data against which future trends may be measured. This chapter examines the age-sex distributions of anthropometric measures relevant to obesity and compares these with findings from two surveys: the 1994 Health Survey for England and the 1984-1986 Scottish Heart Health Study. In addition the chapter analyses regional and social class variations and examines the associations between measures of obesity and three behavioural factors: cigarette smoking, alcohol consumption, and physical activity.

Two widely-used indicators of obesity are: body mass index (BMI), a combined index of height and weight; and waist-hip ratio (WHR). Their definitions and measurement protocols are described below.

7.2 METHODS AND DEFINITIONS

7.2.1 Characteristics measured

Interviewers measured height and weight, and nurses measured waist and hip circumferences. Full details of the measurement protocols can be found in Appendix B in the Technical Report.

Height

Height was measured using a portable stadiometer with a sliding head plate, a base plate and three connecting rods marked with a metric measuring scale. Informants were requested to remove their shoes and to stretch (to maximum height) with their head positioned in the Frankfort plane. A single measurement was recorded to the nearest even millimetre. Informants who were ill, chairbound, or unsteady on their feet were not measured.

Weight

Weight was measured using a battery-operated Soehnle scale with a digital display. Informants were asked to remove their shoes, heavy outer garments and jewellery, loose change and keys. A single measurement was recorded to the nearest 100 grams. Informants who were pregnant, chairbound, in pain, or unsteady on their feet were not weighed. Informants who weighed more than 130 kg were asked for their 'estimated weight' because the scales are inaccurate above this level.

In the analysis of height and weight, data for those who were considered by the interviewer to have unreliable measurements (for example, those who had excessive clothing or made excessive movements during measurement, or those for whom only estimated weights were available) were excluded from the analysis.

Body mass index

Body mass index (BMI) is defined as weight (kg) divided by the square of height (m^2). BMI was calculated for all informants who had a valid height and weight measurement. Weight alone is not an appropriate measure of obesity as it is strongly related to height. BMI does not, however, differentiate between heaviness due to body fat and heaviness due to muscle bulk, nor does it indicate the distribution of fat. In younger and middle-aged groups, changes in weight and in BMI are mainly due to changes in fatness. In older groups, these changes can be due to a true change in fatness or a loss in bone density or muscle bulk. Nevertheless, BMI is the most widely used measure of obesity, and it is the index used in both the Health Survey for England and the Scottish Heart Health Study.

Informants were classified into the following categories:

BMI (kg/m^2)	**Description**
20 or less	Underweight
Over 20 to 25	Desirable
Over 25 to 30	Overweight
Over 30	Obese

Waist and hip circumferences

Waist is defined as the point midway between the iliac crest and the costal margin (lower rib). Hip is defined as the widest circumference over the buttocks and below the iliac crest.

Waist and hip were measured twice to the nearest even millimetre using an insertion tape with a metal buckle at one end which is connected to a spring balance. Informants were asked to remove all outer layers of clothing, shoes with heels, tight garments intended to alter the shape of the body, and belts. They were also asked to empty their pockets.

All those who were pregnant, chairbound or had a colostomy or ileostomy were excluded from measurement. In the analysis, all those whose measurements were considered by the nurse to be unreliable, for example, due to excessive clothing or movement, were excluded from the analysis as were those whose two waist or hip measurements differed by more than 3 cm.

Waist-hip ratio

Waist-hip ratio (WHR) is defined as the waist circumference divided by the hip circumference, i.e., waist girth (m)/hip girth (m). It is a measure of the distribution of abdominal fat, i.e., central obesity. Raised WHR has been shown to be associated with certain health risks and may be a stronger predictor than BMI of the risk of coronary disease for older men,[9] the risk of death in older women,[10] and the risk of diabetes or insulin resistance.[11]

Unlike BMI, there is no consensus on the definition of a raised WHR.[4] Following the reports on the Health Survey for England, a raised WHR has been taken to be 0.95 or more in men and 0.85 or more in women.

7.2.2 Response to anthropometric measurements

Of the 7,825 informants who were interviewed and were not pregnant, 95% of men and 94% of women cooperated with the BMI measurements. Men aged 35-54 and women aged 55 and over were slightly less likely to have cooperated with the weight and height

measurements than the other age-sex groups. Almost all of those who cooperated (over 99%) had valid measurements.

Of the 6,869 informants who had a nurse visit and were not pregnant, almost all (over 99%) cooperated with the waist and hip measurements. Most of them (99% of men and 98% of women) had valid waist and hip measurements. **Tables 7.1, 7.2**

7.3 ANTHROPOMETRIC MEASURES BY AGE AND SEX

7.3.1 Height by age and sex

Mean height was 175.1 cm for men and 161.4 cm for women. In both sexes, mean height decreased with age: in men from 177.1 cm in the youngest age group (16-24) to 172.1 cm in the oldest (55-64); in women the corresponding decrease was from 162.7 cm to 158.9 cm. **Table 7.3**

7.3.2 Weight by age and sex

Mean weight was 79.7 kg for men and 66.7 kg for women. Among men, mean weight increased with age until the 45-54 age group and then declined for those aged 55-64. Men aged 45-54 were 10 kg heavier than the youngest age group (16-24) and 1.5 kg heavier than the oldest age group (55-64). Women's weight consistently increased with age. Women in the oldest age group were 7.4 kg heavier than the youngest age group. **Table 7.4**

7.3.3 Body mass index by age and sex

Mean BMI was approximately normally distributed in men and was slightly positively skewed in women. The variability of BMI across age groups was fairly constant in men. In women variability increased with age but declined slightly in the oldest age group. **Figures 7A, 7B**

Mean BMI was about the same for both sexes: 26.0 kg/m^2 in men and 25.7 kg/m^2 in women. Mean BMI increased with age in both sexes, although in men it rose more steeply in earlier ages and plateaued at the last two age groups. Mean BMI was lower in men than in women in the youngest and oldest groups but was higher in the other age groups. The difference in mean BMI between the youngest and the oldest groups was approximately 4 kg/m^2 for both men and women.

Overall, 56% of men and 47% of women were either overweight (BMI over 25-30 kg/m^2) or obese (BMI greater than 30 kg/m^2). A greater proportion of men than of women were overweight (40% versus 30%), but there was little difference between the sexes in terms of obesity (16% of men and 17% of women). In all age groups except the youngest, the proportions who were overweight were higher in men than women. The proportions who were obese were similar between the sexes for age groups 25-34 and 45-54, but in the youngest and oldest groups women were significantly more likely than men to be obese. **Table 7.5**

Figure 7A: Histogram of body mass index (BMI), by sex

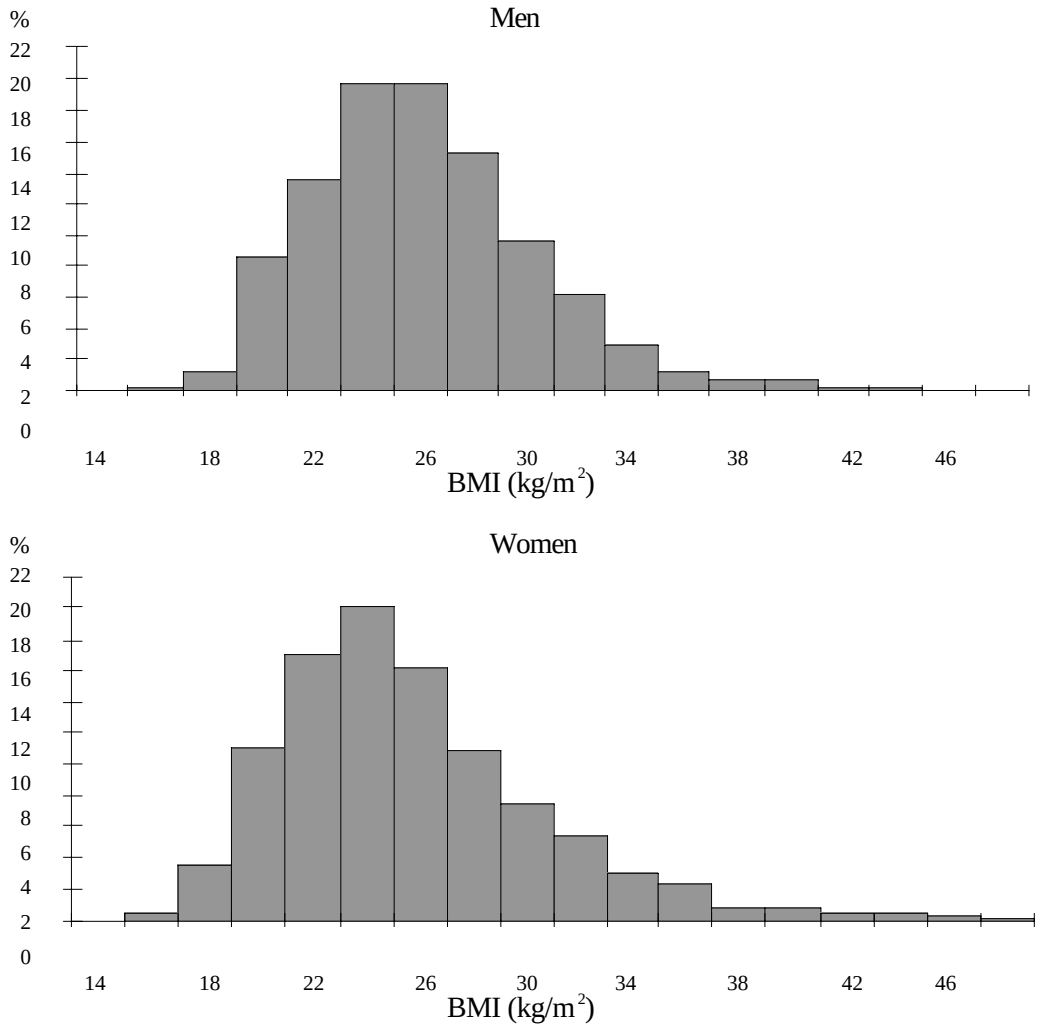
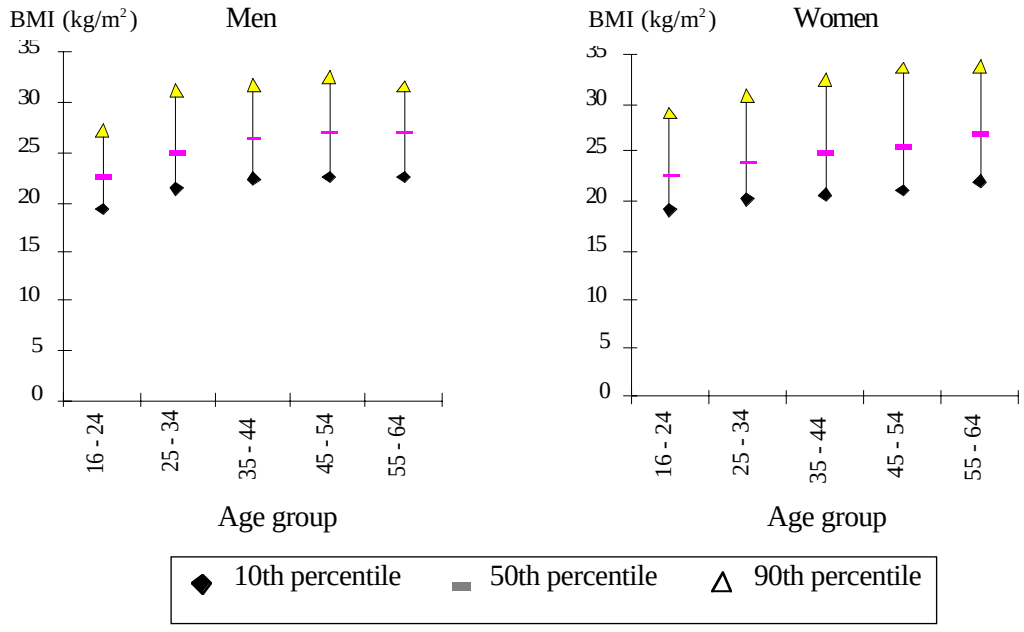


Figure 7B: Body mass index (BMI), by age and sex



7.3.4 Waist-hip ratio by age and sex

In both sexes, the WHR was approximately normally distributed, and its variability across age groups was fairly constant. **Figures 7C, 7D**

Figure 7C: Histogram of waist-hip ratio, by sex

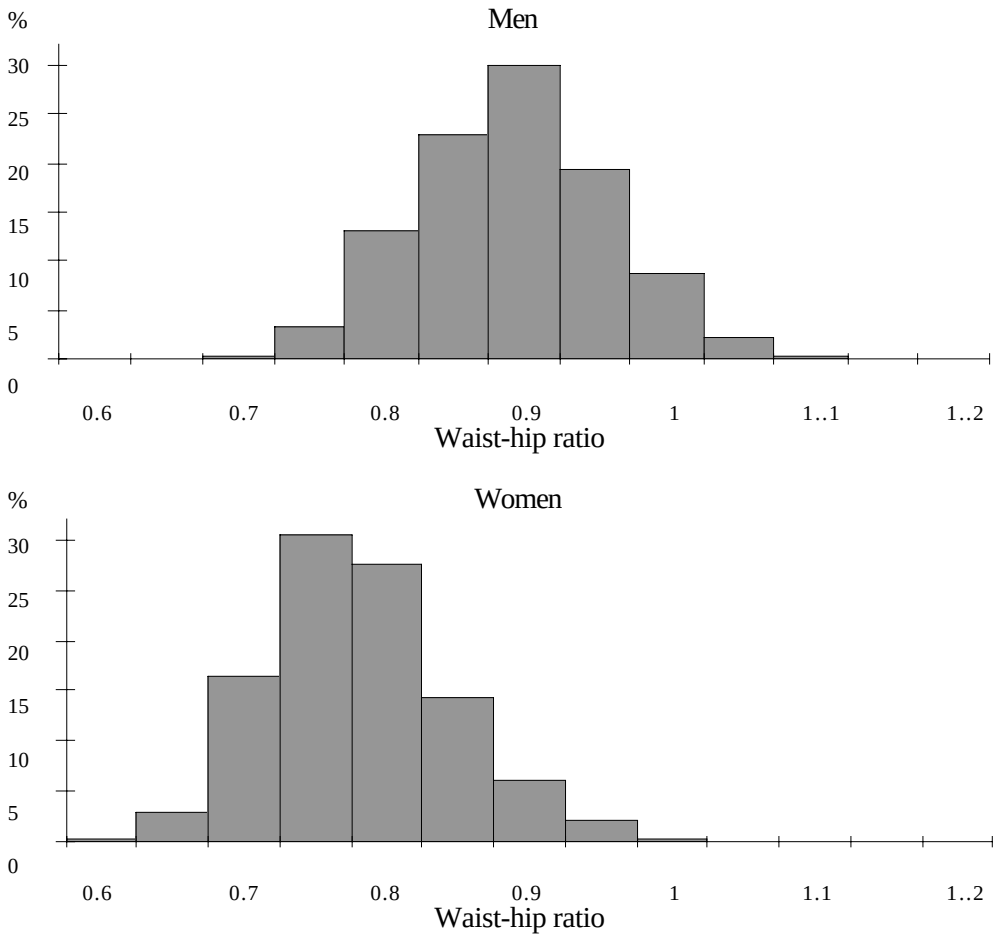
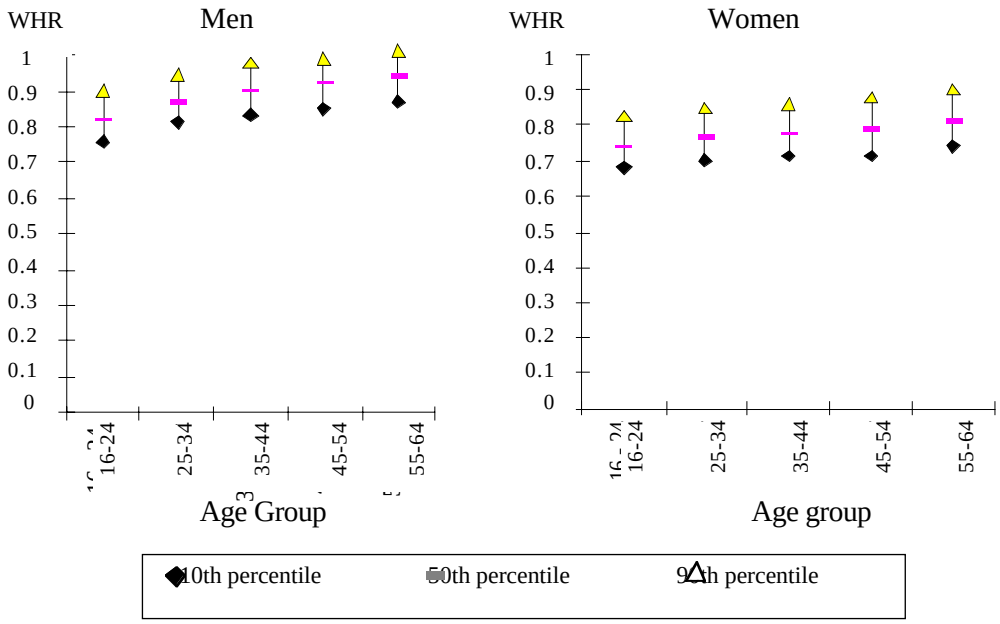


Figure 7D: Waist-hip ratio (WHR), by age and sex



Mean WHR was 0.89 in men and 0.78 in women. Mean WHR increased with age in both sexes: from 0.83 to 0.94 in men and from 0.75 to 0.81 in women. Mean WHR rose more steeply by age in men than in women. If raised WHR is defined as 0.95 or more in men and 0.85 or more in women, 20% of men and 14% of women had a raised WHR.

Table 7.6

7.3.5 Waist-hip ratio and body mass index

As expected WHR and BMI were highly positively correlated, although more closely in men than in women. The correlation was highest in the 25-34 and 35-44 age groups in men and the three oldest age groups in women. **Tables 7.7, 7.8**

7.4. COMPARISON OF SCOTLAND AND ENGLAND

This section compares BMI and obesity for Scotland with data from the Health Survey for England (HSE). Comparisons are with results from the 1994 HSE, as this was the most recent year in which cardiovascular disease was the primary focus. The English and Scottish health surveys were carried out by the same organisation, and both surveys used identical equipment and measurement protocols for measuring height and weight.

Among those aged 16-64, mean BMI was approximately 26 kg/m^2 for men and women in both Scotland and England. Between the two countries, there were no differences in mean BMI of more than 0.5 kg/m^2 for any age-sex group. **Table 7.9**

The prevalence of being overweight or obese was similar in the two countries. Men in Scotland were a bit less likely to be overweight than men in England (40% versus 43%), but they were a bit more likely to be obese (16% versus 13%). There were virtually no differences between women.

In a logistic regression analysis which adjusted for age, the prevalence of obesity varied significantly between countries in men ($p=0.04$) but not in women. After adjusting for age, men in Scotland were 1.3 times more likely to be obese than men in England.

7.5 COMPARISON WITH THE SCOTTISH HEART HEALTH STUDY (SHHS)

This section compares data from the Health Survey with results from The Scottish Heart Health Study (SHHS) carried out in 1984-86 (see Chapter 1 for a description of this study). Because of the differences in survey design and methodology between the Health Survey and the SHHS, the following comparisons must be treated with caution.

In both sexes aged 40-59 (the age range covered by the SHHS), mean BMI increased by approximately 1 kg/m^2 over the decade, from 26 kg/m^2 in the SHHS to 27 kg/m^2 in the Health Survey. This increase of about 1 kg/m^2 appeared to occur in all the 5-year age groups in both sexes. **Table 7.10**

Using the Royal College of Physicians' (of London) definition of obesity (BMI greater than 30 kg/m^2 for men and 28.6 kg/m^2 for women),[12] 12% of men and 21% of women were obese in the SHHS. The corresponding values in the Health Survey were 22% of men and 28% of women aged 40-59. Thus, the increase in obesity appeared to be greater in men than in women.

7.6 REGIONAL VARIATIONS

7.6.1 Region and mean body mass index

In men the unadjusted mean BMI ranged from 25.7 kg/m^2 in both Greater Glasgow and Lothian & Fife to 26.6 kg/m^2 in Highland & Islands. In women the corresponding range was from 25.3 kg/m^2 in Greater Glasgow to 26.2 kg/m^2 in the Highland & Islands.

Table 7.11

After adjustment for age, the variation in mean BMI between regions was statistically significant for men ($p=0.021$) and women ($p=0.049$). Mean BMI was significantly lower than the overall average in Greater Glasgow for men (by 0.44 kg/m^2) and women (by 0.42 kg/m^2). **Table 7.12**

7.6.2 Region and raised body mass index

Among men, the age-standardised prevalence of being overweight (BMI over 25-30 kg/m^2) was lowest in Greater Glasgow and highest in Borders, Dumfries & Galloway; among women, it was lowest in Borders, Dumfries & Galloway and highest in Lothian & Fife. **Table 7.13**

In a logistic regression analysis which adjusted for age, the prevalence of being overweight varied significantly between regions among men ($p<0.001$) but not among women. Men in Greater Glasgow were significantly less likely to be overweight than men in general. There were no significant differences from the overall mean for the other regions.

The age-standardised prevalence of obesity (BMI over 30 kg/m^2) was lowest in Lothian & Fife and highest in Lanarkshire, Ayrshire & Arran among men; it was lowest in Greater Glasgow and highest in Highland & Islands among women.

Figure 7E, Table 7.13

The prevalence of obesity varied significantly between regions among women ($p=0.041$) but not among men in a logistic regression analysis which adjusted for age. Women in Greater Glasgow were significantly less likely to be obese than women in general. There were no significant differences from the overall mean for the other regions.

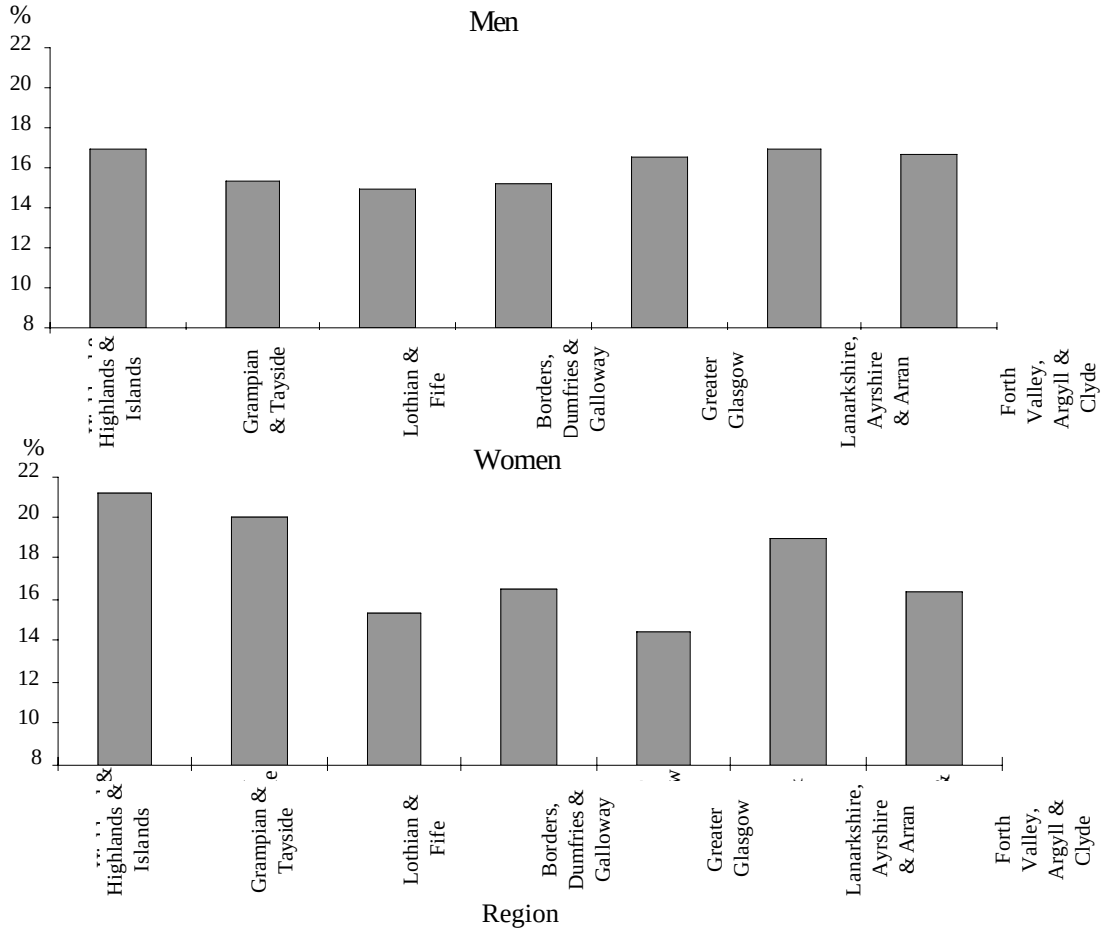
7.6.3 Region and waist-hip ratio

WHR unadjusted for age differed little between regions. The range for men was from 0.887 in Lothian & Fife to 0.902 in Borders, Dumfries & Galloway. The range for women was from 0.776 in Grampian & Tayside to 0.786 in Borders, Dumfries & Galloway. Female informants from Greater Glasgow, who had lower mean BMI and prevalence of obesity, had higher than average WHR, a measure of central obesity.

Table 7.14

After adjustment for age, the variation between regions in mean WHR was statistically significant only in men ($p=0.023$). Mean WHR was significantly lower in Lothian & Fife (by 0.004) than the overall average for men but was not significantly different from the overall mean for men in the other regions.

Figure 7E: Age standardised prevalence of obesity, by region and sex



7.7 SOCIAL CLASS VARIATIONS

Several studies have shown a strong inverse relationship between socio-economic status and obesity, particularly among women.[13] These studies have assessed socio-economic status using a wide variety of indicators such as income, education and occupation. In the Health Survey, social class is defined on the basis of the occupation of the chief income earner within the informant's household. The Glossary (Appendix E in the Technical Report) gives further details on the derivation of social class for the Health Survey.

7.7.1 Social class and body mass index

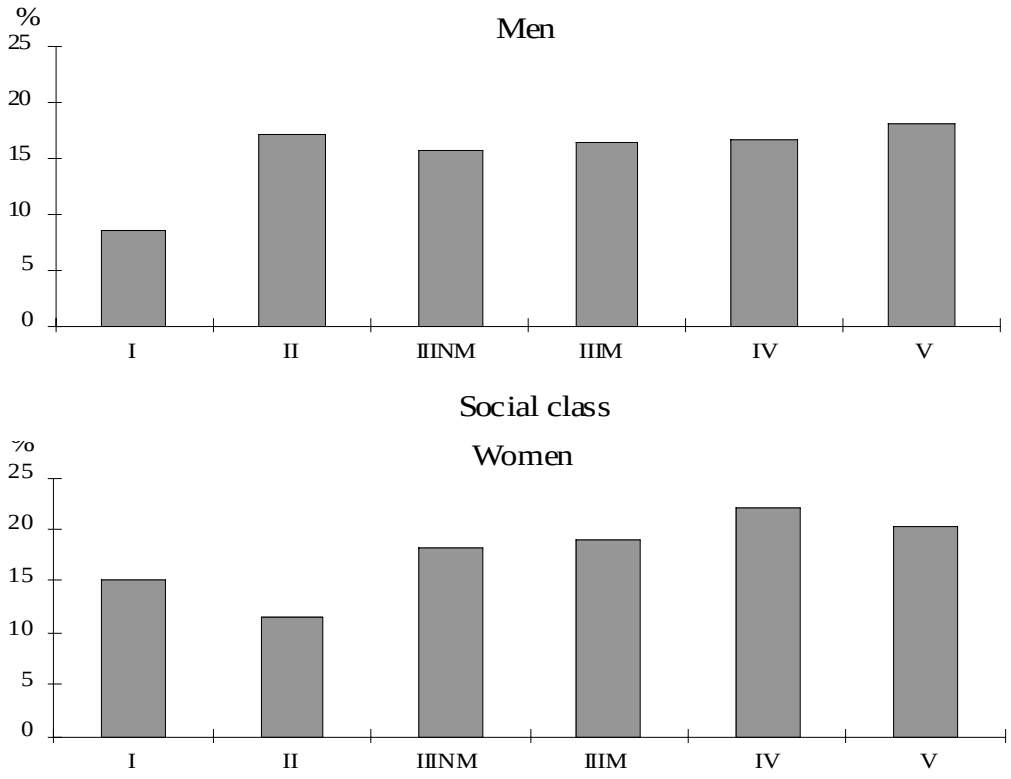
Mean BMI unadjusted for age generally increased from Social Class I to Social Class V in women: from 25.1 kg/m^2 and 25.0 kg/m^2 in Social Classes I and II to 26.3 kg/m^2 in Social Classes IV and V. The pattern was less clear in men; mean BMI was highest in Social Classes II and IIIM. **Table 7.15**

After adjustment for age, the variation in mean BMI between social classes was statistically significant in both men ($p=0.018$) and women ($p<0.001$). Compared with men in Social Class I, those in all other social classes except for Social Class V had significantly higher mean BMI: approximately 0.9 kg/m^2 higher in Social Classes II and IIIM and 0.7 kg/m^2 higher in Social Classes IIINM and IV. In women the differences from Social Class I increased from Social Class II to Social Class IV and decreased in Social Class V, although the differences were significant only for Social Classes IIINM, IIIM, and IV. **Table 7.16**

7.7.2 Social class and obesity

The age-standardised prevalence of obesity among men in Social Class I was about half that observed in the other social classes, all of which tended to have similar prevalence. Among women the prevalence was lower in the non-manual (I, II, IIINM) than the manual social classes (IIIM, IV, V). **Figure 7F, Table 7.17**

Figure 7F: Age standardised prevalence of obesity, by social class of chief income earner and sex



In a logistic regression analysis which adjusted for age, obesity varied significantly by social class in men ($p=0.013$) and women ($p<0.001$). Men in each of Social Classes II to V were more than twice as likely to be obese than those in Social Class I. Women in Social Class IV had the highest prevalence and were more than twice as likely to be obese than women in Social Class II who had the lowest prevalence.

7.7.3 Social class and waist-hip ratio

Mean WHR unadjusted for age increased from Social Class I (0.765) to Social Class V (0.804) in women. In men mean WHR tended to be higher in the manual social classes (IIIM, IV and V) than in non-manual social classes (I, II, IIINM). **Table 7.18**

After adjustment for age, mean WHR varied significantly between social classes in men ($p<0.001$) and women ($p<0.001$). Mean WHR of men in Social Classes II to V were all significantly higher than those in Social Class I. The differences in WHR compared with those in Social Class I increased from 0.012 for those in Social Class IIINM to 0.027 in Social Class V. In women the differences increased from 0.007 in Social Class II to 0.033 in Social Class V, the differences being significant for all social classes except Social Class II. **Table 7.19**

7.8 OBESITY AND BEHAVIOURAL FACTORS

Studies in England and other countries have shown significant associations between obesity and behavioural factors including smoking, alcohol consumption and physical activity. A review of 27 cross-sectional studies, mainly in North America and Europe, found generally positive associations between alcohol intake and adiposity for men and negative associations for women.[14] In a study of 1950 men and women aged 50-79 years in the USA, cigarette smokers were found to have more central adiposity than non-smokers.[15] A study of 5282 men and women in Finland showed strong associations between obesity and five 'environmental' factors which included exercise, alcohol consumption, and smoking. These factors were found to be more strongly associated with WHR than BMI in men, while in women BMI was the more strongly associated measure.[16] It should be borne in mind that, as the Health Survey is a cross-sectional study, the direction of an association cannot be presumed.

7.8.1 Body mass index and behavioural factors

Smoking

Compared with those who never regularly smoked, both men and women current smokers generally had a lower BMI while ex-smokers had a higher BMI. Those who smoked less than 20 cigarettes a day had a lower BMI than those who smoked 20 or more a day. **Table 7.20**

Alcohol consumption

Regular drinkers generally had a lower BMI than non- or occasional drinkers among men and women aged 45-64, but there was little difference among those aged 16-44. Among women drinkers, BMI decreased with increasing quantity of alcohol regularly consumed. **Tables 7.21, 7.22**

Physical activity

Men and women classified in physical activity levels 1-2 and levels 3-5 (see Chapter 2 for a description of how these levels were derived) had lower BMI than those in level 0 (the lowest activity level). **Table 7.23**

All factors

Regression analyses of BMI (separately analysed for men and women) adjusted for age and these three behavioural factors showed similar patterns as described above. However, BMI was only significantly associated with smoking in men ($p<0.001$) and women ($p<0.001$) and alcohol consumption in men ($p<0.001$).

7.8.2 Waist-hip ratio and behavioural factors

Smoking

Compared with those who never regularly smoked, current and ex-smokers tended to have a higher WHR in both sexes. Among current smokers, those who smoked less than 20 cigarettes a day had a lower WHR than those who smoked 20 or more a day. **Table 7.24**

Alcohol consumption

Men who were regular drinkers tended to have a higher WHR than non- or occasional drinkers, while female drinkers had a slightly lower WHR. **Tables 7.25, 7.26**

Physical activity

Men and women with physical activity levels 1-2 and levels 3-5 had lower WHR than those with level 0. **Table 7.27**

All factors

The regression analyses of WHR with these behavioural factors showed similar patterns as described above. The statistically significant associations found were with smoking in men ($p=0.004$) and women ($p<0.001$), alcohol consumption in men ($p=0.010$), and physical activity in men ($p<0.001$) and women ($p=0.012$).

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CHAPTER 7 - LIST OF TABLES

Table 7.1 Response to anthropometric measurements, by age and sex

All who were interviewed or who had a nurse visit *1995*

Response to anthropometric measurements	Age					Total
	16-24	25-34	35-44	45-54	55-64	
	%	%	%	%	%	%
Men						
Height						
Co-operated	98.1	97.7	96.4	97.0	96.8	97.2
Refused	1.1	0.8	1.6	1.0	1.3	1.2
Not attempted/attempted, not obtained	0.8	1.4	2.0	2.0	1.9	1.7
Bases (unweighted): interviewed	*475*	*840*	*811*	*709*	*689*	*3524*
Weight						
Co-operated	97.1	95.1	93.6	93.7	95.1	94.7
Refused	0.8	1.0	1.6	1.1	1.2	1.2
Not attempted/attempted, not obtained	2.1	3.9	4.8	5.2	3.8	4.1
Bases (unweighted): interviewed	*475*	*840*	*811*	*709*	*689*	*3524*
BMI						
Co-operated	96.8	94.9	93.6	93.4	94.9	94.6
Refused	1.1	1.1	1.6	1.1	1.5	1.3
Not attempted/attempted, not obtained	2.1	4.0	4.8	5.5	3.6	4.2
Bases (unweighted): interviewed	*475*	*840*	*811*	*709*	*689*	*3524*
Waist-hip ratio						
Co-operated	99.8	99.6	99.6	99.7	99.8	99.7
Refused	-	0.1	-	-	-	0
Not attempted	0.2	0.3	0.4	0.3	0.2	0.3
Bases (unweighted): saw nurse	*407*	*745*	*717*	*631*	*610*	*3110*
Women						
Height						
Co-operated	98.2	97.9	97.6	97.0	96.0	97.3
Refused	0.7	1.0	1.0	1.5	2.3	1.3
Not attempted/attempted, not obtained	1.1	1.0	1.4	1.6	1.7	1.4
Bases (unweighted): interviewed	*547*	*1160*	*992*	*825*	*884*	*4408*
Weight[a]						
Co-operated	95.2	94.3	93.7	93.8	92.1	93.7
Refused	1.2	2.4	2.2	2.8	3.4	2.5
Not attempted/attempted, not obtained	3.7	3.3	4.1	3.4	4.5	3.8
Bases (unweighted): interviewed	*519*	*1090*	*984*	*824*	*884*	*4301*
BMI[a]						
Co-operated	94.8	94.2	93.4	93.7	91.9	93.5
Refused	1.5	2.4	2.4	2.8	3.4	2.6
Not attempted/attempted not obtained	3.7	3.4	4.2	3.5	4.8	3.9
Bases (unweighted): interviewed	*519*	*1090*	*984*	*824*	*884*	*4301*
Waist-hip ratio[a]						
Co-operated	99.6	99.4	99.3	99.5	99.1	99.3
Refused	0.2	0.3	0.5	0.5	0.7	0.5
Not attempted	0.2	0.3	0.2	-	0.3	0.2
Bases (unweighted): saw nurse	*448*	*929*	*887*	*737*	*758*	*3759*

[a]Bases exclude women who were pregnant

Table 7.2 Proportion of cases used in analysis, by age and sex

All those who co-operated with anthropometric measurements *1995*

Proportion of cases used	Age					Total
	16-24	25-34	35-44	45-54	55-64	
	%	%	%	%	%	%
Men						
Height						
Usable cases	99.8	99.6	99.2	99.3	99.3	99.4
Invalid measurements	0.2	0.4	0.8	0.7	0.7	0.6
Bases (unweighted)	*466*	*821*	*782*	*688*	*667*	*3424*
Weight						
Usable cases	100.0	99.7	99.7	99.5	98.8	99.6
Invalid measurements	-	0.3	0.3	0.5	1.2	0.4
Bases (unweighted)	*461*	*799*	*759*	*664*	*655*	*3338*
BMI						
Usable cases	99.8	99.5	99.2	98.9	98.3	99.1
Invalid measurements	0.2	0.5	0.8	1.1	1.7	0.9
Bases (unweighted)	*460*	*797*	*759*	*662*	*654*	*3332*
Waist-hip ratio						
Usable cases	98.3	99.2	98.9	98.4	98.7	98.7
Invalid measurements	1.7	0.8	1.1	1.6	1.3	1.3
Bases (unweighted)	*406*	*742*	*714*	*629*	*609*	*3100*
Women						
Height						
Usable cases	100.0	99.9	99.8	99.9	99.8	99.9
Invalid measurements	-	0.1	0.2	0.1	0.2	0.1
Bases (unweighted)	*537*	*1136*	*968*	*800*	*849*	*4290*
Weight						
Usable cases	100.0	99.5	99.9	99.5	99.8	99.7
Invalid measurements	-	0.5	0.1	0.5	0.2	0.3
Bases (unweighted)	*494*	*1028*	*922*	*773*	*814*	*4031*
BMI						
Usable cases	100.0	99.4	99.7	99.5	99.5	99.6
Invalid measurements	-	0.6	0.3	0.5	0.5	0.4
Bases (unweighted)	*492*	*1027*	*919*	*772*	*812*	*4022*
Waist-hip ratio						
Usable cases	98.7	97.8	98.8	97.3	97.9	98.0
Invalid measurement	1.3	2.2	1.2	2.7	2.1	2.0
Bases (unweighted)	*446*	*923*	*881*	*733*	*751*	*3734*

Table 7.3 Height, by age and sex

All with a valid height measurement *1995*

Height (cm)	Age					Total
	16-24	25-34	35-44	45-54	55-64	
	%	%	%	%	%	%
Men						
Less than 160	0.3	0.8	0.6	1.9	3.3	1.3
160, less than 165	3.9	3.7	5.4	6.3	10.1	5.6
165, less than 170	10.3	11.8	15.2	18.9	26.1	15.8
170, less than 175	22.6	25.6	26.5	29.2	25.1	25.8
175, less than 180	29.3	26.4	27.2	27.7	22.4	26.7
180 or more	33.6	31.8	25.1	16.0	13.0	24.8
Mean	177.1	176.5	175.1	173.5	172.1	175.1
Standard error of the mean	0.25	0.23	0.23	0.24	0.28	0.11
5th percentile	166.0	165.1	164.0	163.0	161.0	163.8
10th percentile	168.9	167.8	166.8	165.3	163.9	166.1
Median	177.0	176.4	175.2	173.3	171.7	175.1
90th percentile	186.2	186.0	183.1	181.9	181.0	184.0
95th percentile	188.0	188.5	185.2	184.7	183.0	187.0
Women						
Less than 155	10.5	11.6	14.4	17.3	27.2	15.7
155, less than 160	23.1	21.6	24.0	28.0	30.2	25.0
160, less than 165	30.6	31.9	33.6	30.5	25.9	30.8
165, less than 170	22.1	23.9	20.4	15.8	13.0	19.5
170 or more	13.7	11.0	7.7	8.4	3.7	9.1
Mean	162.7	162.5	161.5	160.6	158.9	161.4
Standard error of the mean	0.25	0.20	0.20	0.23	0.23	0.10
5th percentile	151.9	152.6	151.9	150.4	149.4	151.1
10th percentile	154.5	154.3	153.7	153.0	151.2	153.4
Median	162.5	162.6	161.9	160.5	158.6	161.4
90th percentile	171.6	170.1	169.0	169.0	166.5	169.5
95th percentile	173.5	172.4	171.0	171.1	168.9	172.0
Bases (weighted)						
Men	*711*	*950*	*816*	*728*	*579*	*3783*
Women	*683*	*968*	*845*	*758*	*638*	*3891*
Bases (unweighted)						
Men	*465*	*818*	*776*	*683*	*662*	*3404*
Women	*537*	*1135*	*966*	*799*	*847*	*4284*

Table 7.4 Weight, by age and sex

All with a valid weight measurement *1995*

Weight (kg)	Age					Total
	16-24	25-34	35-44	45-54	55-64	
	%	%	%	%	%	%
Men						
Less than 60	14.2	3.5	2.5	3.6	3.4	5.3
60, less than 70	34.3	18.5	12.6	13.6	14.8	18.8
70, less than 80	29.5	30.8	31.2	27.6	29.5	29.8
80, less than 90	12.6	28.2	29.7	28.6	30.5	26.0
90 or more	9.3	19.0	24.0	26.6	21.8	20.1
Mean	72.4	80.3	82.2	82.4	80.9	79.7
Standard error of the mean	0.48	0.43	0.45	0.50	0.53	0.22
5th percentile	55.7	61.3	63.6	61.5	61.1	59.7
10th percentile	58.3	64.8	67.1	67.0	64.5	63.5
Median	70.3	79.0	81.2	81.8	81.0	78.8
90th percentile	89.5	97.2	99.5	99.2	97.3	97.3
95th percentile	98.6	104.8	104.5	104.7	102.7	103.6
Women						
Less than 50	11.2	5.5	4.1	3.7	3.9	5.6
50, less than 60	35.5	30.7	27.8	22.8	18.2	27.3
60, less than 70	30.4	33.8	33.3	36.1	35.3	33.8
70, less than 80	15.4	18.5	19.7	19.9	23.7	19.3
80 or more	7.5	11.5	15.1	17.6	18.8	14.0
Mean	62.4	65.5	67.3	68.5	69.8	66.7
Standard error of the mean	0.47	0.43	0.46	0.49	0.54	0.22
5th percentile	46.0	49.8	50.7	51.1	51.2	49.4
10th percentile	49.0	51.9	53.3	54.0	55.4	52.3
Median	60.5	63.3	64.6	65.7	68.0	64.6
90th percentile	78.4	81.6	84.5	87.5	87.6	83.9
95th percentile	82.2	89.8	91.9	95.3	95.0	90.8
Bases (weighted)						
Men	*702*	*924*	*795*	*703*	*566*	*3691*
Women	*639*	*867*	*801*	*727*	*610*	*3646*
Bases (unweighted)						
Men	*461*	*797*	*757*	*661*	*647*	*3323*
Women	*494*	*1023*	*921*	*769*	*812*	*4019*

Table 7.5 Body mass index (BMI), by age and sex

All with valid height and weight measurements *1995*

BMI (kg/m^2)	Age					Total
	16-24	25-34	35-44	45-54	55-64	
	%	%	%	%	%	%
Men						
20 or under	16.1	3.8	2.6	1.8	1.0	5.1
Over 20-25	61.3	46.5	32.2	27.3	25.2	39.3
Over 25-30	18.1	35.3	46.3	49.0	52.8	39.7
Over 30	4.5	14.4	18.9	21.9	21.0	15.9
Mean	23.0	25.8	26.8	27.3	27.3	26.0
Standard error of the mean	0.13	0.13	0.14	0.15	0.15	0.07
5th percentile	18.7	20.5	21.2	21.1	21.4	20.0
10th percentile	19.4	21.3	22.3	22.6	22.6	20.9
Median	22.6	25.0	26.4	27.0	27.0	25.6
90th percentile	27.1	31.1	31.8	32.5	31.5	31.3
95th percentile	29.9	33.3	33.8	34.0	33.7	33.3
Women						
20 or under	19.6	8.7	6.9	4.9	4.1	8.7
Over 20-25	50.4	53.7	45.6	39.5	27.7	44.2
Over 25-30	21.0	24.0	30.5	34.8	40.9	29.9
Over 30	9.0	13.7	17.0	20.8	27.3	17.3
Mean	23.6	24.9	25.8	26.6	27.6	25.7
Standard error of the mean	0.17	0.16	0.17	0.19	0.21	0.08
5th percentile	18.2	19.3	19.8	20.1	20.3	19.3
10th percentile	19.1	20.2	20.8	21.1	22.0	20.2
Median	22.7	23.9	24.8	25.6	26.9	24.8
90th percentile	29.1	30.9	32.4	33.6	34.0	32.2
95th percentile	31.8	33.2	35.5	36.2	36.9	35.1
Bases (weighted)						
Men	*700*	*920*	*790*	*698*	*564*	*3672*
Women	*637*	*866*	*796*	*726*	*606*	*3632*
Bases (unweighted)						
Men	*459*	*793*	*753*	*655*	*643*	*3303*
Women	*492*	*1021*	*916*	*768*	*808*	*4005*

Table 7.6 Waist-hip ratio (WHR), by age and sex

All with a valid waist-hip ratio measurement *1995*

Waist-hip ratio	Age					Total
	16-24	25-34	35-44	45-54	55-64	
	%	%	%	%	%	%
Men						
Less than 0.80	31.3	6.7	2.7	1.7	1.4	8.5
0.80, less than 0.85	36.5	23.8	14.0	9.4	3.6	18.1
0.85, less than 0.90	22.3	34.3	30.7	25.8	18.8	27.3
0.90, less than 0.95	8.7	23.9	33.0	32.6	33.9	26.3
0.95, less than 1.00	0.8	8.3	14.2	21.6	28.9	14.0
1.00 or more	0.4	3.1	5.2	9.0	13.4	5.8
Mean	0.829	0.879	0.904	0.920	0.939	0.893
Standard error of the mean	0.002	0.002	0.002	0.002	0.002	0.001
5th percentile	0.750	0.790	0.810	0.820	0.850	0.780
10th percentile	0.760	0.810	0.830	0.850	0.870	0.800
Median	0.820	0.870	0.900	0.920	0.940	0.890
90th percentile	0.900	0.950	0.980	0.990	1.010	0.980
95th percentile	0.920	0.980	1.000	1.010	1.030	1.000
Women						
Less than 0.70	23.3	8.5	7.7	6.6	3.0	9.6
0.70, less than 0.75	33.9	29.8	22.3	20.0	13.4	24.1
0.75, less than 0.80	22.5	36.5	37.2	29.4	27.0	31.2
0.80, less than 0.85	13.7	16.3	20.1	25.6	30.1	20.9
0.85, less than 0.90	4.8	6.6	9.2	12.2	16.4	9.6
0.90 or more	1.7	2.4	3.6	6.3	10.1	4.6
Mean	0.748	0.770	0.781	0.794	0.813	0.781
Standard error of the mean	0.003	0.002	0.002	0.003	0.003	0.001
5th percentile	0.660	0.690	0.690	0.690	0.710	0.680
10th percentile	0.680	0.700	0.710	0.710	0.740	0.700
Median	0.740	0.770	0.780	0.790	0.810	0.780
90th percentile	0.830	0.850	0.860	0.880	0.900	0.870
95th percentile	0.860	0.880	0.890	0.900	0.920	0.900
Bases (weighted)						
Men	*622*	*865*	*752*	*660*	*528*	*3426*
Women	*574*	*768*	*766*	*673*	*548*	*3329*
Bases (unweighted)						
Men	*399*	*736*	*706*	*619*	*601*	*3061*
Women	*440*	*903*	*870*	*713*	*735*	*3661*

Table 7.7 Mean waist-hip ratio (WHR), by body mass index (BMI), age and sex

All with valid waist, hip, height and weight measurements *1995*

Waist-hip ratio	BMI (kg/m^2)				Total
	20 or under	Over 20-25	Over 25-30	Over 30	
Men					
16 - 44					
Mean	0.813	0.846	0.892	0.950	0.873
Standard error of the mean	0.005	0.002	0.002	0.003	0.001
45 - 64					
Mean	[*]	0.891	0.931	0.974	0.928
Standard error of the mean	[*]	0.003	0.002	0.003	0.002
All ages					
Mean	0.819	0.857	0.909	0.961	0.892
Standard error of the mean	0.005	0.001	0.001	0.002	0.001
Women					
16 - 44					
Mean	0.731	0.754	0.781	0.820	0.767
Standard error of the mean	0.003	0.002	0.003	0.004	0.001
45 - 64					
Mean	0.746	0.774	0.809	0.843	0.802
Standard error of the mean	0.007	0.003	0.003	0.004	0.002
All ages					
Mean	0.734	0.760	0.794	0.832	0.780
Standard error of the mean	0.003	0.001	0.002	0.003	0.001
Bases (weighted)					
Men					
16 - 44	*143*	*981*	*743*	*269*	*2136*
45 - 64	*18*	*300*	*583*	*229*	*1130*
All ages	*161*	*1282*	*1325*	*499*	*3266*
Women					
16 - 44	*224*	*1000*	*506*	*268*	*1998*
45 - 64	*52*	*403*	*429*	*265*	*1149*
All ages	*276*	*1403*	*935*	*533*	*3147*
Bases (unweighted)					
Men					
16 - 44	*106*	*776*	*644*	*230*	*1756*
45 - 64	*20*	*312*	*583*	*237*	*1152*
All ages	*126*	*1088*	*1227*	*467*	*2908*
Women					
16 - 44	*213*	*1080*	*520*	*282*	*2095*
45 - 64	*60*	*459*	*508*	*334*	*1361*
All ages	*273*	*1539*	*1028*	*616*	*3456*

Table 7.8 Correlation of BMI and WHR, by age and sex

All with valid waist, hip, height and weight measurements *1995*

Correlation	Age					Total
	16-24	25-34	35-44	45-54	55-64	
	%	%	%	%	%	%
Men						
Pearsons correlation coefficient	0.42	0.56	0.54	0.50	0.52	0.60
Women						
Pearsons correlation coefficient	0.35	0.34	0.45	0.43	0.42	0.45
Bases (weighted)						
Men	*602*	*823*	*712*	*627*	*503*	*3266*
Women	*556*	*727*	*715*	*636*	*513*	*3147*
Bases (unweighted)						
Men	*386*	*702*	*668*	*584*	*568*	*2908*
Women	*421*	*856*	*820*	*673*	*688*	*3456*

Table 7.9 Mean BMI in Scotland, England and Northern England, by age and sex

All with valid height and weight measurements *1995*

BMI (kg/m^2)	Age					Total
	16-24	25-34	35-44	45-54	55-64	
	%	%	%	%	%	%
Men						
Scotland						
20 or under	16.1	3.8	2.6	1.8	1.0	5.1
Over 20-25	61.3	46.5	32.2	27.3	25.2	39.3
Over 25-30	18.1	35.3	46.3	49.0	52.8	39.7
Over 30	4.5	14.4	18.9	21.9	21.0	15.9
Mean	23.0	25.8	26.8	27.3	27.3	26.0
Standard error of the mean	0.13	0.13	0.14	0.15	0.15	0.07
5th percentile	18.7	20.5	21.2	21.1	21.4	20.0
10th percentile	19.4	21.3	22.3	22.6	22.6	20.9
Median	22.6	25.0	26.4	27.0	27.0	25.6
90th percentile	27.1	31.1	31.8	32.5	31.5	31.3
95th percentile	29.9	33.3	33.8	34.0	33.7	33.3
England						
20 or under	16.0	4.8	1.9	1.8	1.4	4.9
Over 20-25	53.4	45.6	36.4	30.3	29.4	39.2
Over 25-30	24.9	39.8	46.2	50.7	51.4	42.8
Over 30	5.7	9.8	15.5	17.2	17.8	13.2
Mean	23.5	25.3	26.4	26.8	27.0	25.8
Standard error of the mean	0.12	0.10	0.11	0.11	0.12	0.05
5th percentile	18.7	20.1	20.9	21.1	21.9	20.0
10th percentile	19.4	21.2	21.9	22.4	22.9	21.1
Median	23.0	24.9	26.0	26.7	26.6	25.5
90th percentile	28.2	30.0	31.5	31.5	32.2	30.9
95th percentile	30.4	31.8	33.3	33.5	33.9	32.9
Northern England[a]						
20 or under	14.6	5.3	3.2	2.6	1.9	5.3
Over 20-25	57.7	43.5	35.6	27.6	28.2	38.4
Over 25-30	22.7	39.8	48.8	51.0	52.7	43.3
Over 30	5.0	11.3	12.4	18.8	17.2	12.9
Mean	23.5	25.5	26.1	27.0	27.0	25.9
Standard error of the mean	0.23	0.20	0.20	0.23	0.23	0.10
5th percentile	18.9	19.9	20.7	21.0	22.0	19.9
10th percentile	19.6	21.0	21.5	22.6	22.8	21.0
Median	22.9	25.1	26.1	26.8	26.6	25.6
90th percentile	28.1	30.6	30.9	31.2	32	30.8
95th percentile	30.3	32.3	32.7	33.5	34	32.8
Bases (weighted)						
Scotland	*700*	*920*	*790*	*698*	*564*	*3672*
Bases (unweighted)						
Scotland	*459*	*793*	*753*	*655*	*643*	*3303*
England	*935*	*1373*	*1288*	*1076*	*925*	*5597*
Northern England	*260*	*379*	*340*	*304*	*262*	*1545*

Continued ....

Table 7.9 - continued

1995

BMI (kg/m^2)	Age					Total
	16-24	25-34	35-44	45-54	55-64	
	%	%	%	%	%	%
Women						
Scotland						
20 or under	19.6	8.7	6.9	4.9	4.1	8.7
Over 20-25	50.4	53.7	45.6	39.5	27.7	44.2
Over 25-30	21.0	24.0	30.5	34.8	40.9	29.9
Over 30	9.0	13.7	17.0	20.8	27.3	17.3
Mean	23.6	24.9	25.8	26.6	27.6	25.7
Standard error of the mean	0.17	0.16	0.17	0.19	0.21	0.08
5th percentile	18.2	19.3	19.8	20.1	20.3	19.3
10th percentile	19.1	20.2	20.8	21.1	22.0	20.2
Median	22.7	23.9	24.8	25.6	26.9	24.8
90th percentile	29.1	30.9	32.4	33.6	34.0	32.2
95th percentile	31.8	33.2	35.5	36.2	36.9	35.1
England						
20 or under	19.6	9.5	4.9	3.8	2.4	7.8
Over 20-25	52.2	52.9	50.3	42.0	33.4	46.9
Over 25-30	20.3	24.7	27.9	36.4	38.7	29.3
Over 30	7.9	12.9	16.9	17.8	25.5	16.0
Mean	23.5	24.8	25.7	26.3	27.5	25.5
Standard error of the mean	0.14	0.12	0.13	0.14	0.16	0.06
5th percentile	18.4	19.3	20.0	20.3	20.7	19.4
10th percentile	19.2	20.1	20.7	21.3	21.8	20.4
Median	22.6	23.7	24.5	25.4	26.7	24.5
90th percentile	29.0	31.4	32.2	32.7	34.0	32.1
95th percentile	31.4	34.5	35.6	36.2	37.2	35.3
Northern England[a]						
20 or under	21.7	8.2	5.7	3.3	0.8	7.7
Over 20-25	49.4	51.9	47.5	38.7	34.4	45.1
Over 25-30	20.6	26.1	27.5	40.8	44.7	31.4
Over 30	8.2	13.8	19.2	17.2	20.2	15.9
Mean	23.5	24.9	26.1	26.4	27.2	25.6
Standard error of the mean	0.26	0.23	0.28	0.25	0.29	0.12
5th percentile	18.1	19.3	19.8	20.6	21.3	19.4
10th percentile	19.0	20.2	20.7	21.4	22.2	20.4
Median	22.8	24.2	24.7	25.8	26.6	24.7
90th percentile	29.1	31.5	33.5	32.7	33.0	32.0
95th percentile	31.2	34.4	37.5	35.9	35.8	35.4
Bases (weighted)						
Scotland	*637*	*866*	*798*	*726*	*606*	*3633*
Bases (unweighted)						
Scotland	*492*	*1021*	*918*	*768*	*808*	*4007*
England	*990*	*1524*	*1418*	*1227*	*988*	*6147*
Northern England	*267*	*414*	*385*	*331*	*262*	*1659*

Continued ....

Table 7.9 - continued

1995

BMI (kg/m^2)	Age					Total
	16-24	25-34	35-44	45-54	55-64	
	%	%	%	%	%	%
All informants						
Scotland						
20 or under	17.8	6.2	4.8	3.4	2.6	6.9
Over 20-25	56.1	50.0	38.9	33.5	26.5	41.7
Over 25-30	19.5	29.8	38.4	41.7	46.6	34.8
Over 30	6.7	14.0	17.9	21.4	24.3	16.6
Mean	23.3	25.3	26.3	27.0	27.5	25.8
Standard error of the mean	0.10	0.10	0.11	0.12	0.13	0.05
5th percentile	18.5	19.8	20.1	20.4	20.9	19.7
10th percentile	19.3	20.6	21.4	21.6	22.3	20.6
Median	22.7	24.6	25.7	26.5	27.0	25.2
90th percentile	28.2	31.1	32.1	32.9	32.8	31.7
95th percentile	30.8	33.2	34.3	35.2	35.6	34.2
England						
20 or under	17.9	7.3	3.5	2.9	1.9	6.4
Over 20-25	52.8	49.4	43.7	36.5	31.5	43.2
Over 25-30	22.5	31.8	36.6	43.1	44.8	35.7
Over 30	6.8	11.5	16.2	17.5	21.8	14.7
Mean	23.5	25.0	26.0	26.5	27.2	25.7
Standard error of the mean	0.09	0.08	0.09	0.09	0.10	0.04
5th percentile	18.5	19.6	20.4	20.6	21.3	19.7
10th percentile	19.3	20.4	21.1	21.6	22.4	20.6
Median	22.8	24.4	25.4	26.0	26.6	25.0
90th percentile	28.6	30.6	31.8	32.1	33.1	31.5
95th percentile	31.1	33.3	34.3	34.6	35.6	34.0
Northern England[a]						
20 or under	18.2	6.8	4.6	3.0	1.3	6.5
Over 20-25	53.5	47.9	41.9	33.4	31.3	41.9
Over 25-30	21.6	32.7	37.5	45.7	48.7	37.1
Over 30	6.6	12.6	16.0	18.0	18.7	14.5
Mean	23.5	25.2	26.1	26.7	27.1	25.7
Standard error of the mean	0.17	0.15	0.17	0.17	0.18	0.08
5th percentile	18.4	19.6	20.1	20.7	21.4	19.6
10th percentile	19.3	20.5	21.1	21.7	22.5	20.6
Median	22.8	24.6	25.4	26.3	26.6	25.2
90th percentile	28.6	30.8	31.7	32.1	32.4	31.3
95th percentile	30.9	33.3	34.8	34.6	35	33.9
Bases (weighted)						
Scotland	*1337*	*1786*	*1588*	*1425*	*1170*	*7305*
Bases (unweighted)						
Scotland	*951*	*1814*	*1671*	*1423*	*1451*	*7310*
England	*1925*	*2897*	*2706*	*2303*	*1913*	*11744*
Northern England	*527*	*793*	*725*	*635*	*524*	*3204*

[a]Northern England consists of the Northern & Yorkshire and North West health regions.

Table 7.10 Mean BMI in the 1984-86 Scottish Heart Health Study (SHHS) and the 1995 Scottish Health Survey (SHS), by age and sex

Aged 40-59 with valid height and weight measurements *1995*

BMI (kg/m^2)	Age				Total
	40-44	45-49	50-54	55-59	
	%	%	%	%	%
Men					
1984-86 SHHS					
Mean	25.9	26.1	26.2	26.1	26.1
Standard deviation	3.4	3.6	3.4	3.5	3.5
1995 SHS					
Mean	26.9	27.5	27.2	27.3	27.2
Standard deviation	3.8	4.0	4.1	3.7	3.9
Women					
1984-86 SHHS					
Mean	24.9	25.6	26.0	26.2	25.7
Standard deviation	4.5	4.7	4.6	4.7	4.7
1995 SHS					
Mean	26.0	26.3	26.9	27.5	26.6
Standard deviation	4.7	5.1	5.2	5.3	5.1
Bases					
Men					
1984-86 SHHS[a]	*1263*	*1202*	*1364*	*1294*	*5123*
1995 SHS (weighted)	*385*	*391*	*307*	*285*	*1368*
1995 SHS (unweighted)	*354*	*358*	*297*	*310*	*1319*
Bases					
Women					
1984-86 SHHS[a]	*1342*	*1262*	*1346*	*1286*	*5236*
1995 SHS (weighted)	*377*	*404*	*323*	*330*	*1434*
1995 SHS (unweighted)	*398*	*401*	*367*	*396*	*1562*

[a] Number of participants in the survey

Table 7.11 Mean BMI, by region, age and sex

All with valid height and weight measurements *1995*

BMI (kg/m^2)	Region							Total
	Highland & Islands	Grampian & Tayside	Lothian & Fife	Borders, Dumfries & Galloway	Greater Glasgow	Lanarkshire, Ayrshire & Arran	Forth Valley, Argyll & Clyde	
Men								
16 - 24								
Mean	[24.0]	23.3	[22.8]	23.2	22.4	23.3	23.0	23.0
Standard error of the mean	[0.61]	0.27	[0.23]	0.72	0.33	0.36	0.35	0.13
25 - 34								
Mean	[26.6]	25.7	[25.3]	25.6	25.4	26.1	26.5	25.8
Standard error of the mean	[0.56]	0.30	[0.25]	0.55	0.39	0.31	0.40	0.13
35 - 44								
Mean	[27.4]	26.7	[26.9]	27.4	26.6	26.8	26.7	26.8
Standard error of the mean	[0.61]	0.28	[0.33]	0.59	0.38	0.32	0.32	0.14
45 - 54								
Mean	[27.5]	27.4	[27.1]	27.8	27.3	27.7	26.7	27.3
Standard error of the mean	[0.57]	0.34	[0.28]	0.65	0.44	0.38	0.43	0.15
55 - 64								
Mean	[27.2]	27.6	[27.4]	26.8	26.5	27.7	27.2	27.3
Standard error of the mean	[0.66]	0.35	[0.35]	0.76	0.36	0.36	0.40	0.15
All men								
Mean	[26.6]	26.0	[25.7]	26.4	25.7	26.4	26.0	26.0
Standard error of the mean	[0.28]	0.15	[0.14]	0.31	0.19	0.16	0.18	0.07
Women								
16 - 24								
Mean	[23.7]	23.3	[23.7]	23.0	23.3	24.0	23.8	23.6
Standard error of the mean	[0.78]	0.40	[0.33]	0.62	0.40	0.47	0.41	0.17
25 - 34								
Mean	[25.3]	24.8	[24.8]	24.2	24.2	25.7	24.6	24.9
Standard error of the mean	[0.68]	0.38	[0.38]	0.63	0.31	0.38	0.40	0.16
35 - 44								
Mean	[25.6]	26.3	[25.5]	25.6	25.9	25.9	25.8	25.8
Standard error of the mean	[0.69]	0.44	[0.33]	0.84	0.44	0.40	0.37	0.17
45 - 54								
Mean	[27.9]	27.11	[25.9]	27.3	26.2	27.0	25.9	26.6
Standard error of the mean	[1.02]	0.47	[0.38]	0.79	0.43	0.45	0.50	0.19
55 - 64								
Mean	[28.4]	28.0	[27.7]	27.6	26.9	27.6	27.7	27.6
Standard error of the mean	[0.98]	0.59	[0.46]	0.82	0.46	0.50	0.49	0.21
All women								
Mean	[26.2]	25.8	[25.4]	25.7	25.3	26.1	25.5	25.7
Standard error of the mean	[0.39]	0.21	[0.17]	0.36	0.19	0.20	0.20	0.08

Continued....

Table 7.11 - continued

1995

BMI (kg/m^2)	Region							Total
	Highland & Islands	Grampian & Tayside	Lothian & Fife	Borders, Dumfries & Galloway	Greater Glasgow	Lanarkshire, Ayrshire & Arran	Forth Valley, Argyll & Clyde	
Bases (weighted)								
Men								
16 - 24	*38*	*140*	*176*	*26*	*104*	*116*	*100*	*700*
25 - 34	*54*	*179*	*226*	*37*	*139*	*167*	*118*	*920*
35 - 44	*44*	*169*	*179*	*43*	*111*	*134*	*111*	*790*
45 - 54	*35*	*137*	*154*	*41*	*111*	*129*	*92*	*698*
55 - 64	*35*	*95*	*112*	*24*	*98*	*123*	*76*	*564*
All men	*206*	*719*	*847*	*170*	*564*	*669*	*497*	*3672*
Women								
16 - 24	*29*	*120*	*167*	*23*	*113*	*94*	*91*	*637*
25 - 34	*47*	*144*	*196*	*40*	*147*	*175*	*117*	*866*
35 - 44	*46*	*125*	*174*	*39*	*149*	*136*	*126*	*796*
45 - 54	*36*	*148*	*135*	*39*	*129*	*146*	*93*	*726*
55 - 64	*37*	*97*	*118*	*31*	*122*	*115*	*86*	*606*
All women	*196*	*633*	*790*	*172*	*660*	*666*	*514*	*3632*
Bases (unweighted)								
Men								
16 - 24	*42*	*75*	*105*	*31*	*69*	*77*	*60*	*459*
25 - 34	*77*	*143*	*171*	*59*	*101*	*138*	*104*	*793*
35 - 44	*79*	*138*	*152*	*71*	*99*	*118*	*96*	*753*
45 - 54	*69*	*112*	*126*	*68*	*80*	*113*	*87*	*655*
55 - 64	*75*	*91*	*114*	*52*	*102*	*127*	*82*	*643*
All men	*342*	*559*	*668*	*281*	*451*	*573*	*429*	*3303*
Women								
16 - 24	*41*	*84*	*107*	*36*	*78*	*76*	*70*	*492*
25 - 34	*94*	*149*	*207*	*79*	*158*	*202*	*132*	*1021*
35 - 44	*96*	*120*	*178*	*84*	*151*	*155*	*132*	*916*
45 - 54	*80*	*132*	*129*	*77*	*113*	*146*	*91*	*768*
55 - 64	*87*	*117*	*137*	*77*	*136*	*154*	*100*	*808*
All women	*398*	*602*	*758*	*353*	*636*	*733*	*525*	*4005*

Table 7.12 Estimated regional differences in mean BMI (adjusted for age[a]), by sex

All with valid height and weight measurements *1995*

Variable	*N*	Difference from overall mean (kg/m^2)	95% C.I.[b]	Variable	*N*	Difference from overall mean (kg/m^2)	95% C.I.[b]
Men				**Women**			
Base (weighted) 3672				*Base (weighted) 3632*			
Region[c] (p=0.021)				Region[c] (p=0.049)			
Highland & Islands	*206*	0.46	-0.01, 0.92	Highland & Islands	*196*	0.41	-0.18, 1.01
Grampian & Tayside	*719*	-0.02	-0.30, 0.25	Grampian & Tayside	*633*	0.17	-0.20, 0.53
Lothian & Fife	*847*	-0.25	-0.52, 0.01	Lothian & Fife	*790*	-0.19	-0.53, 0.14
Borders, Dumfries & Galloway	*170*	0.11	-0.40, 0.62	Borders, Dumfries & Galloway	*172*	-0.15	-0.78, 0.49
Greater Glasgow	*564*	-0.44	-0.75, -0.14	Greater Glasgow	*660*	-0.42	-0.78, -0.07
Lanarkshire , Ayrshire & Arran	*669*	0.20	-0.09, 0.49	Lanarkshire , Ayrshire & Arran	*666*	0.34	-0.20, 0.70
Forth Valley, Argyll & Clyde	*497*	-0.05	-0.37, 0.27	Forth Valley, Argyll & Clyde	*514*	-0.16	-0.56, 0.24

[a] Adjusted for age group using linear regression
[b] C.I. = confidence interval
[c] Each region is compared to the overall mean

Table 7.13 Observed and age-standardised prevalence of raised body mass index, by region and sex

All with valid height and weight measurements *1995*

Prevalence of overweight/obesity	**Region**						
	Highland & Islands	Grampian & Tayside	Lothian & Fife	Borders, Dumfries & Galloway	Greater Glasgow	Lanarkshire, Ayrshire & Arran	Forth Valley, Argyll & Clyde
	%	%	%	%	%	%	%
Overweight (BMI over 25-30 kg/m^2)							
Men							
Observed	44.0	41.3	37.3	47.0	32.0	43.3	40.8
Age-standardised	41.0	39.1	36.4	44.3	30.1	41.7	39.0
Women							
Observed	28.5	27.0	31.3	27.6	29.7	31.9	30.3
Age-standardised	26.0	26.5	31.2	25.6	28.7	30.4	29.6
Obese (BMI over 30 kg/m^2)							
Men							
Observed	16.9	15.3	14.5	16.3	16.4	17.3	16.5
Age-standardised	15.8	14.5	13.9	14.0	16.0	16.1	15.5
Women							
Observed	21.5	20.1	14.7	17.6	14.8	19.4	16.5
Age-standardised	20.4	19.1	14.3	15.5	14.0	18.6	15.7
Bases (weighted)							
Men	*206*	*719*	*847*	*170*	*564*	*669*	*497*
Women	*196*	*633*	*790*	*172*	*660*	*666*	*514*
Bases (unweighted)							
Men	*342*	*559*	*668*	*281*	*451*	*573*	*429*
Women	*398*	*602*	*758*	*353*	*636*	*733*	*525*

Table 7.14 Mean waist-hip ratio (WHR), by region, age and sex

All with valid waist and hip measurements *1995*

Waist-hip ratio	Region							Total
	Highland & Islands	Grampian & Tayside	Lothian & Fife	Borders, Dumfries & Galloway	Greater Glasgow	Lanarkshire, Ayrshire & Arran	Forth Valley, Argyll & Clyde	
Men								
16 - 24								
Mean	[0.831]	0.828	0.819	[0.828]	0.832	0.836	0.832	0.829
Standard error of the mean	[0.009]	0.004	0.004	[0.012]	0.005	0.005	0.006	0.002
25 - 34								
Mean	[0.872]	0.876	0.875	[0.880]	0.872	0.889	0.891	0.879
Standard error of the mean	[0.008]	0.005	0.004	[0.011]	0.005	0.004	0.005	0.002
35 - 44								
Mean	[0.915]	0.900	0.903	[0.918]	0.899	0.907	0.908	0.904
Standard error of the mean	[0.009]	0.005	0.005	[0.010]	0.005	0.005	0.005	0.002
45 - 54								
Mean	[0.916]	0.920	0.920	[0.928]	0.917	0.921	0.917	0.920
Standard error of the mean	[0.011]	0.005	0.005	[0.009]	0.005	0.005	0.006	0.002
55 - 64								
Mean	[0.930]	0.942	0.939	[0.940]	0.935	0.942	0.943	0.939
Standard error of the mean	[0.011]	0.006	0.006	[0.012]	0.005	0.006	0.007	0.002
All men								
Mean	[0.892]	0.890	0.887	[0.902]	0.891	0.900	0.896	0.893
Standard error of the mean	[0.005]	0.003	0.003	[0.006]	0.003	0.003	0.003	0.001
Women								
16 - 24								
Mean	[0.738]	0.750	0.749	[0.754]	0.745	0.746	0.751	0.748
Standard error of the mean	[0.011]	0.007	0.005	[0.011]	0.008	0.007	0.006	0.003
25 - 34								
Mean	[0.773]	0.766	0.763	[0.766]	0.774	0.778	0.771	0.770
Standard error of the mean	[0.010]	0.005	0.004	[0.010]	0.005	0.004	0.006	0.002
35 - 44								
Mean	[0.786]	0.776	0.777	[0.787]	0.780	0.784	0.784	0.781
Standard error of the mean	[0.010]	0.005	0.005	[0.009]	0.005	0.005	0.006	0.002
45 - 54								
Mean	[0.798]	0.788	0.795	[0.803]	0.802	0.787	0.794	0.794
Standard error of the mean	[0.012]	0.006	0.006	[0.012]	0.006	0.005	0.007	0.003
55 - 64								
Mean	[0.810]	0.806	0.818	[0.812	0.811	0.806	0.827	0.813
Standard error of the mean	[0.011]	0.007	0.006	[0.012]	0.006	0.006	0.008	0.003
All women								
Mean	[0.783]	0.776	0.777	[0.786]	0.783	0.781	0.784	0.781
Standard error of the mean	[0.005]	0.003	0.002	[0.005]	0.003	0.002	0.003	0.001

Continued....

Table 7.14 - continued

1995

Waist-hip ratio	Region							Total
	Highland & Islands	Grampian & Tayside	Lothian & Fife	Borders, Dumfries & Galloway	Greater Glasgow	Lanarkshire, Ayrshire & Arran	Forth Valley, Argyll & Clyde	
Bases (weighted)								
Men								
16 - 24	32	131	146	25	97	103	88	622
25 - 34	49	161	218	32	129	164	112	865
35 - 44	39	166	166	38	105	133	104	752
45 - 54	33	128	130	40	114	132	84	660
55 - 64	33	91	103	23	95	113	69	528
All men	186	677	763	157	541	645	458	3426
Women								
16 - 24	26	103	150	23	103	87	82	574
25 - 34	44	125	169	38	130	155	108	768
35 - 44	41	123	170	39	146	126	120	766
45 - 54	35	129	126	33	123	134	92	673
55 - 64	35	86	97	32	115	105	78	548
All women	181	565	713	165	617	608	480	3329
Bases (unweighted)								
Men								
16 - 24	36	71	82	29	59	68	54	399
25 - 34	70	130	161	50	92	134	99	736
35 - 44	69	133	142	63	92	117	90	706
45 - 54	63	103	110	65	85	114	79	619
55 - 64	70	88	104	50	97	117	75	601
All men	308	525	599	257	425	550	397	3061
Women								
16 - 24	38	74	93	36	68	68	63	440
25 - 34	84	130	177	76	135	180	121	903
35 - 44	88	118	170	80	148	141	125	870
45 - 54	76	118	120	66	108	133	92	713
55 - 64	83	104	118	77	124	138	91	735
All women	369	544	678	335	583	660	492	3661

Table 7.15 Mean body mass index (BMI), by social class of chief income earner, age and sex

All with valid height and weight measurements *1995*

BMI (kg/m^2)	Social class of chief income earner						Total[a]
	I	II	IIINM	IIIM	IV	V	
Men							
16 - 44							
Mean	25.0	25.7	25.4	25.5	25.2	24.6	25.3
Standard error of the mean	0.27	0.17	0.21	0.16	0.22	0.44	0.08
45 - 64							
Mean	26.1	27.4	27.4	27.5	27.4	27.1	27.3
Standard error of the mean	0.31	0.20	0.33	0.19	0.30	0.62	0.11
All men							
Mean	25.4	26.3	26.0	26.3	25.9	25.5	26.0
Standard error of the mean	0.21	0.13	0.18	0.13	0.18	0.37	0.07
Women							
16 - 44							
Mean	24.1	24.2	25.1	25.4	25.2	25.9	24.8
Standard error of the mean	0.35	0.18	0.23	0.19	0.29	0.55	0.10
45 - 64							
Mean	26.9	26.2	27.2	27.4	28.0	26.7	27.1
Standard error of the mean	0.59	0.24	0.37	0.28	0.42	0.53	0.14
All women							
Mean	25.1	25.0	25.8	26.2	26.3	26.3	25.7
Standard error of the mean	0.32	0.15	0.20	0.16	0.25	0.39	0.08
Bases (weighted)							
Men							
16 - 44	*163*	*604*	*306*	*723*	*336*	*106*	*2410*
45 - 64	*96*	*347*	*117*	*445*	*162*	*60*	*1262*
All men	*259*	*950*	*423*	*1168*	*498*	*166*	*3672*
Women							
16 - 44	*147*	*534*	*415*	*587*	*303*	*99*	*2299*
45 - 64	*81*	*366*	*214*	*366*	*182*	*83*	*1333*
All women	*229*	*899*	*628*	*953*	*485*	*181*	*3632*
Bases (unweighted)							
Men							
16 - 44	*138*	*489*	*243*	*599*	*290*	*101*	*2005*
45 - 64	*88*	*333*	*116*	*460*	*182*	*79*	*1298*
All men	*226*	*822*	*359*	*1059*	*472*	*180*	*3303*
Women							
16 - 44	*139*	*546*	*493*	*555*	*369*	*117*	*2429*
45 - 64	*85*	*432*	*271*	*390*	*224*	*119*	*1576*
All women	*224*	*978*	*764*	*945*	*593*	*236*	*4005*

[a]Includes those for whom social class could not be determined.

Table 7.16 Estimated social class differences in mean BMI (adjusted for age[a]), by sex

All with valid height and weight measurements *1995*

Variable	*N*	Differences from Social Class I (kg/m^2)	95% C.I.[b]
Men			
Base (weighted) 3464			
Social Class[c] (p=0.018)			
I	*259*	0	
II	*950*	0.90	0.37, 1.43
IIINM	*423*	0.73	0.14, 1.33
IIIM	*1168*	0.88	0.36, 1.40
IV	*498*	0.71	0.13, 1.29
V	*166*	0.44	-0.31, 1.20
Women			
Base (weighted) 3376			
Social Class[c] (p<0.001)			
I	*229*	0	
II	*899*	-0.22	-0.90, 0.47
IIINM	*628*	0.78	0.06, 1.50
IIIM	*953*	1.03	0.34, 1.71
IV	*485*	1.12	0.37, 1.86
V	*181*	0.85	-0.08, 1.77

[a] Adjusted for age group using linear regression
[b] C.I. = confidence interval
[c] Social class of chief income earner

Table 7.17 Observed and age-standardised prevalence of obesity, by social class of chief income earner and sex

All with valid height and weight measurements *1995*

Prevalence of obesity	**Social class of chief income earner**					
(BMI>30 kg/m^2)	I	II	IIINM	IIIM	IV	V
	%	%	%	%	%	%
Men						
Observed	8.2	17.7	15.3	16.8	16.5	16.7
Age-standardised	8.3	15.7	14.7	15.4	16.0	17.1
Women						
Observed	14.9	12.2	18.1	19.2	22.5	20.7
Age-standardised	13.9	9.9	17.8	18.1	22.1	20.2
Bases (weighted)						
Men	*259*	*950*	*423*	*1168*	*498*	*166*
Women	*229*	*899*	*628*	*953*	*485*	*181*
Bases (unweighted)						
Men	*226*	*822*	*359*	*1059*	*472*	*180*
Women	*224*	*978*	*764*	*945*	*593*	*236*

Table 7.18 Mean waist-hip ratio, by social class of chief income earner, age and sex

All with valid waist and hip measurements **1995**

WHR	Social class of chief income earner						Total[a]
	I	II	IIINM	IIIM	IV	V	
Men							
16 - 44							
Mean	0.862	0.878	0.874	0.878	0.875	0.874	0.874
Standard error of the mean	0.005	0.003	0.003	0.003	0.004	0.007	0.001
45 - 64							
Mean	0.908	0.923	0.919	0.934	0.935	0.950	0.928
Standard error of the mean	0.006	0.003	0.006	0.003	0.005	0.009	0.002
All men							
Mean	0.879	0.895	0.885	0.899	0.895	0.904	0.893
Standard error of the mean	0.004	0.002	0.003	0.002	0.003	0.006	0.001
Women							
16 - 44							
Mean	0.755	0.765	0.762	0.775	0.776	0.797	0.768
Standard error of the mean	0.005	0.003	0.003	0.003	0.003	0.007	0.001
45 - 64							
Mean	0.785	0.787	0.800	0.811	0.820	0.811	0.802
Standard error of the mean	0.007	0.004	0.005	0.004	0.005	0.007	0.002
All women							
Mean	0.765	0.774	0.775	0.788	0.792	0.804	0.781
Standard error of the mean	0.004	0.002	0.003	0.002	0.003	0.005	0.001
Bases (weighted)							
Men							
16 - 44	*153*	*557*	*297*	*684*	*304*	*95*	*2238*
45 - 64	*86*	*336*	*102*	*418*	*152*	*60*	*1187*
All men	*239*	*893*	*399*	*1102*	*456*	*156*	*3426*
Women							
16 - 44	*137*	*496*	*375*	*548*	*284*	*87*	*2108*
45 - 64	*75*	*341*	*195*	*337*	*167*	*75*	*1221*
All women	*212*	*837*	*570*	*885*	*451*	*162*	*3329*
Bases (unweighted)							
Men							
16 - 44	*130*	*446*	*236*	*563*	*258*	*90*	*1841*
45 - 64	*81*	*320*	*105*	*427*	*170*	*80*	*1220*
All men	*211*	*766*	*341*	*990*	*428*	*170*	*3061*
Women							
16 - 44	*129*	*505*	*445*	*519*	*339*	*100*	*2213*
45 - 64	*79*	*406*	*247*	*361*	*206*	*104*	*1448*
All women	*208*	*911*	*692*	*880*	*545*	*204*	*3661*

[a]Includes those for whom social class could not be determined

Table 7.19 Estimated social class differences in mean WHR (adjusted for age[a]), by sex

All with valid waist and hip measurements *1995*

Variable	*N*	Differences from Social Class I	95% C.I.[b]
Men			
Base (weighted) 3244			
Social Class[c] (p<0.001)			
I	*239*	0	
II	*893*	0.014	0.006, 0.022
IIINM	*399*	0.012	0.003, 0.021
IIIM	*1102*	0.020	0.012, 0.028
IV	*456*	0.020	0.012, 0.029
V	*156*	0.027	0.016, 0.039
Women			
Base (weighted) 3116			
Social Class[c] (p<0.001)			
I	*212*	0	
II	*837*	0.007	-0.003, 0.016
IIINM	*570*	0.010	0.000, 0.020
IIIM	*885*	0.022	0.013, 0.032
IV	*451*	0.026	0.016, 0.036
V	*162*	0.033	0.020, 0.046

[a] Adjusted for age group using linear regression

[b] C.I. = confidence interval

[c] Social Class of chief income earner

Table 7.20 Mean BMI, by cigarette smoking status, age and sex

All with valid height and weight measurements *1995*

BMI (kg/m^2)	Cigarette smoking status				Total
	Never regularly smoked	Ex-regular smoker	Smokes less than 20 a day	Smokes 20 or more a day	
Men					
16 - 44					
Mean	25.6	26.5	24.0	25.2	25.3
Standard error of the mean	0.12	0.21	0.16	0.25	0.08
45 - 64					
Mean	27.7	28.1	25.9	26.4	27.3
Standard error of the mean	0.19	0.18	0.28	0.25	0.11
All men					
Mean	26.1	27.4	24.5	25.8	26.0
Standard error of the mean	0.10	0.14	0.14	0.18	0.07
Women					
16 - 44					
Mean	24.9	25.6	24.2	25.3	24.8
Standard error of the mean	0.13	0.27	0.20	0.28	0.10
45 - 64					
Mean	27.5	27.8	25.7	26.6	27.1
Standard error of the mean	0.23	0.30	0.28	0.35	0.14
All women					
Mean	25.7	26.7	24.7	25.8	25.7
Standard error of the mean	0.12	0.21	0.16	0.22	0.08
Bases (weighted)					
Men					
16 - 44	*1270*	*328*	*508*	*301*	*2410*
45 - 64	*407*	*434*	*167*	*253*	*1262*
All men	*1677*	*762*	*674*	*554*	*3672*
Women					
16 - 44	*1194*	*277*	*541*	*282*	*2299*
45 - 64	*573*	*283*	*277*	*201*	*1333*
All women	*1766*	*560*	*818*	*483*	*3632*
Bases (unweighted)					
Men					
16 - 44	*1023*	*279*	*421*	*280*	*2005*
45 - 64	*398*	*436*	*181*	*280*	*1298*
All men	*1421*	*715*	*602*	*560*	*3303*
Women					
16 - 44	*1159*	*301*	*614*	*351*	*2429*
45 - 64	*671*	*348*	*325*	*232*	*1576*
All women	*1830*	*649*	*939*	*583*	*4005*

Table 7.21 Mean BMI for men, by alcohol consumption level and age

Men with valid height and weight measurements *1995*

BMI (kg/m^2)	Alcohol consumption level (units per week)					Total
	Ex-drinker	Non/occasional drinker	1-10	Over 10-21	Over 21	
Men						
16 - 44						
Mean	[27.0]	25.0	25.6	25.2	25.3	25.3
Standard error of the mean	[0.68]	0.33	0.17	0.15	0.13	0.08
45 - 64						
Mean	27.8	28.6	26.9	27.0	27.5	27.3
Standard error of the mean	0.71	0.37	0.20	0.20	0.19	0.11
All men						
Mean	27.4	26.3	26.0	25.8	26.0	26.0
Standard error of the mean	0.50	0.27	0.13	0.12	0.11	0.07
Bases (weighted)						
16 - 44	*36*	*236*	*665*	*641*	*814*	*2410*
45 - 64	*51*	*141*	*354*	*328*	*388*	*1262*
All men	*87*	*377*	*1018*	*969*	*1203*	*3672*
Bases (unweighted)						
16 - 44	*39*	*182*	*540*	*530*	*703*	*2005*
45 - 64	*58*	*151*	*372*	*317*	*400*	*1298*
All men	*97*	*333*	*912*	*847*	*1103*	*3303*

Table 7.22 Mean BMI for women, by alcohol consumption level and age

Women with valid height and weight measurements *1995*

BMI (kg/m^2)	Alcohol consumption level (units per week)					Total
	Ex-drinker	Non/occasional drinker	1-7	Over 7-14	Over 14	
Women						
16 - 44						
Mean	25.7	24.6	25.1	24.7	24.4	24.8
Standard error of the mean	0.87	0.23	0.15	0.19	0.23	0.10
45 - 64						
Mean	27.0	27.9	26.9	26.8	25.9	27.1
Standard error of the mean	0.76	0.30	0.21	0.35	0.34	0.14
All women						
Mean	26.5	26.0	25.8	25.3	24.8	25.7
Standard error of the mean	0.57	0.19	0.13	0.18	0.19	0.08
Bases (weighted)						
16 - 44	*46*	*464*	*947*	*479*	*350*	*2299*
45 - 64	*68*	*362*	*550*	*217*	*135*	*1333*
All women	*114*	*826*	*1497*	*696*	*485*	*3632*
Bases (unweighted)						
16 - 44	*56*	*480*	*1009*	*506*	*369*	*2429*
45 - 64	*87*	*458*	*618*	*257*	*156*	*1576*
All women	*143*	*938*	*1627*	*763*	*525*	*4005*

Table 7.23 Mean BMI, by frequency-intensity level of physical activity, age and sex

All with valid height and weight measurements *1995*

BMI (kg/m^2)	Frequency-intensity level			Total
	Level 0	Levels 1,2	Levels 3,4,5	
Men				
16 - 44				
Mean	25.6	25.6	25.1	25.3
Standard error of the mean	0.22	0.15	0.11	0.08
45 - 64				
Mean	27.5	27.1	27.4	27.3
Standard error of the mean	0.20	0.17	0.19	0.11
All men				
Mean	26.6	26.1	25.6	26.0
Standard error of the mean	0.15	0.12	0.10	0.07
Women				
16 - 44				
Mean	24.8	24.8	24.9	24.8
Standard error of the mean	0.21	0.16	0.15	0.10
45 - 64				
Mean	27.7	26.5	27.1	27.1
Standard error of the mean	0.28	0.21	0.26	0.14
All women				
Mean	26.1	25.5	25.6	25.7
Standard error of the mean	0.18	0.13	0.13	0.08
Bases (weighted)				
Men				
16 - 44	*389*	*789*	*1218*	*2410*
45 - 64	*424*	*437*	*393*	*1262*
All men	*813*	*1226*	*1611*	*3672*
Women				
16 - 44	*501*	*884*	*901*	*2299*
45 - 64	*409*	*512*	*404*	*1333*
All women	*910*	*1396*	*1305*	*3632*
Bases (unweighted)				
Men				
16 - 44	*334*	*654*	*1004*	*2005*
45 - 64	*432*	*443*	*413*	*1298*
All men	*766*	*1097*	*1417*	*3303*
Women				
16 - 44	*495*	*942*	*980*	*2429*
45 - 64	*493*	*599*	*472*	*1576*
All women	*988*	*1541*	*1452*	*4005*

Table 7.24 Mean WHR, by cigarette smoking status, age and sex

All with a valid waist and hip measurement *1995*

WHR	Cigarette smoking status				Total
	Never regularly smoked	Ex-regular smoker	Smokes less than 20 a day	Smokes 20 or more a day	
Men					
16 - 44					
Mean	0.872	0.891	0.860	0.883	0.874
Standard error of the mean	0.002	0.003	0.003	0.004	0.001
45 - 64					
Mean	0.923	0.932	0.926	0.933	0.928
Standard error of the mean	0.003	0.003	0.004	0.004	0.002
All men					
Mean	0.885	0.914	0.877	0.906	0.893
Standard error of the mean	0.002	0.002	0.003	0.003	0.001
Women					
16 - 44					
Mean	0.760	0.771	0.771	0.792	0.768
Standard error of the mean	0.002	0.004	0.003	0.004	0.001
45 - 64					
Mean	0.792	0.805	0.809	0.819	0.802
Standard error of the mean	0.003	0.004	0.004	0.005	0.002
All women					
Mean	0.770	0.788	0.784	0.803	0.781
Standard error of the mean	0.002	0.003	0.002	0.003	0.001
Bases (weighted)					
Men					
16 - 44	*1178*	*325*	*462*	*271*	*2238*
45 - 64	*392*	*403*	*158*	*233*	*1187*
All men	*1570*	*727*	*620*	*504*	*3426*
Women					
16 - 44	*1105*	*260*	*488*	*250*	*2108*
45 - 64	*536*	*269*	*243*	*174*	*1221*
All women	*1641*	*529*	*731*	*423*	*3329*
Bases (unweighted)					
Men					
16 - 44	*951*	*273*	*370*	*246*	*1841*
45 - 64	*380*	*405*	*171*	*261*	*1220*
All men	*1331*	*678*	*541*	*507*	*3061*
Women					
16 - 44	*1073*	*283*	*549*	*304*	*2213*
45 - 64	*635*	*328*	*283*	*202*	*1448*
All women	*1708*	*611*	*832*	*506*	*3661*

Table 7.25 MeanWHR for men, by alcohol consumption level and age

Men with a valid waist-hip ratio *1995*

WHR	Alcohol consumption level (units per week)					Total
	Ex-drinker	Non/occasional drinker	1-10	Over 10-21	Over 21	
Men						
16 - 44						
Mean	[0.891]	0.868	0.877	0.871	0.875	0.874
Standard error of the mean	[0.011]	0.005	0.003	0.002	0.002	0.001
45 - 64						
Mean	0.936	0.930	0.924	0.923	0.935	0.928
Standard error of the mean	0.007	0.005	0.003	0.003	0.003	0.002
All men						
Mean	0.919	0.891	0.893	0.889	0.895	0.893
Standard error of the mean	0.006	0.004	0.002	0.002	0.002	0.001
Bases (weighted)						
16 - 44	*32*	*222*	*620*	*595*	*756*	*2238*
45 - 64	*51*	*129*	*336*	*309*	*363*	*1187*
All men	*82*	*351*	*957*	*903*	*1119*	*3426*
Bases (unweighted)						
16 - 44	*35*	*168*	*508*	*484*	*639*	*1841*
45 - 64	*55*	*139*	*351*	*302*	*373*	*1220*
All men	*90*	*307*	*859*	*786*	*1012*	*3061*

Table 7.26 MeanWHR for women, by alcohol consumption level and age

Women with a valid waist-hip ratio *1995*

WHR	Alcohol consumption level (units per week)					Total
	Ex-drinker	Non/occasional drinker	1-7	Over 7-14	Over 14	
Women						
16 - 44						
Mean	0.790	0.769	0.767	0.769	0.763	0.768
Standard error of the mean	0.008	0.003	0.002	0.003	0.003	0.001
45 - 64						
Mean	0.806	0.805	0.799	0.803	0.801	0.802
Standard error of the mean	0.010	0.004	0.003	0.005	0.005	0.002
All women						
Mean	0.800	0.785	0.779	0.779	0.774	0.781
Standard error of the mean	0.007	0.003	0.002	0.003	0.003	0.001
Bases (weighted)						
16 - 44	*39*	*424*	*885*	*441*	*311*	*2108*
45 - 64	*62*	*341*	*505*	*193*	*120*	*1221*
All women	*101*	*765*	*1390*	*635*	*431*	*3329*
Bases (unweighted)						
16 - 44	*47*	*435*	*934*	*469*	*322*	*2213*
45 - 64	*79*	*433*	*565*	*231*	*140*	*1448*
All women	*126*	*868*	*1499*	*700*	*462*	*3661*

Table 7.27 Mean WHR, by frequency-intensity level of physical activity, age and sex

All with valid waist and hip measurements *1995*

WHR	Frequency-intensity level			Total
	Level 0	Levels 1,2	Levels 3,4,5	
Men				
16 - 44				
Mean	0.888	0.880	0.866	0.874
Standard error of the mean	0.004	0.002	0.002	0.001
45 - 64				
Mean	0.938	0.921	0.926	0.928
Standard error of the mean	0.003	0.003	0.003	0.002
All men				
Mean	0.915	0.895	0.880	0.893
Standard error of the mean	0.003	0.002	0.002	0.001
Women				
16 - 44				
Mean	0.770	0.765	0.770	0.768
Standard error of the mean	0.003	0.002	0.002	0.001
45 - 64				
Mean	0.813	0.798	0.798	0.802
Standard error of the mean	0.004	0.003	0.003	0.002
All women				
Mean	0.790	0.776	0.779	0.781
Standard error of the mean	0.002	0.002	0.002	0.001
Bases (weighted)				
Men				
16 - 44	*348*	*733*	*1145*	*2238*
45 - 64	*391*	*417*	*371*	*1187*
All men	*739*	*1150*	*1516*	*3426*
Women				
16 - 44	*443*	*818*	*838*	*2108*
45 - 64	*381*	*454*	*378*	*1221*
All women	*824*	*1272*	*1216*	*3329*
Bases (unweighted)				
Men				
16 - 44	*301*	*605*	*924*	*1841*
45 - 64	*399*	*419*	*391*	*1220*
All men	*700*	*1024*	*1315*	*3061*
Women				
16 - 44	*431*	*863*	*909*	*2213*
45 - 64	*457*	*542*	*436*	*1448*
All women	*888*	*1405*	*1345*	*3661*

8 RESPIRATORY SYMPTOMS AND LUNG FUNCTIONS TESTS

Wei Dong, Paola Primatesta and Sara Walsh

SUMMARY

- Among all informants aged 16-64 years, the prevalence of phlegm production was 13% among men and 9% among women. The prevalence of breathlessness was 20% in men and 30% in women. For wheezing, the prevalence was 20% in both sexes. The prevalence of these respiratory symptoms did not change much by age through the 35-44 age group, but then increased quite sharply for those aged 45 or more, especially for phlegm and breathlessness.

- The prevalence of phlegm and of breathlessness was significantly higher in Scotland than in England in both sexes, and the difference was largest among the two age groups most likely to have these symptoms (45-54 and 55-64 years).

- For both sexes, high prevalence of respiratory symptoms in Scotland was strongly associated with the manual social classes, and with current cigarette smoking status.

- Among all informants, mean FEV_1(l) was 3.9 in men and 2.8 in women. Mean FVC (l) was 4.9 in men and 3.4 in women. Mean PEF ($l.min^{-1}$) was 571 in men and 386 in women. Lung function increased with height, but decreased with age.

- Over half of the population (53% of men and 54% of women) had FEV_1 lung function levels equal to, or in excess of, the predicted value. This proportion decreased continuously with age in men to 36% in those aged 55-64. For women, the pattern was less clear.

- The proportion of informants having low lung function levels (over 1.64 SD below the predicted values) was 8% in men and 6% in women. Low lung function levels were related to the manual social classes and current cigarette smoking.

- Informants who reported having phlegm, breathlessness or wheezing were more likely to have lung function levels 1.64 SD below the predicted values.

8.1 INTRODUCTION

Among the adult population in Scotland, respiratory diseases (bronchitis, emphysema and related diseases) cause substantial illness and are estimated to kill 3000 people per year.[1] As part of the Health Survey, respiratory symptoms were recorded and lung function tests were performed.

The MRC Respiratory Symptom Questionnaire (the 1986 and earlier versions) was designed as a simple device to measure chronic bronchitis and other diseases of chronic airway limitation.[2] It has been used in studies in occupational epidemiology[3] and in a number of the recent Health Surveys for England.[4] Presence or absence of common respiratory symptoms, namely, *phlegm production, breathlessness and wheezing or whistling in the chest* were examined.

Designed to assess airflow limitation, lung function tests have been commonly used in clinical settings to follow the progress of the patient and check the effectiveness of treatment. These tests have also been used to study lung function at a population level, and have been shown to be predictive of mortality from respiratory disease as well as cardiovascular disease and all cause mortality.[5,6,7,8]

Three measures of respiratory function were employed in the Health Survey: a) FEV_1 (Forced Expiratory Volume) which is the volume of air in litres that can be forced out of the lungs in the first second following a full inspiration; b) *FVC* (Forced Vital Capacity), which is the volume of gas in litres delivered during an expiration made as forcefully and as completely as possible starting from full inspiration; c) *PEF* (Peak Expiratory Flow) which is the fastest rate of exhalation in litres per minute recorded during the measurement. On the basis of these measures, relative lung function levels were calculated in relation to predicted values (see Section 8.3.2).

This chapter is divided into two main sections: the first deals with respiratory symptoms by age and sex, and their variation between regions, social classes, and smoking status. The results are also compared with those obtained from the 1994 Health Survey for England.

In the following sections, after describing the methods used, the lung function results are presented. Estimates of FEV_1, FVC and PEF by age, sex and height are reported, followed by the results on relative lung function levels. Data on the following are also presented: variation in lung function levels between regions and social classes (Sections 8.4.3 and 8.4.4 respectively); and the relationships of lung function levels with cigarette smoking (Section 8.4.5) and with respiratory symptoms (Section 8.4.6) are then examined.

8.2 RESPIRATORY SYMPTOMS

8.2.1 Methods and definitions

The prevalence of respiratory symptoms was assessed using the MRC Respiratory Questionnaire: informants were asked about phlegm production (morning and other phlegm), breathlessness (shortness of breath occurring when either hurrying or walking) and wheezing. Breathlessness was classified as grade 1 or grade 2, grade 2 being more severe. Wheezing was defined as an attack, within the last twelve months, of wheezing or whistling in the chest at any time, or of breathlessness at night.[2] For a full description of these definitions see the Glossary (Appendix E in the Technical Report).

8.2.2 Respiratory symptoms by age and sex

The majority of those who reported phlegm production had morning phlegm, with a very small proportion of informants reporting phlegm during the day or at night only. Therefore, both types of phlegm production were combined. The prevalence of phlegm production was 13% in men and 9% in women.

For both sexes, the prevalence was similar for the 16-24, 25-34 and 35-44 age groups, but it then increased sharply: in men, to 16% among those aged 45-54 and to 19% among those aged 55-64; the figures for women in these two age groups were 11% and 13% respectively.

The categories for grade 1 and grade 2 breathlessness were combined, as the majority of those who reported having breathlessness were in grade 1. The prevalence was 20% in men and 30% in women, and at all ages it was higher in women than in men. As for phlegm, the prevalence of breathlessness increased markedly among the two oldest age groups in both sexes: in men, it was 25% in the 45-54 age group and 41% in the 55-64 age group; among women, the corresponding figures were 36% and 47% respectively.

The prevalence of wheezing was 20% in both men and women. There was little difference in the prevalence of wheezing between age groups, although it was highest among those aged 55-64 (25% in men and women). **Table 8.1**

8.2.3 Comparison with England

This section compares the prevalence of respiratory symptoms in Scotland with results from the 1994 Health Survey for England. Comparisons are with England as a whole and with Northern England, which includes the two health regions of Northern & Yorkshire and North West.

The Health Surveys for Scotland and England were similar in design and objectives (see Chapter 1). Data on respiratory symptoms were collected using the same MRC questionnaire.

Phlegm

The prevalence of phlegm production was significantly higher in Scotland than in England after adjustment for age ($p=0.002$ for men and $p<0.001$ for women). Among men, the prevalence was 13% in Scotland compared with 11% in England; the differences were greatest among those aged 45-54 (16% in Scotland vs 10% in England) and 55-64 (19% vs 15%). Among women, the prevalence was 9% in Scotland compared with 6% in England; the differences were greatest among those aged 55-64 (13% vs 9%) and 45-54 (11% vs 8%).

The differences between Scotland and Northern England were less marked. Among men, the prevalence was similar for all age groups; among women, it was slightly higher in Scotland than in Northern England, particularly for women aged 55-64.

Breathlessness

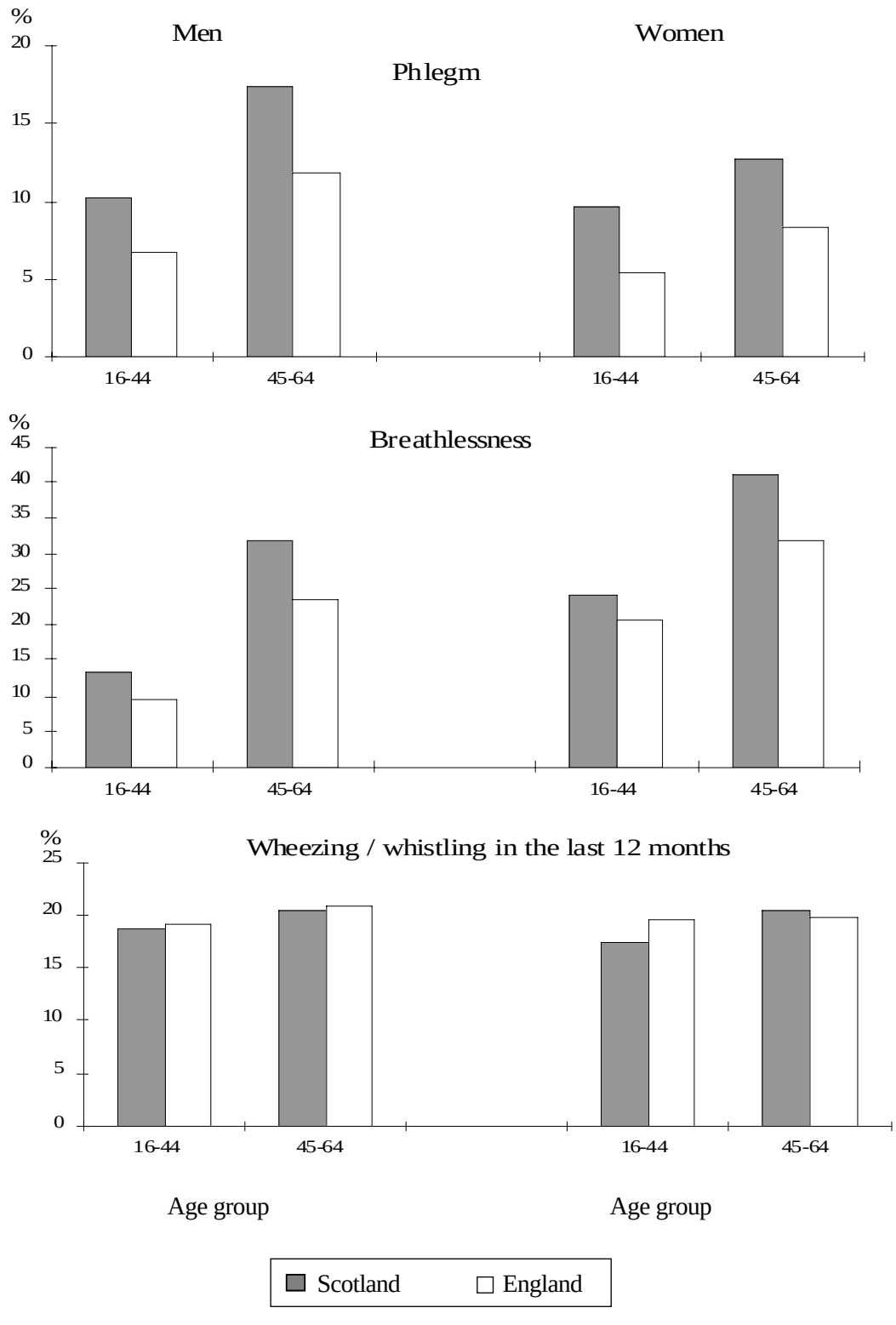
The prevalence of breathlessness was significantly higher in Scotland than in England after adjustment for age ($p<0.001$ in both sexes). Among men, the overall prevalence was 20% in Scotland and 15% in England. The differences in prevalence were greatest among those aged 45-54 (25% vs 18%) and 55-64 (41% vs 29%). Among women, the overall prevalence was 30% in Scotland and 25% in England. The corresponding figures in the 45-54 and 55-64 age groups were: 36% in Scotland vs 30% in England, and 47% vs 34% respectively.

The prevalence of breathlessness in Scotland was also higher than in Northern England in both sexes, with the differences being largest for those aged 55-64 years.

Wheezing

The prevalence of wheezing was very similar between Scotland and England across all age groups. In both men and women, the prevalence was 19% in Scotland and 20% in England (and 20% in Northern England). **Table 8.2, Figure 8A**

Figure 8A: Respiratory symptoms in Scotland and England, by age and sex



8.2.4 Respiratory symptoms and region

For phlegm, the regional prevalence varied from 8% to 18% in men and from 5% to 11% in women; for breathlessness, it varied from 15% to 24% in men, and from 26% to 35% in women; and, for wheezing, the prevalence varied from 15% to 25% in men and from 15% to 24% in women.

In general, the prevalence of respiratory symptoms tended to be higher among men and women living in Greater Glasgow and Lanarkshire, Ayrshire & Arran; it was lower among those living in Borders, Dumfries & Galloway and Grampian & Tayside.

Table 8.3

8.2.5 Respiratory symptoms and social class

In general, the prevalence of these symptoms increased continuously from Social Class I to Social Class V in both sexes. The respiratory symptoms tended to be much more common among informants in manual than non-manual social classes.

The prevalence of phlegm increased from 7% in Social Class I to 26% in Social Class V in men; the corresponding figures for women were 4% and 13%. The prevalence of breathlessness also increased, in men from 9% in Social Class I to 30% in Social Class V, and in women from 18% to 44% respectively. Similarly, for wheezing, between Social Class I and Social Class V, the prevalence increased from 12% to 26% in men, and from 15% to 30% in women. **Table 8.4**

8.2.6 Respiratory symptoms by smoking status

Cigarette smoking is one of the major contributing factors to respiratory disease in adults in Scotland. In general, the prevalence of respiratory symptoms was lowest among non-smokers, followed by ex-smokers. It was highest among those who smoked 20 cigarettes or more per day. This was true for each of the three respiratory symptoms, and for both sexes and all age groups. For example, in men, the prevalence of phlegm production increased from 5% among those who never smoked to 28% in those who smoked 20 cigarettes or more per day. The corresponding figures in women were 4% and 26%. Similar patterns were seen for the prevalence of breathlessness and wheezing by smoking status. **Table 8.5**

8.3 LUNG FUNCTION TESTS

8.3.1 Methods and definitions

The detailed measurement protocol is contained in Appendix B in the Technical Report. Briefly, lung function was measured using the Vitalograph Escort spirometer with a calibration device.[9] Before the test, the spirometer was calibrated in the informant's house. The ambient temperature was entered into the spirometer and the spirometer was then automatically corrected for BTPS conditions (body temperature, ambient pressure, saturated with water vapour).

The test procedures were demonstrated by the nurse using a detached mouthpiece. While in a standing position (unless chairbound), informants were asked to perform a forced inspiration, then an expiration with maximal effort without hesitation. Results of FEV_1, FVC and PEF were displayed on the spirometer from each expiration.

Lung function tests require the person being tested to learn the technique and to apply considerable effort to the task. In order to allow an opportunity to practice, and to allow also for invalid attempts, informants were asked to repeat the performance up to four more times, giving a maximum of five tests in total. The value of this was demonstrated by the fact that the lung function test results for any individual tended to increase from

the first test to the third and fourth, and thereafter to remain stable (data not shown).

The data presented here are based on the highest values for each of the three parameters (FEV_1, FVC, PEF) from any of the five technically satisfactory tests. A test was considered to be technically satisfactory if it was without any of the following: 1) an unsatisfactory start of expiration; 2) laughing or coughing, especially during the first second of expiration; 3) holding the breath in; 4) a leak in the system; or 5) an obstructed mouthpiece. The values of the three parameters used for a particular informant may not all come from the same test.

8.3.2 Predicted values and *relative* lung function levels

In this chapter, on the basis of lung function tests, *relative* lung function levels were calculated which categorise informants into one of the following four levels:

1 equal to, or in excess of, the predicted values
2 within 1 standard deviation below the predicted values
3 1 to 1.64 standard deviations below the predicted values
4 more than 1.64 standard deviations below the predicted values

It is common practice for results of lung function tests to be interpreted in the context of predicted values. This also enables sub-group comparisons in which lower than predicted lung function levels can be related to impaired respiratory function. A lung function measurement over 1.64 standard deviations (SD) below the predicted value is generally considered to be outside the normal range.[10] But individuals with lung function measurements between 1 SD and 1.64 SD below the predicted values are also likely to have impairment of their lung function.

Predicted values have usually been derived from small-scale studies among subjects who were generally non-smokers and without (previous) disease which could compromise their respiratory function. Examples include those published by the ECSC (European Community for Steel and Coal), the ATS (American Thoracic Society) and others. In this chapter, the ECSC reference values have been used, as recommended by the European Respiratory Society in 1993.[11] Respiratory function indices are dependent on a variety of factors, but most standard reference values, including the ECSC ones, allow only for the effects of age, height and sex. The ECSC predicted values for FEV_1 and FVC have been shown to closely correspond with results observed in various European populations. There is less correspondence for predicted values for PEF, partly because tests for PEF measures are more effort-dependent than, for example, FEV_1. Therefore, only FEV_1 and FVC levels are presented.

It must be emphasised that these results should be interpreted with caution. Lung function measurements are affected by the way the informant performs the required task. This in turn is dependent upon the ability of the technician in explaining the task and in motivating informants to perform it as well as they possibly can. Moreover, possible differences in choice of equipment, measurement procedures and study settings must be taken into account when comparing the Health Survey results with those from other studies.

8.3.3 Response rate to the lung function test

All informants (including those who were chairbound) were eligible for the test, except for those who: were pregnant; had abdominal or chest surgery in the preceding three weeks; or had been admitted to hospital with a heart disease or stroke in the preceding six weeks. (See the Technical Report for a full discussion of response rates.)

Valid readings were obtained from 6,707 informants (3,050 men and 3,657 women), which is 96% of all those visited by a nurse. The remainder were excluded because the tests performed were all technically unsatisfactory, or because the informants did not co-operate or were ineligible for the reasons described above. Of those visited by a nurse, women aged 16-44 had a slightly lower response rate to the lung function test, largely due to the exclusion of pregnant women. **Table 8.6**

8.4 LUNG FUNCTION RESULTS

8.4.1 Mean FEV_1, FVC and PEF by age and sex

FEV_1 (l)

In general, FEV_1 increased with increasing height, but declined with increasing age. Mean FEV_1 was higher among men than women (3.9 compared with 2.8). Among men, mean FEV_1 decreased continuously from 4.5 in those aged 16-24 to 3.0 in those aged 55-64 years. Among women, mean FEV_1 decreased from 3.3 in those aged 16-24 to 2.1 in those aged 55-64 years.

Among men of all ages, mean FEV_1 increased from 3.2 in the shortest group (height <170 cm) to 4.5 in the tallest group (height ≥180 cm). Among women of all ages, mean FEV_1 increased from 2.5 to 3.2 from the shortest group (height <160 cm) to the tallest (height ≥ 165 cm).

FEV_1 was approximately normally distributed in men, but was negatively skewed in women. The variability of FEV_1 was higher in men than in women.

Table 8.7, Figures 8B,8C

Figure 8B: Frequency distribution of FEV_1, by sex

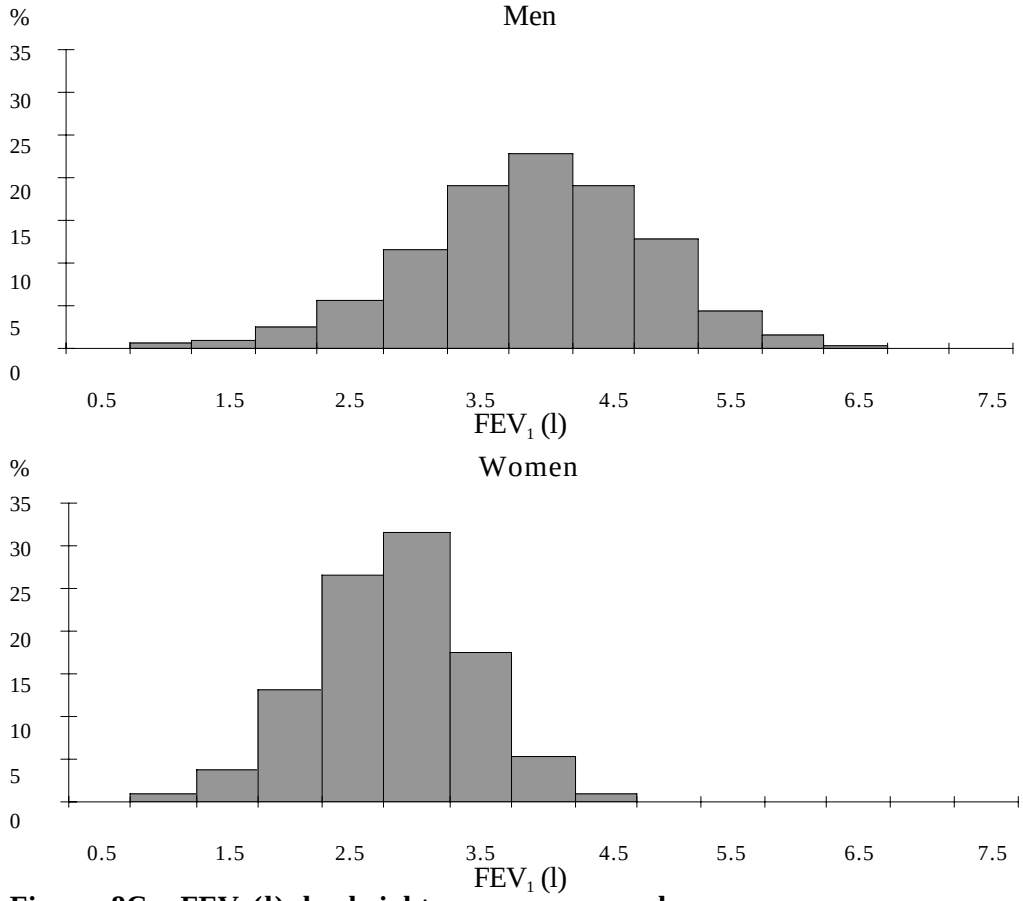
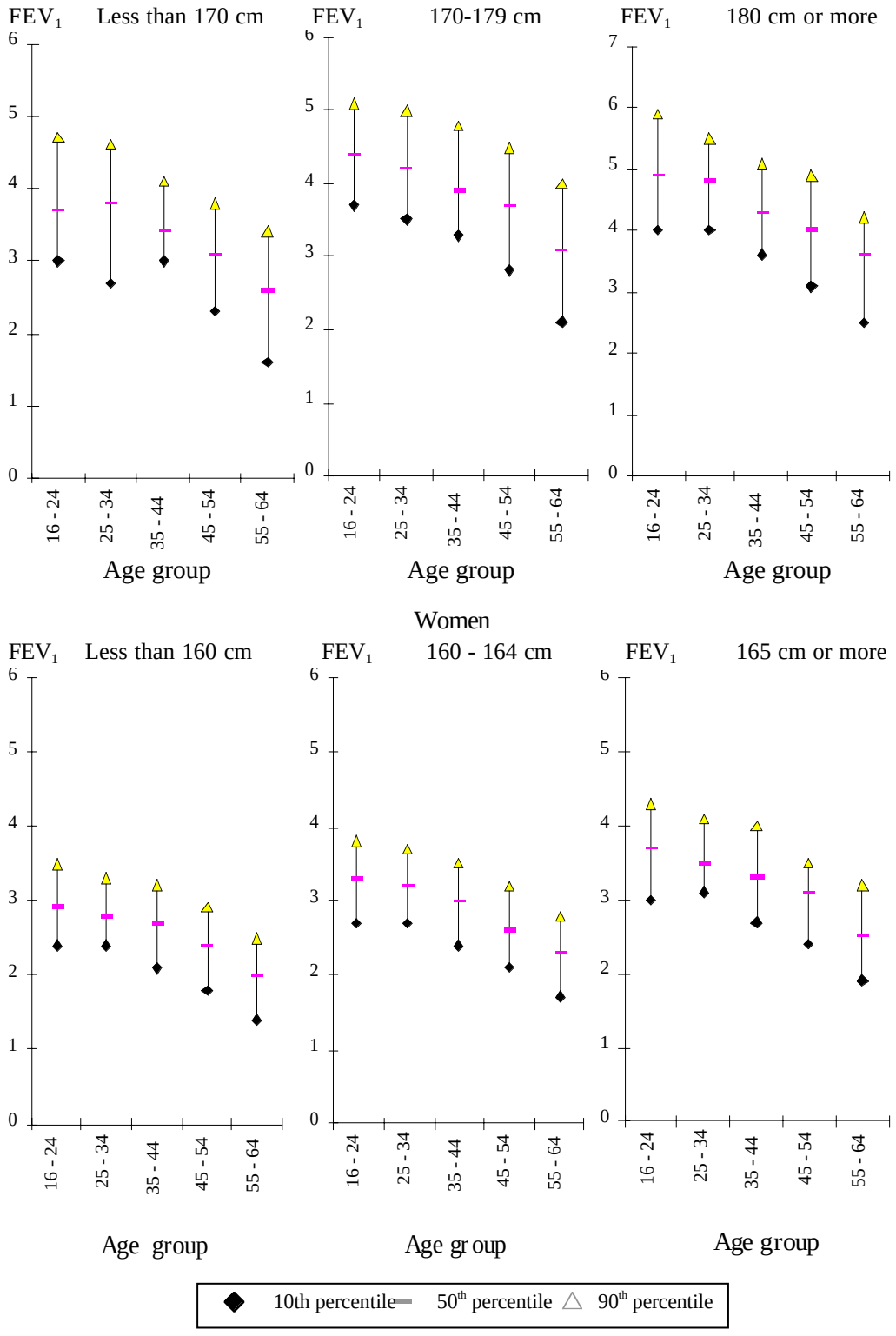


Figure 8C: FEV_1(l) by height groups, age and sex

Men



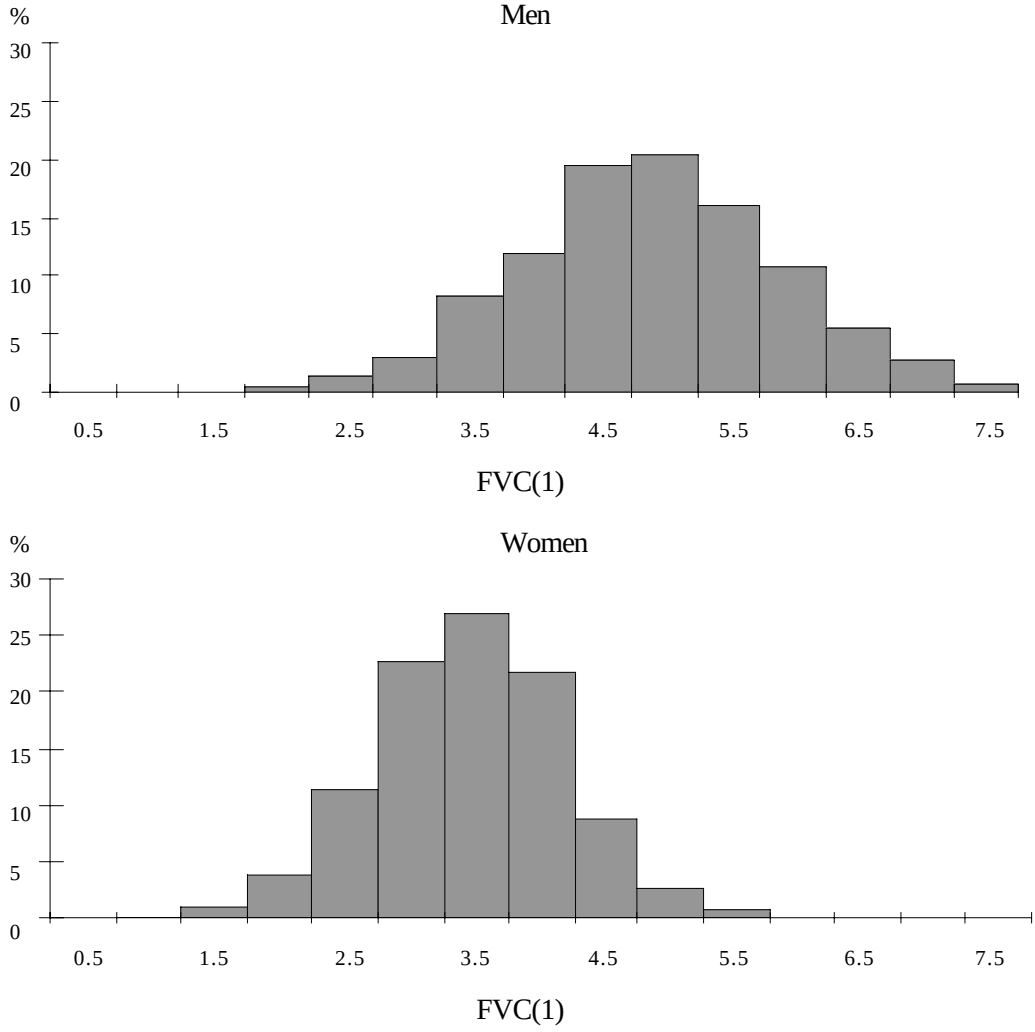
FVC (l)

Like FEV_1, FVC increased with increasing height, but declined with increasing age. Mean FVC was higher among men than women (4.9 compared with 3.4). Among men, FVC decreased continuously from 5.3 in those aged 16-24 to 3.9 in those aged 55-64 years. The corresponding decrease among women was from 3.8 to 2.7.

Among men of all ages, mean FVC increased from 4.0 in the shortest group (height <170 cm) to 5.6 in the tallest (height ≥180 cm). Among women of all ages, mean FVC increased continuously from 3.0 to 3.9 between the shortest group (height <160 cm) and the tallest (height ≥165 cm).

FVC was approximately normally distributed in both men and women. The variability of FVC was higher in men than in women. **Table 8.8, Figures 8D,8E**

Figure 8D: Frequency distribution of FVC, by sex

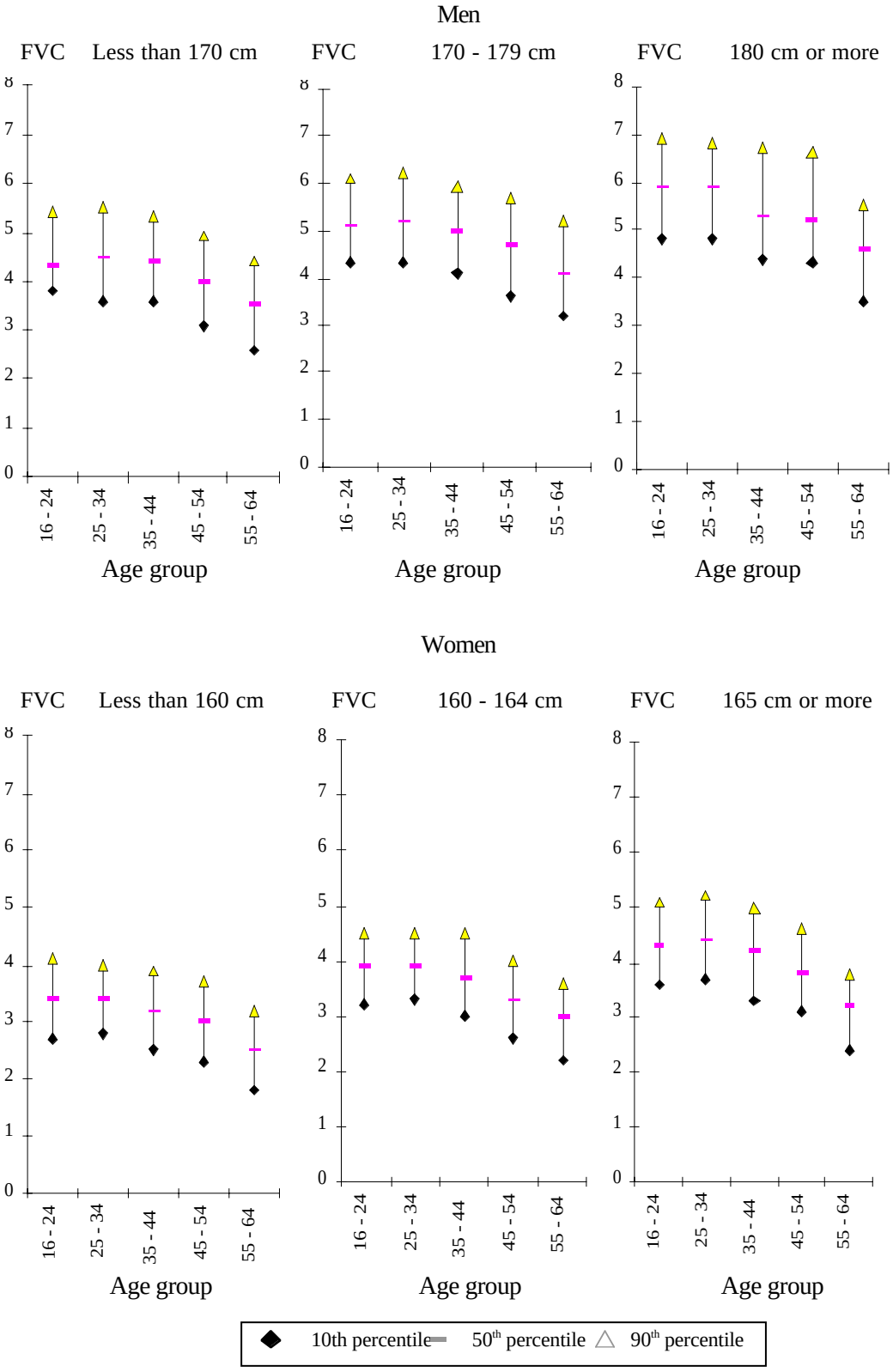


PEF (l.min^{-1})

Like FEV_1 and FVC, men had higher mean PEF levels than women (571 compared with 386). In both sexes, mean PEF peaked in the 25-34 age group and then declined with age. Among men, PEF was 607 for those aged 25-34, and it then decreased continuously to 487 in those aged 55-64. Among women a similar pattern was observed: mean PEF was 411 for those aged 25-34, and it then decreased to 323 in those aged 55-64.

Among men of all ages, mean PEF increased from 507 in the shortest group (height <170 cm) to 618 in the tallest (height ≥180 cm). Among women of all ages, mean PEF increased continuously from 357 to 419 from the shortest (height <160 cm) to the tallest (height ≥165 cm) groups.

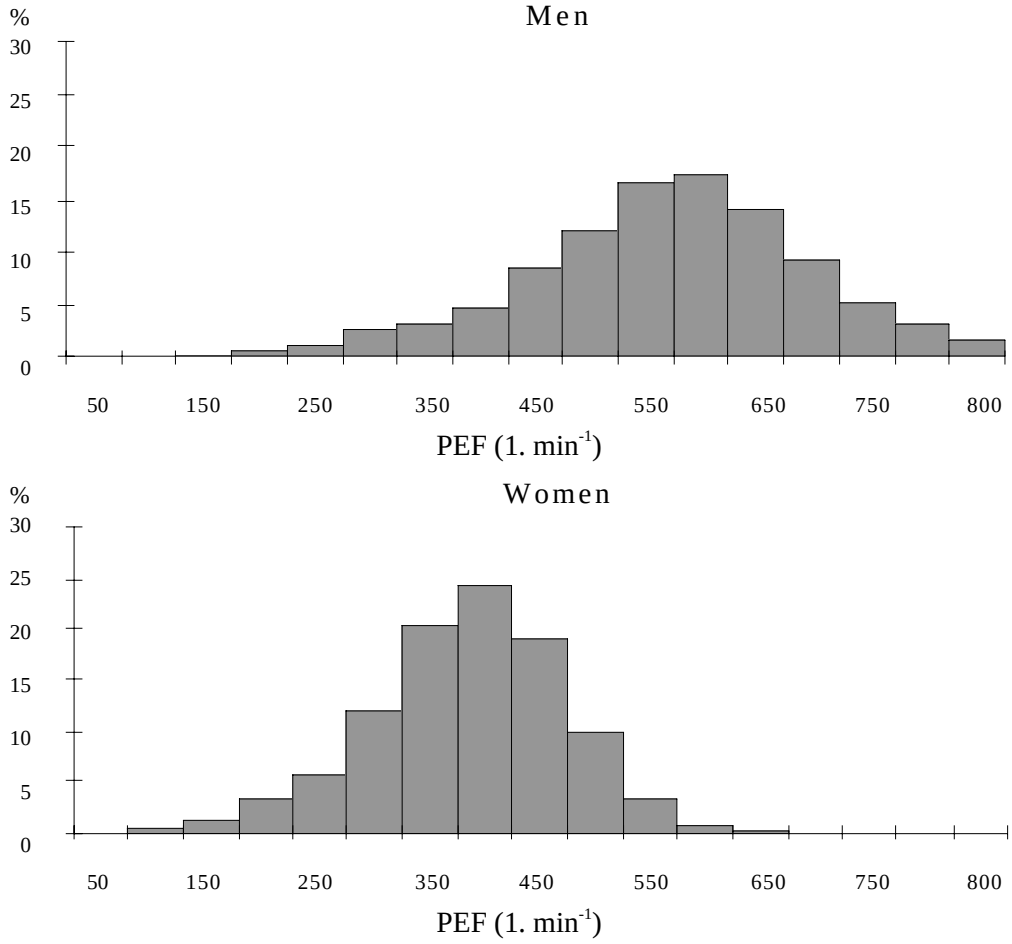
Figure 8E: FVC(l) by height groups, age and sex



PEF had a slight negative skew in both men and women. The variability of PEF was higher among men than women and remained fairly constant with age.

Table 8.9, Figures 8F, 8G

Figure 8F: Frequency distribution of PEF, by sex



8.4.2 Relative lung function levels by age and sex

This section presents data on relative lung function levels (observed values in relation to predicted values) for FEV_1 and FVC. It should be noted that low lung function levels should not be interpreted simply as 'abnormal'.

Relative FEV_1 levels

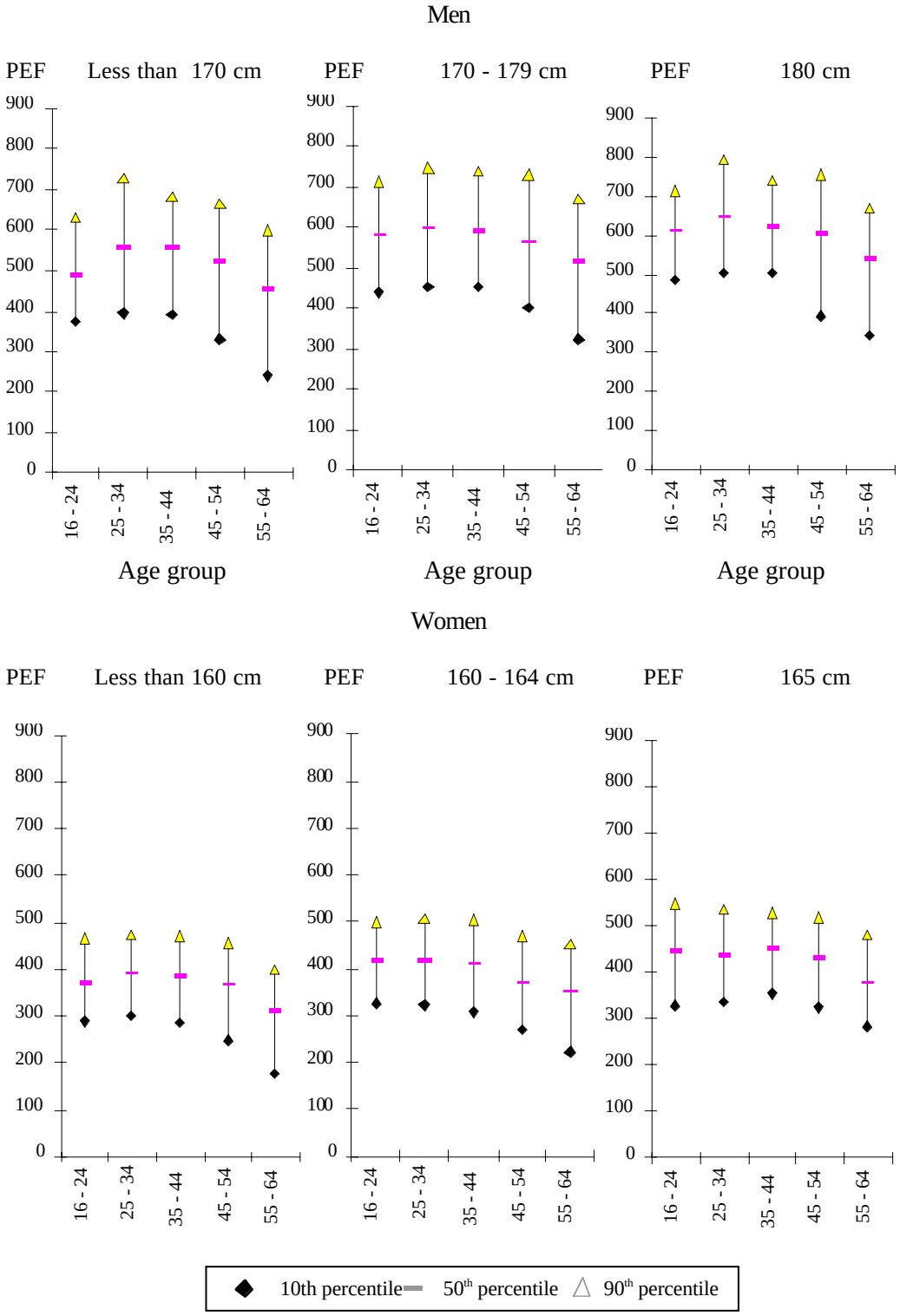
Over half of informants had results equal to, or in excess of, predicted values (53% in men and 54% in women). This proportion decreased continuously with age in men from 59% in those aged 16-24 to 36% in those aged 55-64. For women there was no clear pattern, although those aged 55-64 had the lowest proportion (43%).

The proportion of informants with FEV_1 levels below 1.64 SD of the predicted value was 8% among men and 6% among women. In both sexes, there was little variation by age, except for a large increase in the oldest age group (55-64 years) to 18% in men and 12% in women. **Table 8.10**

Relative FVC levels

As with FEV_1, the majority of informants had results equal to, or in excess of, the predicted values (59% in men and 67% in women). This proportion was somewhat lower in men than in women for all age groups.

Figure 8G: PEF (l.min^{-1}) by height groups, age and sex



The proportion of informants with FVC levels below 1.64 SD of the predicted values was 5% among men and 4% among women. There was little variation by age until the oldest age group: among those aged 55-64, 10% of men and 8% of women fell below 1.64 SD of the predicted values. **Table 8.10**

8.4.3 Relative lung function levels by region

In this section, the proportions of informants in each lung function level category are presented by region. Regional data on mean FEV_1 and FVC are not shown because of the relatively small sample bases in many of the groups defined by the inter-linking sex, age and height categories within each region.

As expected, the majority of informants in each region had lung function levels equal to or in excess of the predicted values. Nonetheless, there was some variation in the proportion of respondents having lung function levels 1.64 SD below the predicted values. For FEV_1 level, this proportion varied from 6% to 10% in men and from 4% to 7% in women. For FVC level, this proportion varied from 3% to 7% in men and from 2% to 6% in women. Low lung function levels tended to be more common among those living in Greater Glasgow, Lanarkshire, Ayrshire & Arran and Forth Valley, Argyll & Clyde; they were less common among those in Highland & Islands. This applied to both FEV_1 and FVC levels in both sexes. **Tables 8.11, 8.12**

8.4.4 Relative lung function levels by social class

This section examines lung function levels by social class of the chief income earner within the informant's household. Social class data on mean FEV_1 and FVC are not presented, because of the relatively small sample bases in many of the groups defined by the inter-linking sex, age and height categories within each social class.

In general, compared with the non-manual social classes, informants in manual social classes were more likely to have lung function results below 1.64 SD of the predicted values and were less likely to have lung function levels equal to, or in excess of, the predicted values. This social class difference tended to be greater in men than in women, and it applied to both FEV_1 and FVC.

For example, the proportion having FEV_1 levels equal to, or in excess of, the predicted values decreased from 65% in Social Class I to only 36% in Social Class V in men, and from 64% to 49% in women (respectively); on the other hand, the proportion having FEV_1 levels 1.64 SD below the predicted values increased from 3% in Social Class I to 21% in Social Class V in men, and from 3% to 13% in women (respectively).

Tables 8.13, 8.14

8.4.5 Relative lung function levels by cigarette smoking status

Cigarette smoking is known to have an adverse impact on respiratory function.[12] In general, the proportion of informants having lung function levels equal to, or in excess of, the predicted values was highest among non-smokers, followed by ex-smokers; it was lowest among those who smoked 20 or more cigarettes a day. The proportion of informants with lung function levels below 1.64 SD of the predicted values was higher among heavy smokers than non-smokers. This applied to both FEV_1 and FVC levels, and was generally the case for both sexes and most age groups.

For example, among men, 60% of non-smokers had FEV_1 levels equal to, or in excess of, the predicted values, compared with only 33% of those who smoked 20 cigarettes or more a day, while the proportion with low FEV_1 levels was 6% in non-smokers and 18% in heavy smokers (20 cigarettes or more a day). A similar pattern was seen for women for FVC, although the differences in prevalence between smoking categories were smaller than those for FEV_1. **Tables 8.15, 8.16**

8.4.6 Relative lung function levels by respiratory symptoms

This section looks at variations in relative FEV_1 and FVC levels by the presence or absence of respiratory symptoms as assessed using the MRC respiratory questionnaire (see Section 8.2).

In general, those who reported having had respiratory symptoms were more likely to have lung function levels 1.64 SD below the predicted values and were less likely to have lung function levels equal to, or in excess of, the predicted values. These differences were greater among those aged 45-64 than those aged 16-44, and applied to all three symptoms in both sexes.

For example, among men, the proportion with FEV_1 levels 1.64 SD below the predicted values was: 22% among those with phlegm production compared with 6% among those without; 21% among those with breathlessness compared with 5% among those without; and 20% compared with 5% between those with and without wheezing in the chest. Similar patterns were seen for women, although the differences were smaller than for men.

For both men and women, the differences in FVC levels between those with and those without respiratory symptoms were smaller than the differences found for FEV_1 levels. In general, the differences were greater among those aged 45-64 than among those aged 16-44. **Tables 8.17, 8.18**

References and notes

1 The Scottish Office. *Scotland's Health A Challenge To Us All: A Policy Statement*. HMSO, Edinburgh, 1992.

2 *Phlegm*
Informants were classified into one of three categories:
No phlegm
Morning phlegm phlegm usually produced in the morning during winter
Other phlegm phlegm usually produced during the day or night in winter but not first thing in the morning.

Breathlessness
Three categories were defined as follows:
None not troubled by shortness of breath except when performing strenuous exercise
Grade 1 if breathlessness occurred when hurrying on level ground or walking up a hill
Grade 2 if breathlessness occurred when walking on level ground at the informant's own pace or at the pace of the informant's peers.

Wheezing
Informants were classified as having wheezed if :
1 they reported having had attacks of wheezing or whistling in the chest at any time in the past twelve months; or
2 they had been woken at night by attacks of breathlessness within the past twelve months.

3 Leigh J, Wiles AN, Glick M. Total population study of factors affecting chronic bronchitis prevalence in the coal mining industry of New South Wales, Australia. *Br J Ind Med* 1986 Apr; **43**(4): 263-71.

4 For example, White A, Nicolas G, Foster K, Browne F, Carey S. *Health Survey for England 1991*. HMSO, London, 1993.

5 Ebi-Kryston KL. Respiratory symptoms and pulmonary function as predictors of 10-year mortality from respiratory disease, cardiovascular disease, and all-causes in the Whitehall Study. *J Clin Epidemiol*. 1988; **41**(3): 251-60.

6 Sorlie PD, Kannel WB, O'Connor G. Mortality associated with respiratory function and symptoms in advanced age. The Framingham Study. *Am Rev Respir Dis*. 1989 Aug; **140**(2): 379-84.

7 Wannamethee SG, Shaper AG, Ebrahim S. Respiratory function and risk of stroke. *Stroke* 1995 Nov; **26**(11): 2004-10.

8 Bang KM, Gergen PJ, Kramer R, Cohen B. The effect of pulmonary impairment on all-cause mortality in a national cohort. *Chest* 1993 Feb; **103**(2): 536-40.

9 The manufacturer reports the accuracy of measurement as ± 3% or ± 0.05 litres volume, whichever is greater, and ± 5% flow, which complies with the ECSC (1993) and the ATS (1987) standard.

10 Cotes JE. Lung function throughout life: determinants and reference values in Cotes JE, Leathart DL (eds). *Lung Function: Assessment and Application in Medicine* (5th edition, chapter 15). 1993.

11 European Community for Steel and Coal. Standardised lung function testing. Official statement of the European Respiratory Society. *Eur Respir J*, 1993; **6**, Suppl.16.

The ECSC summary equations for lung function for healthy adults:

Variable	Unit	Regression equation	Residual SD
Men			
FEV_1	1	4.30H - 0.029A - 2.49	0.51
FVC	1	5.76H - 0.026A - 4.34	0.61
Women			
FEV_1	1	3.95H - 0.025A - 2.60	0.38
FVC	1	4.43H - 0.026A - 2.89	0.43

H: standing height (m): A: age (years). Gas volumes are in l BTPS. These reference values relate to persons aged 25 to 70. ECSC recommend that for those aged 18 to 24, an age of 25 should be substituted in the equation. There is no consensus as to reference values for people aged 16-17 years old. In this report, 16-17 year olds have been treated in the same way as those aged 18-24 years. This is unlikely to compromise the results, as the number of informants concerned was very small.

12 For example, Higgins MW, Enright PL, Kronmal RA, Schenker MB, Anton-Culver H, Lyles M. Smoking and lung function in elderly men and women. The Cardiovascular Health Study. *JAMA*. 1993 Jun 2; **269**(21): 2741-1.

CHAPTER 8 - LIST OF TABLES

Table 8.1 Respiratory symptoms, by age and sex

All *1995*

Respiratory symptoms	Age					Total
	16-24	25-34	35-44	45-54	55-64	
	%	%	%	%	%	%
Men						
Phlegm	12	11	9	16	19	13
Breathlessness	14	12	15	25	41	20
Wheezing	22	18	19	20	25	20
Women						
Phlegm	5	8	7	11	13	9
Breathlessness	22	26	24	36	47	30
Wheezing	20	20	17	21	25	20
Bases[a] (weighted)						
Men	*723*	*979*	*851*	*749*	*600*	*3902*
Women	*695*	*990*	*870*	*777*	*665*	*3998*
Bases[a] (unweighted)						
Men	*475*	*840*	*811*	*709*	*689*	*3524*
Women	*547*	*1160*	*992*	*825*	*884*	*4408*

[a]Bases are for all informants. There were variations in the bases between symptoms because a small number of informants did not answer all questions.

Table 8.2 Respiratory symptoms in Scotland, England and Northern England, by age and sex

All *1995*

Respiratory symptoms	Age					Total
	16-24	25-34	35-44	45-54	55-64	
	%	%	%	%	%	%
Men						
Phlegm						
Scotland	12	11	9	16	19	13
England	11	10	9	10	16	11
Northern England	14	11	9	15	17	13
Breathlessness						
Scotland	14	12	15	25	41	20
England	10	8	11	18	29	15
Northern England	8	9	10	20	29	15
Wheezing						
Scotland	21	17	18	19	23	19
England	22	18	19	17	24	20
Northern England	23	16	18	18	26	20
Women						
Phlegm						
Scotland	5	8	7	11	13	9
England	7	5	5	8	9	6
Northern England	6	5	6	9	9	7
Breathlessness						
Scotland	22	26	24	36	47	30
England	23	19	21	30	34	25
Northern England	22	19	23	28	37	25
Wheezing						
Scotland	18	18	16	19	22	19
England	22	19	19	20	20	20
Northern England	23	18	18	21	24	20
Bases[a] (weighted)						
Scotland						
Men	*723*	*979*	*851*	*749*	*600*	*3902*
Women	*695*	*990*	*870*	*777*	*665*	*3998*
Bases[a] (unweighted)						
Men						
Scotland	*475*	*840*	*811*	*709*	*689*	*3524*
England	*968*	*1434*	*1329*	*1127*	*1001*	*5859*
Northern England	*269*	*394*	*353*	*318*	*292*	*1626*
Women						
Scotland	*547*	*1160*	*992*	*825*	*884*	*4408*
England	*1080*	*1723*	*1520*	*1300*	*1059*	*6682*
Northern England	*296*	*472*	*414*	*351*	*285*	*1818*

[a]Bases are for all informants. There were variations in the bases between symptoms because a small number of informants did not answer all questions.

Table 8.3 Prevalence of respiratory symptoms, by region, age and sex

All *1995*

Respiratory symptoms	Region							Total
	Highland & Islands	Grampian & Tayside	Lothian & Fife	Borders, Dumfries & Galloway	Greater Glasgow	Lanarkshire, Ayrshire & Arran	Forth Valley, Argyll & Clyde	
	%	%	%	%	%	%	%	%
Men								
Phlegm								
16-44	11	7	11	7	13	9	13	10
45 - 64	14	12	17	11	25	20	16	17
All men	12	8	13	9	18	13	14	13
Breathlessness								
16 - 44	14	11	10	11	17	17	17	13
45 - 64	26	23	27	29	39	38	36	32
All men	18	15	16	18	25	25	23	20
Wheezing								
16 - 44	21	14	19	15	23	22	20	19
45 - 64	25	16	21	15	28	21	29	22
All men	22	15	20	15	25	21	23	20
Women								
Phlegm								
16 - 44	5	6	7	4	8	6	7	7
45 - 64	11	10	11	7	18	11	10	12
All women	8	8	8	5	11	8	8	9
Breathlessness								
16 - 44	24	24	20	22	28	27	25	24
45 - 64	33	34	42	30	46	49	39	41
All women	27	28	27	26	35	35	30	30
Wheezing								
16 - 44	21	21	17	14	19	21	18	19
45 - 64	20	23	19	17	25	28	18	23
All women	21	22	18	15	21	24	18	20
Bases[a] (weighted)								
Men								
16 - 44	*140*	*511*	*618*	*110*	*390*	*436*	*348*	*2553*
45 - 64	*73*	*242*	*278*	*69*	*239*	*268*	*180*	*1349*
All men	*213*	*753*	*896*	*179*	*629*	*704*	*527*	*3902*
Women								
16 - 44	*132*	*424*	*590*	*118*	*480*	*451*	*362*	*2555*
45 - 64	*78*	*258*	*273*	*76*	*284*	*280*	*193*	*1443*
All women	*210*	*681*	*863*	*194*	*764*	*731*	*556*	*3998*
Bases[a] (unweighted)								
Men								
16 - 44	*206*	*374*	*456*	*168*	*296*	*350*	*276*	*2126*
45 - 64	*150*	*216*	*253*	*128*	*212*	*257*	*182*	*1398*
All men	*356*	*590*	*709*	*296*	*508*	*607*	*458*	*3524*
Women								
16 - 44	*249*	*386*	*541*	*228*	*450*	*481*	*364*	*2699*
45 - 64	*176*	*265*	*284*	*165*	*287*	*323*	*209*	*1709*
All women	*425*	*651*	*825*	*393*	*737*	*804*	*573*	*4408*

[a]Bases are for all informants. There were variations in the bases between symptoms because a small number of informants did not answer all questions.

Table 8.4 Prevalence of respiratory symptoms, by social class of chief income earner, age and sex

All *1995*

Respiratory symptoms	Social class of chief income earner						Total[a]
	I	II	IIINM	IIIM	IV	V	
	%	%	%	%	%	%	%
Men							
Phlegm							
16 - 44	6	7	9	12	11	24	10
45 - 64	10	12	10	20	26	32	17
All men	7	9	9	15	16	27	13
Breathlessness							
16 - 44	3	12	11	15	15	21	13
45 - 64	18	21	23	39	44	45	32
All men	8	16	15	24	24	30	20
Wheezing							
16 - 44	14	16	16	22	20	24	19
45 - 64	10	19	13	26	30	31	22
All men	12	17	15	23	23	26	20
Women							
Phlegm							
16 - 44	1	4	7	7	10	10	7
45 - 64	8	5	14	14	18	17	12
All women	4	5	9	9	13	13	9
Breathlessness							
16 - 44	13	18	25	25	31	33	24
45 - 64	28	26	35	48	61	59	41
All women	18	22	29	33	42	44	30
Wheezing							
16 - 44	15	14	20	19	25	23	19
45 - 64	15	13	25	23	33	39	23
All women	15	13	22	21	28	30	20
Bases[b] (weighted)							
Men							
16 - 44	*170*	*640*	*321*	*778*	*354*	*110*	*2553*
45 - 64	*97*	*372*	*127*	*466*	*179*	*69*	*1349*
All men	*267*	*1012*	*448*	*1244*	*532*	*179*	*3902*
Women							
16 - 44	*164*	*598*	*454*	*655*	*342*	*114*	*2555*
45 - 64	*89*	*386*	*235*	*387*	*206*	*93*	*1443*
All women	*253*	*983*	*689*	*1042*	*548*	*207*	*3998*
Bases[b] (unweighted)							
Men							
16 - 44	*146*	*517*	*255*	*645*	*306*	*105*	*2126*
45 - 64	*90*	*357*	*128*	*484*	*203*	*91*	*1398*
All men	*236*	*874*	*383*	*1129*	*509*	*196*	*3524*
Women							
16 - 44	*159*	*609*	*537*	*618*	*412*	*136*	*2699*
45 - 64	*93*	*459*	*297*	*414*	*253*	*132*	*1709*
All women	*252*	*1068*	*834*	*1032*	*665*	*268*	*4408*

[a]The total column includes those for whom social class could not be determined.

[b]Bases are for all informants. There were variations in the bases between symptoms because a small number of informants did not answer all questions.

Table 8.5 Respiratory symptoms, by cigarette smoking status, age and sex

All *1995*

Respiratory symptoms	Smoking status				Total
	Never regularly smoked	Ex- regular smoker	Smokes less than 20 a day	Smokes 20 or more a day	
	%	%	%	%	%
Men					
Phlegm					
16 - 44	4	8	19	24	10
45 - 64	7	13	32	32	17
All men	5	11	22	28	13
Breathlessness					
16 - 44	9	14	14	30	13
45 - 64	17	33	44	46	32
All men	11	25	22	37	20
Wheezing					
16 - 45	14	18	25	32	19
45 - 64	11	19	37	35	22
All men	13	19	28	33	20
Women					
Phlegm					
16 - 44	3	3	9	23	7
45 - 64	6	5	17	31	12
All women	4	4	12	26	9
Breathlessness					
16 - 44	18	21	30	46	24
45 - 64	35	40	43	58	41
All women	23	30	34	51	30
Wheezing					
16 - 44	13	14	25	37	19
45 - 64	16	19	28	39	23
All women	14	16	26	38	20
Bases[a] (weighted)					
Men					
16 - 44	*1337*	*351*	*537*	*326*	*2550*
45 - 64	*437*	*458*	*179*	*273*	*1347*
All men	*1774*	*809*	*716*	*599*	*3897*
Women					
16 - 44	*1325*	*319*	*596*	*311*	*2550*
45 - 64	*618*	*308*	*298*	*218*	*1443*
All women	*1943*	*627*	*894*	*529*	*3993*
Bases[a] (unweighted)					
Men					
16 - 44	*1080*	*298*	*443*	*303*	*2124*
45 - 64	*427*	*462*	*198*	*308*	*1395*
All men	*1507*	*760*	*641*	*611*	*3519*
Women					
16 - 44	*1286*	*350*	*675*	*384*	*2695*
45 - 64	*725*	*380*	*353*	*251*	*1709*
All women	*2011*	*730*	*1028*	*635*	*4404*

[a] Bases are for all informants. There were variations in the bases between symptoms because a small number of informants did not answer all questions.

Table 8.6 Response to lung function measurement

All with a nurse visit *1995*

Response to lung function measurement	Age				Total	
	16-44		45-64			
	N	%	N	%	N	%
Men						
Valid lung function measurement	1844	99	1206	97	3050	98
Invalid lung function measurement[a]	12	1	13	1	25	1
Other ineligible[b]	3	0	13	1	16	1
Refused, attempted but not obtained, not attempted	10	1	9	1	19	1
Women						
Valid lung function measurement	2213	94	1444	97	3657	95
Invalid lung function measurement[a]	31	1	25	2	56	2
Pregnant	89	4	-	-	89	2
Other ineligible[b]	6	0	7	1	13	0
Refused, attempted but not obtained, not attempted	14	1	19	1	33	1
All						
Valid lung function measurement	4057	96	2650	97	6707	96
Invalid lung function measurement[a]	43	1	38	1	81	1
Pregnant	89	2	-	-	89	1
Other ineligible[b]	9	0	20	1	29	0
Refused, attempted but not obtained, not attempted	24	1	28	1	52	1
Bases (unweighted)						
Men	*1869*	*44.3*	*1241*	*45.4*	*3110*	*44.7*
Women	*2353*	*55.7*	*1495*	*54.6*	*3848*	*55.3*
All	*4222*	*100*	*2736*	*100*	*6958*	*100*

[a]Only technically unsatisfactory blows were performed.

[b]Informants who were admitted to hospital for heart disease or stroke in the past six weeks or who had abdominal or chest surgery in the past three weeks.

Table 8.7 FEV_1 by height (cm), age and sex

All with valid lung function readings *1995*

FEV_1 (l)	Age					Total
	16-24	25-34	35-44	45-54	55-64	
Men						
Height <170 cm						
Mean	3.7	3.7	3.5	3.1	2.6	3.2
Standard error of the mean	0.07	0.06	0.04	0.05	0.05	0.03
5th percentile	2.7	2.6	2.7	2.1	1.5	2.0
10th percentile	3.0	2.7	3.0	2.3	1.6	2.2
Median	3.7	3.8	3.4	3.1	2.6	3.3
90th percentile	4.7	4.6	4.1	3.8	3.4	4.2
95th percentile	4.7	4.7	4.3	4.2	3.6	4.5
Height 170 to <180 cm						
Mean	4.4	4.2	4.0	3.6	3.1	3.9
Standard error of the mean	0.03	0.03	0.03	0.03	0.05	0.02
5th percentile	3.4	3.1	3.1	2.5	1.7	2.6
10th percentile	3.7	3.5	3.3	2.8	2.1	2.9
Median	4.4	4.2	3.9	3.7	3.1	4.0
90th percentile	5.1	5.0	4.8	4.5	4.0	4.9
95th percentile	5.5	5.2	4.9	4.7	4.3	5.1
Height >=180 cm						
Mean	4.9	4.8	4.3	4.0	3.4	4.5
Standard error of the mean	0.05	0.04	0.04	0.06	0.09	0.03
5th percentile	3.6	3.8	3.3	2.9	2.0	3.1
10th percentile	4.0	4.0	3.6	3.1	2.5	3.5
Median	4.9	4.8	4.3	4.0	3.6	4.6
90th percentile	5.9	5.5	5.1	4.9	4.2	5.5
95th percentile	5.9	5.7	5.5	5.2	4.3	5.8
All men						
Mean	4.5	4.4	4.0	3.6	3.0	3.9
Standard error of the mean	0.03	0.02	0.02	0.03	0.03	0.02
5th percentile	3.3	3.1	3.0	2.4	1.5	2.4
10th percentile	3.6	3.5	3.2	2.7	1.9	2.8
Median	4.5	4.4	4.0	3.6	3.0	4.0
90th percentile	5.5	5.2	4.8	4.5	3.9	5.0
95th percentile	5.8	5.5	5.1	4.7	4.2	5.3
Bases (weighted)						
Height <170 cm	*73*	*116*	*126*	*144*	*180*	*640*
Height 170 to < 180 cm	*318*	*437*	*400*	*385*	*250*	*1788*
Height >=180 cm	*222*	*296*	*207*	*119*	*74*	*918*
All men	*613*	*848*	*733*	*648*	*504*	*3346*
Bases (unweighted)						
Height <170 cm	*53*	*104*	*120*	*142*	*210*	*629*
Height 170 to <180 cm	*196*	*377*	*372*	*339*	*280*	*1564*
Height >=180 cm	*145*	*241*	*195*	*124*	*81*	*786*
All men	*394*	*722*	*687*	*605*	*571*	*2979*

Continued ....

Table 8.7 - continued

1995

	Age					Total
	16-24	25-34	35-44	45-54	55-64	
Women						
Height <160 cm						
Mean	2.9	2.8	2.6	2.4	2.0	2.5
Standard error of the mean	0.03	0.03	0.03	0.03	0.03	0.02
5th percentile	2.4	2.2	1.9	1.6	1.0	1.5
10th percentile	2.4	2.4	2.1	1.8	1.4	1.8
Median	2.9	2.8	2.7	2.4	2.0	2.5
90th percentile	3.5	3.3	3.2	2.9	2.5	3.2
95th percentile	3.6	3.5	3.3	3.0	2.7	3.4
Height 160 to <165 cm						
Mean	3.2	3.1	2.9	2.5	2.2	2.8
Standard error of the mean	0.03	0.02	0.03	0.03	0.04	0.02
5th percentile	2.4	2.5	2.1	1.8	1.4	1.9
10th percentile	2.7	2.6	2.3	2.1	1.7	2.1
Median	3.2	3.1	2.9	2.5	2.2	2.9
90th percentile	3.7	3.6	3.4	3.0	2.7	3.5
95th percentile	4.1	3.8	3.5	3.2	2.9	3.6
Height >=165 cm						
Mean	3.5	3.4	3.1	2.8	2.4	3.2
Standard error of the mean	0.03	0.03	0.03	0.03	0.05	0.02
5th percentile	2.8	2.6	2.4	2.1	1.6	2.2
10th percentile	3.0	2.8	2.5	2.2	1.7	2.4
Median	3.5	3.4	3.2	2.9	2.4	3.2
90th percentile	4.2	3.9	3.8	3.3	3.0	3.9
95th percentile	4.3	4.1	4.0	3.5	3.2	4.1
All women						
Mean	3.3	3.1	2.9	2.5	2.1	2.8
Standard error of the mean	0.02	0.02	0.02	0.02	0.02	0.01
5th percentile	2.4	2.4	2.1	1.8	1.2	1.8
10th percentile	2.7	2.6	2.3	1.9	1.5	2.0
Median	3.2	3.1	2.9	2.5	2.1	2.8
90th percentile	3.9	3.7	3.5	3.2	2.7	3.6
95th percentile	4.2	3.9	3.8	3.3	2.9	3.8
Bases (weighted)						
Height < 160 cm	*163*	*216*	*252*	*273*	*277*	*1180*
Height 160 to <165 cm	*167*	*245*	*240*	*211*	*152*	*1014*
Height >= 165 cm	*231*	*297*	*261*	*178*	*109*	*1076*
All women	*560*	*758*	*753*	*662*	*537*	*3269*
Bases (unweighted)						
Height <160 cm	*125*	*261*	*275*	*281*	*358*	*1300*
Height 160 to < 165 cm	*129*	*287*	*269*	*217*	*202*	*1104*
Height >=165 cm	*177*	*345*	*310*	*196*	*154*	*1182*
All women	*431*	*893*	*854*	*694*	*714*	*3586*

Table 8.8 FVC, by height (cm), age and sex

All with valid lung function readings *1995*

FVC (l)	Age					Total
	16-24	25-34	35-44	45-54	55-64	
Men						
Height <170 cm						
Mean	4.4	4.5	4.3	3.9	3.5	4.0
Standard error of the mean	0.07	0.08	0.06	0.06	0.05	0.03
5th percentile	3.6	2.8	3.3	2.9	2.4	2.7
10th percentile	3.8	3.6	3.5	3.1	2.6	3.0
Median	4.3	4.5	4.3	3.9	3.5	4.1
90th percentile	5.4	5.5	5.1	4.9	4.4	5.1
95th percentile	5.5	6.0	5.4	5.2	4.8	5.4
Height 170 to <180 cm						
Mean	5.1	5.2	4.9	4.6	4.1	4.9
Standard error of the mean	0.04	0.04	0.04	0.04	0.05	0.02
5th percentile	4.0	4.0	3.9	3.3	2.8	3.5
10th percentile	4.2	4.3	4.1	3.6	3.2	3.8
Median	5.1	5.2	4.9	4.7	4.1	4.9
90th percentile	6.1	6.1	5.9	5.7	5.1	5.9
95th percentile	6.5	6.4	6.2	6.0	5.4	6.2
Height >=180 cm						
Mean	5.8	5.9	5.4	5.2	4.6	5.6
Standard error of the mean	0.05	0.05	0.06	0.08	0.09	0.03
5th percentile	4.4	4.6	4.2	3.8	3.3	4.2
10th percentile	4.8	4.8	4.4	4.2	3.5	4.4
Median	5.8	5.9	5.3	5.1	4.6	5.6
90th percentile	6.9	7.0	6.7	6.4	5.5	6.7
95th percentile	7.1	7.4	7.0	6.7	5.7	7.1
All men						
Mean	5.3	5.3	5.0	4.6	3.9	4.9
Standard error of the mean	0.04	0.03	0.03	0.04	0.04	0.02
5th percentile	3.9	3.9	3.7	3.2	2.6	3.3
10th percentile	4.1	4.3	3.9	3.4	2.8	3.6
Median	5.3	5.3	5.0	4.6	4.0	4.9
90th percentile	6.5	6.5	6.0	5.8	5.1	6.2
95th percentile	6.9	6.8	6.4	6.1	5.4	6.6
Bases (weighted)						
Height <170 cm	*73*	*116*	*126*	*144*	*180*	*640*
Height 170 to < 180 cm	*318*	*437*	*400*	*385*	*250*	*1788*
Height >=180 cm	*222*	*296*	*207*	*119*	*74*	*918*
All men	*613*	*848*	*733*	*648*	*504*	*3346*
Bases (unweighted)						
Height <170 cm	*53*	*104*	*120*	*142*	*210*	*629*
Height 170 to <180 cm	*196*	*377*	*372*	*339*	*280*	*1564*
Height >=180 cm	*145*	*241*	*195*	*124*	*81*	*786*
All men	*394*	*722*	*687*	*605*	*571*	*2979*

Continued...

Table 8.8 - continued

1995

	Age					Total
	16-24	25-34	35-44	45-54	55-64	
Women						
Height <160 cm						
Mean	3.4	3.3	3.2	3.0	2.5	3.0
Standard error of the mean	0.04	0.03	0.03	0.04	0.03	0.02
5th percentile	2.6	2.6	2.3	2.1	1.5	2.0
10th percentile	2.7	2.7	2.5	2.3	1.8	2.2
Median	3.4	3.3	3.2	2.9	2.5	3.0
90th percentile	4.1	4.0	3.9	3.6	3.2	3.8
95th percentile	4.3	4.2	4.1	3.8	3.4	4.0
Height 160 to < 165 cm						
Mean	3.7	3.8	3.6	3.2	2.8	3.5
Standard error of the mean	0.04	0.03	0.03	0.04	0.04	0.02
5th percentile	2.9	3.0	2.6	2.4	2.0	2.4
10th percentile	3.1	3.1	2.9	2.5	2.2	2.7
Median	3.7	3.7	3.6	3.2	2.8	3.5
90th percentile	4.3	4.4	4.2	3.8	3.4	4.2
95th percentile	4.7	4.5	4.5	4.2	3.6	4.4
Height >=165 cm						
Mean	4.1	4.1	3.9	3.6	3.1	3.9
Standard error of the mean	0.04	0.03	0.04	0.04	0.06	0.02
5th percentile	3.3	3.3	2.9	2.5	2.1	2.8
10th percentile	3.5	3.4	3.1	2.9	2.3	3.0
Median	4.1	4.1	3.9	3.6	3.1	3.9
90th percentile	4.9	4.8	4.7	4.4	3.8	4.7
95th percentile	5.1	5.1	4.9	4.6	4.0	4.9
All women						
Mean	3.8	3.8	3.6	3.2	2.7	3.4
Standard error of the mean	0.03	0.02	0.02	0.02	0.03	0.01
5th percentile	2.8	2.8	2.6	2.2	1.7	2.2
10th percentile	3.0	3.0	2.8	2.5	1.9	2.5
Median	3.8	3.7	3.6	3.2	2.7	3.5
90th percentile	4.6	4.5	4.4	4.0	3.4	4.4
95th percentile	4.8	4.8	4.6	4.3	3.7	4.6
Bases (weighted)						
Height < 160 cm	*163*	*216*	*252*	*273*	*277*	*1180*
Height 160 to <165 cm	*167*	*245*	*240*	*211*	*152*	*1014*
Height >= 165 cm	*231*	*297*	*261*	*178*	*109*	*1076*
All women	*560*	*758*	*753*	*662*	*537*	*3269*
Bases (unweighted)						
Height <160 cm	*125*	*261*	*275*	*281*	*358*	*1300*
Height 160 to < 165 cm	*129*	*287*	*269*	*217*	*202*	*1104*
Height >=165 cm	*177*	*345*	*310*	*196*	*154*	*1182*
All women	*431*	*893*	*854*	*694*	*714*	*3586*

Table 8.9 PEF, by height (cm), age and sex

All with valid lung function readings *1995*

PEF (l.min^{-1})	Age					Total
	16-24	25-34	35-44	45-54	55-64	
Men						
Height <170 cm						
Mean	501.8	542.9	552.0	513.2	445.1	507.0
Standard error of the mean	12.01	10.10	8.53	9.96	9.27	4.67
5th percentile	275.0	330.0	367.0	303.0	214.0	275.0
10th percentile	369.0	395.0	406.0	328.0	239.0	330.0
Median	489.0	553.0	568.0	526.0	461.0	517.0
90th percentile	632.0	702.0	680.0	663.0	601.0	655.0
95th percentile	678.0	740.0	704.0	720.0	643.0	702.0
Height 170 to <180 cm						
Mean	584.8	601.1	590.7	564.3	513.1	576.1
Standard error of the mean	5.78	5.71	5.86	6.77	8.93	2.96
5th percentile	414.0	402.0	391.0	323.0	256.0	347.0
10th percentile	447.0	460.0	449.0	391.0	324.0	417.0
Median	584.0	601.0	585.0	564.0	520.0	577.0
90th percentile	711.0	749.0	739.0	734.0	677.0	733.0
95th percentile	755.0	790.0	780.0	790.0	741.0	777.0
Height >=180 cm						
Mean	600.4	650.0	631.2	607.3	514.4	617.5
Standard error of the mean	7.58	6.46	7.26	14.03	15.85	4.09
5th percentile	451.0	470.0	475.0	315.0	338.0	426.0
10th percentile	484.0	510.0	504.0	426.0	343.0	469.0
Median	610.0	650.0	626.0	631.0	529.0	619.0
90th percentile	714.0	795.0	745.0	790.0	644.0	763.0
95th percentile	802.0	833.0	824.0	840.0	698.0	822.0
All men						
Mean	577.5	607.3	592.9	558.1	486.5	571.0
Standard error of the mean	4.50	4.14	4.18	5.34	6.14	2.24
5th percentile	390.0	402.0	391.0	319.0	236.0	330.0
10th percentile	440.0	460.0	454.0	374.0	285.0	403.0
Median	583.0	606.0	592.0	562.0	495.0	577.0
90th percentile	709.0	762.0	734.0	730.0	646.0	730.0
95th percentile	754.0	799.0	780.0	791.0	702.0	780.0
Bases (weighted)						
Height <170 cm	*73*	*116*	*126*	*144*	*180*	*640*
Height 170 to < 180 cm	*318*	*437*	*400*	*385*	*250*	*1788*
Height >=180 cm	*222*	*296*	*207*	*119*	*74*	*918*
All men	*613*	*848*	*733*	*648*	*504*	*3346*
Bases (unweighted)						
Height <170 cm	*53*	*104*	*120*	*142*	*210*	*629*
Height 170 to <180 cm	*196*	*377*	*372*	*339*	*280*	*1564*
Height >=180 cm	*145*	*241*	*195*	*124*	*81*	*786*
All men	*394*	*722*	*687*	*605*	*571*	*2979*

Continued ....

Table 8.9 - continued

1995

	Age					Total
	16-24	25-34	35-44	45-54	55-64	
Women						
Height <160 cm						
Mean	377.5	390.9	379.2	357.3	298.4	357.1
Standard error of the mean	5.67	4.80	4.83	4.75	4.99	2.45
5th percentile	260.0	269.0	239.0	218.0	156.0	209.0
10th percentile	288.0	300.0	286.0	250.0	177.0	247.0
Median	370.0	392.0	387.0	366.0	311.0	361.0
90th percentile	468.0	475.0	470.0	454.0	400.0	456.0
95th percentile	502.0	515.0	496.0	480.0	432.0	487.0
Height 160 to <165 cm						
Mean	397.7	403.3	399.4	363.3	337.8	383.3
Standard error of the mean	5.14	4.51	5.16	5.29	7.23	2.51
5th percentile	287.0	285.0	261.0	247.0	186.0	240.0
10th percentile	300.0	318.0	301.0	265.0	224.0	282.0
Median	403.0	406.0	407.0	364.0	342.0	387.0
90th percentile	483.0	497.0	502.0	464.0	448.0	483.0
95th percentile	504.0	508.0	527.0	492.0	483.0	506.0
Height >=165 cm						
Mean	436.7	433.1	422.0	400.2	362.8	418.6
Standard error of the mean	5.07	4.73	4.81	5.60	8.47	2.51
5th percentile	320.0	297.0	285.0	298.0	201.0	271.0
10th percentile	349.0	331.0	334.0	319.0	237.0	320.0
Median	445.0	436.0	426.0	398.0	378.0	424.0
90th percentile	527.0	531.0	518.0	506.0	468.0	517.0
95th percentile	558.0	567.0	541.0	520.0	503.0	545.0
All women						
Mean	407.9	411.4	400.4	370.8	322.6	385.5
Standard error of the mean	3.24	2.80	2.91	3.07	3.87	1.51
5th percentile	279.0	284.0	260.0	237.0	164.0	228.0
10th percentile	310.0	313.0	301.0	265.0	195.0	272.0
Median	409.0	415.0	406.0	372.0	327.0	389.0
90th percentile	502.0	507.0	497.0	473.0	433.0	492.0
95th percentile	529.0	531.0	528.0	501.0	467.0	519.0
Bases (weighted)						
Height < 160 cm	*163*	*216*	*252*	*273*	*277*	*1180*
Height 160 to <165 cm	*167*	*245*	*240*	*211*	*152*	*1014*
Height >= 165 cm	*231*	*297*	*261*	*178*	*109*	*1076*
All women	*560*	*758*	*753*	*662*	*537*	*3269*
Bases (unweighted)						
Height <160 cm	*125*	*261*	*275*	*281*	*358*	*1300*
Height 160 to < 165 cm	*129*	*287*	*269*	*217*	*202*	*1104*
Height >=165 cm	*177*	*345*	*310*	*196*	*154*	*1182*
All women	*431*	*893*	*854*	*694*	*714*	*3586*

Table 8.10 Relative lung function levels, by age and sex

All with valid lung function levels *1995*

Lung function levels	Age					Total
	16-24	25-34	35-44	45-54	55-64	
	%	%	%	%	%	%
FEV_1 level						
Men						
Equal to, or in excess of, predicted	59	57	55	51	36	53
Within 1SD below predicted	27	30	31	30	32	30
1 SD to 1.64 SD below predicted	7	7	10	10	14	9
1.64 SD or more below predicted	7	6	4	9	18	8
Women						
Equal to, or in excess of, predicted	52	55	62	54	43	54
Within 1 SD below predicted	34	34	25	31	32	31
1 SD to 1.64 SD below predicted	9	8	10	8	13	9
1.64 SD or more below predicted	5	4	4	7	12	6
All						
Equal to, or in excess of, predicted	56	56	58	53	40	53
Within 1 SD below predicted	31	32	28	30	32	30
1 SD to 1.64 SD below predicted	8	7	10	9	13	9
1.64 SD or more below predicted	6	5	4	8	15	7
FVC level						
Men						
Equal to, or in excess of, predicted	54	66	61	62	45	59
Within 1 SD below predicted	29	22	29	23	32	27
1 SD to 1.64 SD below predicted	11	8	7	9	12	9
1.64 SD or more below predicted	6	4	3	6	10	5
Women						
Equal to, or in excess of, predicted	58	67	74	72	60	67
Within 1 SD below predicted	27	25	18	20	24	23
1 SD to 1.64 SD below predicted	9	5	5	5	9	6
1.64 SD or more below predicted	5	2	3	3	8	4
All						
Equal to, or in excess of, predicted	56	67	67	67	53	63
Within 1 SD below predicted	28	24	24	21	28	25
1 SD to 1.64 SD below predicted	10	6	6	7	10	8
1.64 SD or more below predicted	6	3	3	5	9	5
Bases (weighted)						
Men	*613*	*848*	*733*	*648*	*504*	*3346*
Women	*560*	*758*	*753*	*662*	*537*	*3269*
All	*1173*	*1606*	*1486*	*1310*	*1042*	*6616*
Bases (unweighted)						
Men	*394*	*722*	*687*	*605*	*571*	*2979*
Women	*431*	*893*	*854*	*694*	*714*	*3586*
All	*825*	*1615*	*1541*	*1299*	*1285*	*6565*

Table 8.11 FEV_1 level, by region, age and sex

All with valid lung function readings *1995*

FEV_1 level	Region							Total
	Highland & Islands	Grampian & Tayside	Lothian & Fife	Borders, Dumfries & Galloway	Greater Glasgow	Lanarkshire, Ayrshire & Arran	Forth Valley, Argyll & Clyde	
	%	%	%	%	%	%	%	%
Men								
16 - 44								
Equal to, or in excess of, predicted	62	61	59	59	54	50	55	57
Within 1 SD below predicted	24	25	27	27	34	35	30	30
1 SD to 1.64 SD below predicted	9	8	8	7	6	8	10	8
1.64 SD or more below predicted	5	7	5	6	7	7	5	6
45 - 64								
Equal to, or in excess of, predicted	56	52	46	44	38	40	41	45
Within 1SD below predicted	30	32	31	35	31	30	28	31
1 SD to 1.64 SD below predicted	7	8	8	14	14	17	12	12
1.64 SD or more below predicted	6	8	15	7	16	13	19	13
All men								
Equal to, or in excess of, predicted	60	58	55	53	48	46	51	53
Within 1 SD below predicted	26	27	28	30	33	34	30	30
1 SD to 1.64 SD below predicted	9	8	8	10	9	11	10	9
1.64 SD or more below predicted	6	7	8	6	10	9	9	8
Women								
16 - 44								
Equal to, or in excess of, predicted	61	69	55	59	54	52	52	57
Within 1 SD below predicted	26	19	33	22	34	34	36	30
1 SD to 1.64 SD below predicted	10	7	8	13	9	10	7	9
1.64 SD or more below predicted	3	5	3	5	4	4	5	4
45 - 64								
Equal to, or in excess of, predicted	59	57	48	49	42	46	49	49
Within 1 SD below predicted	28	28	33	32	34	32	29	31
1 SD to 1.64 SD below predicted	7	9	10	10	11	11	11	10
1.64 SD or more below predicted	6	6	9	9	12	10	11	9
All women								
Equal to, or in excess of, predicted	60	64	53	55	49	50	51	54
Within 1 SD below predicted	27	22	33	26	34	33	33	31
1 SD to 1.64 SD below predicted	9	8	9	12	10	10	8	9
1.64 SD or more below predicted	4	6	5	7	7	6	7	6
Bases (weighted)								
Men								
16 - 44	*116*	*457*	*511*	*93*	*326*	*388*	*303*	*2194*
45 - 64	*64*	*215*	*227*	*61*	*195*	*241*	*150*	*1152*
All men	*180*	*672*	*738*	*154*	*521*	*629*	*452*	*3346*
Women								
16 - 44	*112*	*342*	*469*	*97*	*370*	*377*	*301*	*2070*
45 - 64	*69*	*216*	*222*	*65*	*225*	*237*	*164*	*1199*
All women	*181*	*558*	*692*	*163*	*596*	*614*	*466*	*3269*
Bases (unweighted)								
Men								
16 - 44	*169*	*332*	*374*	*140*	*238*	*310*	*240*	*1803*
45 - 64	*129*	*185*	*208*	*113*	*167*	*225*	*149*	*1176*
All men	*298*	*517*	*582*	*253*	*405*	*535*	*389*	*2979*
Women								
16 - 44	*211*	*314*	*427*	*188*	*343*	*397*	*298*	*2178*
45 - 64	*157*	*220*	*231*	*141*	*215*	*270*	*174*	*1408*
All women	*368*	*534*	*658*	*329*	*558*	*667*	*472*	*3586*

Table 8.12 FVC level, by region, age and sex

All with valid lung function readings *1995*

FVC level	Region							Total
	Highland & Islands	Grampian & Tayside	Lothian & Fife	Borders, Dumfries & Galloway	Greater Glasgow	Lanarkshire, Ayrshire & Arran	Forth Valley, Argyll & Clyde	
	%	%	%	%	%	%	%	%
Men								
16 - 44								
Equal to, or in excess of, predicted	67	68	65	66	54	56	52	61
Within 1 SD below predicted	22	20	23	23	30	29	37	26
1 SD to 1.64 SD below predicted	8	7	7	5	11	10	10	8
1.64 SD or more below predicted	3	5	5	6	4	5	1	4
45 - 64								
Equal to, or in excess of, predicted	69	68	57	56	50	47	47	55
Within 1 SD below predicted	25	22	24	24	26	31	35	27
1 SD to 1.64 SD below predicted	2	7	10	14	14	13	10	10
1.64 SD or more below predicted	4	4	8	7	11	9	9	8
All men								
Equal to, or in excess of, predicted	68	68	63	62	53	53	50	59
Within 1 SD below predicted	23	21	23	24	29	30	36	27
1 SD to 1.64 SD below predicted	6	7	8	8	12	11	10	9
1.64 SD or more below predicted	3	4	6	7	7	6	4	5
Women								
16 - 44								
Equal to, or in excess of, predicted	74	75	65	71	65	63	66	67
Within 1 SD below predicted	18	18	28	20	24	27	23	23
1 SD to 1.64 SD below predicted	6	5	5	5	7	6	9	6
1.64 SD or more below predicted	2	2	3	4	5	4	3	3
45-64								
Equal to, or in excess of, predicted	79	78	68	66	56	64	60	66
Within 1 SD below predicted	16	15	20	24	26	23	26	22
1 SD to 1.64 SD below predicted	4	4	7	6	9	7	6	7
1.64 SD or more below predicted	2	2	4	4	9	6	7	5
All women								
Equal to, or in excess of, predicted	76	77	66	69	62	64	64	67
Within 1 SD below predicted	17	17	25	21	24	25	24	23
1 SD to 1.64 SD below predicted	5	5	6	6	8	7	8	6
1.64 SD or more below predicted	2	2	3	4	6	5	5	4
Bases (weighted)								
Men								
16 - 44	*116*	*457*	*511*	*93*	*326*	*388*	*303*	*2194*
45 - 64	*64*	*215*	*227*	*61*	*195*	*241*	*150*	*1152*
All men	*180*	*672*	*738*	*154*	*521*	*629*	*452*	*3346*
Women								
16 - 44	*112*	*342*	*469*	*97*	*370*	*377*	*301*	*2070*
45 - 64	*69*	*216*	*222*	*65*	*225*	*237*	*164*	*1199*
All women	*181*	*558*	*692*	*163*	*596*	*614*	*466*	*3269*
Bases (unweighted)								
Men								
16 - 44	*169*	*332*	*374*	*140*	*238*	*310*	*240*	*1803*
45 - 64	*129*	*185*	*208*	*113*	*167*	*225*	*149*	*1176*
All men	*298*	*517*	*582*	*253*	*405*	*535*	*389*	*2979*
Women								
16 - 44	*211*	*314*	*427*	*188*	*343*	*397*	*298*	*2178*
45 - 64	*157*	*220*	*231*	*141*	*215*	*270*	*174*	*1408*
All women	*368*	*534*	*658*	*329*	*558*	*667*	*472*	*3586*

Table 8.13 FEV_1 level, by social class of chief income earner, age and sex

All with valid lung function readings *1995*

FEV_1 level	Social class of chief income earner						Total[a]
	I	II	IIINM	IIIM	IV	V	
	%	%	%	%	%	%	%
Men							
16 - 44							
Equal to, or in excess of, predicted	66	56	59	59	50	47	57
Within 1 SD below predicted	22	31	32	28	35	32	30
1 SD to 1.64 SD below predicted	12	7	7	7	7	8	8
1.64 SD or more below predicted	1	6	2	7	7	13	6
45 - 64							
Equal to, or in excess of, predicted	63	53	43	40	40	19	45
Within 1 SD below predicted	26	32	34	30	30	31	31
1 SD to 1.64 SD below predicted	5	5	13	16	16	16	12
1.64 SD or more below predicted	7	10	9	13	15	34	13
All men							
Equal to, or in excess of, predicted	65	55	55	52	47	36	53
Within 1 SD below predicted	23	31	33	29	34	32	30
1 SD to 1.64 SD below predicted	9	6	9	10	10	11	9
1.64 SD or more below predicted	3	8	4	9	9	21	8
Women							
16 - 44							
Equal to, or in excess of, predicted	67	62	56	54	53	60	57
Within 1 SD below predicted	23	28	32	32	32	28	30
1 SD to 1.64 SD below predicted	8	7	10	9	9	7	9
1.64 SD or more below predicted	2	3	2	5	7	6	4
45 - 64							
Equal to, or in excess of, predicted	57	58	50	44	39	36	49
Within 1 SD below predicted	30	29	36	33	29	30	31
1 SD to 1.64 SD below predicted	6	9	8	10	15	14	10
1.64 SD or more below predicted	6	4	6	12	16	21	9
All women							
Equal to, or in excess of, predicted	64	61	54	50	48	49	54
Within 1 SD below predicted	25	28	33	32	31	29	31
1 SD to 1.64 SD below predicted	7	8	9	10	11	10	9
1.64 SD or more below predicted	3	3	3	8	10	13	6
Bases (weighted)							
Men							
16 - 44	*150*	*547*	*285*	*675*	*301*	*93*	*2194*
45 - 64	*82*	*324*	*103*	*413*	*140*	*57*	*1152*
All men	*232*	*871*	*388*	*1088*	*442*	*150*	*3346*
Women							
16 - 44	*138*	*489*	*367*	*539*	*277*	*83*	*2070*
45 - 64	*74*	*345*	*189*	*328*	*164*	*70*	*1199*
All women	*212*	*834*	*556*	*867*	*441*	*153*	*3269*
Bases (unweighted)							
Men							
16 - 44	*126*	*439*	*229*	*553*	*255*	*88*	*1803*
45 - 64	*79*	*307*	*103*	*421*	*156*	*74*	*1176*
All men	*205*	*746*	*332*	*974*	*411*	*162*	*2979*
Women							
16 - 44	*128*	*499*	*438*	*511*	*331*	*97*	*2178*
45 - 64	*76*	*407*	*238*	*346*	*200*	*96*	*1408*
All women	*204*	*906*	*676*	*857*	*531*	*193*	*3586*

[a]The total column includes those for whom social class could not be determined.

Table 8.14 FVC level, by social class of chief income earner, age and sex

All with valid lung function readings *1995*

FVC level	Social class of chief income earner						Total[a]
	I	II	IIINM	IIIM	IV	V	
	%	%	%	%	%	%	%
Men							
16 - 44							
Equal to, or in excess of, predicted	65	60	61	64	52	59	61
Within 1 SD below predicted	29	29	26	24	28	25	26
1 SD to 1.64 SD below predicted	5	7	9	8	14	8	8
1.64 SD or more below predicted	1	4	4	4	6	8	4
45 - 64							
Equal to, or in excess of, predicted	69	64	56	50	49	27	55
Within 1 SD below predicted	23	23	29	31	25	27	27
1 SD to 1.64 SD below predicted	5	6	13	12	17	17	10
1.64 SD or more below predicted	4	7	2	7	9	29	8
All men							
Equal to, or in excess of, predicted	66	61	60	59	51	47	59
Within 1 SD below predicted	27	27	27	26	27	25	27
1 SD to 1.64 SD below predicted	5	6	10	10	15	12	9
1.64 SD or more below predicted	2	5	4	5	7	16	5
Women							
16 - 44							
Equal to, or in excess of, predicted	70	72	70	67	61	66	67
Within 1 SD below predicted	24	21	21	24	27	19	23
1 SD to 1.64 SD below predicted	5	5	6	5	9	7	6
1.64 SD or more below predicted	1	3	3	4	3	8	3
45 - 64							
Equal to, or in excess of, predicted	70	74	66	66	54	54	66
Within 1 SD below predicted	22	18	23	22	26	26	22
1 SD to 1.64 SD below predicted	3	4	7	6	12	11	7
1.64 SD or more below predicted	6	4	3	6	9	9	5
All women							
Equal to, or in excess of, predicted	70	73	68	67	58	61	67
Within 1 SD below predicted	23	20	22	23	27	22	23
1 SD to 1.64 SD below predicted	4	5	7	5	10	9	6
1.64 SD or more below predicted	2	3	3	5	5	8	4
Bases (weighted)							
Men							
16 - 44	*150*	*547*	*285*	*675*	*301*	*93*	*2194*
45 - 64	*82*	*324*	*103*	*413*	*140*	*57*	*1152*
All men	*232*	*871*	*388*	*1088*	*442*	*150*	*3346*
Women							
16 - 44	*138*	*489*	*367*	*539*	*277*	*83*	*2070*
45 - 64	*74*	*345*	*189*	*328*	*164*	*70*	*1199*
All women	*212*	*834*	*556*	*867*	*441*	*153*	*3269*
Bases (unweighted)							
Men							
16 - 44	*126*	*439*	*229*	*553*	*255*	*88*	*1803*
45 - 64	*79*	*307*	*103*	*421*	*156*	*74*	*1176*
All men	*205*	*746*	*332*	*974*	*411*	*162*	*2979*
Women							
16 - 44	*128*	*499*	*438*	*511*	*331*	*97*	*2178*
45 - 64	*76*	*407*	*238*	*346*	*200*	*96*	*1408*
All women	*204*	*906*	*676*	*857*	*531*	*193*	*3586*

[a]The total column includes those for whom social class could not be determined.

Table 8.15 FEV_1 level, by cigarette smoking status, age and sex

All with valid lung function readings *1995*

FEV_1 level	Cigarette smoking status				Total
	Non-smoker	Ex-smoker	Smokes less than 20 a day	Smokes 20 a day or more	
	%	%	%	%	%
Men					
16 - 44					
Equal to, or in excess of, predicted	61	59	54	40	57
Within 1 SD below predicted	27	30	32	37	30
1 SD to 1.64 SD below predicted	7	8	9	12	8
1.64 SD or more below predicted	5	4	6	11	6
45 - 64					
Equal to, or in excess of, predicted	58	48	31	24	45
Within 1 SD below predicted	30	31	33	30	31
1 SD to 1.64 SD below predicted	5	12	17	20	12
1.64 SD or more below predicted	7	10	19	26	13
All men					
Equal to, or in excess of, predicted	60	53	48	33	53
Within 1 SD below predicted	28	31	32	34	30
1 SD to 1.64 SD below predicted	6	10	11	16	9
1.64 SD or more below predicted	6	7	9	18	8
Women					
16 - 44					
Equal to, or in excess of, predicted	59	68	53	41	57
Within 1 SD below predicted	31	23	31	36	30
1 SD to 1.64 SD below predicted	7	7	9	17	9
1.64 SD or more below predicted	3	3	6	6	4
45 - 64					
Equal to, or in excess of, predicted	59	52	42	25	49
Within 1 SD below predicted	28	31	34	38	31
1 SD to 1.64 SD below predicted	8	8	12	20	10
1.64 SD or more below predicted	6	9	13	17	9
All women					
Equal to, or in excess of, predicted	59	60	49	34	54
Within 1 SD below predicted	30	27	32	37	31
1 SD to 1.64 SD below predicted	7	7	10	18	9
1.64 SD or more below predicted	4	6	8	11	6
All					
16 - 44					
Equal to, or in excess ,of predicted	67	69	60	48	63
Within 1 SD below predicted	24	22	29	34	26
1 SD to 1.64 SD below predicted	5	6	7	11	6
1.64 SD or more below predicted	4	3	4	8	4
45 - 64					
Equal to, or in excess of, predicted	71	58	51	34	58
Within 1 SD below predicted	21	26	26	32	25
1 SD to 1.64 SD below predicted	5	9	11	16	9
1.64 SD or more below predicted	3	7	11	18	8
All informants					
Equal to, or in excess of, predicted	68	63	57	42	61
Within 1 SD below predicted	23	24	28	33	26
1 SD to 1.64 SD below predicted	5	8	8	13	7
1.64 SD or more below predicted	4	5	6	12	6

Continued ....

Table 8.15 - continued

1995

	Cigarette smoking status				Total
	Non-smoker	Ex-smoker	Smokes Less than 20 a day	Smokes 20 a day or more	
Bases (weighted)					
Men					
16 - 44	*1155*	*318*	*452*	*268*	*2193*
45 - 64	*383*	*402*	*146*	*220*	*1150*
All men	*1538*	*720*	*598*	*487*	*3343*
Women					
16 - 44	*1081*	*256*	*479*	*249*	*2065*
45 - 64	*528*	*269*	*233*	*169*	*1199*
All women	*1609*	*525*	*712*	*418*	*3264*
All					
16 - 44	*2236*	*573*	*931*	*517*	*4257*
45 - 64	*911*	*671*	*379*	*389*	*2350*
All informants	*3147*	*1244*	*1310*	*906*	*6607*
Bases (unweighted)					
Men					
16 - 44	*933*	*266*	*361*	*242*	*1802*
45 - 64	*368*	*401*	*160*	*244*	*1173*
All men	*1301*	*667*	*521*	*486*	*2975*
Women					
16 - 44	*1055*	*278*	*538*	*303*	*2174*
45 - 64	*618*	*329*	*269*	*192*	*1408*
All women	*1673*	*607*	*807*	*495*	*3582*
All					
16 - 44	*1988*	*544*	*899*	*545*	*3976*
45 - 64	*986*	*730*	*429*	*436*	*2581*
All informants	*2974*	*1274*	*1328*	*981*	*6557*

Table 8.16 FVC level, by cigarette smoking status, age and sex

All with valid lung function readings *1995*

FVC level	Cigarette smoking status				Total
	Non-smoker	Ex-smoker	Smokes less than 20 a day	Smokes 20 a day or more	
	%	%	%	%	%
Men					
16 - 44					
Equal to, or in excess of, predicted	61	62	68	49	61
Within 1 SD below predicted	27	31	20	31	26
1 SD to 1.64 SD below predicted	8	6	10	13	8
1.64 SD or more below predicted	5	2	2	8	4
45 - 64					
Equal to, or in excess of, predicted	63	57	46	43	55
Within 1 SD below predicted	25	24	30	33	27
1 SD to 1.64 SD below predicted	7	9	19	15	10
1.64 SD or more below predicted	6	9	5	10	8
All men					
Equal to, or in excess of, predicted	61	59	63	46	59
Within 1 SD below predicted	26	27	22	32	26
1 SD to 1.64 SD below predicted	7	8	12	14	9
1.64 SD or more below predicted	5	6	3	9	5
Women					
16 - 44					
Equal to, or in excess of, predicted	69	76	63	61	67
Within 1 SD below predicted	22	18	27	29	23
1 SD to 1.64 SD below predicted	6	4	7	5	6
1.64 SD or more below predicted	3	1	4	5	3
45 - 64					
Equal to, or in excess of, predicted	74	66	59	54	66
Within 1 SD below predicted	17	22	26	28	22
1 SD to 1.64 SD below predicted	5	6	8	11	7
1.64 SD or more below predicted	4	6	6	7	5
All women					
Equal to, or in excess of, predicted	71	71	62	58	67
Within 1 SD below predicted	20	20	26	29	23
1 SD to 1.64 SD below predicted	6	5	8	8	6
1.64 SD or more below predicted	3	4	4	6	4
All					
16 - 44					
Equal to, or in excess of, predicted	65	68	65	54	64
Within 1 SD below predicted	24	25	23	30	25
1 SD to 1.64 SD below predicted	7	5	9	9	7
1.64 SD or more below predicted	4	2	3	6	4
45-64					
Equal to, or in excess of, predicted	69	61	54	48	61
Within 1 SD below predicted	20	24	27	31	24
1 SD to 1.64 SD below predicted	6	8	13	13	9
1.64 SD or more below predicted	5	8	6	9	7
All informants					
Equal to, or in excess of, predicted	66	64	62	51	63
Within 1 SD below predicted	23	24	24	30	25
1 SD to 1.64 SD below predicted	7	7	10	11	8
1.64 SD or more below predicted	4	5	4	7	5

Continued ....

Table 8.16 - continued

1995

	Cigarette smoking status				Total
	Non-smoker	Ex-smoker	Smokes less than 20 a day	Smokes 20 a day or more	
Bases (weighted)					
Men					
16 - 44	*1155*	*318*	*452*	*268*	*2193*
45 - 64	*383*	*402*	*146*	*220*	*1150*
All men	*1538*	*720*	*598*	*487*	*3343*
Women					
16 - 44	*1081*	*256*	*479*	*249*	*2065*
45 - 64	*528*	*269*	*233*	*169*	*1199*
All women	*1609*	*525*	*712*	*418*	*3264*
All					
16 - 44	*2236*	*573*	*931*	*517*	*4257*
45 - 64	*911*	*671*	*379*	*389*	*2350*
All informants	*3147*	*1244*	*1310*	*906*	*6607*
Bases (unweighted)					
Men					
16 - 44	*933*	*266*	*361*	*242*	*1802*
45 - 64	*368*	*401*	*160*	*244*	*1173*
All men	*1301*	*667*	*521*	*486*	*2975*
Women					
16 - 44	*1055*	*278*	*538*	*303*	*2174*
45 - 64	*618*	*329*	*269*	*192*	*1408*
All women	*1673*	*607*	*807*	*495*	*3582*
All					
16 - 44	*1988*	*544*	*899*	*545*	*3976*
45 - 64	*986*	*730*	*429*	*436*	*2581*
All informants	*2974*	*1274*	*1328*	*981*	*6557*

Table 8.17 FEV_1 level, by respiratory symptoms, age and sex

All with valid lung function readings *1995*

FEV_1 level	Phlegm		Breathlessness		Wheezing		**Total**
	yes	no	yes	no	yes	no	
	%	%	%	%	%	%	%
Men							
16 - 44							
Equal to, or in excess of, predicted	50	57	38	60	42	60	57
Within 1 SD below predicted	28	30	36	29	36	28	30
1 SD to 1.64 SD below predicted	10	8	11	7	8	8	8
1.64 SD or more below predicted	12	5	15	5	14	4	6
45 - 64							
Equal to, or in excess of, predicted	24	49	26	53	20	51	45
Within 1 SD below predicted	27	32	28	32	32	31	31
1 SD to 1.64 SD below predicted	16	11	20	8	16	11	12
1.64 SD or more below predicted	33	9	26	7	32	8	13
All men							
Equal to, or in excess of, predicted	38	55	31	58	34	57	53
Within 1 SD below predicted	28	30	31	30	34	29	30
1 SD to 1.64 SD below predicted	13	9	16	8	11	9	9
1.64 SD or more below predicted	22	6	21	5	20	5	8
Women							
16 - 44							
Equal to, or in excess of, predicted	40	58	48	60	44	60	57
Within 1 SD below predicted	32	30	33	30	36	29	30
1 SD to 1.64 SD below predicted	15	8	11	8	11	8	9
1.64 SD or more below predicted	12	3	8	3	9	3	4
45 - 64							
Equal to, or in excess of, predicted	25	52	36	58	24	56	49
Within 1 SD below predicted	31	31	34	29	33	31	31
1 SD to 1.64 SD below predicted	24	8	15	7	19	8	10
1.64 SD or more below predicted	21	8	15	5	24	5	9
All women							
Equal to, or in excess of, predicted	32	56	42	59	36	58	54
Within 1 SD below predicted	31	31	34	29	35	30	31
1 SD to 1.64 SD below predicted	19	8	13	8	14	8	9
1.64 SD or more below predicted	17	5	12	4	15	4	6
Bases (weighted)							
Men							
16 - 44	*222*	*1971*	*288*	*1905*	*421*	*1773*	*2194*
45 - 64	*189*	*962*	*357*	*793*	*247*	*905*	*1152*
All men	*411*	*2932*	*646*	*2697*	*669*	*2678*	*3346*
Women							
16 - 44	*141*	*1928*	*502*	*1568*	*386*	*1684*	*2070*
45 - 64	*141*	*1058*	*479*	*721*	*258*	*941*	*1199*
All women	*282*	*2986*	*981*	*2288*	*645*	*2625*	*3269*
Bases (unweighted)							
Men							
16 - 44	*190*	*1612*	*251*	*1551*	*344*	*1459*	*1803*
45 - 64	*204*	*971*	*388*	*785*	*279*	*897*	*1176*
All men	*394*	*2583*	*639*	*2336*	*623*	*2356*	*2979*
Women							
16 - 44	*171*	*2005*	*557*	*1621*	*426*	*1752*	*2178*
45 - 64	*148*	*1260*	*581*	*827*	*305*	*1103*	*1408*
All women	*319*	*3265*	*1138*	*2448*	*731*	*2855*	*3586*

Table 8.18 FVC level, by respiratory symptoms, age and sex

All with valid lung function readings *1995*

FVC level	Phlegm		Breathlessness		Wheezing		**Total**
	yes	no	yes	no	yes	no	
	%	%	%	%	%	%	%
Men							
16 - 44							
Equal to, or in excess of, predicted	53	62	49	63	55	62	61
Within 1 SD below predicted	27	26	30	26	28	26	26
1 SD to 1.64 SD below predicted	11	8	9	8	8	9	8
1.64 SD or more below predicted	9	4	12	3	9	3	4
45 - 64							
Equal to, or in excess of, predicted	34	59	35	64	37	60	55
Within 1 SD below predicted	31	26	32	25	27	27	27
1 SD to 1.64 SD below predicted	18	9	20	6	19	8	10
1.64 SD or more below predicted	17	6	13	5	16	5	8
All men							
Equal to, or in excess of, predicted	44	61	41	63	49	61	59
Within 1 SD below predicted	29	26	31	25	28	26	27
1 SD to 1.64 SD below predicted	14	8	15	8	12	8	9
1.64 SD or more below predicted	13	4	13	4	12	4	5
Women							
16 - 44							
Equal to, or in excess of, predicted	51	68	60	70	60	69	67
Within 1 SD below predicted	33	23	28	22	26	23	23
1 SD to 1.64 SD below predicted	7	6	8	6	7	6	6
1.64 SD or more below predicted	10	3	5	3	6	3	3
45 - 64							
Equal to, or in excess of, predicted	45	69	54	75	44	73	66
Within 1 SD below predicted	34	20	28	17	30	19	22
1 SD to 1.64 SD below predicted	10	6	10	5	14	5	7
1.64 SD or more below predicted	10	5	8	3	12	3	5
All women							
Equal to, or in excess of, predicted	48	69	57	71	54	70	67
Within 1 SD below predicted	33	22	28	20	28	21	23
1 SD to 1.64 SD below predicted	9	6	9	5	10	6	6
1.64 SD or more below predicted	10	3	6	3	9	3	4
Bases (weighted)							
Men							
16 - 44	*222*	*1971*	*288*	*1905*	*421*	*1773*	*2194*
45 - 64	*189*	*962*	*357*	*793*	*247*	*905*	*1152*
All men	*411*	*2932*	*646*	*2697*	*669*	*2678*	*3346*
Women							
16 - 44	*141*	*1928*	*502*	*1568*	*386*	*1684*	*2070*
45 - 64	*141*	*1058*	*479*	*721*	*258*	*941*	*1199*
All women	*282*	*2986*	*981*	*2288*	*645*	*2625*	*3269*
Bases (unweighted)							
Men							
16 - 44	*190*	*1612*	*251*	*1551*	*344*	*1459*	*1803*
45 - 64	*204*	*971*	*388*	*785*	*279*	*897*	*1176*
All men	*394*	*2583*	*639*	*2336*	*623*	*2356*	*2979*
Women							
16 - 44	*171*	*2005*	*557*	*1621*	*426*	*1752*	*2178*
45 - 64	*148*	*1260*	*581*	*827*	*305*	*1103*	*1408*
All women	*319*	*3265*	*1138*	*2448*	*731*	*2855*	*3586*

9 BLOOD ANALYTES

PART I: Lualhati Bost, Wei Dong and Paola Primatesta
PART II: Wei Dong, Lualhati Bost, Patricia E. Fitzsimons and David I. Thurnham

SUMMARY

- Mean total cholesterol was 5.6 mmol/l in men and women and increased with age. Men had higher levels than women except in the youngest (16-24) and oldest age groups (55-64). Overall 22% of men and 21% of women had cholesterol levels of 6.5 mmol/l or above. Total cholesterol varied significantly between regions in both men and women, but not between social classes in either sex after adjustment for age.

- Mean HDL-cholesterol was 1.3 mmol/l in men and 1.6 mmol/l in women. The proportion of men having levels less than 0.9 mmol/l (14%) was more than three times that of women (4%). There was a significant regional variation in age-adjusted HDL-cholesterol in men but not in women, while there was a significant social class variation in women but not in men. Women in manual social classes had lower HDL-cholesterol than those in non-manual social classes.

- Significant positive associations were found between: total cholesterol and body mass index (BMI) in men and women; total cholesterol and cigarette smoking in women; HDL-cholesterol and alcohol consumption in both sexes. On the other hand, negative associations were found between HDL-cholesterol and BMI and smoking in both sexes; and total cholesterol and physical activity in men.

- The geometric mean fibrinogen was 3.2 g/l in men and 3.5 g/l in women. Age-adjusted fibrinogen varied significantly between regions in both sexes. It generally increased from Social Class I to Social Class V, and with the level of cigarette smoking in both men and women.

- The prevalence of anaemia (haemoglobin less than 13 g/dl in men and less than 12 g/dl in women) was 2% in men and 8% in women. There were significant variations between regions in age-adjusted mean haemoglobin and mean ferritin in men but not in women. There was no significant social class variation in either sex after adjustment for age.

PART I CHOLESTEROL, FIBRINOGEN, FERRITIN AND HAEMOGLOBIN

9.1 INTRODUCTION

Part I of this chapter presents findings on five blood analytes: total cholesterol, HDL-cholesterol, fibrinogen, haemoglobin and ferritin. The first three are associated with cardiovascular disease, while the last two are indicators of iron status. The chapter examines the age-sex distributions and regional and social class variations for each analyte. In addition, it looks at cholesterol monitoring, and analyses the associations between fibrinogen and cigarette smoking, and between total and HDL-cholesterol and selected lifestyle factors: BMI, cigarette smoking, alcohol consumption and physical activity.

In Part II, results for vitamins A, C and E and carotenoids are presented.

9.1.1 Response to measurements

Of the 7,932 informants interviewed, 6,958 were also visited by a nurse (88% of men and 87% of women). Of these, 6,813 informants were eligible to give a blood sample. The 145 informants who were not eligible consisted of the following: those with bleeding or clotting disorders, those on oral anticoagulants, pregnant women, and those aged 16-17 for whom parental or guardian consent was not available.

Of the 6,813 informants who were eligible, 6,183 had a blood sample taken. The rest either refused a blood sample, or the nurse was not able to obtain a sample from them. The 6,183 informants who had a blood sample taken comprised 78% of all those interviewed (81% of men and 76% of women). Most of those who gave a blood sample had valid measurements. **Tables 9.1, 9.2**

Women were less likely than men to have a blood sample taken, mainly because pregnant women were ineligible. Younger informants and those in Social Class V were also less likely to have a blood sample taken and were thus slightly under-represented: the proportion with a blood sample among those aged 16-34 was 72%, while it was 81% among those aged 35-64; the proportion was 72% in Social Class V and ranged from 77% to 80% in the other social classes. Caution should therefore be observed in generalising the findings in this chapter, as the sample may not fully represent the total population with regard to these (and possibly other) factors.

9.1.2 Comparisons with the 1994 Health Survey for England and the 1984-86 Scottish Heart Health Study

The age-sex distributions for each analyte in the Health Survey were compared with their equivalents from these two surveys (depending on their availability).

The 1994 Health Survey for England

Total cholesterol, fibrinogen, ferritin and haemoglobin were measured in both the 1994 Health Survey for England (HSE) and the 1995 Scottish Health Survey. As mentioned in the Introduction to this report (Chapter 1), the HSE was carried out by the same institutions as the Health Survey and used the same protocols. The same laboratory employing the same analysis methods was used for both surveys (see the Technical Report for details on the laboratory analysis and quality control).

However, caution should be observed in comparing the findings of these surveys because of the relatively low response rates for the blood analytes. Among adults aged 16-64, 72% of all those interviewed in the 1994 English survey, and 78% in the Scottish survey had a blood sample taken.

Women, young adults and those in Social Class V were less likely to have a blood sample taken in both the 1994 English[1] and 1995 Scottish health surveys. Therefore, although the blood test results from these two surveys may not be fully representative of their target populations, both studies appear to slightly under-represent the same groups of people.

The 1984-86 Scottish Heart Health Study

Total cholesterol, HDL-cholesterol and fibrinogen were measured in both the 1984-86 Scottish Heart Health Study (SHHS) and the Health Survey. The overall response rate in the SHHS was 74%, based on those selected and currently resident in the sample districts at the time of the study.

The two surveys are not strictly comparable. As described in Chapter 1, the studies differed considerably both in sampling methods and design. Moreover, the 10-year gap between the two surveys and the advancements in technology over this period mean that laboratory analysis could vary between the two studies even when the same general methods were used.

9.2 TOTAL AND HDL-CHOLESTEROL

9.2.1 Introduction

Two important components of blood lipids and lipoproteins were measured in the survey: total cholesterol and HDL-cholesterol. Cholesterol is transported in the plasma together with several lipoproteins. In a normal individual, HDL (high density lipoprotein) constitutes approximately 20% of the total plasma cholesterol, while the other main cholesterol-carrying lipoprotein, LDL (low density lipoprotein), makes up about 70%.

There is considerable evidence that raised total cholesterol is positively related to the risk of coronary heart disease in men and women.[2] Studies have shown that lowering total cholesterol through changes in diet, particularly the decrease in saturated fat intake, and drug treatment reduces the subsequent risk of cardiovascular death.[3,4,5,6,7,8]

On the other hand, HDL-cholesterol is negatively associated with cardiovascular disease independent of other major risk factors.[2], This association may be due to HDL's role of 'reverse cholesterol transport' (i.e., HDL promotes the transport of extrahepatic cholesterol back to the liver for elimination). From puberty onwards, women tend to have higher HDL-cholesterol levels than men. This may partly explain the lower cardiovascular disease morbidity and mortality among women than among men of the same age until the menopause.[9]

In this report, informants were classified into the following conventional categories on the basis of their cholesterol concentration:

Total cholesterol level	**Description**
Less than 5.2 mmol/l	Desirable range
≥5.2 but <6.5 mmol/l	Mildly raised
≥6.5 but <7.8 mmol/l	Moderately raised
7.8 mmol/l or over	Severely raised
HDL-cholesterol level	
Less than 0.9 mmol/l	Low
≥0.9 mmol/l	Desirable

It should be noted that the HDL-cholesterol level should be considered in the context of total cholesterol as well. LDL-cholesterol was not measured in the survey. A *proxy* measure, defined as the difference between total cholesterol and HDL-cholesterol (uncorrected for serum triglycerides), was used in this report. LDL-cholesterol is positively related to the risk of cardiovascular disease.

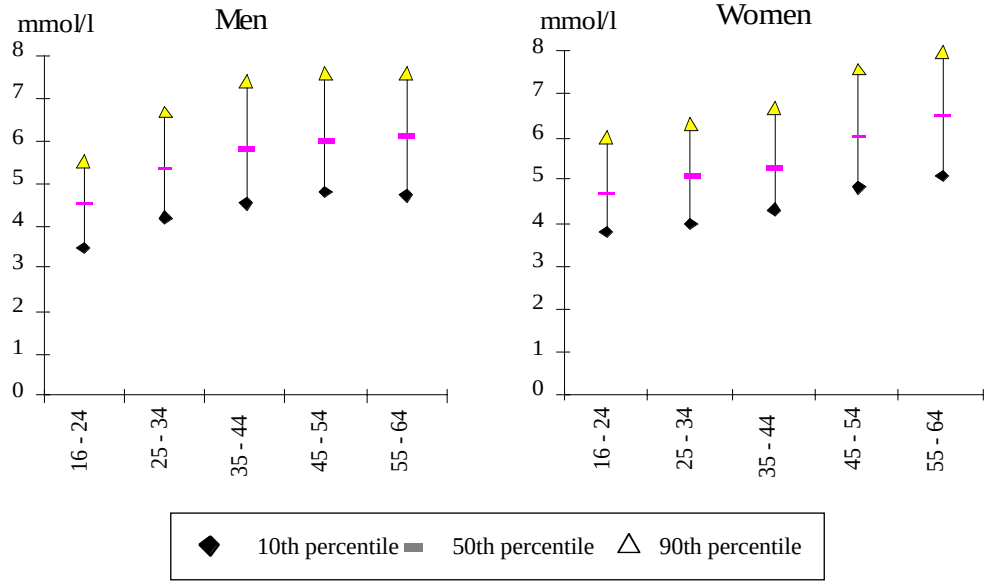
Of the informants who had a valid total and HDL-cholesterol measurement, 46 were on lipid lowering drugs. These informants were included in the analysis. Because of their very small number, it is unlikely they would affect the results presented here.

9.2.2 Total cholesterol by age and sex

Total cholesterol in the sample was approximately normally distributed. Mean cholesterol was the same in men and women (5.6 mmol/l) and increased with age. Men had higher mean cholesterol than women, except in the youngest and oldest age groups.

Although a cholesterol level of 5.2 mmol/l is considered mildly raised, a level of 6.5 mmol/l or above is the more common threshold level for intervention. Overall, 22% of men and 21% of women had a cholesterol level of 6.5 mmol/l or above. Among men, this increased with age up to the 45-54 age group. Among women, this proportion consistently increased with age, particularly in the last two age groups, which is consistent with the reported increase in cholesterol after menopause.[10] As for mean total cholesterol, men had a higher prevalence than women of levels of 6.5 mmol/l or above in age groups 25-34 to 45-54, while the prevalence was higher in the youngest and the oldest groups in women. **Table 9.3, Figures 9A, 9B**

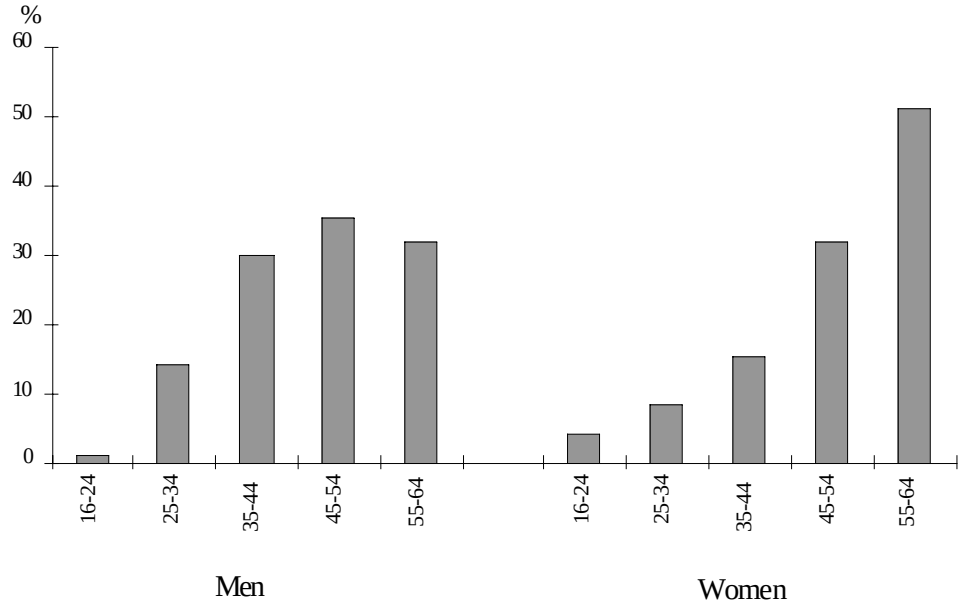
Figure 9A: Total cholesterol, by age and sex



Comparison with the 1994 Health Survey for England

Men and women in Scotland had slightly lower mean total cholesterol than those in England, both overall (5.6 mmol/l compared with 5.7 mmol/l) and in most age groups. The difference in mean total cholesterol between the two surveys was statistically significant in men ($p=0.001$) and women ($p<0.001$) after adjustment for age. These differences remained unchanged after further adjustment for body mass index.

Figure 9B: Percentage of informants with total cholesterol greater than or equal to 6.5 mmol/l, by age and sex



A lower proportion of men had a cholesterol level of 6.5 mmol/l or above in the Scottish survey than in the English survey (22% compared with 26%). After adjustment for age and body mass index, men in the English survey were 1.2 times more likely to have a total cholesterol of 6.5 mmol/l or above than men in the Scottish survey ($p<0.001$). There was no significant difference among women, for which the equivalent figures were 21% in Scotland and 22% in England.

The pattern was similar when Scotland was compared with Northern England alone (which consists of the Northern & Yorkshire and North West regions), although the difference was slightly greater for men. **Table 9.4**

Comparison with the 1984-86 Scottish Heart Health Study (SHHS)

Among adults aged 40-59, mean total cholesterol was higher in the 1984-86 SHHS (6.4 mmol/l among men and 6.6 mmol/l among women) than in the Health Survey (6.1 mmol/l among men and 6.0 mmol/l among women). Mean total cholesterol was higher for each of the five-year age groups. **Table 9.5**

Similarly, the prevalence of having total cholesterol greater than 6.5 mmol/l was higher in the 1984-86 SHHS than in the Health Survey: 42% and 31% respectively in men, and 49% and 29% respectively in women. (Note that the SHHS used 'greater than 6.5 mmol/l' and not '6.5 mmol/l or above' as the threshold for raised total cholesterol.)

9.2.3 Region and total cholesterol

The unadjusted mean total cholesterol ranged in men from 5.5 mmol/l in Lothian & Fife to 5.9 mmol/l in Borders, Dumfries & Galloway, and in women from 5.4 in Lothian & Fife to 5.7 in three regions (Highland & Islands, Borders, Dumfries & Galloway, and Forth Valley, Argyll & Clyde).

The regional variation in age-adjusted mean total cholesterol was statistically significant in men ($p=0.014$) and women ($p=0.048$). Among men, mean total cholesterol in Borders, Dumfries & Galloway was significantly higher by 0.2 mmol/l than the overall mean for men, while in Lothian & Fife it was significantly lower by 0.1 mmol/l.

Women in Lothian & Fife also had significantly lower cholesterol (by 0.1 mmol/l) than women in general in the sample.

The prevalence of having total cholesterol of 6.5 mmol/l or above among men was lowest in Forth Valley, Argyll & Clyde and highest in Borders, Dumfries & Galloway. Among women, it was lowest in Lothian & Fife and highest in Highland & Islands and Forth Valley, Argyll & Clyde. The differences between regions were not, however, significant in either men or women in a logistic regression analysis which adjusted for age. **Table 9.6**

9.2.4 Social class and total cholesterol

Previous studies in England have shown very little variation in total cholesterol between social classes.[1, 11] Similarly, this study found little difference between social classes in both men and women. No significant social class variations were apparent after adjustment for age. **Table 9.7**

9.2.5 Cholesterol monitoring

A greater proportion of men (31%) than women (23%) said they had ever had their blood cholesterol measured by a doctor or a nurse. In both men and women aged 45-64, this proportion was about twice that in the 16-44 age group. **Table 9.8**

Of those who ever had their cholesterol monitored, more than two-thirds (70%) of men and women said it was last measured in the past three years. Those aged 45-64 were more likely than those aged 16-44 to have had their cholesterol level checked in the last year. **Table 9.9**

The proportion of men who said they had ever had their cholesterol monitored was lowest in Highland & Islands, the region with the lowest mean total cholesterol among men; it was highest in Borders, Dumfries & Galloway, the region with the highest mean total cholesterol among men. Among women, the proportion was lowest in Highland & Islands and highest in Greater Glasgow, which were not the regions with either the lowest or highest mean total cholesterol levels among women. The World Health Organisation's MONICA (monitoring trends and determinants in cardiovascular disease) project in Glasgow from 1985 to 1991 may have increased monitoring in this region. [12] (Further details on cholesterol monitoring can be found in Chapter 11.)

Table 9.10

9.2.6 HDL and LDL-cholesterol by age and sex

HDL-cholesterol

Mean HDL-cholesterol was 1.4 mmol/l for all informants. Women had higher HDL-cholesterol than men both overall (1.5 mmol/l versus 1.3 mmol/l) and in all age groups. Mean HDL-cholesterol was the same for all age groups in men, while in women it was slightly higher in the 35-44 and 45-54 age groups. HDL-cholesterol was approximately normally distributed and its variability remained fairly constant with age in both men and women.

Overall, 9% had a HDL-cholesterol level of 0.9 mmol/l or less. The proportion was more than three times higher in men (14%) than in women (4%), and generally increased with age in men (but not in women). **Table 9.11, Figures 9C, 9D**

Figure 9C: HDL-cholesterol, by age and sex

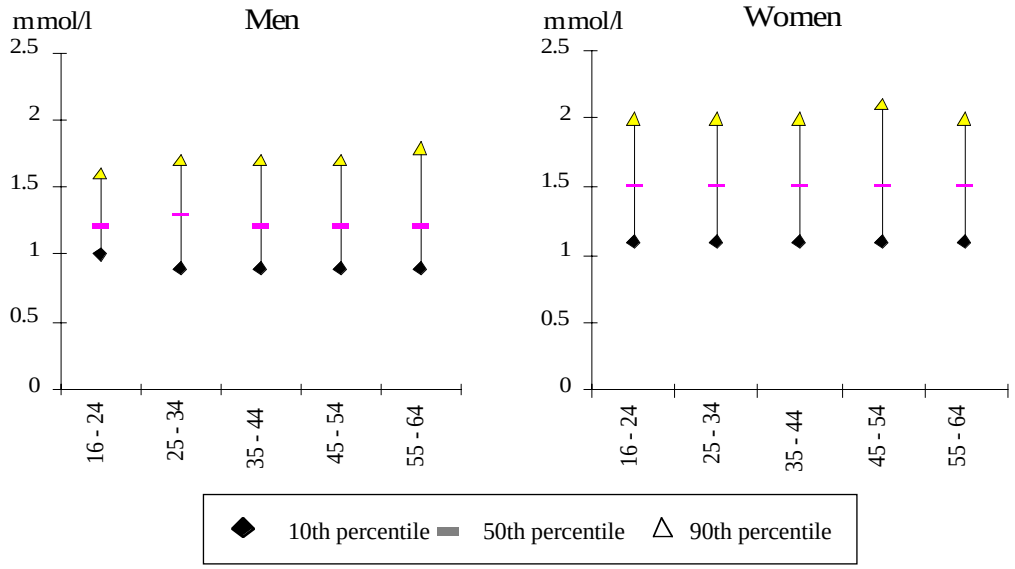
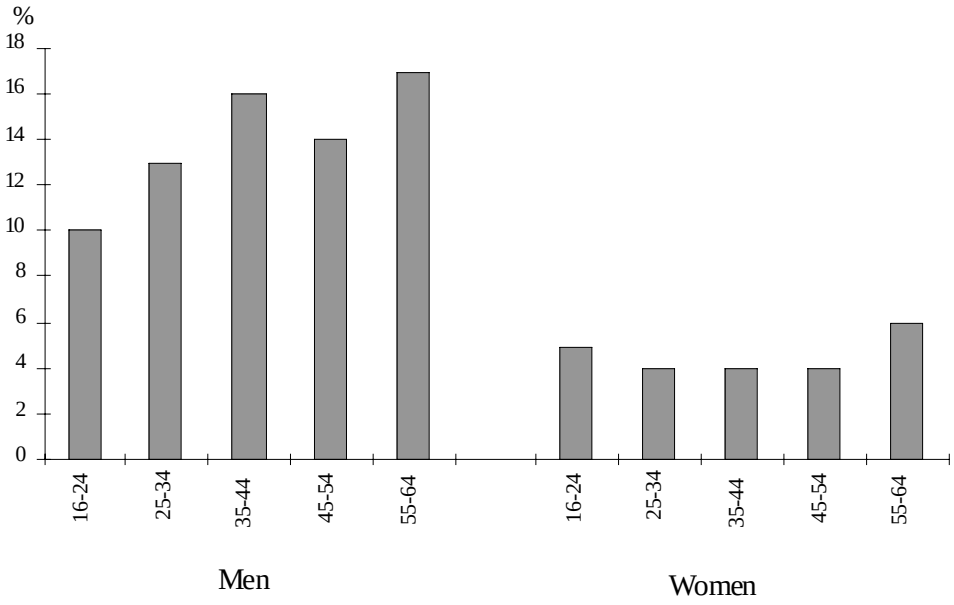


Figure 9D: Percentage of informants with HDL-cholesterol less than 0.9 mmol/l, by age and sex



Comparison with the 1984-86 Scottish Heart Health Study (SHHS)

Among informants aged 40-59, mean HDL-cholesterol was higher in the 1984-86 SHHS (1.36 mmol/l among men and 1.67 mmol/l among women) than in the Health Survey (1.30 mmol/l among men and 1.56 mmol/l among women). Mean HDL-cholesterol was higher in the SHHS in all the five-year age groups in both sexes. However, as mentioned above, differences in assay methods and other aspects of study design should be borne in mind in interpreting these results. **Table 9.12**

Estimated LDL-cholesterol

Mean LDL-cholesterol was estimated as 4.2 mmol/l for all informants, 4.3 mmol/l for men and 4.0 mmol/l for women. Women had lower LDL-cholesterol than men until the 55-64 age group, where women had higher LDL-cholesterol than men. **Table 9.13**

9.2.7 Region and HDL-cholesterol

There were small variations in mean HDL-cholesterol between regions, ranging from 1.2 to 1.3 mmol/l among men and from 1.5 to 1.6 mmol/l among women. In linear regression analyses which adjusted for age, there were significant differences between regions among men ($p=0.004$), with HDL-cholesterol being highest among those living in Grampian & Tayside. No significant variation was found among women.

Among men, the prevalence of having HDL-cholesterol 0.9 mmol/l or less ranged from 11% in Highland & Islands and Grampian & Tayside to 16% in Forth Valley, Argyll & Clyde (compared with 14% overall). Among women the range was narrower, from 3% to 6%. However, there were no significant regional differences in the prevalence of low HDL-cholesterol in either men or women in logistic regression analyses which adjusted for age. **Table 9.14**

9.2.8 Social class and HDL-cholesterol

In general, women in manual social classes tended to have lower HDL-cholesterol than those in non-manual social classes. No such pattern was seen in men. In linear regression analyses which adjusted for age, an inverse gradient between social class and mean HDL-cholesterol was found among women ($p<0.001$) but not among men: mean HDL-cholesterol was significantly lower among women in Social Classes IIINM, IIIM, IV and V than in Social Class I.

The prevalence of having HDL-cholesterol levels of 0.9 mmol/l or less in men increased from 10% in Social Class I to 16% in Social Class IIIM and then declined slightly for Social Classes IV and V. In women the proportion with low HDL-cholesterol was lower in the non-manual Social Classes (I, II, IINM) and higher in the manual social classes, except for Social Class V which had a small base. In a logistic regression analysis which adjusted for age, significant variation in the prevalence of having HDL-cholesterol levels of 0.9 mmol/l or less was found in women ($p<0.001$), with the prevalence being higher among the manual social classes. No significant social class variation was found in men. **Table 9.15**

9.2.9 Total and HDL-cholesterol and lifestyle factors

Body mass index

Total cholesterol increased, and HDL-cholesterol declined, with increasing body mass index (BMI) in both men and women. The associations between BMI and both total and HDL-cholesterol were statistically significant after adjustment for age, cigarette smoking, alcohol consumption, and physical activity. **Tables 9.16, 9.20**

Cigarette smoking

Among women total cholesterol increased, and HDL-cholesterol decreased, as the number of cigarettes smoked per day increased. Among men there was no clear pattern in total cholesterol, and HDL-cholesterol was constant across the different categories of smoking status.

After adjustment for age and other lifestyle factors, a significant positive association was found between smoking and total cholesterol in women ($p<0.001$) with smokers having higher total cholestorol. The association in men was not significant ($p=0.08$), although heavy smokers also tended to have higher total cholesterol than non-smokers. There was a negative association between smoking and HDL-cholesterol in both men and women. **Tables 9.17, 9.20**

Alcohol consumption

Among women total cholesterol declined, and HDL-cholesterol increased, as the weekly quantity of alcohol regularly consumed increased. However, only HDL-cholesterol was significantly associated with alcohol consumption after adjusting for age and lifestyle factors.

Among men HDL-cholesterol increased along with increasing units of alcohol regularly consumed, both before and after adjustment for other factors. Total cholesterol was highest among ex-drinkers but varied little between the other categories of alcohol consumption level; however, after adjusting for age and lifestyle factors, total cholesterol was lower for ex-drinkers than for current drinkers. **Tables 9.18, 9.20**

Physical activity

Among men total cholesterol declined, and HDL-cholesterol remained constant, with increasing levels of physical activity (see Chapter 2 for a description of the frequency-intensity physical activity scale). After adjusting for age and lifestyle factors, physical activity was negatively associated with total cholesterol and positively associated with HDL-cholesterol.

Among women total cholesterol slightly declined, and HDL-cholesterol slightly increased, with increasing levels of physical activity. After adjustment for age and lifestyle factors, however, neither total cholesterol nor HDL-cholesterol was significantly associated with physical activity. **Tables 9.19, 9.20**

9.2.10 Total and HDL-cholesterol and cardiovascular morbidity

Informants were classified as having any cardiovascular disorder if they reported a previous doctor-diagnosis of the following conditions: angina, heart attack, abnormal heart rhythm, heart murmur, other heart trouble, stroke, high blood pressure, or diabetes (see Chapter 10 for a description of cardiovascular disorders).

In the two broad age groups (16-44 and 45-64), both men and women who had any cardiovascular disorder had higher total cholesterol than those who did not have a disorder. HDL-cholesterol was slightly lower for those with a cardiovascular disorder compared with those without a disorder in the 45-64 age group; however, this difference was not found in the 16-44 age group. **Table 9.21**

Regression analyses adjusting for age showed significant associations between having any cardiovascular disorder with both total cholesterol ($p=0.003$ in men and $p<0.001$ in women) and HDL-cholesterol ($p<0.001$ in men and $p=0.001$ in women).

9.3 FIBRINOGEN

Fibrinogen is a soluble protein essential in the blood clotting mechanism. Studies have shown that high fibrinogen is related to increased risk of cardiovascular disease. [13,14] Several factors, particularly smoking, are associated with high fibrinogen levels. [15]

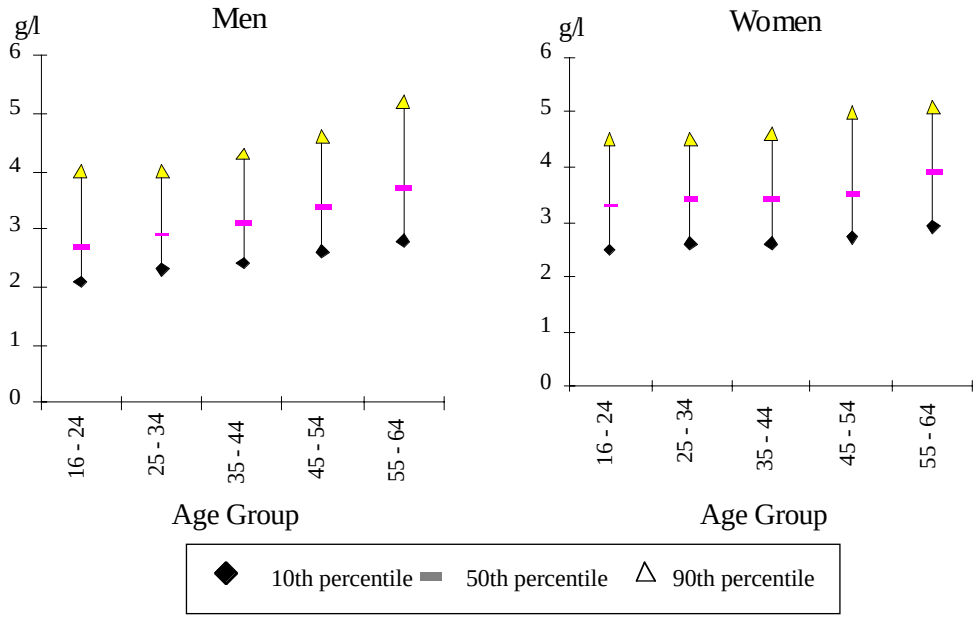
As fibrinogen is not normally distributed, fibrinogen level was logarithmically transformed, and the geometric mean (see the Glossary in the Technical Report) was used as the summary measure.

9.3.1 Fibrinogen by age and sex

The geometric mean fibrinogen was 3.2 g/l in men and 3.5 g/l in women. It increased continuously with age in men, while in women it only increased after the 35-44 age group. Fibrinogen levels were higher in women than in men in all age groups (which is consistent with the findings from the 1994 Health Survey for England).

Table 9.22, Figure 9E

Figure 9E: Fibrinogen, by age and sex



Comparison with the 1994 Health Survey for England

Geometric mean fibrinogen was higher in Scotland than in England: 3.2 g/l in Scotland vs. 2.8 g/l in England among men, and 3.5 g/l vs. 3.0 g/l respectively among women. The levels were higher in Scotland for all age groups. The difference between the two surveys was statistically significant in men ($p<0.001$) and women ($p<0.001$) after adjustment for age. The differences in geometric mean fibrinogen increased for men and decreased for women when Scotland was compared with Northern England alone, where the values were 2.5 g/l in men and 3.2 g/l in women. **Table 9.23**

The higher levels of fibrinogen in Scotland than in England do not seem to be due to differences in smoking habits between the two populations, as smoking prevalence did not differ greatly between the two countries (19.9% in Scotland smoked less than 20 cigarettes a day compared with 19.3% in England; 13.7% and 10.2% respectively smoked 20 or more cigarettes a day). Furthermore, regression analyses adjusting for age and cigarette smoking status did not alter the above findings (i.e., that levels were higher in Scotland).

Comparison with the 1984-86 Scottish Heart Health Study

Only mean fibrinogen levels, and not geometric mean levels, were available for comparison. Mean levels were much higher in the Health Survey than in the SHHS (3.51 g/l compared with 2.31 g/l among men, and 3.70 g/l compared with 2.38 g/l among women), and these differences were apparent for all age groups. **Table 9.24**

9.3.2 Region and fibrinogen

Geometric mean fibrinogen varied in men from 3.1 g/l in Grampian & Tayside and Lothian & Fife to 3.3 g/l in Greater Glasgow and Lanarkshire, Ayrshire & Arran; in women it ranged from 3.4 g/l in Grampian & Tayside and Forth Valley, Argyll & Clyde to 3.6 g/l in Greater Glasgow and Lanarkshire, Ayrshire & Arran. Women had higher fibrinogen than men in all regions. The regional variation in the logarithmically transformed fibrinogen was statistically significant in men ($p=0.001$) and women ($p=0.021$) after adjustment for age. **Table 9.25**

9.3.3 Social class and fibrinogen

Fibrinogen levels were generally lower in the non-manual (I, II, IIINM) than in the manual social classes (IIIM, IV, V). Among men, geometric mean fibrinogen was the same in the non-manual social classes (3.1 g/l), and it then increased from 3.2 g/l in Social Class IIIM to 3.4 g/l in Social Class V. Among women, geometric mean fibrinogen increased from 3.3 g/l in Social Class I to 3.8 g/l in Social Class V. After adjustment for age, the logarithmically transformed fibrinogen was statistically significantly associated with social class in men ($p<0.001$) and women ($p<0.001$), generally increasing from Social Class I to Social Class V. **Table 9.26**

9.3.4 Cigarette smoking and fibrinogen

Mean fibrinogen increased with the level of cigarette smoking in both men and women. Among men, ex-smokers and current smokers had significantly higher levels than never smokers ($p<0.001$). Among women, only current smokers had significantly higher levels ($p<0.001$). **Table 9.27**

9.4 HAEMOGLOBIN

Haemoglobin is the oxygen carrying, iron-containing molecule in red blood cells. The level of haemoglobin is mainly determined by the iron status in the body. Low haemoglobin or anaemia is most commonly caused by iron deficiency which arises when iron requirements exceed supply, either through excessive blood loss or inadequate dietary supply. Women of childbearing age tend to have lower haemoglobin due to menstrual blood loss.

This report uses the World Health Organisation definition of anaemia, which is a haemoglobin concentration of less than 13 g/dl in men and less than 12 g/dl in women.

Of the 6,020 informants who had a valid haemoglobin measurement, 42 (0.7%) were taking iron supplements. These informants were included in the analyses as they did not alter the findings.

9.4.1 Haemoglobin by age and sex

Mean haemoglobin was 15.1 g/dl in men and 13.3 g/dl in women. It varied little between age groups in men. In women it was constant in the younger age groups, decreased in the 35-44 age group and then increased in the older groups.

Overall, 2% of men and 8% of women had low haemoglobin (anaemia). In men the prevalence of anaemia differed little between the 16-24 and 45-54 age groups (1-2%), but was much higher in the oldest age group (6%). In women, the prevalence increased from the 16-24 to 35-44 age groups and declined thereafter.

Table 9.28, Figures 9F, 9G

Figure 9F: Haemoglobin, by age and sex

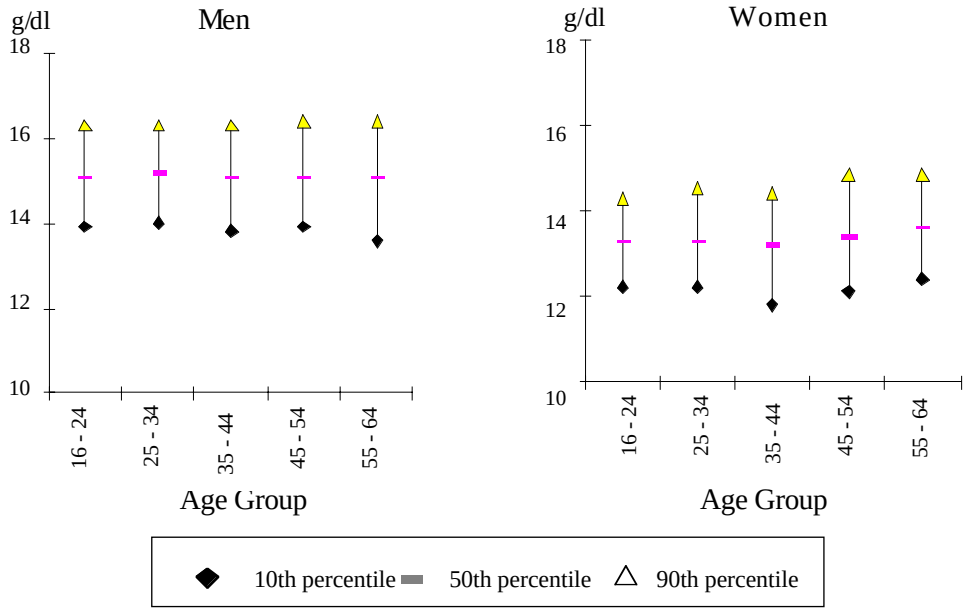
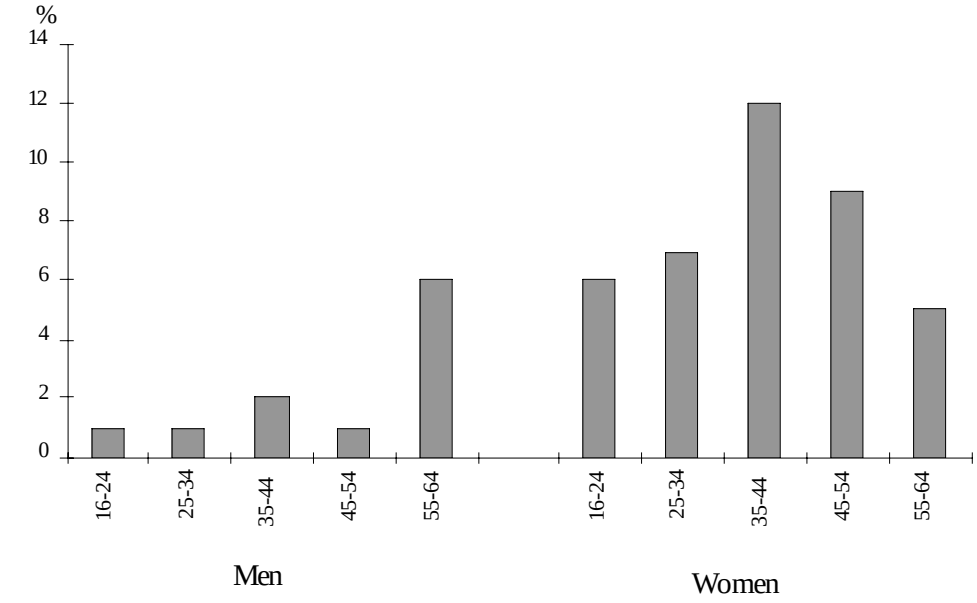


Figure 9G: Percentage of informants with low haemoglobin, by age and sex



Comparison with the 1994 Health Survey for England

Both overall and within age groups for men and women, mean haemoglobin was higher in Scotland than in England. The overall mean for men was 15.1 g/dl in Scotland and 14.9 g/dl in England, while for women the figures were 13.3 g/dl and 13.1 g/dl respectively. The difference in mean haemoglobin between the two surveys was statistically significant in men ($p<0.001$) and women ($p<0.001$) after adjustment for age.

The overall prevalence of anaemia in men was the same in England and Scotland (2%). For women the prevalence was slightly higher in England (11%) than in Scotland (8%). Women in England were 1.4 times more likely to be anaemic than those in Scotland after adjustment for age ($p<0.001$).

As Northern England generally had the same values as all of England, the pattern was similar for both sexes when comparing Scotland with Northern England. **Table 9.29**

9.4.2 Region and haemoglobin

Among men mean haemoglobin was lowest in Lothian & Fife and Borders, Dumfries & Galloway (15.0 g/dl) and highest in Greater Glasgow and Forth Valley, Argyll & Clyde (15.2 g/dl). Among women mean haemoglobin was 13.3 g/dl in all regions except for Grampian & Tayside where it was 13.4 g/dl. After adjustment for age, there was significant variation in mean haemoglobin between regions in men (p=0.013) but not in women.

The prevalence of anaemia among men was lowest in Greater Glasgow and Highland & Islands (1%) and highest in Borders, Dumfries & Galloway (3%). Among women, the prevalence was lowest in Grampian & Tayside and Lanarkshire, Ayrshire & Arran (6%) and highest in Greater Glasgow (10%). The variations in the prevalence of anaemia between regions were not, however, statistically significant for either sex in logistic regression analyses which adjusted for age. **Table 9.30**

9.4.3 Social class and haemoglobin

Mean haemoglobin varied little between social classes in both men and women. No significant associations were found after adjustment for age.

The prevalence of anaemia in men was constant in all social classes (2%). In women the prevalence was higher in Social Classes IIINM, IIIM and IV than in the other social classes, but these variations were not significant. **Table 9.31**

9.5 FERRITIN

Ferritin is a circulating protein which indicates the amount of iron stored in the body. It provides a more definite indicator of low iron status than haemoglobin, as ferritin is often depleted before the haemoglobin concentration when the body's iron status is low. Moreover, low haemoglobin can be due to conditions other than iron deficiency. On the other hand, infection and several diseases can raise the levels of ferritin.

Ferritin was measured by immunoassay, a method which shows a wide variability between laboratories. There is therefore no universally accepted level of ferritin which indicates low iron status. For the purposes of this report, sex specific quintiles (see the Glossary in the Technical Report) were used to categorise ferritin levels. Those in the lowest quintile (less than 54 μg/l for men and less than 20 μg/l for women) were classified as having low ferritin.

As ferritin is not normally distributed, the geometric mean is used in describing ferritin levels.

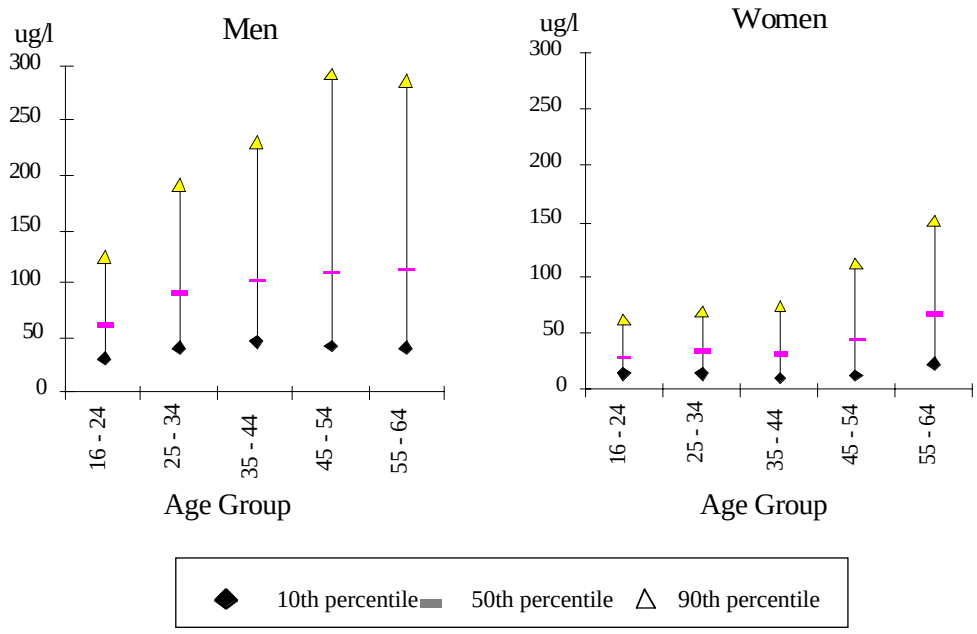
9.5.1 Ferritin by age and sex

Geometric mean ferritin was 94.1 μg/l in men and 37.1 μg/l in women. In both sexes, ferritin generally increased with age: in men from 61.9 μg/l in the 16-24 age group to 111.0 μg/l in the 55-64 age group, and in women from 29.5 μg/l to 63.9 μg/l respectively. Ferritin sharply increased in women between the 45-54 and 55-64 age groups, reflecting the reduced loss of iron after menopause.

The prevalence of low ferritin in men (as defined by the lowest quintile) sharply declined with age up to 35-44 and remained constant thereafter: from 37% in the youngest age group to 14% in the 35-44 age group and above. On the other hand, the prevalence of low ferritin in women did not vary much between the 16-24 to 45-54 age groups (ranging from 19% to 26%), but dropped to 7% in the oldest age group.

Table 9.32, Figure 9H

Figure 9H: Ferritin, by age and sex



Comparison with the 1994 Health Survey for England

Geometric mean ferritin was higher in Scotland than in England: among men, 94.1 µg/l in Scotland and 79.6 µg/l in England, and 37.1 µg/l and 32.6 µg/l respectively among women. The difference was statistically significant in men ($p<0.001$) and women ($p<0.001$) after adjustment for age.

In both Scotland and England, the prevalence of low ferritin (for 16-64 year olds, the lowest quintile in England was defined as less than 46.5 µg/l for men and less than 17 µg/l for women) was markedly higher in the youngest age group in men and markedly lower in the oldest age group in women.

Similar patterns were observed when Scotland was compared with Northern England, as the values in Northern England were similar to those for England as a whole.

Table 9.33

9.5.2 Region and ferritin

Geometric mean ferritin was lowest in Borders, Dumfries & Galloway (82.6) and highest in Greater Glasgow (103.4) in men. It varied little between regions in women. After adjustment for age, ferritin varied significantly between regions in men ($p=0.014$) but not in women. **Table 9.34**

9.5.3 Social class and ferritin

There was no clear pattern in the distribution of ferritin by social class, and age-adjusted ferritin did not vary significantly between social classes in either men or women. **Table 9.35**

9.5.4 Low haemoglobin and ferritin

Among informants with a normal haemoglobin level, 18% of men and 16% of women had low ferritin. In both men and women, this percentage decreased with age.

Table 9.36

The prevalence of having low ferritin only was greater than the prevalence of having low haemoglobin only for both sexes and all age groups (within sex). The prevalence of having both low haemoglobin and low ferritin was higher in women (6%) than in men (2%).

Table 9.37

PART II: VITAMINS AND CAROTENOIDS

9.6 VITAMINS C, A AND E AND CAROTENOIDS

9.6.1 Introduction

As part of the Health Survey, serum concentrations of vitamins C, A and E and carotenoids were measured to determine the nutritional status of micronutrients among informants.

Vitamins are a group of organic compounds which are required in small amounts for the normal functioning of the body. The majority of them cannot be synthesised adequately in the body and hence must be obtained from the diet. Their inadequate intake may result in conditions which have a wide variety of clinical manifestations, such as scurvy (extremely severe vitamin C deficiency) and night blindness (vitamin A deficiency). In recent years, there has been increasing interest in the antioxidant effects of vitamins C and E and carotenoids. For example, low levels of blood concentrations (or dietary intake) of these antioxidants have been related to increased risk for deaths from cardiovascular disease and cancer.[16,17,18]

On the basis of their physical properties, vitamins may be classified into broad categories such as water-soluble vitamins (e.g., vitamin C) and fat-soluble vitamins (e.g., vitamins A and E). In order to assess the nutritional status of these micronutrients amongst individuals, blood levels of vitamins and carotenoids are usually measured.

Vitamin C (ascorbic acid)

Vitamin C is the generic descriptor for compounds exhibiting the biological activity of ascorbic acid. Fresh fruits and vegetables are good dietary sources of vitamin C. The measurement of blood levels of ascorbic acid is the most common procedure for evaluating vitamin C nutritional status in the population. There has been very little published literature on the population distributions of blood levels of vitamin C. A vitamin C level in the range 17-88 μmol/l is usually considered to be biologically acceptable, while 11-16 μmol/l, and less than 11 μmol/l, respectively represent marginal and severe risks of deficiency.[19]

Vitamin A (retinol) and carotenoids (β-carotene and others)

Vitamin A is the generic descriptor for preformed vitamin A (retinol) and some pro-vitamin A carotenoids. Preformed vitamin A is found in food of animal origin such as dairy products, liver and fish. It can also be formed in the body from provitamin A carotenoids such as β-carotene and α-carotene found in green or yellow leafy vegetables, and β-cryptoxanthin predominantly found in fruit, with oranges being the richest source in the Western diet. β-carotene is the most important of the provitamin A carotenoids. Other carotenoids such as lycopene and lutein are thought to have no

provitamin activity. Dietary carotenoids have significant antioxidant activity, regardless of their provitamin A activity.

Blood concentration of retinol remains constant over a wide range of intakes. It is only when liver reserves are nearly depleted that it falls significantly, and it only rises significantly at the onset of toxic signs. Serum retinol below 0.7 μmol/l may be indicative of inadequate vitamin A status or infection.[20]

Vitamin E (α-tocopherol and γ-tocopherol)

Vitamin E is the generic descriptor for several compounds exhibiting the biological activity of α-tocopherol. It has important antioxidant activity. Plant products, particularly plant oils, are rich in vitamin E. As vitamin E is transported in lipoproteins, the amount of vitamin E in the plasma is determined by the amount of lipids in the plasma (particularly cholesterol). Therefore, the α-tocopherol:total cholesterol ratio is the marker of vitamin E status.[21]

There are large tissue reserves of vitamin E in the body. A very low plasma vitamin E level (e.g., α-tocopherol less than 12 μmol/l, or a α-tocopherol:total cholesterol ratio less than 2.25 μmol/mmol) suggests long-term low intake of vitamin E.[22]

In this section, age/sex distributions for vitamins C, A and E and carotenoids are presented. Comments are focused on the 'major' analytes: vitamins C, retinol, β-carotene, α-tocopherol and α-tocopherol:total cholesterol ratio. For these analytes, distributions by several population characteristics and by season are also examined.

9.6.2 Data interpretation

The following issues should be born in mind when interpreting the results presented here.

Representativeness of the sample

Firstly, for practical reasons, the vitamin and carotenoid analyses were only carried out among a sub-sample of informants (approximately 15% of informants participated in this part of the survey); the sampling points for this part of the study were not selected from the whole country and therefore are *not* nationally representative. Because the blood used for these analytes had to be processed (and frozen) within about four hours of venepuncture, it was only possible to include sampling points within, at most, an hour's drive of one of the (seven) local processing laboratories used for sample preparation. Therefore, only a sub-group of sampling points (i.e., postcode sectors) was eligible for inclusion in this part of the study, and 60 sectors in all were selected. The result of the sub-sample selection was that most informants included in the vitamin and carotenoid analysis lived within a relatively short distance of one of these local processing laboratories and they were more heavily concentrated within urban areas (and particularly within the Glasgow and Edinburgh conurbations) than the sample as a whole.

The sub-sample of informants for whom vitamin and carotenoid results were obtained was comparable with the full sample on a number of variables. While the average age of those in the sub-sample was slightly greater than that for the full sample, adjustments for age had little effect on the results.[23] In terms of other likely predictors of vitamin

intake (such as social class), the distribution of the sub-sample was reasonably close to that of the full sample.

Deterioration

There may have been some deterioration of the samples (for example, oxidation) particularly during storage. For logistic reasons, samples were stored for various periods, ranging from one to nine months before they were analysed (see the Technical report for details). In an attempt to evaluate the potential impact of storage on sample deterioration, about 90 samples were re-analysed after nine months of storage at -40^{0}C. A deterioration of 13% in vitamin C concentration was found over this period. However, as vitamin C is the most labile of the analytes measured, and these samples were thawed twice (rather than only once as for all other samples) and had the longest period of storage, it can be concluded that deterioration during storage for most of the other analytes would be minimal.

Fed and fasted blood

Although the majority of samples were taken as non-fasting samples,[24] blood concentrations of retinol, tocopherol (and cholesterol) are not affected by the fed or fasted status. For carotene, it is also very unlikely that food consumed in the previous four hours will have affected blood level. However, fruit or fruit juice consumed within one hour of venepuncture may have an impact on blood levels of vitamin C, and therefore the few informants who said they had consumed fruit or fruit juice during this period were excluded from the vitamin C results (see Section 9.6.3).

9.6.3 Results by age and sex

In the sub-sample of 60 sampling points selected for vitamin and carotenoid analysis, 1361 informants were visited by a nurse. Of them, 1146 provided blood samples for vitamin and carotenoid analysis. Results for vitamins A and E and carotenoids were obtained from 1106 samples; the rest (40) were not analysed because of insufficient samples or other technical reasons.

For vitamin C, the final sample size presented here is 1026 informants. Seventy-four samples were not analysed for technical reasons (of them, 31 samples were thawed on arrival at the assay laboratory). Another 40 thawed samples were analysed but their results were thought to be unreliable. A further six informants were excluded because they had consumed fresh fruit or fruit juice within one hour before the nurse visit.

Vitamin C

Vitamin C is not normally distributed and is skewed to the right. Mean vitamin C was 30.4 μmol/l among men and 37.0 μmol/l among women, with the median being 24.9 μmol/l for men and 33.3 μmol/l for women. Vitamin C levels were higher among those aged 16-44 than those aged 45-64 years in both sexes. These results are somewhat higher than those reported in a small scale study (131 subjects) among adults in Scotland aged 40-49, which showed a median of 18.2 μmol/l and a 5th and a 95th percentile of 5.7 μmol/l and 61.3 μmol/l respectively.[25]

While the majority of informants (61% of men and 72% of women) had vitamin C levels above 17 μmol/l (the biologically acceptable level), 25% of men and 15% of women had vitamin C concentrations below 11 μmol/l which is indicative of severe *risk* of deficiency. The proportions with vitamin C levels less than 11 μmol/l tended to be higher among those aged 45-64 years than among younger informants (16-44 years) in both sexes. These results should be interpreted with caution as possible deterioration may have occurred during storage (see Section 9.6.2). **Table 9.38**

Vitamin A (retinol) and carotenoids (β-carotene and others)

Retinol is approximately normally distributed. Mean retinol was 2.6 μmol/l among men and 2.4 μmol/l among women. It increased slightly with age in both sexes, with mean retinol being slightly higher among those aged 45-64 than those aged under 45.

Very few (0.2%) informants in either sex had retinol levels below 0.7 μmol/l which is suggestive of inadequate vitamin A status or infection.

β-carotene is not normally distributed and is skewed to the right. In general, men had lower β-carotene concentration than women, which is consistent with an earlier study.[26] Mean β-carotene was 0.32 μmol/l (median: 0.27) among men and 0.42 μmol/l (median: 0.34) among women. Informants aged 45-64 tended to have slightly higher β-carotene than those aged under 45. **Table 9.38**

Results for retinol and β-carotene were slightly higher than those reported by the national Dietary and Nutritional Survey of British Adults (NDNS).[27] The NDNS was carried out in 1986-1987 among a nationally representative sample of adults aged 16-64 years, with data on fat-soluble vitamins and carotenoids available for approximately 2000 individuals in the UK (of whom 150 were in Scotland).

Results for other carotenoids including α-carotene, β-cryptoxanthin, α-cryptoxanthin, lycopene and lutein are also presented in Table 9.38. In general, women tended to have higher concentrations of α-carotene and β-cryptoxanthin than men, but there was little difference in the other carotenoids between the sexes. There was no clear pattern between informants aged 16-44 and those aged 45-64 years. **Table 9.38**

Vitamin E

Among both men and women, α-tocopherol is approximately normally distributed. Mean α-tocopherol was 30.8 μmol/l among men and 30.1 μmol/l among women. The mean α-tocopherol:total cholesterol ratio was 5.39 μmol/mmol in men and 5.47 μmol/mmol in women. Although older informants had higher mean α-tocopherol in both sexes, no such difference was found in the ratio. In fact, women aged 45-64 had a lower α-tocopherol:total cholesterol ratio (5.30 μmol/mmol) than women aged 16-44 (5.57 μmol/mmol). The Health Survey results were slightly higher than those reported by the NDNS.[28] **Table 9.38**

Very few informants in either sex had α-tocopherol below 12 μmol/l (0.4% for men and women) or α-tocopherol: total cholesterol ratio below 2.25 μmol/mmol (0.2% for men and 0.5% for women), which are indicative of long-term low vitamin E intake.

Results for γ-tocopherol are also presented in Table 9.38.

9.6.4 Results by social class

Given the known variations in diet and health between social classes, levels of vitamins C, A, and E and carotenoids are examined by social class of the chief income earner within the informant's household (see the Glossary in the Technical Report for details of this classification). In view of the much smaller number of informants for whom vitamin and carotenoid results were available, it was necessary to group social class into the two broad categories of non-manual (Social Classes I, II and IIINM) and manual (Social Classes IIIM, IV and V).

Vitamin C

Vitamin C varied between social classes, with men and women from non-manual social classes having higher levels than those from manual social classes. Among men, mean vitamin C was 37.6 μmol/l (median: 35.4) in the non-manual social classes compared with 24.4 μmol/l (median: 18.5) in the manual social classes. Among women, mean vitamin C was 41.7 μmol/l (median: 40.5) in the non-manual social classes compared

with 31.7 μmol/l (median: 25.3) in the manual social classes. After adjustment for age using linear regression, there were statistically significant differences in log transformed vitamin C concentrations, which were lower among men and women from manual than from non-manual social classes ($p<0.001$).

Informants from manual social classes were also more likely to have vitamin C levels below 11 μmol/l. Among men, the proportion was 35% in manual social classes compared with 14% in non-manual social classes. The corresponding figures for women were 22% and 8% respectively. The differences were statistically significant after adjustment for age using logistic regression. **Table 9.39**

Vitamin A (retinol) and carotenoids (β-carotene)

There was very little difference in preformed vitamin A (retinol) concentration between informants from manual and non-manual social classes for either sex. Among men, mean retinol was 2.7 μmol/l in the non-manual social classes compared with 2.6 μmol/l in the manual social classes, while among women mean retinol was 2.4 μmol/l for both manual and non-manual social classes. **Table 9.39**

There was some variation in β-carotene, the major provitamin A carotenoid. Informants in the non-manual social classes had higher β-carotene concentrations than those in manual social classes in both age groups for both sexes. Among men, mean β-carotene was 0.34 μmol/l (median: 0.29) in non-manual social classes compared with 0.29 μmol/l (median: 0.26) in manual social classes. The equivalent figures for women were 0.46 μmol/l (median: 0.37) and 0.37 μmol/l (median: 0.32) respectively. The differences in β-carotene between manual and non-manual social classes were statistically significant for both sexes ($p<0.001$), after adjustment for age.

Vitamin E

There was also some social class variation in α-tocopherol concentrations. Mean α-tocopherol was 31.3 μmol/l and 30.8 μmol/l for non-manual and manual social classes respectively among men; among women, the corresponding figures were 30.1 μmol/l and 29.8 μmol/l.

Similarly, there were small non-significant differences in the α-tocopherol:total cholesterol ratio between non-manual and manual social classes, being 5.5 μmol/mmol in non-manual, and 5.3 in manual, social classes among men; the corresponding figures for women were 5.6 and 5.3 μmol/mmol. **Table 9.39**

9.6.5 Results by season

Results of vitamins C, A and E and β-carotene by season are presented in Table 9.40. (When interpreting these results, it should be borne in mind that blood samples collected between April and November were stored for longer periods than samples collected during the other months of fieldwork.)

Among both men and women, vitamin C levels were lowest in Spring (March to May), with means of 26.4 μmol/l (median: 14.6) for men and 33.7 μmol/l (median: 29.0) for women; vitamin C levels were similar in the other seasons.

Retinol levels showed little variation between seasons. β-carotene was slightly lower in winter than in the other seasons for both sexes.

Mean α-tocopherol and the α-tocopherol:total cholesterol ratio also showed very little variation between seasons, although both α-tocopherol and the ratio tended to be slightly lower in summer. **Table 9.40**

In linear regression analysis adjusted for age, there was no statistically significant difference in these analytes between seasons in either sex.

9.6.6 Results by other population characteristics

This section presents results of vitamins C, A and E and β-carotene by cigarette smoking and alcohol consumption for men and women.

Cigarette smoking

There were significant variations in log transformed vitamin C concentrations between smoking categories after adjustment for age in both sexes ($p<0.001$ for both men and women). Current smokers had significantly lower vitamin C levels than non-smokers. For example, among men, mean vitamin C was 21.4 μmol/l (median: 13.5) in those who smoked 1-19 cigarettes a day and 20.0 μmol/l (median: 13.5) in those who smoked 20 or more cigarettes a day compared with 35.3 μmol/l (median: 31.9) among non-smokers. Mean vitamin C concentrations were similar for ex-smokers and non-smokers.

Table 9.41

Retinol concentration was significantly associated with smoking categories in men ($p=0.024$) after adjustment for age, with ex-smokers having significantly higher mean retinol than non-smokers. No such associations were found among women.

Mean β-carotene, the major provitamin A carotenoid, was significantly related to cigarette smoking after adjustment for age ($p<0.001$ for both men and women), with current smokers having significantly lower levels of β-carotene in both sexes. For example, among men, mean β-carotene was 0.28 μmol/l and 0.25 μmol/l among those who smoked 1-19 and 20 or more cigarettes per day respectively, compared with 0.29 μmol/l among non-smokers. **Table 9.41**

Mean α-tocopherol was significantly associated with cigarette smoking status in men ($p=0.003$, adjusted for age), with those who smoked 20 or more cigarettes a day having significantly higher concentrations of α-tocopherol. No such associations were found among women.

There were significant differences in mean α-tocopherol:total cholesterol ratio between smoking status adjusted for age, particularly for men ($p<0.001$ for men and $p=0.04$ for women). Among men, mean α-tocopherol:total cholesterol ratio was 5.15 μmol/mmol and 4.95 among those who smoked 1-19 and 20 or more cigarettes per day respectively, compared with 5.51 among non-smokers. **Table 9.41**

Alcohol consumption

Among men, alcohol consumption was significantly related to log transformed vitamin C, retinol and mean β-carotene concentrations after adjustment for age. Vitamin C was higher among men who consumed alcohol regularly. Those who drank 1-21 units per week had significantly higher vitamin C compared with non/occasional drinkers. Those who drank alcohol also had significantly higher levels of retinol than non/occasional drinkers. However, those who drank over 21 units of alcohol per week had significantly lower levels of β-carotene.

Among women, alcohol consumption was only significantly related to retinol. Those who drank alcohol tended to have higher retinol levels than non-drinkers. **Table 9.42**

In summary, current cigarette smoking was related to lower mean values of vitamin C, β-carotene and α-tocopherol:total cholesterol ratio in both men and women and to α-tocopherol in men. Alcohol consumption was related to higher mean values of retinol in both sexes, but lower mean β-carotene and higher mean vitamin C in men. These results are generally consistent with findings from other studies.[27,28]

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23 Because of the differences in sample selection, the weighting factors used for the bulk of the analyses in this report do not apply to the results for vitamins and carotenoids. All results described in this section are based on *un*weighted data. As a check, the sub-sample was weighted by age and sex so that it would match the age/sex distribution for the full achieved sample. However, as the weighted results were much the same as the unweighted results, only the latter are presented. No attempt was made to weight the data for other potential selection biases.

24 Informants were instructed to avoid certain foods before the nurse visit, such as fruit, fruit juices, dairy products, margarine, fatty meat and fried foods. While most informants did not eat these foods within one hour of the nurse visit, quite a high proportion had consumed one or more of these food types within four hours of the visit. For example, among the 1106 informants who had vitamins A and E and carotenoid results, 751 of them had consumed one or more of these types of food within four hours of venepuncture.

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CHAPTER 9 - LIST OF TABLES

Table 9.1 Response to blood sample, by age and sex

All who had a nurse visit *1995*

Response to blood sample	Age					
	16-44		45-64		**Total**	
	N	%	N	%	N	%
Men						
Consent and blood obtained	1702	91	1153	93	2855	92
Consent given, no blood obtained	33	2	26	2	59	2
Ineligible[a]	9	0	10	1	19	1
Refused	125	7	52	4	177	6
Women						
Consent and blood obtained	1971	84	1357	91	3328	86
Consent given, no blood obtained	81	3	54	4	135	4
Ineligible[a]	109	5	17	1	126	3
Refused	192	8	67	4	259	7
All informants						
Consent and blood obtained	3673	87	2510	92	6183	89
Consent given, no blood obtained	114	3	80	3	194	3
Ineligible[a]	118	3	27	1	145	2
Refused	317	8	119	4	436	6
Bases (unweighted)						
Men		*1869*		*1241*		*3110*
Women		*2353*		*1495*		*3848*
All informants		*4222*		*2736*		*6958*

[a]Ineligibles include informants who were pregnant, had a bleeding or clotting disorder, were on oral anticoagulants, or were aged 16-17 and parental or guardian consent was not available.

Table 9.2 Percent of valid samples for each analyte, by age and sex

All who gave a blood sample *1995*

Blood analyte	Age					
	16-44		45-64		**Total**	
	N	%	N	%	N	%
Men						
Total cholesterol	1689	99	1142	99	2831	99
HDL-cholesterol	1663	98	1119	97	2782	97
Fibrinogen	1604	94	1088	94	2692	94
Haemoglobin	1667	98	1120	97	2787	98
Ferritin	1668	98	1124	97	2792	98
Women						
Total cholesterol	1953	99	1347	99	3300	99
HDL-cholesterol	1932	98	1321	97	3253	98
Fibrinogen	1840	93	1274	94	3114	94
Haemoglobin	1917	97	1316	97	3233	97
Ferritin	1919	97	1315	97	3234	97
All informants						
Total cholesterol	3642	99	2489	99	6131	99
HDL-cholesterol	3595	98	2440	97	6035	98
Fibrinogen	3444	94	2362	94	5806	94
Haemoglobin	3584	98	2436	97	6020	97
Ferritin	3587	98	2439	97	6026	97
Bases (unweighted)						
Men		*1702*		*1153*		*2855*
Women		*1971*		*1357*		*3328*
All informants		*3673*		*2510*		*6183*

Table 9.3 Total cholesterol, by age and sex

All with a valid cholesterol measurement *1995*

Cholesterol (mmol/l)	Age					Total
	16-24	25-34	35-44	45-54	55-64	
	%	%	%	%	%	%
Men						
Less than 5.2	82	43	26	17	19	37
5.2, less than 6.5	17	42	44	48	49	40
6.5, less than 7.8	1	12	25	27	26	18
7.8 or more	-	3	5	8	7	4
Mean	4.4	5.4	5.9	6.1	6.1	5.6
Standard error of the mean	0.03	0.04	0.04	0.04	0.05	0.02
5th percentile	3.2	3.8	4.3	4.5	4.4	3.7
10th percentile	3.4	4.2	4.5	4.8	4.8	4.2
Median	4.4	5.3	5.8	6.0	6.0	5.5
90th percentile	5.4	6.7	7.4	7.6	7.5	7.2
95th percentile	5.6	7.3	7.8	8.0	8.0	7.7
Women						
Less than 5.2	74	54	41	19	11	39
5.2, less than 6.5	22	38	44	49	38	39
6.5, less than 7.8	4	7	12	25	38	17
7.8 or more	0	1	2	7	13	4
Mean	4.7	5.1	5.4	6.1	6.5	5.6
Standard error of the mean	0.04	0.04	0.04	0.04	0.05	0.02
5th percentile	3.6	3.8	4.0	4.4	4.7	3.9
10th percentile	3.8	4.0	4.3	4.8	5.1	4.2
Median	4.6	5.0	5.3	6.0	6.5	5.4
90th percentile	5.7	6.3	6.7	7.5	7.9	7.2
95th percentile	6.3	6.8	7.3	7.9	8.4	7.7
All informants						
Less than 5.2	78	48	33	18	15	38
5.2, less than 6.5	19	40	44	49	43	40
6.5, less than 7.8	2	10	19	26	32	18
7.8 or more	0	2	4	7	10	4
Mean	4.6	5.3	5.7	6.1	6.3	5.6
Standard error of the mean	0.03	0.03	0.03	0.03	0.04	0.02
5th percentile	3.4	3.8	4.2	4.4	4.5	3.8
10th percentile	3.6	4.1	4.4	4.8	4.9	4.2
Median	4.5	5.2	5.5	6.0	6.2	5.5
90th percentile	5.5	6.6	7.1	7.6	7.8	7.2
95th percentile	6.0	7.1	7.6	8.0	8.3	7.7
Bases (weighted)						
Men	*540*	*801*	*721*	*628*	*494*	*3185*
Women	*435*	*696*	*712*	*643*	*500*	*2986*
All informants	*974*	*1498*	*1434*	*1272*	*994*	*6171*
Bases (unweighted)						
Men	*342*	*676*	*671*	*584*	*558*	*2831*
Women	*338*	*811*	*804*	*673*	*674*	*3300*
All informants	*680*	*1487*	*1475*	*1257*	*1232*	*6131*

Table 9.4 Total cholesterol in the 1995 Scottish Health Survey and the 1994 Health Survey for England, by age and sex

All with a valid cholesterol measurement *Scottish Health Survey 1995 and Health Survey for England 1994*

Cholesterol (mmol/l)	Age					Total
	16-24	25-34	35-44	45-54	55-64	
	%	%	%	%	%	%
Men						
Scotland						
Less than 5.2	82	43	26	17	19	37
5.2, less than 6.5	17	42	44	48	49	40
6.5, less than 7.8	1	12	25	27	26	18
7.8 or more	-	3	5	8	7	4
Mean	4.4	5.4	5.9	6.1	6.1	5.6
Standard error of the mean	0.03	0.04	0.04	0.04	0.05	0.02
England						
Less than 5.2	74	46	24	17	14	33
5.2, less 6.5	23	40	45	44	45	40
6.5, less 7.8	3	12	23	28	31	20
7.8 and over	1	2	7	11	10	6
Mean	4.7	5.3	6.0	6.3	6.2	5.7
Standard error of the mean	0.04	0.03	0.03	0.04	0.04	0.02
Northern England[a]						
Less than 5.2	76	44	22	17	15	33
5.2, less 6.5	18	36	45	41	43	38
6.5, less 7.8	5	17	28	29	35	23
7.8 and over	1	2	6	13	7	6
Mean	4.6	5.4	6.0	6.3	6.2	5.8
Standard error of the mean	0.07	0.07	0.06	0.07	0.07	0.03
Women						
Scotland						
Less than 5.2	74	54	41	19	11	39
5.2, less 6.5	22	38	44	49	38	39
6.5, less than 7.8	4	7	12	25	38	17
7.8 or more	0	1	2	7	13	4
Mean	4.7	5.1	5.4	6.1	6.5	5.6
Standard error of the mean	0.04	0.04	0.04	0.04	0.05	0.02
England						
Less than 5.2	65	53	37	19	7	36
5.2, less 6.5	30	37	49	49	36	41
6.5, less 7.8	4	8	11	25	35	16
7.8 and over	0	2	2	7	22	6
Mean	4.9	5.2	5.5	6.1	6.8	5.7
Standard error of the mean	0.04	0.03	0.03	0.04	0.04	0.02
Northern England[a]						
Less than 5.2	64	54	36	18	7	36
5.2, less 6.5	32	36	51	52	36	43
6.5, less 7.8	4	8	10	23	33	15
7.8 and over	-	3	2	7	24	6
Mean	4.9	5.2	5.5	6.0	6.8	5.7
Standard error of the mean	0.06	0.06	0.06	0.06	0.09	0.03

[a]Consists of Northern & Yorkshire and North West health regions

Continued…

Table 9.4 - continued

Cholesterol (mmol/l)	Age					Total
	16-24	25-34	35-44	45-54	55-64	
Bases (weighted)						
Scotland						
Men	*540*	*801*	*721*	*628*	*494*	*3185*
Women	*435*	*696*	*712*	*643*	*500*	*2986*
Bases (unweighted)						
Men						
Scotland	*342*	*676*	*671*	*584*	*558*	*2831*
England	*635*	*1090*	*1069*	*856*	*755*	*4405*
Northern England	*176*	*299*	*279*	*238*	*222*	*1214*
Women						
Scotland	*338*	*811*	*804*	*673*	*674*	*3300*
England	*588*	*1097*	*1104*	*967*	*765*	*4521*
Northern England	*165*	*299*	*294*	*261*	*184*	*1203*

Table 9.5 Total cholesterol in the 1984-86 Scottish Heart Health Study and the 1995 Scottish Health Survey, by age and sex

All aged 40-59 with a valid total cholesterol measurement *1995*

Cholesterol (mmol/l)	Age				Total
	40-44	45-49	50-54	55-59	
Men					
1984-86 Heart Health Study[a]					
6.5 or less	[b]	[b]	[b]	[b]	58
Greater than 6.5[c]	[b]	[b]	[b]	[b]	42
Mean	6.3	6.4	6.4	6.4	6.4
Standard deviation	1.2	1.2	1.1	1.1	1.2
1995 Health Survey					
6.5 or less	69	73	62	70	69
Greater than 6.5 [c]	31	27	38	30	31
Mean	6.0	6.0	6.2	6.1	6.1
Standard deviation	1.2	1.1	1.1	1.1	1.1
Women					
1984-86 Heart Health Study[a]					
6.5 or less	[b]	[b]	[b]	[b]	51
Greater than 6.5[c]	[b]	[b]	[b]	[b]	49
Mean	5.9	6.3	6.9	7.2	6.6
Standard deviation	1.1	1.2	1.3	1.3	1.3
1995 Health Survey					
6.5 or less	83	76	67	54	71
Greater than 6.5[c]	17	24	33	46	29
Mean	5.6	5.9	6.3	6.4	6.0
Standard deviation	1.0	1.1	1.1	1.1	1.1
Bases					
Men					
1984-86 Heart Health Study[a]	*1263*	*1202*	*1364*	*1294*	*5123*
1995 Health Survey (weighted)	*351*	*352*	*276*	*257*	*1236*
1995 Health Survey (unweighted)	*313*	*319*	*265*	*277*	*1174*
Women					
1984-86 Heart Health Study[a]	*1342*	*1262*	*1346*	*1286*	*5236*
1995 Health Survey(weighted)	*346*	*360*	*283*	*267*	*1256*
1995 Health Survey (unweighted)	*355*	*351*	*322*	*324*	*1352*

[a]Number of participants in the survey

[b]Data not available

[c]The SHHS used 'greater than 6.5 mmol/l' and not '6.5 mmol/l or above' to define raised total cholesterol.

Table 9.6 Total cholesterol, by region, age and sex

All with a valid cholesterol measurement *1995*

Cholesterol (mmol/l)	Region							Total
	Highland & Islands	Grampian & Tayside	Lothian & Fife	Borders, Dumfries & Galloway	Greater Glasgow	Lanarkshire, Ayrshire & Arran	Forth Valley, Argyll & Clyde	
Men								
16-44								
Less than 5.2	48	48	54	43	44	44	42	47
5.2, less than 6.5	33	35	30	35	41	39	42	36
6.5, less than 7.8	15	13	14	15	13	15	13	14
7.8 or more	3	4	3	7	2	2	2	3
Mean	5.3	5.3	5.2	5.5	5.3	5.4	5.4	5.3
Standard error of the mean	0.12	0.06	0.05	0.14	0.07	0.06	0.06	0.03
45-64								
Less than 5.2	23	19	19	15	17	18	15	18
5.2, less than 6.5	46	48	47	43	45	49	55	48
6.5, less than 7.8	23	28	27	27	27	27	24	27
7.8 or more	8	4	7	14	11	6	6	7
Mean	6.0	6.0	6.0	6.4	6.3	6.1	6.1	6.1
Standard error of the mean	0.14	0.07	0.08	0.15	0.08	0.07	0.10	0.03
All ages								
Less than 5.2	39	38	43	32	33	34	33	37
5.2, less than 6.5	38	39	35	38	42	43	46	40
6.5, less than 7.8	18	18	18	20	19	20	17	18
7.8 or more	5	4	4	10	6	4	4	4
Mean	5.6	5.6	5.5	5.9	5.7	5.6	5.7	5.6
Standard error of the mean	0.09	0.05	0.04	0.11	0.05	0.05	0.06	0.02
Women								
16-44								
Less than 5.2	48	51	58	51	53	55	51	54
5.2, less than 6.5	40	37	35	41	39	34	35	37
6.5, less than 7.8	11	11	7	7	6	10	10	9
7.8 or more	1	1	1	1	2	1	3	1
Mean	5.3	5.2	5.0	5.2	5.2	5.1	5.3	5.2
Standard error of the mean	0.10	0.06	0.04	0.09	0.05	0.05	0.06	0.02
45-64								
Less than 5.2	14	17	21	12	14	12	14	16
5.2, less than 6.5	41	44	44	41	43	50	42	44
6.5, less than 7.8	36	28	29	36	34	29	31	31
7.8 or more	10	11	6	11	9	10	13	10
Mean	6.3	6.2	6.1	6.4	6.3	6.2	6.3	6.2
Standard error of the mean	0.14	0.08	0.08	0.15	0.08	0.07	0.09	0.03
All ages								
Less than 5.2	34	37	45	35	38	38	38	39
5.2, less than 6.5	40	40	38	41	40	40	38	39
6.5, less than 7.8	21	18	14	19	17	17	18	17
7.8 or more	4	5	2	5	4	5	7	4
Mean	5.7	5.6	5.4	5.7	5.6	5.6	5.7	5.6
Standard error of the mean	0.09	0.05	0.04	0.10	0.05	0.05	0.06	0.02

Continued ....

Table 9.6 - continued

1995

Cholesterol (mmol/l)	Region							Total
	Highland & Islands	Grampian & Tayside	Lothian & Fife	Borders, Dumfries & Galloway	Greater Glasgow	Lanarkshire, Ayrshire & Arran	Forth Valley, Argyll & Clyde	
Bases (weighted)								
Men								
16-44	*107*	*417*	*498*	*86*	*307*	*373*	*275*	*2062*
45-64	*63*	*206*	*218*	*56*	*201*	*236*	*142*	*1122*
All men	*170*	*622*	*715*	*141*	*509*	*610*	*418*	*3185*
Women								
16-44	*97*	*291*	*430*	*84*	*334*	*341*	*266*	*1843*
45-64	*65*	*207*	*215*	*57*	*215*	*225*	*159*	*1143*
All women	*162*	*498*	*644*	*141*	*549*	*567*	*425*	*2986*
Bases (unweighted)								
Men								
16-44	*157*	*304*	*357*	*129*	*223*	*298*	*221*	*1689*
45-64	*128*	*181*	*199*	*101*	*170*	*222*	*141*	*1142*
All men	*285*	*485*	*556*	*230*	*393*	*520*	*362*	*2831*
Women								
16-44	*183*	*271*	*391*	*166*	*309*	*364*	*269*	*1953*
45-64	*145*	*211*	*232*	*122*	*211*	*260*	*166*	*1347*
All women	*328*	*482*	*623*	*288*	*520*	*624*	*435*	*3300*

Table 9.7 Total cholesterol, by social class of chief income earner, age and sex

All with a valid total cholesterol measurement *1995*

Cholesterol (mmol/l)	Social class of chief income earner						Total[a]
	I	II	IIINM	IIIM	IV	V	
	%	%	%	%	%	%	%
Men							
16-44							
Less than 5.2	44	44	43	50	44	54	47
5.2, less than 6.5	36	36	44	34	38	32	36
6.5, less than 7.8	15	17	9	14	17	9	14
7.8 or more	5	3	4	2	2	5	3
Mean	5.5	5.4	5.4	5.3	5.4	5.2	5.3
Standard error of the mean	0.10	0.05	0.07	0.05	0.07	0.14	0.03
45-64							
Less than 5.2	21	15	13	19	22	16	18
5.2, less than 6.5	46	46	55	50	45	46	48
6.5, less than 7.8	27	31	24	24	25	32	27
7.8 or more	7	8	8	7	8	6	7
Mean	6.0	6.2	6.2	6.1	6.0	6.0	6.1
Standard error of the mean	0.12	0.06	0.11	0.06	0.09	0.17	0.03
All men							
Less than 5.2	36	33	35	38	36	39	37
5.2, less than 6.5	39	40	47	40	40	38	40
6.5, less than 7.8	19	22	13	18	20	18	18
7.8 or more	6	5	5	4	4	5	4
Mean	5.7	5.7	5.6	5.6	5.6	5.5	5.6
Standard error of the mean	0.08	0.04	0.06	0.04	0.06	0.11	0.02
Bases (weighted)							
Men							
16-44	*145*	*518*	*270*	*637*	*277*	*87*	*2062*
45-64	*82*	*313*	*101*	*400*	*140*	*55*	*1122*
All men	*227*	*830*	*371*	*1037*	*417*	*142*	*3185*
Bases (unweighted)							
Men							
16-44	*120*	*418*	*218*	*518*	*233*	*81*	*1689*
45-64	*77*	*296*	*105*	*406*	*154*	*70*	*1142*
All men	*197*	*714*	*323*	*924*	*387*	*151*	*2831*

Continued…

Table 9.7 - continued

1995

Cholesterol (mmol/l)	Social class of chief income earner						Total[a]
	I	II	IIINM	IIIM	IV	V	
	%	%	%	%	%	%	%
Women							
16-44							
Less than 5.2	54	56	53	51	51	46	54
5.2, less than 6.5	39	35	37	39	37	41	37
6.5, less than 7.8	7	8	9	9	10	10	9
7.8 or more	-	2	2	1	2	3	1
Mean	5.1	5.2	5.2	5.2	5.2	5.3	5.2
Standard error of the mean	0.08	0.04	0.06	0.04	0.06	0.13	0.02
45-64							
Less than 5.2	11	18	19	13	14	16	16
5.2, less than 6.5	48	47	44	46	39	41	44
6.5, less than 7.8	31	27	27	32	34	35	31
7.8 or more	9	8	11	9	13	7	10
Mean	6.2	6.2	6.2	6.2	6.4	6.2	6.2
Standard error of the mean	0.13	0.06	0.08	0.06	0.09	0.13	0.03
All women							
Less than 5.2	39	40	41	36	37	32	39
5.2, less than 6.5	42	40	39	42	38	41	39
6.5, less than 7.8	15	16	15	18	19	22	17
7.8 or more	3	4	5	4	6	5	4
Mean	5.5	5.6	5.5	5.6	5.7	5.8	5.6
Standard error of the mean	0.08	0.04	0.05	0.04	0.06	0.10	0.02
Bases (weighted)							
Women							
16-44	*129*	*440*	*325*	*470*	*254*	*75*	*1843*
45-64	*69*	*319*	*184*	*314*	*157*	*67*	*1143*
All women	*198*	*759*	*509*	*784*	*411*	*142*	*2986*
Bases (unweighted)							
Women							
16-44	*121*	*452*	*390*	*449*	*305*	*89*	*1953*
45-64	*72*	*375*	*232*	*333*	*198*	*92*	*1347*
All women	*193*	*827*	*622*	*782*	*503*	*181*	*3300*

[a]The total includes informants for whom social class was unknown.

Table 9.8 Proportion of informants who ever had their cholesterol measured, by age and sex

All *1995*

	Age		Total
	16-44	45-64	
	%	%	%
Men			
Yes	22	47	31
No	77	51	68
Don't know	1	2	1
Women			
Yes	17	33	23
No	81	66	76
Don't know	1	1	1
All informants			
Yes	19	40	27
No	79	58	72
Don't know	1	2	1
Bases (weighted)			
Men	*2553*	*1349*	*3902*
Women	*2555*	*1443*	*3998*
All informants	*5108*	*2792*	*7900*
Bases (unweighted)			
Men	*2126*	*1398*	*3524*
Women	*2699*	*1709*	*4408*
All informants	*4825*	*3107*	*7932*

Table 9.9 Last time cholesterol measured, by age and sex

All who ever had their cholesterol monitored *1995*

Last time cholesterol measured	Age		Total
	16-44	45-64	
	%	%	%
Men			
Less than 1 year	32	36	34
1 to less than 3 years	42	30	36
3 to less than 5 years	14	20	18
5 years or more	11	13	12
Women			
Less than 1 year	28	36	32
1 to less than 3 years	42	34	38
3 to less than 5 years	19	19	19
5 years or more	10	11	11
All informants			
Less than 1 year	31	36	33
1 to less than 3 years	42	32	37
3 to less than 5 years	17	20	18
5 years or more	11	12	12
Bases (weighted)			
Men	*556*	*640*	*1197*
Women	*438*	*480*	*918*
All informants	*994*	*1120*	*2114*
Bases (unweighted)			
Men	*486*	*641*	*1127*
Women	*488*	*574*	*1062*
All informants	*974*	*1215*	*2189*

Table 9.10 Observed and age-standardised proportions who ever had cholesterol measured, by region and sex

All

Ever had cholesterol measured	Region						
	Highland & Islands	Grampian & Tayside	Lothian & Fife	Borders, Dumfries & Galloway	Greater Glasgow	Lanarkshire ,Ayrshire & Arran	Forth Valley, Argyll & Clyde
Men							
Observed %	25.3	31.2	23.2	39.0	36.4	36.5	30.4
Age-standardised %	22.0	29.1	22.2	34.3	33.3	32.7	27.8
Women							
Observed %	17.4	22.2	17.6	25.9	28.0	24.8	26.1
Age-standardised %	15.7	21.2	16.8	23.7	26.6	22.6	25.1
Bases (weighted)							
Men	*213*	*753*	*896*	*179*	*629*	*704*	*527*
Women	*210*	*681*	*863*	*194*	*764*	*731*	*556*
Bases (unweighted)							
Men	*356*	*590*	*709*	*296*	*508*	*607*	*458*
Women	*425*	*651*	*825*	*393*	*737*	*804*	*573*

Table 9.11 HDL-cholesterol, by age and sex

All with a valid HDL-cholesterol measurement *1995*

HDL-cholesterol (mmol/l)	Age					Total
	16-24	25-34	35-44	45-54	55-64	
	%	%	%	%	%	%
Men						
0.9 or less	10	13	16	14	17	14
More than 0.9	90	87	84	86	83	86
Mean	1.3	1.3	1.3	1.3	1.3	1.3
Standard error of the mean	0.01	0.01	0.01	0.01	0.02	0.01
5th percentile	0.9	0.8	0.8	0.8	0.8	0.8
10th percentile	1.0	0.9	0.9	0.9	0.9	0.9
Median	1.2	1.3	1.2	1.2	1.2	1.2
90th percentile	1.6	1.7	1.7	1.7	1.8	1.7
95th percentile	1.9	1.9	1.8	2.0	2.1	1.9
Women						
0.9 or less	4	4	4	4	5	4
More than 0.9	96	96	96	96	95	96
Mean	1.5	1.5	1.6	1.6	1.5	1.5
Standard error of the mean	0.02	0.01	0.01	0.02	0.02	0.01
5th percentile	1.0	1.0	1.0	1.0	0.9	1.0
10th percentile	1.1	1.1	1.1	1.1	1.1	1.1
Median	1.5	1.5	1.5	1.5	1.5	1.5
90th percentile	2.0	2.0	2.0	2.1	2.0	2.0
95th percentile	2.1	2.2	2.2	2.4	2.2	2.2
All informants						
0.9 or less	7	9	10	10	11	9
More than 0.9	93	91	90	90	89	91
Mean	1.4	1.4	1.4	1.4	1.4	1.4
Standard error of the mean	0.01	0.01	0.01	0.01	0.01	0.01
5th percentile	0.9	0.9	0.9	0.9	0.8	0.9
10th percentile	1.0	1.0	1.0	1.0	0.9	1.0
Median	1.4	1.4	1.4	1.4	1.3	1.4
90th percentile	1.9	1.9	1.9	2.0	2.0	1.9
95th percentile	2.0	2.1	2.1	2.2	2.2	2.1
Bases (weighted)						
Men	*536*	*784*	*712*	*615*	*489*	*3135*
Women	*432*	*688*	*708*	*633*	*487*	*2946*
All informants	*967*	*1471*	*1420*	*1247*	*976*	*6081*
Bases (unweighted)						
Men	*339*	*662*	*662*	*569*	*550*	*2782*
Women	*336*	*800*	*796*	*660*	*661*	*3253*
All informants	*675*	*1462*	*1458*	*1229*	*1211*	*6035*

Table 9.12 HDL-cholesterol in the 1984-86 Scottish Heart Health Study and the 1995 Scottish Health Survey, by age and sex

All aged 40-59 with a valid HDL-cholesterol measurement *1995*

HDL-cholesterol (mmol/l)	**Age**				**Total**
	40-44	45-49	50-54	55-59	
Men					
1984-86 Heart Health Study					
Mean	1.37	1.35	1.37	1.35	1.36
Standard deviation	0.4	0.4	0.4	0.4	0.4
1995 Health Survey					
Mean	1.29	1.28	1.31	1.30	1.30
Standard deviation	0.3	0.3	0.4	0.4	0.4
Women					
1984-86 Heart Health Study					
Mean	1.63	1.65	1.71	1.70	1.67
Standard deviation	0.4	0.4	0.4	0.4	0.4
1995 Health Survey					
Mean	1.55	1.59	1.59	1.50	1.56
Standard deviation	0.4	0.6	0.4	0.4	0.5
Bases					
Men					
1984-86 Heart Health Study[a]	*1263*	*1202*	*1364*	*1294*	*5123*
1995 Health Survey (weighted)	*411*	*419*	*330*	*301*	*1461*
1995 Health Survey (unweighted)	*379*	*388*	*321*	*332*	*1420*
Women					
1984-86 Heart Health Study[a]	*1342*	*1262*	*1346*	*1286*	*5236*
1995 Health Survey (weighted)	*415*	*434*	*344*	*357*	*1549*
1995 Health Survey (unweighted)	*430*	*431*	*394*	*426*	*1681*

[a]Number of participants in the survey

Table 9.13 Estimated LDL-cholesterol level[a], by age and sex

All with valid total and HDL-cholesterol measurements *1995*

Estimated LDL-cholesterol (mmol/l)	Age					Total
	16-24	25-34	35-44	45-54	55-64	
	%	%	%	%	%	%
Men						
Mean	3.2	4.1	4.6	4.8	4.8	4.3
Standard error of the mean	0.03	0.04	0.04	0.05	0.05	0.02
5th percentile	1.9	2.5	2.8	3.0	3.0	2.5
10th percentile	2.2	2.9	3.1	3.4	3.4	2.8
Median	3.1	4.0	4.6	4.8	4.8	4.2
90th percentile	4.1	5.5	6.1	6.4	6.3	6.0
95th percentile	4.4	6.1	6.7	6.7	6.8	6.4
Women						
Mean	3.1	3.6	3.9	4.5	5.0	4.0
Standard error of the mean	0.04	0.04	0.04	0.04	0.05	0.02
5th percentile	1.9	2.3	2.5	2.9	3.2	2.3
10th percentile	2.2	2.5	2.7	3.1	3.5	2.6
Median	3.1	3.5	3.7	4.4	4.8	3.9
90th percentile	4.2	4.9	5.3	5.9	6.5	5.6
95th percentile	4.7	5.3	5.7	6.4	7.1	6.2
All informants						
Mean	3.2	3.9	4.3	4.6	4.9	4.2
Standard error of the mean	0.03	0.03	0.03	0.03	0.04	0.02
5th percentile	1.9	2.4	2.6	2.9	3.1	2.4
10th percentile	2.2	2.6	2.9	3.2	3.5	2.7
Median	3.1	3.8	4.1	4.5	4.8	4.0
90th percentile	4.2	5.3	5.8	6.2	6.4	5.8
95th percentile	4.5	5.8	6.3	6.6	6.9	6.4
Bases (weighted)						
Men	*536*	*784*	*712*	*615*	*489*	*3135*
Women	*432*	*688*	*708*	*633*	*487*	*2946*
All informants	*967*	*1471*	*1420*	*1247*	*976*	*6081*
Bases (unweighted)						
Men	*339*	*662*	*662*	*569*	*550*	*2782*
Women	*336*	*800*	*796*	*660*	*661*	*3253*
All informants	*675*	*1462*	*1458*	*1229*	*1211*	*6035*

[a]LDL-cholesterol has been estimated as the difference between total cholesterol and HDL-cholesterol.

Table 9.14 HDL-cholesterol, by region, age and sex

All with a valid HDL-cholesterol measurement *1995*

HDL-cholesterol (mmol/l)	Region							Total
	Highlands & Islands	Grampian & Tayside	Lothian & Fife	Borders, Dumfries & Galloway	Greater Glasgow	Lanarkshire, Ayrshire & Arran	Forth Valley, Argyll & Clyde	
	%	%	%	%	%	%	%	%
Men								
16-44								
0.9 or less	11	11	13	14	15	14	15	13
More than 0.9	89	89	87	86	85	86	85	87
Mean	1.3	1.3	1.3	1.2	1.3	1.3	1.3	1.3
Standard error of the mean	0.03	0.02	0.01	0.04	0.02	0.02	0.02	0.01
45-64								
0.9 or less	10	12	18	15	14	17	18	15
More than 0.9	90	88	82	85	86	83	82	85
Mean	1.3	1.4	1.3	1.2	1.3	1.3	1.3	1.3
Standard error of the mean	0.05	0.03	0.03	0.05	0.03	0.02	0.03	0.01
All men								
0.9 or less	11	11	14	14	15	15	16	14
More than 0.9	89	89	86	86	85	85	84	86
Mean	1.3	1.3	1.3	1.2	1.3	1.3	1.3	1.3
Standard error of the mean	0.03	0.01	0.01	0.03	0.02	0.01	0.02	0.01
Women								
16-44								
0.9 or less	6	3	4	3	3	5	3	4
More than 0.9	94	97	96	97	97	95	97	96
Mean	1.6	1.6	1.5	1.6	1.5	1.5	1.5	1.5
Standard error of the mean	0.04	0.02	0.02	0.05	0.02	0.02	0.02	0.01
45-64								
0.9 or less	5	5	4	2	8	5	5	5
More than 0.9	95	95	96	98	92	95	95	95
Mean	1.6	1.5	1.6	1.6	1.5	1.5	1.6	1.5
Standard error of the mean	0.06	0.03	0.03	0.06	0.03	0.03	0.03	0.01
All women								
0.9 or less	6	3	4	3	5	5	4	4
More than 0.9	94	97	96	97	95	95	96	96
Mean	1.6	1.6	1.6	1.6	1.5	1.5	1.6	1.5
Standard error of the mean	0.03	0.02	0.02	0.04	0.02	0.02	0.02	0.01
Bases (weighted)								
Men								
16-44	*106*	*412*	*484*	*84*	*299*	*372*	*274*	*2031*
45-64	*62*	*204*	*213*	*54*	*196*	*234*	*141*	*1104*
All men	*168*	*616*	*697*	*139*	*495*	*606*	*415*	*3135*
Women								
16-44	*95*	*288*	*424*	*82*	*332*	*341*	*264*	*1827*
45-64	*64*	*206*	*213*	*56*	*208*	*218*	*155*	*1120*
All women	*160*	*495*	*638*	*138*	*539*	*558*	*419*	*2946*
Bases (unweighted)								
Men								
16-44	*155*	*300*	*349*	*127*	*216*	*296*	*220*	*1663*
45-64	*124*	*179*	*193*	*98*	*166*	*219*	*140*	*1119*
All men	*279*	*479*	*542*	*225*	*382*	*515*	*360*	*2782*
Women								
16-44	*180*	*268*	*386*	*162*	*307*	*362*	*267*	*1932*
45-64	*143*	*209*	*230*	*120*	*204*	*253*	*162*	*1321*
All women	*323*	*477*	*616*	*282*	*511*	*615*	*429*	*3253*

Table 9.15 HDL-cholesterol, by social class of chief income earner, age and sex

All with a valid HDL-cholesterol measurement *1995*

HDL-cholesterol (mmol/l)	Social class of chief income earner						Total[a]
	I	II	IIINM	IIIM	IV	V	
Men	%	%	%	%	%	%	%
16-44							
0.9 or less	10	15	14	14	10	16	13
More than 0.9	90	85	86	86	90	84	87
Mean	1.3	1.3	1.3	1.3	1.3	1.3	1.3
Standard error of the mean	0.02	0.01	0.02	0.01	0.02	0.04	0.01
45-64							
0.9 or less	8	10	15	19	23	8	15
More than 0.9	92	90	85	81	77	92	85
Mean	1.3	1.3	1.3	1.3	1.3	1.4	1.3
Standard error of the mean	0.04	0.02	0.05	0.02	0.04	0.06	0.01
All men							
0.9 or less	10	13	14	16	14	13	14
More than 0.9	90	87	86	84	86	87	86
Mean	1.3	1.3	1.3	1.3	1.3	1.3	1.3
Standard error of the mean	0.02	0.01	0.02	0.01	0.02	0.03	0.01
Women							
16-44							
0.9 or less	3	2	2	4	8	4	4
More than 0.9	97	98	98	96	92	96	96
Mean	1.6	1.6	1.6	1.5	1.5	1.5	1.5
Standard error of the mean	0.03	0.02	0.02	0.02	0.03	0.04	0.01
45-64							
0.9 or less	2	5	4	6	6	2	5
More than 0.9	98	95	96	94	94	98	95
Mean	1.7	1.6	1.6	1.5	1.4	1.5	1.5
Standard error of the mean	0.05	0.02	0.03	0.02	0.03	0.05	0.01
All women							
0.9 or less	3	3	3	5	7	3	4
More than 0.9	97	97	97	95	93	97	96
Mean	1.6	1.6	1.6	1.5	1.5	1.5	1.5
Standard error of the mean	0.03	0.01	0.02	0.01	0.02	0.03	0.01
Bases (weighted)							
Men							
16-44	*144*	*511*	*265*	*629*	*270*	*85*	*2031*
45-64	*80*	*304*	*101*	*394*	*138*	*54*	*1104*
All men	*224*	*816*	*367*	*1023*	*408*	*139*	*3135*
Women							
16-44	*129*	*433*	*321*	*468*	*253*	*75*	*1827*
45-64	*68*	*312*	*182*	*309*	*153*	*65*	*1120*
All women	*197*	*745*	*503*	*777*	*405*	*140*	*2946*
Bases (unweighted)							
Men							
16-44	*119*	*413*	*213*	*513*	*227*	*79*	*1663*
45-64	*75*	*289*	*105*	*396*	*151*	*69*	*1119*
All men	*194*	*702*	*318*	*909*	*378*	*148*	*2782*
Women							
16-44	*121*	*444*	*384*	*445*	*304*	*89*	*1932*
45-64	*71*	*368*	*231*	*328*	*192*	*90*	*1321*
All women	*192*	*812*	*615*	*773*	*496*	*179*	*3253*

[a]The total includes informants for whom social class was unknown.

Table 9.16 Total and HDL-cholesterol, by body mass index and sex

All with valid total and HDL-cholesterol measurements *1995*

HDL-cholesterol (mmol/l)	**BMI**				**Total**[a]
	20 or under	>20-25	>25-30	Over 30	
Men					
Total cholesterol					
Mean	4.7	5.2	5.8	6.1	5.6
Standard error of the mean	0.09	0.03	0.03	0.05	0.02
HDL-cholesterol					
Mean	1.4	1.4	1.3	1.2	1.3
Standard error of the mean	0.03	0.01	0.01	0.01	0.01
Women					
Total cholesterol					
Mean	5.0	5.3	5.8	6.1	5.6
Standard error of the mean	0.07	0.03	0.04	0.06	0.02
HDL-cholesterol					
Mean	1.7	1.6	1.5	1.4	1.5
Standard error of the mean	0.03	0.01	0.01	0.02	0.01
Bases (weighted)					
Men					
Total cholesterol	*141*	*1171*	*1259*	*455*	*3185*
HDL-cholesterol	*141*	*1157*	*1246*	*434*	*3135*
Women					
Total cholesterol	*225*	*1254*	*844*	*479*	*2986*
HDL-cholesterol	*220*	*1248*	*831*	*466*	*2946*
Bases (unweighted)					
Men					
Total cholesterol	*109*	*989*	*1162*	*420*	*2831*
HDL-cholesterol	*109*	*978*	*1144*	*401*	*2782*
Women					
Total cholesterol	*227*	*1387*	*926*	*554*	*3300*
HDL-cholesterol	*223*	*1378*	*910*	*539*	*3253*

[a]The total includes informants for whom BMI was unknown.

Table 9.17 Total and HDL-cholesterol, by cigarette smoking status and sex

All with valid total and HDL-cholesterol measurements *1995*

HDL-cholesterol (mmol/l)	**Cigarette smoking status**				**Total**[a]
	Never regularly smoked	Ex-regular smoker	Smokes less than 20 a day	Smokes 20 or more a day	
Men					
Total cholesterol					
Mean	5.5	5.9	5.4	5.8	5.6
Standard error of the mean	0.03	0.04	0.05	0.06	0.02
HDL-cholesterol					
Mean	1.3	1.3	1.3	1.3	1.3
Standard error of the mean	0.01	0.01	0.01	0.02	0.01
Women					
Total cholesterol					
Mean	5.4	5.7	5.6	5.9	5.6
Standard error of the mean	0.03	0.05	0.05	0.06	0.02
HDL-cholesterol					
Mean	1.6	1.6	1.5	1.4	1.5
Standard error of the mean	0.01	0.02	0.02	0.02	0.01
Bases (weighted)					
Men					
Total cholesterol	*1446*	*699*	*573*	*465*	*3185*
HDL-cholesterol	*1422*	*689*	*567*	*455*	*3135*
Women					
Total cholesterol	*1485*	*479*	*644*	*377*	*2986*
HDL-cholesterol	*1469*	*473*	*633*	*369*	*2946*
Bases (unweighted)					
Men					
Total cholesterol	*1223*	*645*	*497*	*463*	*2831*
HDL-cholesterol	*1198*	*635*	*490*	*456*	*2782*
Women					
Total cholesterol	*1554*	*560*	*737*	*447*	*3300*
HDL-cholesterol	*1533*	*552*	*728*	*438*	*3253*

[a]The total includes informants for whom smoking status was unknown.

Table 9.18 Total and HDL-cholesterol, by alcohol consumption level and sex

All with valid total and HDL-cholesterol measurements *1995*

mmol/l	Alcohol consumption level (units per week)					Total[a]
	Ex-drinker	Non/occasional drinker	1-10 units per week	>10-21 units per week	Over 21 units per week	
Men						
Total cholesterol						
Mean	5.8	5.6	5.6	5.7	5.6	5.6
Standard error of the mean	0.12	0.07	0.04	0.04	0.04	0.02
HDL-cholesterol						
Mean	1.1	1.2	1.2	1.3	1.4	1.3
Standard error of the mean	0.03	0.02	0.01	0.01	0.01	0.01
	Ex-drinker	Non/occasional drinker	1-7 units per week	>7-14 units per week	Over 14 units per week	
Women						
Total cholesterol						
Mean	6.0	5.7	5.6	5.4	5.4	5.6
Standard error of the mean	0.13	0.05	0.03	0.05	0.06	0.02
HDL-cholesterol						
Mean	1.4	1.4	1.5	1.6	1.7	1.5
Standard error of the mean	0.04	0.01	0.01	0.02	0.02	0.01
Bases (weighted)						
Men						
Total cholesterol	*79*	*314*	*894*	*839*	*1047*	*3173*
HDL-cholesterol	*78*	*310*	*880*	*827*	*1029*	*3123*
Women						
Total cholesterol	*91*	*679*	*1252*	*571*	*390*	*2982*
HDL-cholesterol	*90*	*663*	*1240*	*566*	*384*	*2943*
Bases (unweighted)						
Men						
Total cholesterol	*86*	*274*	*800*	*721*	*944*	*2825*
HDL-cholesterol	*85*	*268*	*787*	*711*	*925*	*2776*
Women						
Total cholesterol	*113*	*778*	*1345*	*646*	*416*	*3298*
HDL-cholesterol	*111*	*761*	*1333*	*637*	*409*	*3251*

[a]The total includes informants whose alcohol consumption level was unknown.

Table 9.19 Total and HDL-cholesterol, by frequency-intensity level of physical activity and sex

All with valid total and HDL-cholesterol measurements *1995*

mmol/l	Frequency-intensity of physical activity			Total[a]
	Level 0	Levels 1,2	Levels 3,4,5	
Men				
Total cholesterol				
Mean	5.9	5.7	5.4	5.6
Standard error of the mean	0.04	0.04	0.03	0.02
HDL cholesterol				
Mean	1.3	1.3	1.3	1.3
Standard error of the mean	0.01	0.01	0.01	0.01
Women				
Total cholesterol				
Mean	5.7	5.6	5.5	5.6
Standard error of the mean	0.05	0.03	0.03	0.02
HDL cholesterol				
Mean	1.5	1.5	1.6	1.5
Standard error of the mean	0.02	0.01	0.01	0.01
Bases (weighted)				
Men				
Total cholesterol	*692*	*1068*	*1407*	*3185*
HDL cholesterol	*678*	*1052*	*1389*	*3135*
Women				
Total cholesterol	*729*	*1150*	*1093*	*2986*
HDL cholesterol	*710*	*1138*	*1084*	*2946*
Bases (unweighted)				
Men				
Total cholesterol	*651*	*944*	*1216*	*2831*
HDL cholesterol	*634*	*930*	*1200*	*2782*
Women				
Total cholesterol	*787*	*1289*	*1204*	*3300*
HDL cholesterol	*770*	*1273*	*1190*	*3253*

aThe total includes informants whose frequency-intensity level was unknown.

Table 9.20 Estimates of total and HDL-cholesterol from linear regression, by lifestyle factors and sex

All with valid total and HDL-cholesterol measurements, body mass index, cigarette smoking status, alcohol consumption and physical activity level *1995*

Variable	*N weighted*	Difference from reference category mmol/l	95% C.I. [a]
Total cholesterol			
Men	*2996*		
Age group (p<0.001)			
16-24[b]	*506*	0	
25-34	*760*	0.78	0.66, 0.90
35-44	*675*	1.21	1.09, 1.33
45-54	*589*	1.38	1.25, 1.51
55-64	*467*	1.32	1.18, 1.46
Body mass index (p<0.001)		0.06[c]	0.05, 0.07
Cigarette smoking status (p<0.077)			
Never regularly smoked[b]	*1366*	0	
Ex-regular smoker	*659*	0.07	-0.03, 0.17
Smokes less than 20 cigarettes a day	*538*	0.08	-0.02, 0.18
Smokes 20 or more cigarettes a day	*433*	0.14	0.03, 0.25
Alcohol consumption level (p=0.002)			
Non/occasional drinker[b]	*293*	0	
Ex-drinker	*69*	-0.31	-0.57, -0.04
1-10 units per week	*844*	-0.12	-0.26, 0.02
>10-21 units per week	*801*	0.05	-0.09, 0.19
>21 units per week	*989*	-0.07	-0.21, 0.06
Frequency-intensity level of physical activity (p=0.003)			
Level 0[b]	*649*	0	
Levels 1,2	*1018*	-0.05	-0.15, 0.05
Levels 3,4,5	*1330*	-0.16	-0.26, -0.06

Variable	*N weighted*	Difference from reference category mmol/l	95% C.I. [a]
Total cholesterol			
Women	*2785*		
Age group (p<0.001)			
16-24[b]	*415*	0	
25-34	*648*	0.38	0.25, 0.50
35-44	*657*	0.66	0.53, 0.78
45-54	*603*	1.24	1.12, 1.37
55-64	*463*	1.61	1.48, 1.75
Body mass index (p<0.001)		0.04[c]	0.03, 0.05
Cigarette smoking status (p<0.001)			
Never regularly smoked[b]	*1383*	0	
Ex-regular smoker	*443*	0.03	-0.08, 0.14
Smokes less than 20 cigarettes a day	*605*	0.26	0.17, 0.36
Smokes 20 or more cigarettes a day	*354*	0.30	0.18, 0.41
Alcohol consumption level (p=0.049)			
Non/occasional drinker[b]	*626*	0	
Ex-drinker	*83*	0.13	-0.09, 0.36
1-7 units per week	*1165*	-0.06	-0.15, 0.04
>7-14 units per week	*535*	-0.15	-0.26, -0.03
>14 units per week	*376*	-0.05	-0.18, 0.07
Frequency-intensity level of physical activity (p=0.945)			
Level 0[b]	*662*	0	
Levels 1,2	*1079*	0.02	-0.08, 0.11
Levels 3,4,5	*1044*	0.01	-0.08, 0.11

[a] C.I. = confidence interval

Continued…

[b] Reference category

[c] Average increase in total cholesterol for every unit increase in BMI

Table 9.20 - continued

Variable	*N weighted*	Difference from reference category mmol/l	95% C.I. [a]	Variable	*N weighted*	Difference from reference category mmol/l	95% C.I. [a]
HDL-cholesterol				**HDL-cholesterol**			
Men	*2949*			**Women**	*2748*		
Age group (p<0.001)				Age group (p<0.001)			
16-24[b]	*502*	0		16-24[b]	*412*	0	
25-34	*742*	0.08	0.04, 0.12	25-34	*640*	0.01	-0.03, 0.06
35-44	*666*	0.11	0.07, 0.15	35-44	*653*	0.07	0.02, 0.12
45-54	*578*	0.14	0.10, 0.18	45-54	*592*	0.12	0.07, 0.17
55-64	*461*	0.16	0.11, 0.21	55-64	*451*	0.09	0.04, 0.14
Body mass index (p<0.001)		-0.03	-0.03, -0.02	Body mass index (p<0.001)		-0.02	-0.03, -0.02
Cigarette smoking status (p<0.001)				Cigarette smoking status (p<0.001)			
Never regularly smoked[b]	*1343*	0		Never regularly smoked[b]	*1370*	0	
Ex-regular smoker	*649*	-0.03	-0.06, 0.00	Ex-regular smoker	*437*	-0.02	-0.06, 0.02
Smokes less than 20 cigarettes a day	*534*	-0.07	-0.10, -0.03	Smokes less than 20 cigarettes a day	*595*	-0.13	-0.17, -0.10
Smokes 20 or more cigarettes a day	*423*	-0.08	-0.12, -0.04	Smokes 20 or more cigarettes a day	*347*	-0.18	-0.22, -0.14
Alcohol consumption level (p<0.001)				Alcohol consumption level (p<0.001)			
Non/occasional drinker[b]	*289*	0		Non/occasional drinker[b]	*611*	0	
Ex-drinker	*69*	-0.06	-0.15, 0.02	Ex-drinker	*82*	-0.04	-0.13, 0.04
1-10 units per week	*831*	0.07	0.03, 0.12	1-7 units per week	*1153*	0.08	0.05, 0.12
>10-21 units per week	*788*	0.14	0.09, 0.18	>7-14 units per week	*531*	0.17	0.12, 0.21
>21 units per week	*972*	0.23	0.19, 0.28	>14 units per week	*370*	0.24	0.19, 0.29
Frequency-intensity level of physical activity (p=0.010)				Frequency-intensity level of physical activity (p=0.055)			
Level 0[b]	*636*	0		Level 0[b]	*645*	0	
Levels 1,2	*1001*	-0.02	-0.05, 0.02	Levels 1,2	*1068*	0.02	-0.02, 0.06
Levels 3,4,5	*1312*	0.03	-0.01, 0.06	Levels 3,4,5	*1034*	0.04	0.01, 0.08

[a]C.I. = confidence interval
[b]Reference category
[c]Average increase in HDL-cholesterol for every unit increase in BMI

Table 9.21 Total and HDL-cholesterol, by whether had any cardiovascular disorder[a], age and sex

All with valid total and HDL-cholesterol measurements *1995*

mmol/l	Had any cardiovascular disorder		
	Yes	No	**Total[b]**
Men			
Total cholesterol			
16-44			
Mean	5.8	5.3	5.3
Standard error of the mean	0.08	0.03	0.03
45-64			
Mean	6.2	6.1	6.1
Standard error of the mean	0.06	0.04	0.03
All men			
Mean	6.0	5.5	5.6
Standard error of the mean	0.05	0.02	0.02
HDL-cholesterol			
16-44			
Mean	1.3	1.3	1.3
Standard error of the mean	0.02	0.01	0.01
45-64			
Mean	1.2	1.3	1.3
Standard error of the mean	0.02	0.02	0.01
All men			
Mean	1.2	1.3	1.3
Standard error of the mean	0.01	0.01	0.01
Bases (weighted)			
Total cholesterol			
16-44	*223*	*1802*	*2062*
45-64	*385*	*729*	*1122*
All men	*608*	*2531*	*3185*
HDL-cholesterol			
16-44	*218*	*1777*	*2031*
45-64	*373*	*721*	*1104*
All men	*591*	*2498*	*3135*
Bases (unweighted)			
Total cholesterol			
16-44	*202*	*1457*	*1689*
45-64	*401*	*731*	*1142*
All men	*603*	*2188*	*2831*
HDL-cholesterol			
16-44	*197*	*1436*	*1663*
45-64	*389*	*720*	*1119*
All men	*586*	*2156*	*2782*

mmol/l	Had any cardiovascular disorder		
	Yes	No	**Total[b]**
Women			
Total cholesterol			
16-44			
Mean	5.3	5.1	5.2
Standard error of the mean	0.06	0.02	0.02
45-64			
Mean	6.5	6.1	6.2
Standard error of the mean	0.06	0.04	0.03
All women			
Mean	6.1	5.4	5.6
Standard error of the mean	0.05	0.02	0.02
HDL-cholesterol			
16-44			
Mean	1.5	1.5	1.5
Standard error of the mean	0.03	0.01	0.01
45-64			
Mean	1.5	1.6	1.5
Standard error of the mean	0.02	0.02	0.01
All women			
Mean	1.5	1.6	1.5
Standard error of the mean	0.02	0.01	0.01
Bases (weighted)			
Total cholesterol			
16-44	*225*	*1608*	*1843*
45-64	*372*	*766*	*1143*
All women	*597*	*2375*	*2986*
HDL-cholesterol			
16-44	*223*	*1593*	*1827*
45-64	*362*	*753*	*1120*
All women	*586*	*2346*	*2946*
Bases (unweighted)			
Total cholesterol			
16-44	*247*	*1694*	*1953*
45-64	*466*	*874*	*1347*
All women	*713*	*2568*	*3300*
HDL-cholesterol			
16-44	*244*	*1676*	*1932*
45-64	*456*	*858*	*1321*
All women	*700*	*2534*	*3253*

[a]Informants were classified as having any cardiovascular disorder if they were told by a doctor that they had one of the following: angina, heart attack, abnormal heart rhythm, heart murmur, other heart trouble, stroke, high blood pressure, or diabetes.
[b]The total includes informants who were not classified on CVD condition.

Table 9.22 Fibrinogen, by age and sex

All with a valid fibrinogen measurement *1995*

Fibrinogen (g/l)	Age					Total
	16-24	25-34	35-44	45-54	55-64	
Men						
Mean	2.9	3.1	3.3	3.5	3.9	3.3
Standard error of the mean	0.04	0.03	0.03	0.04	0.04	0.02
Geometric mean	2.8	3.0	3.2	3.4	3.8	3.2
Women						
Mean	3.4	3.4	3.5	3.7	4.0	3.6
Standard error of the mean	0.04	0.03	0.03	0.04	0.04	0.02
Geometric mean	3.4	3.4	3.4	3.6	3.9	3.5
All informants						
Mean	3.2	3.2	3.4	3.6	3.9	3.4
Standard error of the mean	0.03	0.02	0.02	0.03	0.03	0.01
Geometric mean	3.0	3.2	3.3	3.5	3.8	3.3
Bases (weighted)						
Men	*514*	*763*	*690*	*604*	*472*	*3043*
Women	*396*	*659*	*681*	*620*	*469*	*2824*
All informants	*909*	*1421*	*1372*	*1224*	*941*	*5868*
Bases (unweighted)						
Men	*323*	*643*	*638*	*557*	*531*	*2692*
Women	*310*	*767*	*763*	*640*	*634*	*3114*
All informants	*633*	*1410*	*1401*	*1197*	*1165*	*5806*

Table 9.23 Fibrinogen in the 1995 Scottish Health Survey and the 1994 Health Survey for England, by age and sex

All with a valid fibrinogen measurement — *Scottish Health Survey1995 and Health Survey for England 1994*

Fibrinogen (g/l)	Age					Total
	16-24	25-34	35-44	45-54	55-64	
	%	%	%	%	%	%
Men						
Scotland						
Mean	2.9	3.1	3.3	3.5	3.9	3.3
Standard error of the mean	0.04	0.03	0.03	0.04	0.04	0.02
Geometric mean	2.8	3.0	3.2	3.4	3.8	3.2
England						
Mean	2.5	2.6	2.8	3.0	3.3	2.8
Standard error of the mean	0.02	0.02	0.02	0.03	0.03	0.01
Geometric mean	2.4	2.6	2.7	2.9	3.2	2.8
Northern England[a]						
Mean	2.5	2.6	2.8	3.1	3.3	2.9
Standard error of the mean	0.05	0.04	0.04	0.05	0.06	0.02
Geometric mean	2.5	2.5	2.5	3.2	3.2	2.5
Women						
Scotland						
Mean	3.4	3.4	3.5	3.7	4.0	3.6
Standard error of the mean	0.04	0.03	0.03	0.04	0.04	0.02
Geometric mean	3.4	3.4	3.4	3.6	3.9	3.5
England						
Mean	2.9	3.0	3.0	3.2	3.5	3.1
Standard error of the mean	0.03	0.02	0.02	0.02	0.03	0.01
Geometric mean	2.8	2.9	2.9	3.1	3.4	3.0
Northern England[a]						
Mean	2.9	3.0	3.0	3.2	3.6	3.1
Standard error of the mean	0.06	0.05	0.04	0.04	0.06	0.02
Geometric mean	2.5	3.2	3.2	3.2	3.2	3.2
Bases						
Men						
Scotland (weighted)	*514*	*763*	*690*	*604*	*472*	*3043*
Scotland (unweighted)	*323*	*643*	*638*	*557*	*531*	*2692*
England (unweighted)	*584*	*1011*	*1000*	*790*	*699*	*4084*
Northern England (unweighted)	*160*	*283*	*266*	*222*	*213*	*1144*
Women						
Scotland (weighted)	*396*	*659*	*681*	*620*	*469*	*2824*
Scotland (unweighted)	*310*	*767*	*763*	*640*	*634*	*3114*
England (unweighted)	*520*	*1005*	*990*	*897*	*701*	*4113*
Northern England (unweighted)	*147*	*274*	*264*	*239*	*169*	*1093*

[a]Consists of Northern & Yorkshire and North West health authority regions

Table 9.24 Fibrinogen in the 1984-86 Scottish Heart Health Study and the 1995 Scottish Health Survey, by age and sex

All aged 40-59 with a valid fibrinogen measurement *1995*

Fibrinogen (g/l)	**Age**				**Total**
	40-44	45-49	50-54	55-59	
Men					
1984-86 Heart Health Study[a]					
Mean	2.18	2.27	2.35	2.43	2.31
Standard deviation	0.62	0.66	0.73	0.71	0.69
1995 Health Survey					
Mean	3.29	3.40	3.62	3.82	3.51
Standard deviation	0.92	0.81	0.93	0.91	0.91
Women					
1984-86 Heart Health Study[a]					
Mean	2.22	2.30	2.46	2.52	2.38
Standard deviation	0.64	0.62	0.69	0.74	0.69
1995 Health Survey					
Mean	3.55	3.64	3.75	3.94	3.7
Standard deviation	0.84	0.86	0.91	0.93	0.89
Bases					
Men					
1984-86 Heart Health Study[a]	*1263*	*1202*	*1364*	*1294*	*5123*
1995 Health Survey (weighted)	*332*	*341*	*264*	*245*	*1181*
1995 Health Survey (unweighted)	*295*	*306*	*251*	*263*	*1115*
Women					
1984-86 Heart Health Study[a]	*1342*	*1262*	*1346*	*1286*	*5236*
1995 Health Survey (weighted)	*335*	*351*	*269*	*250*	*1205*
1995 Health Survey (unweighted)	*340*	*338*	*302*	*307*	*1287*

[a]Number of participants in the survey

Table 9.25 Fibrinogen, by region, age and sex

All with a valid fibrinogen measurement *1995*

Fibrinogen (g/l)	Region							Total
	Highland & Islands	Grampian & Tayside	Lothian & Fife	Borders, Dumfries & Galloway	Greater Glasgow	Lanarkshire, Ayrshire & Arran	Forth Valley, Argyll & Clyde	
Men								
16-44								
Mean	3.1	3	3.1	3.2	3.2	3.1	3.1	3.1
Standard error of the mean	0.11	0.04	0.05	0.1	0.05	0.04	0.05	0.02
Geometric mean	3.0	2.9	3.0	3.1	3.1	3.0	3.0	3.0
45-64								
Mean	3.6	3.6	3.6	3.6	3.7	3.7	3.8	3.7
Standard error of the mean	0.13	0.06	0.06	0.11	0.07	0.07	0.09	0.03
Geometric mean	3.4	3.5	3.5	3.5	3.6	3.6	3.7	3.6
All men								
Mean	3.3	3.2	3.2	3.3	3.4	3.4	3.3	3.3
Standard error of the mean	0.08	0.03	0.04	0.08	0.04	0.04	0.05	0.02
Geometric mean	3.2	3.1	3.1	3.2	3.3	3.3	3.2	3.2
Women								
16-44								
Mean	3.4	3.4	3.4	3.5	3.5	3.6	3.5	3.5
Standard error of the mean	0.08	0.05	0.04	0.08	0.04	0.05	0.05	0.02
Geometric mean	3.4	3.3	3.3	3.4	3.4	3.5	3.4	3.4
45-64								
Mean	3.8	3.7	3.8	3.9	3.9	3.9	3.6	3.8
Standard error of the mean	0.11	0.06	0.06	0.13	0.06	0.06	0.08	0.03
Geometric mean	3.7	3.6	3.7	3.8	3.8	3.8	3.5	3.7
All women								
Mean	3.6	3.6	3.5	3.6	3.6	3.7	3.6	3.6
Standard error of the mean	0.07	0.04	0.03	0.07	0.04	0.04	0.05	0.02
Geometric mean	3.5	3.4	3.5	3.5	3.6	3.6	3.4	3.5
All informants								
16-44								
Mean	3.3	3.2	3.2	3.3	3.3	3.3	3.3	3.3
Standard error of the mean	0.07	0.03	0.03	0.06	0.03	0.03	0.04	0.01
Geometric mean	3.2	3.1	3.1	3.2	3.3	3.2	3.2	3.2
45-64								
Mean	3.7	3.7	3.7	3.7	3.8	3.8	3.7	3.7
Standard error of the mean	0.09	0.05	0.04	0.09	0.05	0.04	0.06	0.02
Geometric mean	3.6	3.6	3.6	3.6	3.7	3.7	3.6	3.6
All								
Mean	3.4	3.4	3.4	3.5	3.5	3.5	3.5	3.4
Standard error of the mean	0.05	0.03	0.03	0.05	0.03	0.03	0.03	0.01
Geometric mean	3.3	3.2	3.3	3.4	3.4	3.4	3.3	3.3

Continued ....

Table 9.25 - continued

1995

Fibrinogen (g/l)	Region							Total
	Highland & Islands	Grampian & Tayside	Lothian & Fife	Borders, Dumfries & Galloway	Greater Glasgow	Lanarkshire, Ayrshire & Arran	Forth Valley, Argyll & Clyde	
Bases (weighted)								
Men								
16-44	103	403	467	81	288	360	266	1966
45-64	60	202	207	52	197	225	135	1077
All men	162	604	674	133	484	585	400	3043
Women								
16-44	88	278	393	80	314	324	258	1736
45-64	62	194	211	50	206	215	151	1089
All women	150	472	604	130	520	539	409	2824
All informants								
16-44	191	680	860	160	602	684	524	3702
45-64	121	396	418	102	403	440	286	2165
All	312	1076	1278	262	1005	1124	810	5868
Bases (unweighted)								
Men								
16-44	150	294	336	119	206	286	213	1604
45-64	120	176	188	93	165	211	135	1088
All men	270	470	524	212	371	497	348	2692
Women								
16-44	169	256	366	158	288	344	259	1840
45-64	136	196	226	108	203	248	157	1274
All women	305	452	592	266	491	592	416	3114
All informants								
16-44	319	550	702	277	494	630	472	3444
45-64	256	372	414	201	368	459	292	2362
All	575	922	1116	478	862	1089	764	5806

Table 9.26 Fibrinogen, by social class of chief income earner, age and sex

All with a valid fibrinogen measurement *1995*

Fibrinogen (g/l)	Social class of chief income earner						Total[a]
	I	II	IIINM	IIIM	IV	V	
Men							
16-44							
Mean	3.1	3.1	3.1	3.1	3.2	3.4	3.1
Standard error of the mean	0.07	0.04	0.05	0.03	0.07	0.1	0.02
Geometric mean	3.0	3.0	3.0	3.0	3.1	3.3	3.0
45-64							
Mean	3.4	3.5	3.8	3.7	3.9	3.9	3.7
Standard error of the mean	0.09	0.05	0.1	0.05	0.1	0.13	0.03
Geometric mean	3.3	3.4	3.6	3.6	3.7	3.8	3.6
All men							
Mean	3.2	3.2	3.3	3.3	3.4	3.6	3.3
Standard error of the mean	0.06	0.03	0.05	0.03	0.06	0.08	0.02
Geometric mean	3.1	3.1	3.1	3.2	3.3	3.4	3.2
Women							
16-44							
Mean	3.3	3.4	3.5	3.5	3.5	3.7	3.5
Standard error of the mean	0.07	0.04	0.04	0.04	0.05	0.09	0.02
Geometric mean	3.2	3.3	3.4	3.4	3.4	3.6	3.4
45-64							
Mean	3.5	3.7	3.9	3.8	3.9	4.2	3.8
Standard error of the mean	0.09	0.05	0.07	0.05	0.07	0.13	0.03
Geometric mean	3.4	3.5	3.8	3.7	3.8	4.0	3.7
All women							
Mean	3.4	3.5	3.7	3.6	3.7	3.9	3.6
Standard error of the mean	0.05	0.03	0.04	0.03	0.04	0.08	0.02
Geometric mean	3.3	3.4	3.6	3.5	3.6	3.8	3.5
Bases (weighted)							
Men							
16-44	*135*	*492*	*249*	*617*	*263*	*84*	*1966*
45-64	*80*	*296*	*96*	*389*	*135*	*51*	*1077*
All men	*215*	*787*	*345*	*1006*	*398*	*135*	*3043*
Women							
16-44	*128*	*395*	*300*	*451*	*246*	*71*	*1736*
45-64	*66*	*307*	*177*	*299*	*147*	*61*	*1089*
All women	*195*	*702*	*477*	*750*	*393*	*132*	*2824*
Bases (unweighted)							
Men							
16-44	*111*	*398*	*203*	*498*	*222*	*76*	*1604*
45-64	*75*	*280*	*97*	*392*	*146*	*65*	*1088*
All men	*186*	*678*	*300*	*890*	*368*	*141*	*2692*
Women							
16-44	*120*	*410*	*364*	*428*	*293*	*85*	*1840*
45-64	*69*	*356*	*221*	*317*	*186*	*83*	*1274*
All women	*189*	*766*	*585*	*745*	*479*	*168*	*3114*

[a]The total includes informants for whom social class was unknown.

Table 9.27 Fibrinogen, by cigarette smoking status, age and sex

All with a valid fibrinogen measurement *1995*

Fibrinogen (g/l)	Cigarette smoking status				Total[a]
	Never regularly smoked	Ex-regular smoker	Smokes less than 20 a day	Smokes 20 or more a day	
Men					
16-44					
Mean	3.0	3.1	3.2	3.3	3.1
Standard error of the mean	0.03	0.05	0.04	0.07	0.02
Geometric mean	2.9	3.0	3.1	3.2	3.0
45-64					
Mean	3.4	3.7	3.9	4.0	3.7
Standard error of the mean	0.05	0.05	0.08	0.06	0.03
Geometric mean	3.3	3.6	3.8	3.9	3.6
All men					
Mean	3.1	3.4	3.4	3.6	3.3
Standard error of the mean	0.02	0.04	0.04	0.05	0.02
Geometric mean	3.0	3.3	3.2	3.5	3.2
Women					
16-44					
Mean	3.4	3.4	3.5	3.7	3.5
Standard error of the mean	0.03	0.05	0.04	0.06	0.02
Geometric mean	3.3	3.3	3.4	3.6	3.4
45-64					
Mean	3.7	3.8	3.9	4.0	3.8
Standard error of the mean	0.04	0.06	0.06	0.07	0.03
Geometric mean	3.6	3.7	3.8	3.9	3.7
All women					
Mean	3.5	3.6	3.7	3.8	3.6
Standard error of the mean	0.02	0.04	0.04	0.05	0.02
Geometric mean	3.4	3.5	3.6	3.7	3.5
Bases (weighted)					
Men					
16-44	*1019*	*289*	*414*	*244*	*1966*
45-64	*356*	*372*	*146*	*201*	*1077*
All men	*1375*	*661*	*560*	*445*	*3043*
Women					
16-44	*918*	*218*	*392*	*206*	*1736*
45-64	*485*	*237*	*213*	*154*	*1089*
All women	*1403*	*455*	*604*	*360*	*2824*
Bases (unweighted)					
Men					
16-44	*816*	*241*	*329*	*218*	*1604*
45-64	*341*	*368*	*154*	*222*	*1088*
All men	*1157*	*609*	*483*	*440*	*2692*
Women					
16-44	*895*	*244*	*449*	*250*	*1840*
45-64	*565*	*285*	*245*	*179*	*1274*
All women	*1460*	*529*	*694*	*429*	*3114*

[a]The total includes informants not classified on cigarette smoking status.

Table 9.28 Haemoglobin, by age and sex

All with a valid haemoglobin measurement *1995*

Haemoglobin (g/dl)	Age					Total
	16-24	25-34	35-44	45-54	55-64	
	%	%	%	%	%	%
Men						
Less than 13.0	1	1	2	1	6	2
13.0, less than 14.0	11	8	11	9	11	10
14.0, less than 15.5	51	53	54	54	47	52
15.5 or more	36	39	34	36	36	36
Mean	15.1	15.2	15.1	15.1	15.0	15.1
Standard error of the mean	0.04	0.03	0.04	0.04	0.06	0.02
5th percentile	13.4	13.8	13.5	13.5	12.8	13.5
10th percentile	13.9	14.0	13.8	13.9	13.6	13.9
Median	15.1	15.2	15.1	15.1	15.1	15.1
90th percentile	16.3	16.3	16.3	16.4	16.4	16.4
95th percentile	16.7	16.7	16.8	16.8	16.9	16.7
Women						
Less than 12.0	6	7	12	9	5	8
12.0, less than 13.0	27	28	28	22	20	25
13.0, less than 14.0	43	39	38	39	40	40
14 or more	24	26	22	30	35	27
Mean	13.3	13.3	13.1	13.4	13.6	13.3
Standard error of the mean	0.05	0.04	0.04	0.05	0.05	0.02
5th percentile	11.8	11.7	11.3	11.3	12.0	11.6
10th percentile	12.2	12.2	11.8	12.1	12.4	12.1
Median	13.3	13.3	13.2	13.4	13.6	13.4
90th percentile	14.3	14.5	14.4	14.8	14.8	14.6
95th percentile	14.7	14.8	14.7	15.2	15.2	14.9
Bases (weighted)						
Men	*533*	*792*	*711*	*618*	*487*	*3142*
Women	*424*	*685*	*700*	*633*	*484*	*2926*
Bases (unweighted)						
Men	*336*	*667*	*664*	*573*	*547*	*2787*
Women	*332*	*796*	*789*	*659*	*657*	*3233*

Table 9.29 Haemoglobin in the 1995 Scottish Health Survey and the 1994 Health Survey for England, by age and sex

All with a valid haemoglobin measurement *Scottish Health Survey 1995 and Health Survey for England 1994*

Haemoglobin (g/dl)	Age					Total
	16-24	25-34	35-44	45-54	55-64	
	%	%	%	%	%	%
Men						
Scotland						
Less than 13.0	1	1	2	1	6	2
13.0, less than 14.0	11	8	11	9	11	10
14.0, less than 15.5	51	53	54	54	47	52
15.5 or more	36	39	34	36	36	36
Mean	15.1	15.2	15.1	15.1	15.0	15.1
Standard error of the mean	0.04	0.03	0.04	0.04	0.06	0.02
England						
Less than 13.0	1	1	3	2	4	2
13.0, less than 14.0	12	11	13	13	17	13
14.0, less than 15.5	58	58	56	57	55	57
15.5 or more	30	29	28	28	24	28
Mean	15.0	15.0	14.9	14.9	14.7	14.9
Standard error of the mean	0.04	0.03	0.03	0.03	0.04	0.01
Northern England[a]						
Less than 13.0	1	1	1	3	5	2
13.0, less than 14.0	13	11	13	12	16	13
14.0, less than 15.5	54	57	58	56	51	55
15.5 or more	32	32	28	29	28	30
Mean	15.1	15.0	15.0	14.9	14.8	15.0
Standard error of the mean	0.07	0.06	0.06	0.07	0.08	0.03
Women						
Scotland						
Less than 12.0	6	7	12	9	5	8
12.0 less than 13.0	27	28	28	22	20	25
13.0 less than 14.0	43	39	38	39	40	40
14.0 or more	24	26	22	30	35	27
Mean	13.3	13.3	13.1	13.4	13.6	13.3
Standard error of the mean	0.05	0.04	0.04	0.05	0.05	0.02
England						
Less than 12.0	10	11	13	13	6	11
12.0 less than 13.0	34	33	33	27	20	30
13.0 less than 14.0	41	38	38	40	46	40
14.0 or more	15	17	16	20	29	19
Mean	13.1	13.1	13.0	13.1	13.5	13.1
Standard error of the mean	0.04	0.03	0.03	0.04	0.04	0.02
Northern England[a]						
Less than 12.0	9	11	14	14	5	11
12.0 less than 13.0	36	33	32	25	20	30
13.0 less than 14.0	41	38	35	42	49	40
14.0 or more	14	18	19	19	26	19
Mean	13.1	13.1	13.0	13.1	13.5	13.1
Standard error of the mean	0.07	0.06	0.07	0.07	0.08	0.03

[a]Consists of Northern & Yorkshire and North West health regions

Continued....

Table 9.29 - continued

Haemoglobin (g/dl)	Age					Total
	16-24	25-34	35-44	45-54	55-64	
Bases						
Men						
Scotland (weighted)	*533*	*792*	*711*	*618*	*487*	*3142*
Scotland (unweighted)	*336*	*667*	*664*	*573*	*547*	*2787*
England (unweighted)	*613*	*1072*	*1042*	*843*	*734*	*4304*
Northern England (unweighted)	*171*	*297*	*269*	*234*	*216*	*1187*
Women						
Scotland (weighted)	*424*	*685*	*700*	*633*	*484*	*2926*
Scotland (unweighted)	*332*	*796*	*789*	*659*	*657*	*3233*
England (unweighted)	*560*	*1056*	*1065*	*943*	*745*	*4369*
Northern England (unweighted)	*154*	*287*	*289*	*250*	*181*	*1161*

Table 9.30 Haemoglobin, by region, age and sex

All with a valid haemoglobin measurement *1995*

Haemoglobin (g/dl)	Region							Total
	Highland & Islands	Grampian & Tayside	Lothian & Fife	Borders, Dumfries & Galloway	Greater Glasgow	Lanarkshire, Ayrshire & Arran	Forth Valley, Argyll & Clyde	
	%	%	%	%	%	%	%	%
Men								
16-44								
Less than 13.0	1	1	1	2	1	1	1	1
13.0, less than 14.0	13	12	9	9	5	11	11	10
14.0, less than 15.5	52	51	56	59	55	47	50	53
15.5 or more	34	35	33	31	39	40	37	36
Mean	15.1	15.1	15.1	15.0	15.2	15.1	15.2	15.1
Standard error of the mean	0.09	0.05	0.04	0.10	0.05	0.05	0.06	0.02
45-64								
Less than 13.0	1	4	3	4	2	4	3	3
13.0, less than 14.0	11	6	14	13	6	12	8	10
14.0, less than 15.5	62	55	47	61	45	53	48	51
15.5 or more	26	35	36	23	47	31	41	36
Mean	14.9	15.1	15.0	14.9	15.3	14.9	15.2	15.1
Standard error of the mean	0.12	0.07	0.07	0.14	0.07	0.08	0.10	0.03
All men								
Less than 13.0	1	2	2	3	1	2	2	2
13.0, less than 14.0	12	10	10	10	5	11	10	10
14.0, less than 15.5	56	53	54	59	51	50	49	52
15.5 or more	31	35	34	28	42	37	38	36
Mean	15.1	15.1	15.0	15.0	15.2	15.1	15.2	15.1
Standard error of the mean	0.07	0.04	0.04	0.08	0.04	0.05	0.05	0.02
Women								
16-44								
Less than 12.0	9	6	8	7	11	7	10	8
12.0, less than 13.0	28	28	27	30	27	30	28	28
13.0, less than 14.0	43	38	42	43	37	42	37	40
14 or more	20	28	23	20	25	20	26	24
Mean	13.2	13.3	13.2	13.2	13.2	13.2	13.2	13.2
Standard error of the mean	0.10	0.06	0.05	0.10	0.06	0.05	0.07	0.02
45-64								
Less than 12.0	6	6	10	9	9	6	5	7
12.0, less than 13.0	21	18	24	21	15	26	25	21
13.0, less than 14.0	39	41	40	40	44	36	36	40
14 or more	34	35	27	30	33	32	33	32
Mean	13.5	13.6	13.3	13.4	13.6	13.5	13.5	13.5
Standard error of the mean	0.13	0.08	0.08	0.17	0.07	0.08	0.09	0.03
All women								
Less than 12.0	8	6	9	8	10	6	8	8
12.0, less than 13.0	25	23	26	26	22	29	27	25
13.0, less than 14.0	41	39	41	42	39	40	36	40
14 or more	26	31	24	24	28	25	28	27
Mean	13.3	13.4	13.3	13.3	13.3	13.3	13.3	13.3
Standard error of the mean	0.08	0.05	0.04	0.09	0.05	0.04	0.05	0.02

Continued ....

Table 9.30 - continued

All with a valid haemoglobin measurement *1995*

Haemoglobin (g/dl)	Region							Total
	Highland & Islands	Grampian & Tayside	Lothian & Fife	Borders, Dumfries & Galloway	Greater Glasgow	Lanarkshire, Ayrshire & Arran	Forth Valley, Argyll & Clyde	
Bases (weighted)								
Men								
16-44	105	411	490	85	300	371	275	2036
45-64	62	207	214	52	200	231	138	1106
All men	167	618	704	138	500	602	413	3142
Women								
16-44	95	288	420	84	327	330	266	1809
45-64	65	202	214	55	209	219	153	1117
All women	160	490	633	139	536	549	419	2926
Bases (unweighted)								
Men								
16-44	155	299	352	129	217	295	220	1667
45-64	124	182	196	97	169	217	135	1120
All men	279	481	548	226	386	512	355	2787
Women								
16-44	180	266	385	165	301	352	268	1917
45-64	144	206	230	118	205	254	159	1316
All women	324	472	615	283	506	606	427	3233

Table 9.31 Haemoglobin, by social class of chief income earner, age and sex

All with a valid haemoglobin measurement *1995*

Haemoglobin (g/dl)	Social class of chief income earner						Total[a]
	I	II	IIINM	IIIM	IV	V	
	%	%	%	%	%	%	%
Men							
16-44							
Less than 13.0	-	2	2	1	0	-	1
13.0, less than 14.0	8	11	11	10	10	5	10
14.0, less than 15.5	60	54	52	52	51	50	53
15.5 or more	32	33	35	36	39	45	36
Mean	15.1	15.0	15.0	15.1	15.2	15.3	15.1
Standard error of the mean	0.08	0.04	0.06	0.04	0.06	0.09	0.02
45-64							
Less than 13.0	5	1	3	3	6	4	3
13.0, less than 14.0	11	12	8	9	8	9	10
14.0, less than 15.5	51	53	50	51	53	46	51
15.5 or more	34	34	39	37	33	41	36
Mean	14.9	15.0	15.2	15.1	15.0	15.3	15.1
Standard error of the mean	0.12	0.05	0.13	0.06	0.10	0.19	0.03
All men							
Less than 13.0	2	2	2	2	2	2	2
13.0, less than 14.0	9	11	10	10	9	6	10
14.0, less than 15.5	56	54	51	52	52	49	52
15.5 or more	33	33	36	36	37	43	36
Mean	15.1	15.0	15.1	15.1	15.1	15.3	15.1
Standard error of the mean	0.07	0.03	0.06	0.03	0.05	0.09	0.02
Women							
16-44							
Less than 12.0	8	7	9	11	10	5	8
12.0, less than 13.0	34	32	27	30	20	22	28
13.0, less than 14.0	34	42	41	36	41	37	40
14 or more	24	19	23	23	28	36	24
Mean	13.1	13.2	13.2	13.2	13.3	13.5	13.2
Standard error of the mean	0.09	0.04	0.06	0.05	0.07	0.11	0.02
45-64							
Less than 12.0	4	6	8	8	9	9	7
12.0, less than 13.0	21	24	21	19	19	23	21
13.0, less than 14.0	41	43	38	43	34	28	40
14 or more	34	27	34	30	38	40	32
Mean	13.5	13.4	13.5	13.5	13.6	13.5	13.5
Standard error of the mean	0.12	0.06	0.08	0.07	0.10	0.15	0.03
All women							
Less than 12.0	7	6	9	10	10	7	8
12.0, less than 13.0	30	29	24	26	20	22	25
13.0, less than 14.0	37	42	40	39	39	33	40
14 or more	27	23	27	26	32	38	27
Mean	13.3	13.3	13.3	13.3	13.4	13.5	13.3
Standard error of the mean	0.07	0.04	0.05	0.04	0.06	0.09	0.02

Continued…

Table 9.31 - continued

1995

Haemoglobin (g/dl)	Social class of chief income earner						Total[a]
	I	II	IIINM	IIIM	IV	V	
Bases (weighted)							
Men							
16-44	*140*	*512*	*268*	*630*	*274*	*86*	*2036*
45-64	*81*	*308*	*101*	*395*	*134*	*55*	*1106*
All men	*221*	*820*	*370*	*1025*	*408*	*141*	*3142*
Women							
16-44	*129*	*425*	*317*	*466*	*250*	*75*	*1809*
45-64	*68*	*315*	*180*	*306*	*151*	*65*	*1117*
All women	*197*	*741*	*497*	*772*	*401*	*140*	*2926*
Bases (unweighted)							
Men							
16-44	*117*	*414*	*216*	*512*	*230*	*80*	*1667*
45-64	*76*	*290*	*105*	*400*	*146*	*70*	*1120*
All men	*193*	*704*	*321*	*912*	*376*	*150*	*2787*
Women							
16-44	*121*	*437*	*383*	*443*	*300*	*89*	*1917*
45-64	*71*	*369*	*228*	*323*	*192*	*89*	*1316*
All women	*192*	*806*	*611*	*766*	*492*	*178*	*3233*

[a]The total includes informants for whom social class was unknown.

Table 9.32 Ferritin, by age and sex

All with a valid ferritin measurement *1995*

Ferritin (µg/l)	Age					Total
	16-24	25-34	35-44	45-54	55-64	
	%	%	%	%	%	%
Men						
Mean	73.5	108.8	134.6	153.0	155.8	124.7
Standard error of the mean	2.13	3.66	5.56	5.76	8.43	2.41
Geometric mean	61.9	88.3	104.0	114.7	111.0	94.1
1st quintile	37	20	14	14	14	19
2nd quintile	29	22	19	15	19	21
3rd quintile	18	21	21	20	15	19
4th quintile	13	23	23	21	23	21
5th quintile	3	14	23	31	30	20
Women						
Mean	35.9	39.2	40.4	57.6	83.1	50.3
Standard error of the mean	1.49	0.98	1.54	2.18	3.22	0.91
Geometric mean	29.5	32.4	30.3	41.2	63.9	37.1
1st quintile	23	21	26	19	7	20
2nd quintile	31	24	22	15	9	20
3rd quintile	23	21	23	17	11	19
4th quintile	16	24	16	22	24	20
5th quintile	7	10	13	27	49	20
All informants						
Mean	56.9	76.5	87.8	104.9	119.6	88.8
Standard error of the mean	1.49	2.21	3.16	3.34	4.68	1.41
Geometric mean	44.6	55.5	56.4	68.4	84.4	60.1
1st quintile	25	20	23	17	9	19
2nd quintile	28	23	20	17	14	20
3rd quintile	24	21	16	18	21	20
4th quintile	17	20	19	22	25	20
5th quintile	6	16	21	26	31	20
Bases (weighted)						
Men	*535*	*788*	*715*	*621*	*490*	*3148*
Women	*424*	*680*	*705*	*633*	*485*	*2927*
All informants	*959*	*1468*	*1420*	*1254*	*975*	*6075*
Bases (unweighted)						
Men	*339*	*666*	*663*	*574*	*550*	*2792*
Women	*332*	*795*	*792*	*659*	*656*	*3234*
All informants	*671*	*1461*	*1455*	*1233*	*1206*	*6026*

Table 9.33 Ferritin in the 1995 Scottish Health Survey and the 1994 Health Survey for England, by age and sex

All with a valid ferritin measurement — *Scottish Health Survey 1995 and English Health Survey 1994*

Ferritin (µg/l)	Age					Total
	16-24	25-34	35-44	45-54	55-64	
Men						
Scotland						
Mean	73.5	108.8	134.6	153	155.8	124.7
Standard error of the mean	2.13	3.66	5.56	5.76	8.43	2.41
Geometric mean	61.9	88.3	104.0	114.7	111.0	94.1
1st quintile (%)[a]	37	20	14	14	14	19
England						
Mean	65.1	93.7	106.7	116	126.2	102.7
Standard error of the mean	1.55	2.31	3.28	2.96	5.07	1.48
Geometric mean	55.6	77.4	83.0	91.9	89.9	79.6
1st quintile (%)[b]	36	17	18	16	18	20
Northern England[c]						
Mean	60.7	87.4	107	115.8	130.3	101.4
Standard error of the mean	2.69	3.11	9.17	6.08	8.57	3.06
Geometric mean	50.1	79.4	79.4	100.0	100.0	79.4
1st quintile (%)[d]	37	17	19	16	17	20
Women						
Scotland						
Mean	35.9	39.2	40.4	57.6	83.1	50.3
Standard error of the mean	1.49	0.98	1.54	2.18	3.22	0.91
Geometric mean	29.5	32.4	30.3	41.2	63.9	37.1
1st quintile (%)[e]	23	21	26	19	7	20
England						
Mean	31.9	36	38.1	47	68.5	43.9
Standard error of the mean	0.93	0.76	1.27	1.56	1.92	0.63
Geometric mean	25.5	29.1	28.6	33.3	54.3	32.6
1st quintile (%)[f]	24	18	22	20	5	18
Northern England[c]						
Mean	31.5	37.1	37.5	49.0	73.6	44.5
Standard error of the mean	1.84	1.59	1.88	3.89	4.93	1.36
Geometric mean	25.1	31.6	25.1	31.6	50.1	31.6
1st quintile (%)[g]	25	17	24	22	6	19
Bases						
Men						
Scotland (weighted)	*535*	*788*	*715*	*621*	*490*	*3148*
Scotland (unweighted)	*339*	*666*	*663*	*574*	*550*	*2792*
England (unweighted)	*628*	*1083*	*1060*	*849*	*750*	*4370*
Northern England (unwieghted)	*175*	*299*	*275*	*237*	*219*	*1205*
Women						
Scotland (weighted)	*424*	*680*	*705*	*633*	*485*	*2927*
Scotland (unweighted)	*332*	*795*	*792*	*659*	*656*	*3234*
England (unweighted)	*578*	*1075*	*1087*	*959*	*753*	*4452*
Northern England (unweighted)	*163*	*296*	*290*	*257*	*179*	*1185*

[a]Defined as less than 54 µg/l

[b]Defined as less than 46.5 µg/l

[c]Consists of Northern & Yorkshire and North West health regions

[d]Defined as less than 43.5 µg/l

[e]Defined as less than 20 µg/l

[f]Defined as less than 17 µg/l

[g]Defined as less than 17 µg/l

Table 9.34 Ferritin, by region, age and sex

All with a valid ferritin measurement *1995*

Ferritin (ug/l)	Region							Total
	Highland & Islands	Grampian & Tayside	Lothian & Fife	Borders, Dumfries & Galloway	Greater Glasgow	Lanarkshire, Ayrshire & Arran	Forth Valley, Argyll & Clyde	
	%	%	%	%	%	%	%	%
Men								
16-44								
1st quintile	18	23	23	29	19	20	25	22
2nd quintile	29	23	20	27	24	25	22	23
3rd quintile	18	21	21	20	23	18	19	20
4th quintile	18	21	24	14	18	19	16	20
5th quintile	17	12	12	10	15	18	18	15
Mean	110.8	105.1	103.4	90.8	120.3	107.5	116.0	108.5
Standard error of the mean	8.92	4.91	3.49	7.87	10.01	3.77	9.76	2.53
Geometric mean	88.0	83.3	84.0	71.2	89.7	87.8	85.5	85.2
45-64								
1st quintile	19	13	13	18	10	17	14	14
2nd quintile	9	21	16	15	17	18	13	17
3rd quintile	13	16	23	21	16	15	19	18
4th quintile	30	21	21	17	20	21	26	22
5th quintile	29	29	27	28	37	30	28	30
Mean	135.6	154.6	135.3	140.4	187.2	143.7	167.0	154.3
Standard error of the mean	10.96	12.25	7.21	16.54	16.77	8.08	15.69	4.92
Geometric mean	108.9	111.2	107.9	103.8	127.9	108.0	118.5	113.1
All men								
1st quintile	18	20	20	25	16	19	21	19
2nd quintile	22	22	18	22	21	22	19	21
3rd quintile	16	20	22	21	20	17	19	19
4th quintile	22	21	23	15	19	20	20	21
5th quintile	22	18	16	17	24	23	22	20
Mean	120.0	121.3	113.2	110.3	147.1	121.5	133.4	124.7
Standard error of the mean	6.97	5.27	3.32	8.29	9.12	3.95	8.44	2.41
Geometric mean	95.3	91.5	90.7	82.6	103.4	95.1	95.5	94.1
Bases (weighted)								
Men								
16-44	*106*	*415*	*488*	*83*	*300*	*372*	*273*	*2038*
45-64	*62*	*201*	*216*	*54*	*200*	*236*	*141*	*1111*
All men	*169*	*616*	*705*	*137*	*500*	*608*	*415*	*3148*
Bases (unweighted)								
Men								
16-44	*156*	*302*	*352*	*125*	*216*	*297*	*220*	*1668*
45-64	*126*	*176*	*197*	*96*	*169*	*221*	*139*	*1124*
All men	*282*	*478*	*549*	*221*	*385*	*518*	*359*	*2792*

Continued ....

Table 9.34 - continued

All with a valid ferritin measurement *1995*

Ferritin (ug/l)	Region							Total
	Highland & Islands	Grampian & Tayside	Lothian & Fife	Borders, Dumfries & Galloway	Greater Glasgow	Lanarkshire, Ayrshire & Arran	Forth Valley, Argyll & Clyde	
	%	%	%	%	%	%	%	%
Women								
16-44								
1st quintile	17	29	24	23	25	17	25	23
2nd quintile	36	22	29	31	23	24	19	25
3rd quintile	18	20	25	23	20	24	22	22
4th quintile	18	17	15	20	22	23	21	19
5th quintile	11	12	8	3	10	12	13	10
Mean	39.5	37.9	36.2	34.6	39.4	41.6	41.5	38.9
Standard error of the mean	3.32	1.71	1.47	2.85	2.16	1.61	2.54	0.79
Geometric mean	32.0	29.5	29.3	29.3	30.3	34.3	31.6	30.9
45-64								
1st quintile	15	9	16	20	15	14	13	14
2nd quintile	12	15	14	15	12	10	10	12
3rd quintile	12	15	17	10	13	15	16	15
4th quintile	26	22	21	22	20	25	23	23
5th quintile	35	38	33	34	41	36	38	37
Mean	61.3	75.5	63.8	55.4	68.4	69.5	73.5	68.7
Standard error of the mean	6.08	5.74	3.69	5.32	4.11	3.94	5.76	1.90
Geometric mean	46.8	54.1	46.2	41.6	50.7	49.9	52.8	49.8
All women								
1st quintile	16	21	21	22	21	16	20	20
2nd quintile	27	19	24	24	19	19	16	20
3rd quintile	16	18	22	18	17	21	20	19
4th quintile	21	19	17	21	21	23	22	20
5th quintile	21	23	16	15	22	21	22	20
Mean	48.2	53.5	45.6	42.9	50.5	52.6	53.4	50.3
Standard error of the mean	3.25	2.71	1.67	2.85	2.15	1.92	2.77	0.91
Geometric mean	37.3	37.9	34.2	33.7	36.9	39.8	38.2	37.1
Bases (weighted)								
Women								
16-44	*94*	*288*	*415*	*82*	*332*	*336*	*262*	*1809*
45-64	*63*	*204*	*215*	*55*	*208*	*219*	*155*	*1118*
All women	*157*	*492*	*630*	*137*	*540*	*555*	*417*	*2927*
Bases (unweighted)								
Women								
16-44	*178*	*268*	*381*	*162*	*307*	*359*	*264*	*1919*
45-64	*140*	*206*	*230*	*117*	*206*	*253*	*163*	*1315*
All women	*318*	*474*	*611*	*279*	*513*	*612*	*427*	*3234*

Table 9.35 Ferritin, by social class of chief income earner, age and sex

All with a valid ferritin measurement *1995*

Ferritin (ug/l)	Social class of chief income earner						Total[a]
	I	II	IIINM	IIIM	IV	V	
	%	%	%	%	%	%	%
Men							
16-44							
1st quintile	19	24	22	22	19	26	22
2nd quintile	28	25	18	21	27	22	23
3rd quintile	26	16	18	20	25	21	20
4th quintile	17	19	23	21	17	25	20
5th quintile	10	16	20	15	12	6	15
Mean	97.8	106.8	114.1	109.2	110.6	91.7	108.5
Standard error of the mean	5.40	4.48	4.98	3.95	9.80	6.02	2.53
Geometric mean	86.2	82.6	84.2	89.6	87.2	82.2	85.2
45-64							
1st quintile	18	12	15	14	16	14	14
2nd quintile	23	15	19	15	15	22	17
3rd quintile	11	19	21	14	22	17	18
4th quintile	18	23	19	25	17	16	22
5th quintile	29	31	27	31	29	32	30
Mean	158.9	146.1	158.4	153.1	168.9	175.4	154.3
Standard error of the mean	22.63	7.40	15.24	6.90	21.88	24.86	4.92
Geometric mean	96.4	103.5	115.2	110.8	117.1	108.0	113.1
All men							
1st quintile	19	19	20	19	18	21	19
2nd quintile	26	21	18	19	23	22	21
3rd quintile	21	17	19	18	24	19	19
4th quintile	18	20	22	23	17	21	21
5th quintile	16	21	22	21	18	16	20
Mean	120.0	121.6	126.3	126.1	130.2	123.9	124.7
Standard error of the mean	9.10	4.00	5.62	3.66	9.90	10.77	2.41
Geometric mean	88.1	89.7	94.8	95.0	97.7	90.1	94.1
Bases (weighted)							
Men							
16-44	*144*	*509*	*266*	*630*	*274*	*87*	*2038*
45-64	*82*	*309*	*101*	*393*	*139*	*54*	*1111*
All men	*227*	*818*	*367*	*1023*	*413*	*141*	*3148*
Bases (unweighted)							
Men							
16-44	*119*	*412*	*214*	*512*	*230*	*81*	*1668*
45-64	*77*	*291*	*105*	*397*	*151*	*69*	*1124*
All men	*196*	*703*	*319*	*909*	*381*	*150*	*2792*

[a]The total includes informants for whom social class was unknown.

Continued…

Table 9.35 - continued

All with a valid ferritin measurement *1995*

Ferritin (ug/l)	Social class of chief income earner						Total[a]
	I	II	IIINM	IIIM	IV	V	
	%	%	%	%	%	%	%
Women							
16-44							
1st quintile	31	22	25	24	20	26	23
2nd quintile	21	21	26	26	27	21	25
3rd quintile	23	22	20	23	21	27	22
4th quintile	17	21	18	18	20	23	19
5th quintile	9	14	11	9	12	3	10
Mean	34.4	43.4	38.9	36.7	41.9	34.1	38.9
Standard error of the mean	1.97	2.02	1.79	1.20	2.78	2.18	0.79
Geometric mean	29.3	27.4	33.8	30.7	29.5	32.2	30.9
45-64							
1st quintile	15	14	16	13	14	17	14
2nd quintile	5	19	13	10	7	14	12
3rd quintile	14	14	14	16	14	12	15
4th quintile	33	23	19	20	29	21	23
5th quintile	32	30	39	42	36	37	37
Mean	63.4	59.7	70.1	79.3	69.1	62.3	68.7
Standard error of the mean	5.17	3.10	4.76	4.70	4.14	5.75	1.90
Geometric mean	62.9	50.0	44.2	49.2	55.0	51.7	49.8
All women							
1st quintile	25	18	22	19	18	22	20
2nd quintile	16	20	21	19	19	17	20
3rd quintile	20	19	18	21	18	20	19
4th quintile	22	22	18	19	23	22	20
5th quintile	17	21	21	22	21	19	20
Mean	44.2	50.3	50.2	53.7	52.1	47.2	50.3
Standard error of the mean	2.39	1.78	2.18	2.14	2.42	3.14	0.91
Geometric mean	33.5	33.6	37.9	36.4	37.8	38.4	37.1
Bases (weighted)							
Women							
16-44	*129*	*426*	*316*	*463*	*252*	*75*	*1809*
45-64	*66*	*316*	*180*	*307*	*152*	*65*	*1118*
All women	*195*	*742*	*496*	*771*	*404*	*140*	*2927*
Bases (unweighted)							
Women							
16-44	*121*	*439*	*381*	*442*	*303*	*88*	*1919*
45-64	*69*	*371*	*226*	*324*	*191*	*90*	*1315*
All women	*190*	*810*	*607*	*766*	*494*	*178*	*3234*

[a]The total includes informants for whom social class was unknown.

Table 9.36 Percentage of informants in the lowest quintile of ferritin, by level of haemoglobin, age and sex

All with valid ferritin and haemoglobin measurements *1995*

% Lowest quartile of ferritin	**Haemoglobin level**		**Total**
	Low[a]	Normal	
	%	%	%
Men			
16-44	81	21	22
45-64	58	13	14
All men	67	18	19
Women			
16-44	67	19	23
45-64	65	10	14
All women	66	16	20
Bases (weighted)			
Men			
16-44	*24*	*1991*	*2015*
45-64	*35*	*1060*	*1095*
All men	*59*	*3051*	*3109*
Women			
16-44	*151*	*1628*	*1779*
45-64	*80*	*1017*	*1098*
All women	*231*	*2645*	*2877*
Bases (unweighted)			
Men			
16-44	*21*	*1626*	*1647*
45-64	*37*	*1067*	*1104*
All men	*58*	*2693*	*2751*
Women			
16-44	*156*	*1730*	*1886*
45-64	*82*	*1209*	*1291*
All women	*238*	*2939*	*3177*

[a]Low haemoglobin is defined by less than 13 g/dl for men and less than 12 g/dl for women

Table 9.37 Proportion of informants with low haemoglobin, low ferritin, or both, by age and sex

All with valid haemoglobin and ferrtin measurements *1995*

Low haemoglobin and low ferritin	**Age**		**Total**
	16-44	45-64	
	%	%	%
Men			
Low haemoglobin only	1	3	2
Low ferritin only	22	14	19
Low haemoglobin and ferritin	1	2	2
Women			
Low haemoglobin only	8	7	8
Low ferritin only	23	14	20
Low haemoglobin and ferritin	7	5	6
Bases (weighted)			
Men	*2015*	*1095*	*3109*
Women	*1779*	*1098*	*2877*
Bases (unweighted)			
Men	*1647*	*1104*	*2751*
Women	*1886*	*1291*	*3177*

Table 9.38 Vitamins C, A and E and carotenoids, by age and sex

All with a valid vitamin measurement — *1995*

µmol/l	Age		Total
	16-44	45-64	
Men			
Vitamin C			
Mean	32.5	27.4	30.4
S.E.	1.31	1.53	1.00
5th percentile	5.3	4.0	4.4
10th percentile	7.0	4.6	5.8
Median	28.7	20.8	24.9
90th percentile	65.8	60.5	62.0
95th percentile	78.6	67.7	73.4
% of <11	19.6	33.3	25.2
% of 11-17	15.5	12.1	14.1
% of over 17	64.9	54.6	60.6
Vitamin A and carotenoids			
Retinol			
Mean	2.6	2.7	2.6
S.E.	0.05	0.05	0.03
5th percentile	1.4	1.5	1.5
10th percentile	1.7	1.8	1.7
Median	2.5	2.7	2.6
90th percentile	3.6	3.7	3.6
95th percentile	4.0	4.1	4.0
β-carotene			
Mean	0.30	0.34	0.32
S.E.	0.011	0.015	0.009
5th percentile	0.09	0.08	0.09
10th percentile	0.11	0.13	0.12
Median	0.26	0.28	0.27
90th percentile	0.52	0.61	0.57
95th percentile	0.63	0.82	0.73
α-carotene			
Mean	0.07	0.09	0.08
S.E.	0.003	0.005	0.003
5th percentile	0.02	0.02	0.02
10th percentile	0.03	0.03	0.03
Median	0.06	0.07	0.06
90th percentile	0.13	0.18	0.14
95th percentile	0.16	0.21	0.19
β-cryptoxanthin			
Mean	0.12	0.11	0.11
S.E.	0.006	0.009	0.005
5th percentile	0.03	0.02	0.02
10th percentile	0.03	0.02	0.03
Median	0.09	0.08	0.09
90th percentile	0.23	0.21	0.22
95th percentile	0.36	0.27	0.32
Lycopene			
Mean	0.71	0.54	0.64
S.E.	0.02	0.021	0.015
5th percentile	0.21	0.10	0.16
10th percentile	0.30	0.16	0.25
Median	0.66	0.48	0.58
90th percentile	1.22	0.94	1.11
95th percentile	1.40	1.15	1.31

µmol/l	Age		Total
	16-44	45-64	
Women			
Vitamin C			
Mean	38.7	34.0	37.0
S.E.	1.27	1.78	1.04
5th percentile	5.7	4.7	5.6
10th percentile	9.5	7.1	7.8
Median	35.5	26.9	33.3
90th percentile	69.7	72.3	71.2
95th percentile	78.2	82.5	80.5
% of <11	12.1	20.3	15.1
% of 11-17	11.5	16.1	13.2
% of over 17	76.4	63.5	71.7
Vitamin A and carotenoids			
Retinol			
Mean	2.3	2.5	2.4
S.E.	0.04	0.06	0.03
5th percentile	1.3	1.5	1.4
10th percentile	1.5	1.6	1.5
Median	2.2	2.4	2.2
90th percentile	3.2	3.6	3.3
95th percentile	3.6	4.0	3.8
β-carotene			
Mean	0.41	0.43	0.42
S.E.	0.016	0.021	0.013
5th percentile	0.12	0.12	0.12
10th percentile	0.16	0.17	0.16
Median	0.34	0.35	0.34
90th percentile	0.72	0.80	0.76
95th percentile	0.85	1.00	0.93
α-carotene			
Mean	0.09	0.10	0.10
S.E.	0.004	0.005	0.003
5th percentile	0.03	0.03	0.03
10th percentile	0.03	0.04	0.04
Median	0.08	0.08	0.08
90th percentile	0.16	0.17	0.16
95th percentile	0.21	0.24	0.23
β-cryptoxanthin			
Mean	0.15	0.14	0.15
S.E.	0.007	0.011	0.006
5th percentile	0.03	0.03	0.03
10th percentile	0.05	0.03	0.04
Median	0.11	0.1	0.11
90th percentile	0.28	0.31	0.29
95th percentile	0.37	0.41	0.39
Lycopene			
Mean	0.68	0.50	0.62
S.E.	0.017	0.021	0.014
5th percentile	0.25	0.12	0.17
10th percentile	0.30	0.16	0.23
Median	0.64	0.47	0.59
90th percentile	1.11	0.92	1.03
95th percentile	1.22	1.02	1.18

Continued ....

Table 9.38 - continued

1995

µmol/l				µmol/l			
	16-44	45-64	Total		16-44	45-64	Total
Lutein				**Lutein**			
Mean	0.19	0.20	0.20	Mean	0.20	0.20	0.20
S.E.	0.006	0.007	0.004	S.E.	0.005	0.009	0.005
5th percentile	0.08	0.06	0.08	5th percentile	0.08	0.07	0.07
10th percentile	0.09	0.09	0.09	10th percentile	0.09	0.08	0.09
Median	0.17	0.18	0.18	Median	0.18	0.18	0.18
90th percentile	0.31	0.35	0.33	90th percentile	0.32	0.34	0.32
95th percentile	0.38	0.43	0.41	95th percentile	0.36	0.40	0.39
α-cryptoxanthin				**α-cryptoxanthin**			
Mean	0.07	0.06	0.07	Mean	0.08	0.07	0.07
S.E.	0.003	0.002	0.002	S.E.	0.002	0.003	0.002
5th percentile	0.02	0.01	0.02	5th percentile	0.03	0.02	0.03
10th percentile	0.03	0.02	0.03	10th percentile	0.04	0.03	0.03
Median	0.07	0.06	0.06	Median	0.07	0.06	0.07
90th percentile	0.12	0.11	0.12	90th percentile	0.13	0.12	0.13
95th percentile	0.14	0.13	0.14	95th percentile	0.14	0.13	0.14
Vitamin E				**Vitamin E**			
α-tocopherol				**α-tocopherol**			
Mean	29.2	33.1	30.8	Mean	28.4	33.1	30.1
S.E.	0.52	0.69	0.43	S.E.	0.45	0.74	0.40
5th percentile	16.6	18.1	17.7	5th percentile	17.4	17.3	17.4
10th percentile	19.6	21.7	20.3	10th percentile	19.5	21.8	19.7
Median	27.8	31.8	29.9	Median	26.9	31.5	28.7
90th percentile	40.3	45.0	42.3	90th percentile	38.1	46.3	42.3
95th percentile	44.8	52.4	48.6	95th percentile	43.5	51.2	48.4
α-tocopherol:total cholesterol ratio (µmol/mmol)				**α-tocopherol:total cholesterol ratio (µmol/mmol)**			
Mean	5.40	5.37	5.39	Mean	5.57	5.30	5.47
S.E.	0.083	0.097	0.063	S.E.	0.074	0.107	0.061
5th percentile	3.36	3.31	3.34	5th percentile	3.83	2.97	3.63
10th percentile	3.83	3.81	3.83	10th percentile	4.14	3.63	3.95
Median	5.24	5.20	5.24	Median	5.31	5.09	5.21
90th percentile	6.95	7.17	7.10	90th percentile	7.08	7.54	7.17
95th percentile	8.26	7.82	7.88	95th percentile	7.93	8.32	8.18
γ-tocopherol				**γ-tocopherol**			
Mean	2.56	2.75	2.64	Mean	2.42	2.80	2.56
S.E.	0.065	0.084	0.052	S.E.	0.06	0.089	0.05
5th percentile	1.03	1.05	1.04	5th percentile	1.01	1.14	1.06
10th percentile	1.33	1.40	1.35	10th percentile	1.21	1.37	1.26
Median	2.39	2.49	2.43	Median	2.20	2.65	2.31
90th percentile	4.04	4.55	4.22	90th percentile	3.81	4.61	4.23
95th percentile	4.78	5.20	4.94	95th percentile	4.61	5.35	5.01
Bases (unweighted)				*Bases (unweighted)*			
Vitamin C	*296*	*207*	*503*	*Vitamin C*	*331*	*192*	*523*
Vitamins A and E and carotenoids	*317*	*218*	*535*	*Vitamins A and E and carotenoids*	*364*	*207*	*571*
α-tocopherol:total cholesterol ratio	*315*	*218*	*533*	*α-tocopherol:total cholesterol ratio*	*361*	*207*	*568*

Table 9.39 Vitamins C, A and E and carotenoids, by social class of chief income earner, age and sex

All with a valid vitamin measurement — *1995*

µmol/l	Non-manual	Manual	Total[a]	µmol/l	Non-manual	Manual	Total[a]
Men				**Women**			
Vitamin C				***Vitamin C***			
16-44				**16-44**			
Mean	38.6	26.5	32.5	Mean	42.7	33.1	38.7
S.E.	1.99	1.67	1.31	S.E.	1.70	1.95	1.27
Median	35.5	21.6	28.7	Median	41.9	28.2	35.5
% of <11	13.1	25.8	19.6	% of <11	8.0	16.3	12.1
45-64				**45-64**			
Mean	35.8	22.0	27.4	Mean	39.5	29.9	34.0
S.E.	2.43	1.85	1.53	S.E.	2.69	2.36	1.78
Median	31.6	14.5	20.8	Median	33.1	20.9	26.9
% of <11	15.5	44.9	33.3	% of <11	8.4	29.1	20.3
All men				**All women**			
Mean	37.6	24.4	30.4	Mean	41.7	31.7	37.0
S.E.	1.54	1.25	1.00	S.E.	1.44	1.51	1.04
Median	35.4	18.5	24.9	Median	40.5	25.3	33.3
% of <11	14.0	34.8	25.2	% of <11	8.1	22.0	15.1
Vitamin A				**Vitamin A**			
Retinol				**Retinol**			
16-44				**16-44**			
Mean	2.6	2.6	2.6	Mean	2.3	2.3	2.3
S.E.	0.07	0.07	0.05	S.E.	0.05	0.06	0.04
Median	2.5	2.5	2.5	Median	2.2	2.2	2.2
45-64				**45-64**			
Mean	2.8	2.7	2.7	Mean	2.5	2.5	2.5
S.E.	0.08	0.07	0.05	S.E.	0.09	0.07	0.06
Median	2.8	2.7	2.7	Median	2.4	2.5	2.4
All men				**All women**			
Mean	2.7	2.6	2.6	Mean	2.4	2.4	2.4
S.E.	0.05	0.05	0.03	S.E.	0.05	0.05	0.03
Median	2.6	2.5	2.5	Median	2.2	2.3	2.2
β-carotene				**β-carotene**			
16-44				**16-44**			
Mean	0.32	0.27	0.30	Mean	0.44	0.36	0.41
S.E.	0.015	0.015	0.011	S.E.	0.025	0.017	0.016
Median	0.28	0.25	0.26	Median	0.36	0.32	0.34
45-64				**45-64**			
Mean	0.38	0.31	0.34	Mean	0.48	0.39	0.43
S.E.	0.026	0.017	0.015	S.E.	0.038	0.023	0.021
Median	0.30	0.27	0.28	Median	0.39	0.32	0.35
All men				**All women**			
Mean	0.34	0.29	0.32	Mean	0.46	0.37	0.42
S.E.	0.014	0.011	0.009	S.E.	0.021	0.014	0.013
Median	0.29	0.26	0.27	Median	0.37	0.32	0.34

Continued ....

Table 9.39 - continued

1995

µmol/l	Non-manual	Manual	Total[a]	µmol/l	Non-manual	Manual	Total[a]
Men				**Women**			
Vitamin E				**Vitamin E**			
α-tocopherol				**α-tocopherol**			
16-44				**16-44**			
Mean	30.2	28.6	29.2	Mean	28.5	28.0	28.4
S.E.	0.86	0.67	0.52	S.E.	0.63	0.72	0.45
Median	28.6	27.8	27.8	Median	27.2	26.7	26.9
45-64				**45-64**			
Mean	33.3	33.3	33.1	Mean	33.6	32.2	33.1
S.E.	0.92	0.99	0.69	S.E.	1.10	0.97	0.74
Median	32.0	32.1	31.8	Median	32.4	30.6	31.5
All men				**All women**			
Mean	31.29	30.79	30.80	Mean	30.1	29.8	30.1
S.E.	0.645	0.601	0.426	S.E.	0.57	0.60	0.40
Median	30.0	29.8	29.9	Median	28.8	28.5	28.7
α-tocopherol:total cholesterol ratio (µmol/mmol)				**α-tocopherol:total cholesterol ratio (µmol/mmol)**			
16-44				**16-44**			
Mean	5.57	5.27	5.40	Mean	5.62	5.46	5.57
S.E.	0.132	0.113	0.083	S.E.	0.099	0.122	0.074
Median	5.32	5.18	5.24	Median	5.35	5.17	5.31
45-64				**45-64**			
Mean	5.46	5.34	5.37	Mean	5.47	5.14	5.30
S.E.	0.143	0.132	0.097	S.E.	0.161	0.141	0.107
Median	5.43	5.13	5.20	Median	5.17	5.01	5.09
All men				**All women**			
Mean	5.53	5.30	5.39	Mean	5.57	5.32	5.47
S.E.	0.099	0.086	0.063	S.E.	0.085	0.093	0.061
Median	5.37	5.15	5.24	Median	5.31	5.11	5.21
Bases (unweighted)							
Vitamin C				*Vitamin C*			
16-44	*145*	*132*	*296*	*16-44*	*176*	*129*	*331*
45-64	*84*	*118*	*207*	*45-64*	*83*	*103*	*192*
All men	*229*	*250*	*503*	*All women*	*259*	*232*	*523*
Vitamins A and E and carotenoids				*Vitamins A and E and carotenoids*			
16-44	*154*	*143*	*317*	*16-44*	*195*	*142*	*364*
45-64	*88*	*125*	*218*	*45-64*	*89*	*112*	*207*
All men	*242*	*268*	*535*	*All women*	*284*	*254*	*571*
α-tocopherol:total cholesterol ratio				*α-tocopherol:total cholesterol ratio*			
16-44	*154*	*141*	*315*	*16-44*	*194*	*140*	*361*
45-64	*88*	*125*	*218*	*45-64*	*89*	*112*	*207*
All men	*242*	*266*	*533*	*All women*	*283*	*252*	*568*

[a]Members of the armed forces, students, and those for whom social class could not be coded are not shown separately, but are included in the total column.

Table 9.40 Vitamins C, A and E and carotenoids, by season and sex

All with a valid vitamin measurement *1995*

µmol/1	Seasons				Total
	Winter (Dec - Feb)	Spring (Mar - May)	Summer (Jun - Aug)	Autumn (Sep - Nov)	
Men					
Vitamin C					
Mean	32.1	26.4	31.1	31.2	30.4
S.E.	1.91	2.26	1.85	1.99	1.00
Median	29.5	14.6	27.9	23.9	24.9
Retinol					
Mean	2.7	2.6	2.6	2.7	2.6
S.E.	0.08	0.06	0.06	0.07	0.03
Median	2.6	2.5	2.5	2.6	2.6
β-carotene					
Mean	0.28	0.32	0.32	0.34	0.32
S.E.	0.016	0.016	0.017	0.019	0.009
Median	0.24	0.30	0.26	0.31	0.27
α-tocopherol					
Mean	30.8	32.2	29.1	31.4	30.8
S.E.	0.93	0.90	0.68	0.87	0.43
Median	30.3	30.8	28.4	29.9	29.9
α-tocopherol: total cholesterol ratio (µmol/mmol)					
Mean	5.47	5.28	5.20	5.56	5.39
S.E.	0.148	0.116	0.094	0.133	0.063
Median	5.20	5.29	5.05	5.28	5.24
Women					
Vitamin C					
Mean	36.0	33.7	37.8	39.6	37.0
S.E.	2.05	2.20	2.20	1.88	1.04
Median	33.1	29.0	35.2	35.3	33.3
Retinol					
Mean	2.3	2.4	2.4	2.4	2.4
mean	0.07	0.06	0.07	0.06	0.03
Median	2.10	2.32	2.42	2.25	2.24
β-carotene					
Mean	0.38	0.41	0.43	0.44	0.42
S.E.	0.021	0.024	0.032	0.023	0.013
Median	0.32	0.34	0.34	0.37	0.34
α-tocopherol					
Mean	29.6	31.0	29.0	30.6	30.1
S.E.	0.92	0.80	0.72	0.76	0.40
Median	27.7	30.9	27.2	28.9	28.7
α-tocopherol: total cholesterol ratio (µmol/mmol)					
Mean	5.25	5.41	5.39	5.77	5.47
mean	0.117	0.134	0.106	0.123	0.061
Median	5.00	5.22	5.19	5.61	5.21
Bases (unweighted)					
Vitamin C					
Men	*120*	*104*	*141*	*138*	*503*
Women	*127*	*121*	*124*	*151*	*523*
Vitamins A and E and carotenoids					
Men	*137*	*109*	*140*	*149*	*535*
Women	*142*	*133*	*125*	*171*	*571*
α-tocopherol:total cholesterol ratio					
Men	*137*	*108*	*139*	*149*	*533*
Women	*141*	*133*	*125*	*169*	*568*

Table 9.41 Vitamins C, A and E and carotenoids, by smoking status and sex

All with a valid vitamin measurement *1995*

µmol/l	Smoking status				Total
	Non-smoker	Ex-smoker	Less than 20 a day	More than 20 a day	
Men					
Vitamin C					
Mean	35.3	36.4	21.4	20.0	30.4
Standard error of the mean	1.46	2.36	2.02	1.98	1.00
Median	31.9	35.6	13.5	13.5	24.9
Retinol					
Mean	2.6	2.8	2.7	2.5	2.6
Standard error of the mean	0.05	0.07	0.08	0.08	0.03
Median	2.5	2.8	2.5	2.4	2.5
β-carotene					
Mean	0.34	0.36	0.28	0.25	0.32
Standard error of the mean	0.014	0.019	0.017	0.019	0.009
Median	0.29	0.30	0.25	0.21	0.27
α-tocopherol					
Mean	30.8	33.5	29.8	28.5	30.8
Standard error of the mean	0.67	0.96	0.92	0.88	0.43
Median	29.9	32.1	29.0	28.8	29.9
α-tocopherol:total cholesterol ratio (µmol/mmol)					
Mean	5.51	5.70	5.15	4.95	5.39
Standard error of the mean	0.103	0.130	0.125	0.138	0.063
Median	5.28	5.53	4.99	4.90	5.24
Women					
Vitamin C					
Mean	43.2	43.6	31.4	19.5	37.0
Standard error of the mean	1.49	2.52	2.14	1.71	1.04
Median	42.7	45.9	27.7	16.1	33.3
Retinol					
Mean	2.4	2.4	2.3	2.4	2.4
Standard error of the mean	0.05	0.08	0.06	0.08	0.03
Median	2.2	2.2	2.2	2.4	2.2
β-carotene					
Mean	0.45	0.51	0.33	0.34	0.42
Standard error of the mean	0.020	0.041	0.016	0.022	0.013
Median	0.38	0.40	0.30	0.27	0.34
α-tocopherol					
Mean	29.4	31.0	30.3	30.5	30.1
Standard error of the mean	0.55	1.07	0.93	1.02	0.40
Median	28.2	29.8	29.4	28.2	28.7
α-tocopherol:total cholesterol ratio (µmol/mmol)					
Mean	5.50	5.80	5.25	5.34	5.47
Standard error of the mean	0.083	0.156	0.145	0.158	0.061
Median	5.23	5.49	5.03	5.04	5.21

Continued ....

Table 9.41 - continued

All with a valid vitamin measurement *1995*

µmol/l	Smoking status				Total
	Non-smoker	Ex-smoker	Less than 20 a day	More than 20 a day	
Bases (unweighted)					
Vitamin C					
Men	*221*	*104*	*93*	*85*	*503*
Women	*242*	*87*	*110*	*84*	*523*
Vitamines A and E and carotenoids					
Men	*238*	*111*	*95*	*91*	*535*
Women	*261*	*95*	*125*	*90*	*571*
α-tocopherol:total cholesterol ratio					
Men	*237*	*111*	*94*	*91*	*533*
Women	*260*	*95*	*125*	*88*	*568*

Table 9.42 Vitamins C, A and E and carotenoids, by alcohol consumption and sex

All with a valid vitamin measurement and alcohol consumption *1995*

µmol/l	Alcohol consumption				Total
	Ex-drinker	Non/occasional drinker	Under 21/14 units per week	Over 21/14 units per week	
Men					
Vitamin C					
Mean	[18.9]	25.9	33.5	28.3	30.4
Standard error of the mean	[3.55]	3.03	1.40	1.69	1.00
Median	[15.5]	17.2	29.5	22.5	24.9
Retinol					
Mean	[2.4]	2.3	2.6	2.7	2.6
Standard error of the mean	[0.14]	0.11	0.05	0.06	0.03
Median	[2.3]	2.2	2.6	2.7	2.5
β-carotene					
Mean	[0.36]	0.34	0.35	0.25	0.32
Standard error of the mean	[0.045]	0.033	0.012	0.012	0.009
Median	[0.31]	0.29	0.31	0.21	0.27
α-tocopherol					
Mean	[30.5]	28.3	31.5	30.5	30.8
Standard error of the mean	[1.64]	1.32	0.64	0.64	0.43
Median	[31.2]	27.7	29.9	30.2	29.9
α-tocopherol:total cholesterol ratio (µmol/mmol)					
Mean	[5.19]	5.07	5.45	5.41	5.39
Standard error of the mean	[0.272]	0.183	0.093	0.102	0.063
Median	[5.10]	4.90	5.23	5.44	5.24
Women					
Vitamin C					
Mean	[30.5]	37.7	35.6	43.1	37.0
Standard error of the mean	[7.06]	2.17	1.28	3.10	1.04
Median	[22.7]	33.2	32.7	41.8	33.3
Retinol					
Mean	[2.2]	2.3	2.4	2.5	2.4
Standard error of the mean	[0.22]	0.06	0.04	0.10	0.03
Median	[1.9]	2.2	2.2	2.4	2.2
β-carotene					
Mean	[0.34]	0.44	0.41	0.39	0.42
Standard error of the mean	[0.079]	0.028	0.016	0.031	0.013
Median	[0.25]	0.36	0.34	0.32	0.34
α-tocopherol					
Mean	[27.8]	30.9	29.8	30.0	30.1
Standard error of the mean	[3.64]	0.80	0.52	1.08	0.40
Median	[25.2]	29.7	28.6	28.5	28.7
α-tocopherol:total cholesterol ratio (µmol/mmol)					
Mean	[4.96]	5.38	5.53	5.47	5.47
Standard error of the mean	[0.489]	0.117	0.083	0.140	0.061
Median	[4.66]	5.15	5.25	5.23	5.21

Continued ....

Table 9.42 - continued

All with a valid vitamin measurement and alcohol consumption *1995*

µmol/l	Alcohol consumption				Total
	Ex-drinker	Non/occasional drinker	Under 21 units per week	Over 21 units per week	
Bases (unweighted)					
Vitamin C					
Men	*19*	*54*	*259*	*171*	*503*
Women	*14*	*130*	*309*	*70*	*523*
Vitamines A, and E and carotenoids					
Men	*20*	*56*	*277*	*182*	*535*
Women	*14*	*140*	*338*	*79*	*571*
α-tocopherol:total cholesterol ratio					
Men	*20*	*56*	*276*	*181*	*533*
Women	*14*	*139*	*336*	*79*	*568*

10 CARDIOVASCULAR DISEASE AND ITS RISK FACTORS

Wei Dong, Paola Primatesta and Sara Walsh

SUMMARY

- Overall, 20% of men and women reported having had any cardiovascular disorder. The prevalence increased with age in both sexes, being 48% for men and 41% for women aged 55-64 years.
- The prevalence of ischaemic heart disease (IHD) was 4.0% among all men and 2.9% among all women, and 17% for men and 11% for women aged 55-64 years. Very few informants reported having had stroke.
- The prevalence of intermittent claudication was 1.7% for men and 1.9% for women, and increased with age in both sexes. Intermittent claudication was more common among those who reported having had any cardiovascular disorder or IHD.
- The prevalence of any cardiovascular disorder was higher in Scotland than in England in men (19.3% vs. 17.6%, $p<0.01$) and women (20.2% vs. 18.4%, $p=0.08$). The prevalence of IHD was significantly higher in Scotland than in England in both sexes.
- There were significant regional variations in the prevalence of any cardiovascular disorder and of IHD in both sexes.
- There were significant social class differences in any cardiovascular disorder for men and women and in IHD for women. Those in manual social classes were more likely to report having had these conditions.
- Major CVD risk factors such as obesity, cigarette smoking and heavy drinking were common among informants in Scotland as a whole, and among those with CVD conditions. For example, among those with IHD or stroke, 39% of men and 44% of women were current smokers; 17% of men drank over 28 units per week.

10.1 INTRODUCTION

Mortality from cardiovascular disease (CVD), including coronary heart disease and stroke, is higher in Scotland than in most other countries in the world. CVD is one of the two principal causes of premature deaths in Scotland (cancer being the other one). In its report, S*cotland's Health: A Challenge to Us All*, the Scottish Office set out as one of its priorities a reduction in morbidity and mortality from heart disease. Specifically, it set a target of a 40% reduction in heart disease mortality among people under age 65 between 1990 and 2000.[1]

As part of the Health Survey, information on various self-reported cardiovascular disease and related conditions was obtained and their prevalence are reported on in this chapter. Regional and social class differences in the prevalence of several conditions are also presented. Comparisons are made with results from the Health Survey for England for 1994 (the most recent survey to look at cardiovascular disease) and from the 1984-86 Scottish Heart Health Study. In addition, the prevalence of intermittent claudication, a peripheral vascular disease, was also assessed.

It has been recognised that prevention of CVD should be implemented through both an individual high risk approach and a broader population approach.[2] The high risk approach seeks to protect susceptible individuals, while the population approach deals primarily with the discovery and control of the causes of incidence. In this chapter, therefore, estimates of the frequency of common CVD risk factors in the total population and in those with previous CVD conditions are presented. The relationships between cardiovascular disease and its risk factor are also examined.

Given the age range of the survey informants (16-64 years), the prevalences of some conditions were too low to allow detailed examination in relation to region, social class, and CVD risk factors. Therefore, it is sometimes necessary to limit analyses to a few select measures of CVD (usually summary measures, see Section 10.2.3).

10.2 METHODS AND DEFINITION

10.2.1 Methods

In the Health Survey, three types of interviewer-administered questionnaire were used to collect information on cardiovascular disease and related conditions: the survey questionnaire for CVD conditions (see Section 10.2.2), the Rose chest pain questionnaire and the Edinburgh claudication questionnaire.

The survey questionnaire sought information on self-reported CVD conditions which had been previously *diagnosed by a doctor* (or a nurse in the case of hypertension). Informants were asked if they had ever had a CVD condition in the past, and if they had had the condition within the last 12 months (except in the case of hypertension and diabetes). Those who reported ever having hypertension were asked if they still had it. It is important to note that those who reported having had a particular condition in the last 12 months did not necessarily have the condition diagnosed during this time; their condition may have been diagnosed prior to this period, so these are not measures of incidence.

The CVD questionnaire has been used in the Health Survey for England since 1991. Its accuracy and reliability were examined in a GP enhancement study in 1993 which compared conditions measured by the survey with diagnoses made by GPs. It was concluded that, for most CVD conditions, data from these two sources agreed reasonably well.[3]

The Rose angina questionnaire was developed in the 1960's for assessment of cardiovascular symptoms in population surveys and has been used in the Health Surveys for England and the 1984-1986 Scottish Heart Health Study.[4] The questionnaire is used here to provide alternative estimates of prevalence of angina and heart attack.

The Edinburgh claudication questionnaire was developed from the WHO/Rose questionnaire on claudication. It is considered to have higher sensitivity and specificity than the original Rose questionnaire.[6]

10.2.2 Cardiovascular conditions

In this report, cardiovascular conditions refer to the following eight diagnoses:
angina, heart attack, stroke, heart murmur, abnormal heart rhythm, 'other heart trouble', diabetes and hypertension.

It should be noted that in order to maintain comparability with the Health Survey for England, hypertension and diabetes which are risk factors for CVD were also included in this section as CVD conditions. Women were not classified as having hypertension, diabetes or a heart murmur, if they had the condition when pregnant only.

10.2.3 Summary measures of cardiovascular disease

On the basis of self-reported CVD conditions, the following *summary measures* were also used:

Any cardiovascular disorder: Informants were classified as having any cardiovascular disorder if they had any of the self-reported CVD conditions confirmed by a doctor (or a nurse in the case of hypertension).

Ischaemic heart disease: Informants were classified as having ischaemic heart disease (IHD) if they reported a previous diagnosis of angina or a heart attack.

Ischaemic heart disease or stroke: Informants were classified as having ischaemic heart disease or stroke (IHD or stroke) if they reported a previous diagnosis of angina, a heart attack or a stroke. (In other studies, this group of conditions is often referred to as 'cardiovascular disease'.)

10.2.4 Rose angina and possible myocardial infarction

Based on standard criteria,[5] informants were classified as to whether or not they had Rose angina, or a possible myocardial infarction (MI). Angina was further classified as grade 1 or grade 2, with grade 2 being more severe. Informants were classified as having had a possible MI if they had ever had an attack of severe pain across the front of the chest, lasting for half an hour or more.

10.2.5 Intermittent claudication

Intermittent claudication shares many epidemiological and biological features with ischaemic heart disease. It has been shown to be independently related to mortality from cardiovascular disease and possibly non-cardiovascular disease.[7] Usually presented as calf pain on walking, it is a mild symptom of ischaemia of the lower limb. The prevalence of intermittent claudication can only be accurately assessed in a population survey as only a small proportion of patients with this condition requires hospital referral.[6]

Informants were classified as having the condition if they reported leg pain on walking, but not at rest, which disappeared within 10 minutes after they stopped walking. Intermittent claudication was further classified as grade 1 or grade 2, with grade 2 being more severe.[8]

10.2.6 Interpretations

It should be emphasised that the data presented in this chapter should be interpreted with caution, since they are based on self-reported diagnoses or symptoms. Informants may have had a particular condition but not have recalled it. Recall of having a particular condition can be affected by many factors, such as informant's age, presence of co-existing conditions, level of education, and whether a condition is well defined in clinical and lay perspectives. There will therefore inevitably be some misclassification of the prevalence estimates.

10.3 PREVALENCE BY AGE AND SEX

In general, the prevalence was very low among informants in the younger age groups (under 45 years), and comments are therefore mainly focused on the two older age groups (45-54 and 55-64 years) where the estimates were more stable.

10.3.1 Cardiovascular conditions

Angina

Among men, the prevalence of self-reported angina was 3.1%. This increased with age, and was 4.1% among those aged 45-54 and 14.4% in those aged 55-64 years. Among women, the prevalence was 2.5%, and it increased from 3.1% in those aged 45-54 to 9.9% in those aged 55-64 years. **Table 10.1**

The proportion of informants who reported having angina in the past twelve months was 2.5% among men and 1.8% among women. This was 81% of men and 73% of women who reported ever having angina.

Heart attack

Overall, 2.4% of men and 1.1% of women reported having had a heart attack. Among men the prevalence increased from 3.5% in those aged 45-54 years to 9.8% in those aged 55-64 years. The prevalence among women increased from 1.5% in those aged 45-54 to 4.1% in those aged 55-64 years. **Table 10.1**

Very few informants reported having had a heart attack in the past twelve months, with the prevalence being 0.4% among men and 0.1% among women. This was 16% of men and 10% of women who reported ever having had a heart attack.

Stroke

The proportion of informants who reported having had a stroke was very low, being 1.0% among men and 0.5% among women. This increased with age in both sexes, with the prevalence in those aged 55-64 years being 3.9% in men and 1.8% in women. Very few informants reported having had a stroke in the previous 12 months. **Table 10.1**

Hypertension

For both men and women, hypertension was the most commonly reported condition. Overall, 13.3% of men and 13.9% of women reported having had hypertension. This increased with age in both sexes: in men, the prevalence

increased from 1.4% in those aged 16-24 to 31.2% in those aged 55-64; in women, the increase was from 4.8% to 30.3% in the corresponding age groups. The prevalence was similar between the two sexes in most age groups, except for those aged 16-24 where the prevalence tended to be higher in women than in men (4.8% vs 1.4%). (These percentages for 16-24 year olds are based on a small number of informants, and must be treated with caution.)

Table 10.1

Diabetes

The prevalence of diabetes was 1.5% in both men and women and increased with age in both sexes. Among men the prevalence was 2.8% in those aged 45-54 years and 4.3% in those aged 55-64 years; the corresponding figures in women were 1.7% and 3.3% respectively. The prevalence tended to be higher in women than in men among those aged 16-24 to 35-44 years; thereafter, diabetes was more common in men than women.

Table 10.1

Heart murmur, irregular heart rhythm and 'other heart trouble'

The proportion of informants who reported having had a heart murmur was 2.1% among men and 3.2% among women. Irregular heart rhythm was reported by 2.9% of men and 4.0% of women. Overall, 0.6% of men and 0.8% of women reported having had 'other heart trouble'. The prevalence of each of these three conditions increased with age in both sexes and tended to be higher among women than men in most age groups.**Table 10.1**

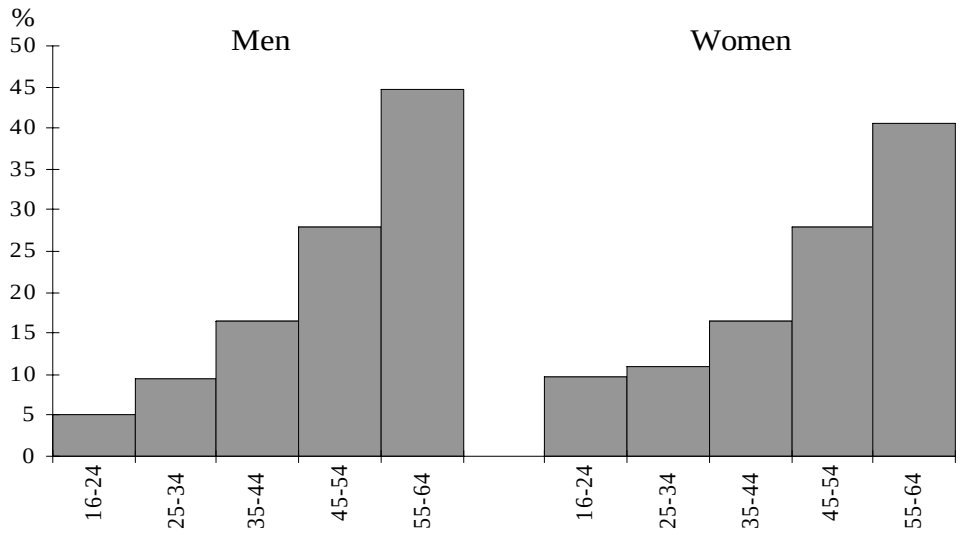
10.3.2 Summary measures of self-reported conditions

Any cardiovascular disorder

The proportion of informants who reported having had any cardiovascular disorder was 19.3% for men and 20.2% for women. The proportion increased with age in both sexes. The prevalence was less than 30% among men and women aged 45-54, but it was much higher among those aged 55-64 years (44.7% for men and 40.6% for women). In all age groups, a large proportion of those classified as having had any cardiovascular disorder consisted of informants who reported a previous diagnosis of hypertension.

Table 10.2 and Figure 10A

Figure 10A: Prevalence of any cardiovascular disorder, by age and sex



Ischaemic heart disease

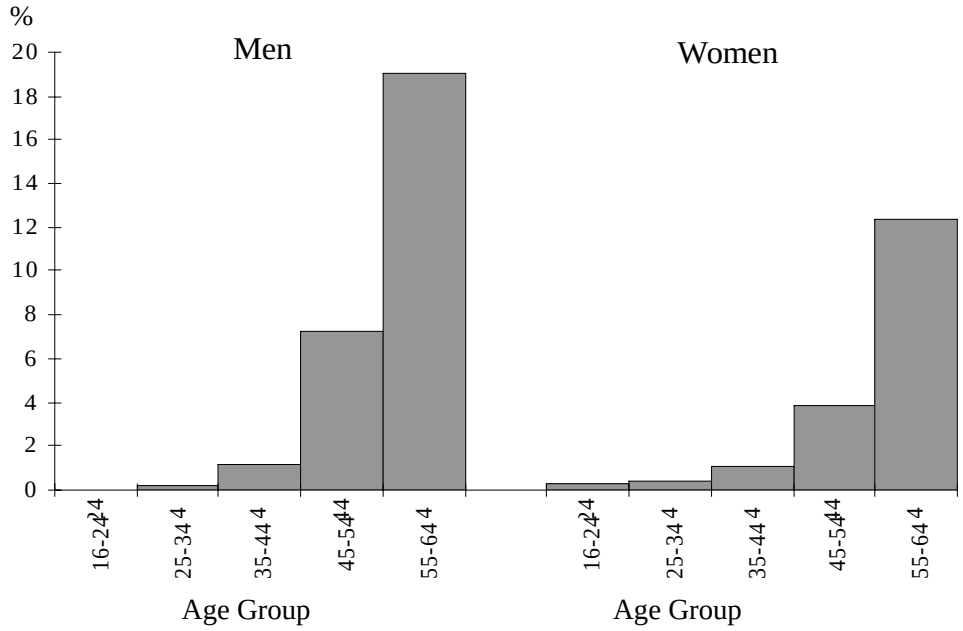
The prevalence of ischaemic heart disease (heart attack or angina) was higher in men than in women, being 4.0% for men and 2.9% for women. This prevalence increased with age in both sexes. Among men the prevalence of IHD was 6.0% in those aged 45-54 years and 17.0% in those aged 55-64 years. Among women the corresponding figures were 3.4% and 11.4% respectively.

Ischaemic heart disease or stroke

The prevalence of IHD or stroke was only slightly higher than that of IHD alone, as very few informants reported having had a stroke: it was 4.6% in men and 3.2% in women. Similar to IHD, the prevalence of IHD or stroke increased with age and was higher in men than in women in most age groups, being 7.2% for men vs. 3.9% for women in those aged 45-54 years, and 19.0% vs. 12.4% in those aged 55-64 years.

Table 10.3 and Figure 10B

Figure 10B: Prevalence of ischaemic heart disease or stroke, by age and sex



10.3.3 Rose angina and possible myocardial infarction

Rose angina symptoms

The prevalence of Rose angina, combining grade 1 and grade 2, was 2.7% in both men and women. It increased with age in both sexes. Rose angina symptoms were more common in men than women among those aged 45-54 (3.9% for men vs. 3.1% for women) and even more so among those aged 55-64 (10.1% for men vs. 5.9% for women). The higher prevalence of Rose angina in men than in women among these older informants is consistent with the pattern for self-reported doctor-diagnosed angina (described in Section 10.3.1). **Table 10.4**

Possible myocardial infarction

Overall, 3.4% of men and 2.5% of women had symptoms suggestive of possible myocardial infarction in the past. The prevalence increased with age in both sexes and tended to be higher among men than women in all age groups. Among men,

the prevalence was 4.0% in those aged 45-54 years and 8.7% in those aged 55-64 years, with the corresponding figures in women being 3.7% and 6.0%, respectively.

Table 10.4

10.3.4 Intermittent claudication

Using the Edinburgh questionnaire, the prevalence of intermittent claudication was 1.7% among men and 1.9% among women. This increased with age in both sexes. The prevalence tended to be lower in men than women in those aged 45-54 years (1.9% vs. 3.4%) but higher in men than women in those aged 55-64 years (5.0% vs. 3.0%).

Table 10.5

In addition, the prevalence of intermittent claudication analysed by any cardiovascular disorder and by IHD or stroke are presented in Tables 10.6 and 10.7. It should be noted that the time sequence between claudication and CVD cannot be assessed with this dataset. Intermittent claudication was more common among those who ever had any cardiovascular disorder than those who had not (4.4% vs. 1.1% in men, and 4.4% vs. 1.2% in women). Similarly, claudication was more common among those with IHD or stroke than those without (10.1% vs. 1.3% in men, and 5.4% vs. 1.8% in women).

Tables 10.6, 10.7

10.3.5 Comparison with the 1984-86 Scottish Heart Health Study

The Scottish Heart Health Study (SHHS), which included people aged 40-59 years, collected data on CVD prevalence using self-reported medical history of angina and heart attack and a self-administered version of the Rose angina questionnaire.[9]

The prevalences of self-reported angina and heart attack were very similar between the SHHS and the Health Survey, except for angina in men which was lower in the Health Survey than in the SHHS.

The prevalences of Rose angina and of possible myocardial infarction (MI) were, however, much lower in the Health Survey than in the SHHS. In the Health Survey, the prevalence estimates for Rose angina and MI were largely consistent with those for self-reported angina and heart attack (except for MI in women); however, in the SHHS, the prevalences of angina and MI on the Rose questionnaire were considerably higher than the prevalence estimates for the self-reported history of these diseases. **Table 10.8**

There were also differences in the prevalence estimates for intermittent claudication. In the Health Survey, among those aged 40-59 years the prevalence was 2.4% for men and 2.9% for women. These were higher than those from the SHHS, which reported a prevalence of 1.1% in men and 0.7% in women.[10] This difference between the two surveys may be partly explained by differences in data collection: results from the SHHS study were based on the Rose Questionnaire which has a lower sensitivity (i.e., gives more false negatives) than its revised version, the Edinburgh questionnaire, which was used in the Health Survey.

10.3.6 Comparison with the Health Survey for England

This section compares prevalences of any cardiovascular disorder, ischaemic heart disease and stroke in Scotland with those from the 1994 Health Survey for England. The Health Surveys for Scotland and England were similar in design and objectives. Data on cardiovascular diseases were collected using exactly the same questionnaires. Comparisons are made with England as a whole, and with Northern England which includes the two health regions of Northern & Yorkshire and North West.

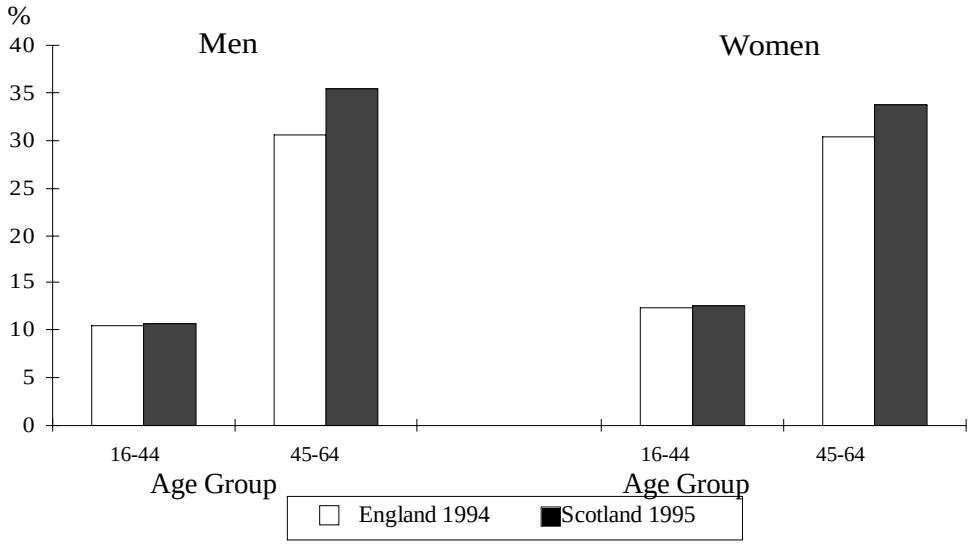
Any cardiovascular disorder

The prevalence of any cardiovascular disorder was similar between Scotland and England among those aged under 45, where the prevalence was low in both countries. The prevalence was higher in Scotland than in England for both men and women in those aged 45-54 and 55-64 years. Among men, the overall prevalence was 19.3% in Scotland compared with 17.6% in England. The difference was greatest among those aged 55-64 (44.7% vs. 37.4%) followed by those aged 45-54 (28.0% vs. 23.8%). Among women, the overall prevalence was 20.2% in Scotland compared with 18.4% in England; the difference was greatest among those aged 45-54 (27.9% vs. 23.5%) and those aged 55-64 (40.6% vs. 37.5%).

On adjustment for age using logistic regression analysis, the difference in the prevalence between Scotland and England was significant in men (p=0.007) but not in women (p=0.08).

The prevalence of any cardiovascular disorder was also higher in Scotland than in Northern England in both sexes, with the difference being biggest among the two older age groups (45-54 and 55-64 years). **Table 10.9 and Figure 10C**

Figure 10C: Prevalence of any cardiovascular disorder in Scotland and England, by age and sex



Ischaemic heart disease

The prevalence of IHD was higher in Scotland than in England, with the difference being greatest among older informants. Among men, the overall prevalence was 4.0% in Scotland and 2.5% in England. The difference in prevalence was greatest among those aged 45-54 (6.0% vs. 3.0%) and those aged 55-64 (17.0% vs. 10.3%). Among women, the overall prevalence was 2.9% in Scotland and 1.5% in England. The corresponding figures in the 45-54 years and 55-64 years were 3.4% vs. 2.3%, and 11.4% vs. 5.9% respectively.

On adjustment for age using logistic regression analysis, the difference in the prevalence between Scotland and England was significant in both men and women (p<0.001).

The prevalence of IHD was higher in Scotland than in Northern England in both sexes (p=0.038 and p=0.001 for men and women respectively, adjusted for age), with the difference being largest among the two older age groups (45-54 and 55-64 years).

Figure 10D

Figure 10D: Prevalence of ischaemic heart disease in Scotland and England, by age and sex

Stroke

The prevalence of stroke was very low in both the Scottish and English surveys. The age and sex specific prevalences of stroke are shown in Table 10.10. In general, the prevalence was higher in Scotland than in England (and Northern England); however, the number of stroke cases was too small to make any meaningful comparisons.

Table 10.10

10.4 REGION AND PREVALENCE OF CARDIOVASCULAR DISEASE

In this section, regional differences in two summary measures of self-reported conditions, i.e., any cardiovascular disorder and ischaemic heart disease (angina or heart attack), are presented. It is expected that the regional pattern for IHD or stroke will be very similar to that of IHD alone, as very few cases of stroke were reported by informants. The number of cases for most other types of condition was too small to make meaningful comparisons for regional differences in disease prevalence.

Both the unadjusted prevalence and the age-standardised prevalence of any cardiovascular disorder and of IHD are presented. Logistic regression analysis adjusted for age was used to assess differences in prevalence, with each region being compared with the overall sample.

Any cardiovascular disorder

There were significant variations in the prevalence of any cardiovascular disorder in both men (p=0.011) and women (p=0.016). Among men, it was lowest (15.2%) in Grampian & Tayside (p=0.012) and highest (23.7%) in Forth Valley, Argyll & Clyde (p=0.003). Among women it was lowest (17.1%) in Lothian & Fife (p=0.23) and highest (25.0%) in Lanarkshire, Ayrshire & Arran (p=0.002). **Table 10.11**

Ischaemic heart disease

There were significant variations in the prevalence of ischaemic heart disease in both men (p=0.022) and women (p=0.003). Among men, it was lowest (1.8%) in Grampian & Tayside (p=0.005) and highest (6.1%) in Lanarkshire, Ayrshire & Arran (p=0.016). Among women the prevalence was lowest (1.6%) in Lothian & Fife (p=0.17) and highest (4.8%) in Lanarkshire, Ayrshire & Arran (p<0.001) and Greater Glasgow (4.4%, p=0.007). **Table 10.12**

10.5 SOCIAL CLASS AND PREVALENCE OF CARDIOVASCULAR DISEASE

In Scotland, as in many other countries, social class differences in cardiovascular disease morbidity and mortality have been reported, with the socio-economically disadvantaged groups having higher risk.[11,12,13,14] In this section, prevalences of any cardiovascular disorder and of ischaemic heart disease (angina or heart attack) are presented as examples. As for the rest of the report, social class is based on the occupation of the chief income earner within the household (see the Technical Report for a description of how social class was derived).

Both unadjusted and age-standardised prevalences are presented, and logistic regression analysis, adjusted for age, was used to assess social class differences in prevalence, with each social class being compared with Social Class I.

Any cardiovascular disorder

There were significant variations in the prevalence of any cardiovascular disorder between social classes (p=0.004 for men and p<0.001 for women). The prevalence was higher among those in the manual than non-manual social classes, although no clear social gradient was seen in either sex. Among men, the age-standardised prevalence was lowest (12.4%) in Social Class I and highest in Social Classes IIIM (19.5%) and V (19.4%). Among women the age-standardised prevalence was lowest in Social Class II (14.2%) and the prevalences were similar in all other social classes. (It should be noted that the number of informants in Social Class I was very small in both sexes).

Table 10.13 and Figure 10E

Figure 10E: Age standardised prevalence of any cardiovascular disorder, by social class of chief income earner and sex

Ischaemic heart disease

There were significant variations in the prevalence of IHD in women (p=0.003) with a clear social class gradient, but not in men (p=0.3), although the prevalence tended to be higher in manual than non-manual social classes in both sexes. Among men the age-standardised prevalence was lowest in Social Class I (1.9%) and highest in Social Class V (4.7%). Among women the age-standardised prevalence was 0.9% in Social Class II and increased continuously to 4.0% in Social Class V. (Again the small sample bases for Social Class I should be noted.) **Table 10.14**

10.6 RISK FACTORS IN THE TOTAL AND SUB-GROUP POPULATION

10.6.1 Introduction

Numerous studies have suggested that obesity, cigarette smoking, high blood pressure, raised total cholesterol and excessive alcohol consumption, many of which are inter-related, are major risk factors for cardiovascular disease. Distributions of these risk factors have been presented in previous chapters of this report.

From a public health perspective, the proportion with particular CVD risk factors among the general population and among those with previous CVD conditions has important implications for both the primary and secondary prevention of cardiovascular disease in Scotland. Therefore, this section first briefly summarises the prevalence of raised CVD risk factors among all informants. Then, the prevalences among those informants who reported a previous diagnosis of any cardiovascular disorder, and of IHD or stoke, are presented.

10.6.2 Definition of risk factors

The major CVD risk factors presented in this section are: raised BMI, smoking, drinking, high blood pressure and raised total cholesterol. Two cut-off points which generally correspond to those in other chapters were used to define 'raised' risk factor, with the lower category of risk factor subsuming the higher category. For example, the category of BMI over 25 kg/m^2 includes the next level of BMI over 30 kg/m^2.

Risk factors	**Categories**
Raised BMI	BMI over 25 kg/m^2 BMI over 30 kg/m^2 (obese)
Cigarette smoking status	Current smoker Current smoker of 20 or more cigarettes a day
Alcohol consumption	More than 21 (men)/14 (women) units per week More than 28 (men)/21 (women) units per week
High blood pressure	Normotensive treated Hypertensive treated Hypertensive untreated
Raised total cholesterol	6.5 mmo1/1 or over 7.8 mmo1/1 or over (extremely high)

10.6.3 Risk factors in the total population

In general, a large proportion of the population had some of these major CVD risk factors, which presents a significant challenge for health education in Scotland. (See other chapters for further information on individual CVD risk factors.)

About half of the population (56% in men and 47% in women) had BMI >25 kg/m^2, and about one in six (16% in men and 17% in women) were obese (BMI >30 kg/m^2). These proportions were higher among those aged 45-64 than those aged 16-44 in both men and women.

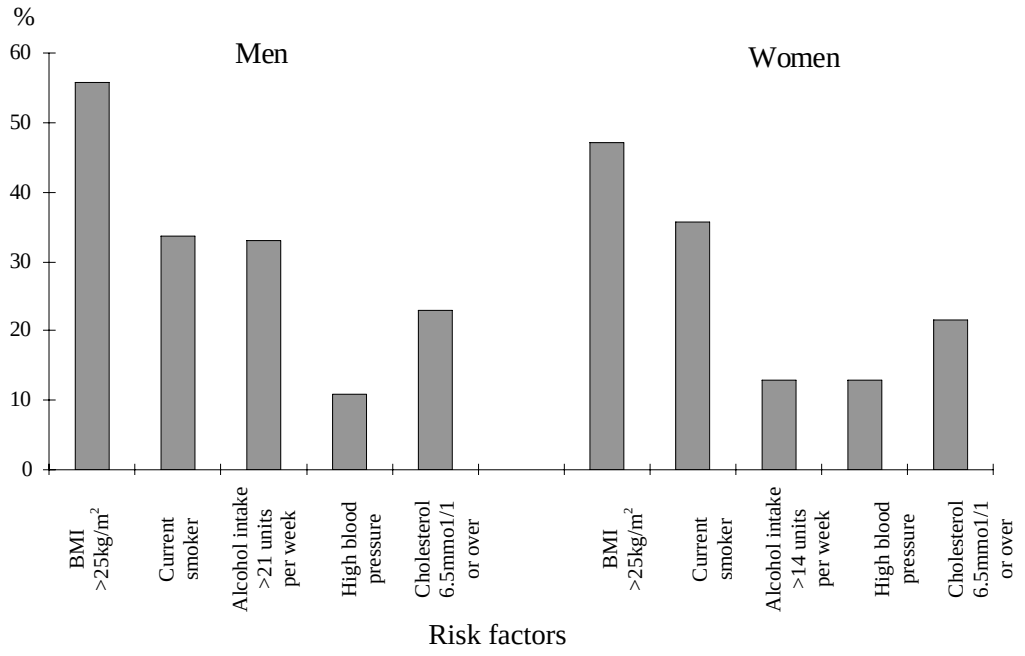
About one-third of the population were current cigarette smokers (34% in men and 36% in women), and about one in seven (15% in men and 13% in women) were heavy smokers (20 cigarettes or more per day). While the prevalence of current smoking was similar among those aged 16-44 and those aged 45-64, older informants, particularly older men, were more likely to be heavy smokers than younger informants.

Heavy alcohol consumption was particularly common in men. One-third of men drank over 21 units per week, and just over one-fifth (22%) drank over 28 units per week. For women, 13% drank over 14 units per week, and just 5% drank over 21 units per week. Among both sexes, younger informants were more likely than older ones to exceed these limits.

The prevalence of survey defined high blood pressure was 11% in men and 13% in women, with the prevalence among those aged 45-64 being 26% for men and 30% for women. About 4% of the population were hypertensive untreated (i.e., blood pressure >160/95 but not taking any anti-hypertensive agents). In the older age group (45-64), this proportion was 10% for men and 8% for women.

Overall, 23% of men and 22% of women in Scotland had total cholesterol of 6.5 mmol/l or above. The proportion with extremely high total cholesterol (7.8 mmol/l or above) was about 5% among both men and women. These proportions were much higher among those aged 45-64 than those aged 16-44 years.**Table 10.15 and Figure 10F**

Figure 10F: Prevalence of CVD risk factors, by sex



10.6.4 Risk factors by cardiovascular conditions

This section examines the proportion of informants with raised CVD risk factors among those individuals at whom secondary prevention should be targeted. Results among informants who reported a previous diagnosis of any cardiovascular disorder, and of ischaemic heart disease or stroke, are presented as examples.

Informants with any cardiovascular disorder

Over 1700 informants reported a history of cardiovascular disorder. Nearly one-third of these informants were obese (31% of men and 32% of women). The prevalence with BMI over 25 kg/m^2 was 74% for men and 63% for women.

Many of these informants were current smokers (35% of men and 38% of women), despite their diagnosis of any cardiovascular disorder. About 19% of men and 16% of women smoked 20 cigarettes or more a day.

One-third of men with any cardiovascular disorder drank over 21 units per week, and 22% drank over 28 units per week. Among women, 10% drank over 14 units per week and 3% drank over 21 units a week. The problem of heavy drinking was more pronounced among younger informants (16-44) than older informants in both men and women.

Just under half of informants in this group had survey defined high blood pressure. The proportion with untreated hypertension (i.e., blood pressure >160/95 but not taking any anti-hypertensive agents) was 11% in men and 7% in women.

Just over one-third of these informants had total cholesterol of 6.5 mmol/l or above, while the proportion with extremely high cholesterol (7.8 mmol/l or above) was 7% in men and 10% in women. The majority of them were not taking lipid-lowering drugs.

Table 10.15

Informants with IHD or stroke

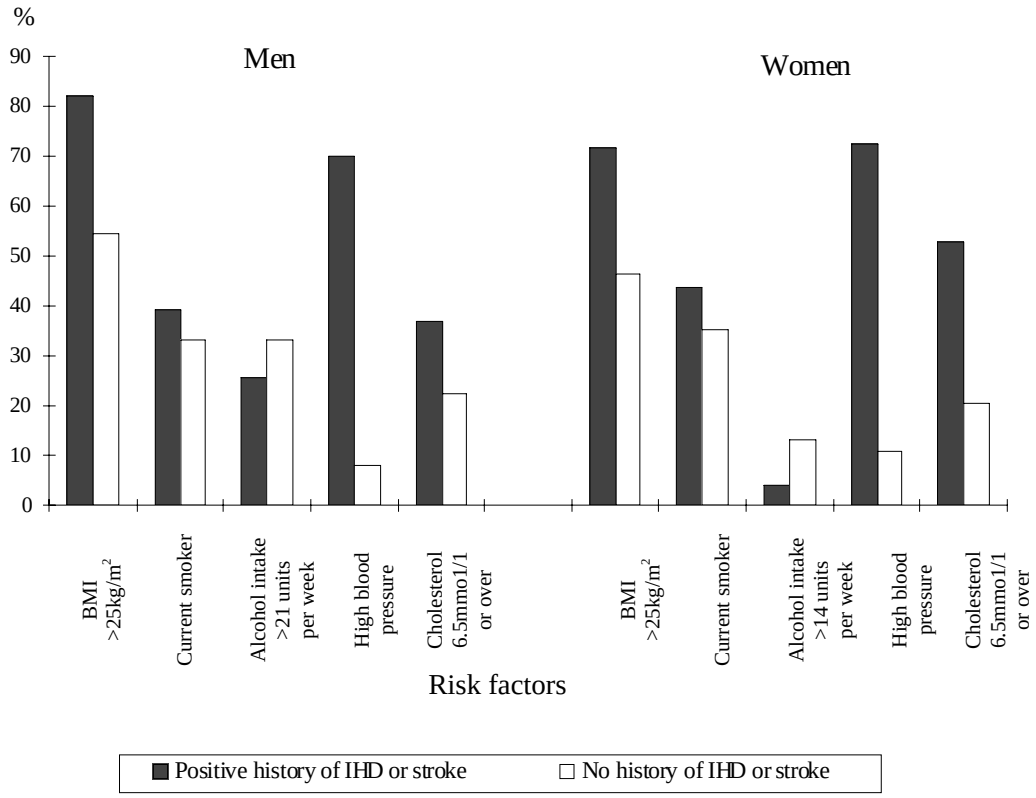
Similar to those with cardiovascular disorder, many informants who reported a history of IHD or stroke were obese, drank alcohol and smoked cigarettes heavily, and had high blood pressure or raised cholesterol.

It is worth noting that more than one-third of informants in this group (39% for men and 44% for women) were cigarette smokers, many of whom smoked over 20 cigarettes or more a day. Heavy drinking was found among a large proportion of men: 26% drinking over 21 units per week and 17% drinking over 28 units per week. The proportion with extremely high total cholesterol (7.8 mmol/l and above) was 7% in men and 16% in women. **Table 10.15 and Figure 10G**

10.7 PREVALENCE OF CARDIOVASCULAR DISEASE AND ITS RISK FACTORS

The associations between major CVD risk factors and cardiovascular disease are examined in this section by presenting the prevalence of CVD according to the levels of a number of risk factors including BMI, cigarette smoking, alcohol consumption, blood pressure and total cholesterol (definitions of these risk factors may be found in the relevant chapters dealing with each of them). Data on any cardiovascular disorder and IHD are presented as examples. It must be emphasised that, due to the cross-sectional nature of the survey, causality cannot be inferred from the Health Survey results. It should be borne in mind that any association observed will reflect not only causal associations between risk factors and CVD, but also modified behaviour as a result of a diagnosis of CVD.

Figure 10G: Prevalence of CVD risk factors among those with IHD or stroke, by sex



Any cardiovascular disorder

The prevalence of any cardiovascular disorder increased with increasing levels of BMI in both age groups (16-44 and 45-64) for both men and women, with the highest prevalence being found among those who were obese (BMI > 30 kg/m^2). For example, the prevalence in men was 9.1% among those with BMI under 20 kg/m^2 compared with 36.7% among those with BMI over 30 kg/m^2. For women, the corresponding figures were 10.6% and 37.0% respectively.

Turning to smoking behaviour, non-smokers had the lowest prevalence of any cardiovascular disorder for men (14.3%) and women (17.8%). In men the highest prevalence was found among ex-smokers (29.1%), and in women among heavy smokers (25.0%) and ex-smokers (24.8%). Among smokers, those who smoked 20 or more cigarettes a day tended to have higher prevalence than those who smoked 1-19 cigarettes a day. The high prevalence observed in ex-smokers may result from smoking cessation due to a diagnosis of disease.

For both sexes, the prevalence of any cardiovascular disorder was lower among those who consumed alcohol regularly, followed by non/occasional drinkers. The highest prevalence was found among ex-drinkers. For example, the prevalence was 17.7% for men and 18.8% for women among those drinking 1-21 units per week (men)/1-14 units per week (women) compared with 42.3% in men and 32.7% in women among ex-drinkers. Similar to cigarette smoking, ex-drinkers might have given up drinking due to health reasons.

The prevalence of any cardiovascular disorder was lower among informants who were normotensive untreated (blood pressure <160/ 95 mmHg and not taking any anti-hypertensive medications) than among those who were hypertensive untreated (blood pressure ≥160/95 but not taking anti-hypertensive agents). For example, for men, the

prevalence was 12.0% among those who were normotensive untreated compared with 48.1% among those who were hypertensive untreated. The corresponding figures for women were 12.5% and 40.8% respectively. (By definition, those who were being treated for high blood pressure would have been classified as having any cardiovascular disorder; they are therefore not described here.)

The prevalence of any cardiovascular disorder increased with increasing levels of total cholesterol in both men and women. For example, the prevalence was 11.9% among men with total cholesterol <5.2 mmol/l compared with 28.5% among men with total cholesterol ≥7.8 mmol/l. The corresponding figures for women were 12.3% and 43.0% respectively. **Table 10.16**

Ischaemic heart disease

The pattern for ischaemic heart disease by level of CVD risk factors was very similar to that for any cardiovascular disorder.

In general, the prevalence of IHD increased with increasing BMI (except for women where the lowest prevalence was found among those with BMI between 20-25 kg/m^2 followed by those with BMI under 20, but the prevalence was very low in these two groups).

Ex-smokers also had the highest prevalence of IHD for men (10.0%) and women (6.0%), while the prevalence was lowest among non-smokers (1.6% for men and 1.8% for women).

Ex-drinkers had the highest prevalence of IHD, followed by non/occasional drinkers. The prevalence was lowest among those who consumed alcohol regularly in both men and women.

It is not surprising that those who were taking anti-hypertensive agents had higher prevalence of IHD than did other informants, including the hypertensive untreated group, because these medications might be used as part of the management of IHD. The prevalence of IHD was lowest among the normotensive untreated group.

The prevalence of IHD increased with increasing level of total cholesterol. The prevalence was very low among those who had total cholesterol <5.2 mmol/l (1.5% for men and 0.6% for women) with the highest prevalence being found among those with total cholesterol 7.8 mmol/l or more (6.9% for men and 11.8% for women).

Table 10.17

In summary, in this cross-sectional survey cardiovascular disease was associated with raised BMI, raised total cholesterol, high blood pressure and current cigarette smoking. High prevalence of disease among ex-smokers and ex-drinkers may reflect behavioural changes among informants who had diagnoses of cardiovascular disease.

References and notes

1 The Scottish Office. *Scotland's Health: A Challenge To Us All:* A Policy Statement. HMSO, Edinburgh, 1992.

2 Rose G. Sick individuals and sick populations. *Int J Epidemiol*. 1985 Mar; **14**(1):32-8.

3 Appendix D. GP enhancement study: evaluation of self-reporting of cardiovascular disease and related conditions. In. Bennett N, Dodd T, Flately J, Freeth S, Bolling S. *Health Survey for England 1993*. HMSO, London, 1994.

4 Rose G, Blackburn H. *Cardiovascular Survey Methods*. 2nd Ed. World Health Organisation Monograph 1986; **56**:1-188.

5 'Rose angina' is defined as a chest pain or discomfort with the following characteristics:

a) The site must include either the serum (any level) or the left arm and left anterior chest (defined as the anterior chest wall between the levels of clavicle and lower end sternum).

b) It must be provoked by either hurrying or walking uphill (or by walking on the level, for those who never attempt more).

c) When it occurs on walking it must make the subject either stop or slacken pace, unless nitro-glycerine is taken.

d) It must disappear on a majority of occasions in 10 minutes or less from the time when the subject stands still.

Grade 1 angina occurs when the subject only experiences the chest pain when walking uphill or hurrying. Grade 2 angina occurs when the subject experiences the chest pain even when walking at an ordinary pace on the level.

'Possible myocardial infarction' is defined as one or more attacks of severe pain across the front of the chest lasting for 30 minutes or longer.

6 Leng GC, Fowkes FGR. The Edinburgh claudication questionnaire: An improved version of the WHO/Rose questionnaire for use in epidemiological surveys. *J Clin Epidemiol* 1992; **45**(10):1101-1109.

7 For example, Davey Smith G, Shipley MJ, Rose G, Intermittent claudication, heart disease risk factors, and mortality. The Whitehall study. *Circulation*. 1990 Dec; **82**(6):1925-1931.

8 Informants were classified as having positive claudication if they had leg pain with the following characteristics:

a) A pain or discomfort in the legs on walking, but not at rest.

b) The pain disappears within 10 minutes when the informant stands still.

c) Informants were not considered as having claudication if the pain was indicated in the hamstrings, feet, shins or joints, or appears to radiate in the absence of any pain in the calf.

The degree of symptoms were further grouped as grade 1 if the pain occurs when walking uphill or hurrying, and as grade 2 if the pain occurs when walking at an ordinary pace on the level. Grade 2 is more severe than grade 1.

9 Smith WC, Kenicer MB, Tunstall-Pedoe H, Clark EC, Crombie IK. The prevalence of coronary heart disease in Scotland: Scottish Heart Health Study. *Br Heart J*. 1990 Nov; **64**(5):295-8.

10 Smith WCS, Woodward M, Tunstall-Pedoe H. Intermittent claudication in Scotland. p117-123. In *Epidemiology of Peripheral Vascular Disease*. Ed. Fowkes FGR. Springer-Verlag, London, 1991.

11 Woodward, Shewry MC, Smith WC, Tunstall-Pedoe H. Social status and coronary heart disease: results from the Scottish Heart Health Study. *Preventive Medicine.* 1992 Jan; **21**(1):136-48.

12 Marmot MG, Smith GD, Stansfield S et al. Health inequalities among British civil servants: the Whitehall II study. *The Lancet* 1991; **337**:1387-93.

13 Pocock S, Shaper AG, Cook D, Phillips AN. Social class differences in ischaemic heart disease in British men. *The Lancet.* 1987; **2**:197-201.

14 Kaplan GA, Keil JE. Socioeconomic factors and cardiovascular disease: a review of the literature. *Circulation.* 1993; **88**:1973-1998.

CHAPTER 10 - LIST OF TABLES

Table 10.1 Prevalence of ever having CVD condition and recently having CVD condition, by age and sex

All men *1995*

CVD condition	Age					Total
	16-24	25-34	35-44	45-54	55-64	
	%	%	%	%	%	%
Men						
Angina						
Ever	-	0.2	0.3	4.1	14.4	3.1
Past 12 months	-	0.2	0.0	3.1	12.2	2.5
Heart attack						
Ever	-	-	1.1	3.5	9.8	2.4
Past 12 months	-	-	0.3	0.8	1.0	0.4
Stroke						
Ever	-	0.2	0.1	1.7	3.9	1.0
Past 12 months	-	-	0.1	0.4	0.8	0.2
Hypertension						
Ever	1.4	6.6	11.6	21.0	31.2	13.3
Currently	0.5	1.5	4.4	11.2	20.3	6.7
Diabetes						
Ever	0.4	0.2	1.0	2.8	4.3	1.5
Heart murmur						
Ever	2.7	1.4	1.6	2.5	2.7	2.1
Past 12 months	0.4	0.3	0.4	0.6	1.1	0.5
Irregular heart rhythm						
Ever	1.7	1.6	2.8	3.1	6.4	2.9
Past 12 months	0.9	0.9	0.8	1.7	3.1	1.4
Other heart trouble						
Ever	-	0.6	0.5	0.3	2.2	0.6
Past 12 months	-	0.1	0.2	0.2	1.2	0.3

Continued ....

Table 10.1 - continued

All women *1995*

CVD condition	Age					Total
	16-24	25-34	35-44	45-54	55-64	
	%	%	%	%	%	%
Women						
Angina						
Ever	0.3	-	0.9	3.1	9.9	2.5
Past 12 months	-	-	0.7	2.5	7.1	1.8
Heart attack						
Ever	-	0.4	0.1	1.5	4.1	1.1
Past 12 months	-	-	-	0.2	0.4	0.1
Stroke						
Ever	-	0.2	0.2	0.7	1.8	0.5
Past 12 months	-	-	0.1	0.1	-	0
Hypertension						
Ever	4.8	6.7	9.9	21.7	30.3	13.9
Currently	1.2	1.5	2.7	11.7	22.2	7.1
Diabetes						
Ever	0.8	0.7	1.3	1.7	3.3	1.5
Heart murmur						
Ever	3.4	1.8	2.8	3.2	5.6	3.2
Past 12 months	1.3	0.8	1.0	1.9	2.0	1.3
Irregular heart rhythm						
Ever	2.4	2.7	3.7	5.2	6.4	4.0
Past 12 months	2.2	1.7	2.1	2.8	3.0	2.3
Other heart trouble						
Ever	-	0.3	0.8	1.5	1.2	0.8
Past 12 months	-	0.1	0.3	0.9	0.8	0.4
Bases[a] (weighted)						
Men	*723*	*979*	*851*	*749*	*600*	*3902*
Women	*695*	*990*	*870*	*777*	*665*	*3998*
All	*1418*	*1969*	*1721*	*1527*	*1265*	*7900*
Bases[a] (unweighted)						
Men	*475*	*840*	*811*	*709*	*689*	*3524*
Women	*547*	*1160*	*992*	*825*	*884*	*4408*
All	*1022*	*2000*	*1803*	*1534*	*1573*	*7932*

[a]Bases are for the overall sample. Bases for certain conditions may vary slightly from these due to a small number of informants failing to give full information.

Table 10.2 Any cardiovascular disorder, by age and sex

All *1995*

Any cardiovascular disorder	**Age**					**Total**
	16-24	25-34	35-44	45-54	55-64	
	%	%	%	%	%	%
Men						
Yes	5.2	9.5	16.6	28.0	44.7	19.3
No	94.8	90.5	83.4	72.0	55.3	80.7
Women						
Yes	9.8	11.0	16.6	27.9	40.6	20.2
No	90.2	89.0	83.4	72.1	59.4	79.8
All						
Yes	7.5	10.3	16.6	28.0	42.5	19.8
No	92.5	89.7	83.4	72.0	57.5	80.2
Bases (weighted)						
Men	*704*	*965*	*838*	*742*	*597*	*3846*
Women	*688*	*983*	*869*	*777*	*659*	*3976*
All	*1392*	*1948*	*1707*	*1518*	*1256*	*7822*
Bases (unweighted)						
Men	*462*	*829*	*799*	*703*	*684*	*3477*
Women	*541*	*1151*	*990*	*823*	*875*	*4380*
All	*1003*	*1980*	*1789*	*1526*	*1559*	*7857*

Table 10.3 Ischaemic heart disease (heart attack or angina), and IHD or stroke, by age and sex

All *1995*

IHD or stroke	Age					Total
	16-24	25-34	35-44	45-54	55-64	
	%	%	%	%	%	%
Ischaemic heart disease						
Men						
Yes	-	0.2	1.1	6.0	17.0	4.0
No	100.0	99.8	98.9	94.0	83.0	96.0
Women						
Yes	0.3	0.4	1.0	3.4	11.4	2.9
No	99.7	99.6	99.0	96.6	88.6	97.1
All						
Yes	0.1	0.3	1.0	4.7	14.0	3.5
No	99.9	99.7	99.0	95.3	86.0	96.5
Ischaemic heart disease or stroke						
Men						
Yes	-	0.2	1.2	7.2	19.0	4.6
No	100.0	99.8	98.8	92.8	81.0	95.4
Women						
Yes	0.3	0.4	1.1	3.9	12.4	3.2
No	99.7	99.6	98.9	96.1	87.6	96.8
All						
Yes	0.1	0.3	1.2	5.5	15.5	3.9
No	99.9	99.7	98.8	94.5	84.5	96.1
Bases[a] (weighted)						
Men	*723*	*979*	*851*	*749*	*600*	*3902*
Women	*695*	*990*	*870*	*777*	*665*	*3998*
All	*1418*	*1969*	*1721*	*1527*	*1265*	*7900*
Bases[a] (unweighted)						
Men	*475*	*840*	*811*	*709*	*689*	*3524*
Women	*547*	*1160*	*992*	*825*	*884*	*4408*
All	*1022*	*2000*	*1803*	*1534*	*1573*	*7932*

[a]Bases are for the overall sample. Bases for certain conditions may vary slightly from these due to a small number of informants failing to give full information.

Table 10.4 Rose angina questionnaire: the prevalence of Rose angina symptoms and possible myocardial infarction (MI), by age and sex

All *1995*

Rose angina and MI	Age					Total
	16-24	25-34	35-44	45-54	55-64	
	%	%	%	%	%	%
Rose angina symptoms						
Men						
Grade 1 angina	0.6	0.5	0.7	1.4	5.6	1.5
Grade 2 angina	-	0.2	0.2	2.5	4.5	1.2
Women						
Grade 1 angina	1.9	1.2	1.0	2.0	3.7	1.9
Grade 2 angina	0.1	0.4	0.6	1.1	2.2	0.8
All						
Grade 1 angina	1.2	0.9	0.9	1.7	4.6	1.7
Grade 2 angina	0	0.3	0.4	1.8	3.3	1.0
Possible MI						
Men	1.5	2.3	2.2	4.0	8.7	3.4
Women	0.3	1.7	1.4	3.7	6.0	2.5
All	0.9	2.0	1.8	3.8	7.3	3.0
Bases[a] (weighted)						
Men	*723*	*979*	*851*	*749*	*600*	*3902*
Women	*695*	*990*	*870*	*777*	*665*	*3998*
All	*1418*	*1969*	*1721*	*1527*	*1265*	*7900*
Bases[a] (unweighted)						
Men	*475*	*840*	*811*	*709*	*689*	*3524*
Women	*547*	*1160*	*992*	*825*	*884*	*4408*
All	*1022*	*2000*	*1803*	*1534*	*1573*	*7932*

[a]Bases are for the overall sample. Bases for Rose angina symptoms vary slightly from these due to a small number of informants (2 men and 7 women) failing to give full information.

Table 10.5 Intermittent claudication, by age and sex

All *1995*

Intermittent claudication	Age					Total
	16-24	25-34	35-44	45-54	55-64	
	%	%	%	%	%	%
Men						
Grade 1	-	0.5	1.1	1.1	2.8	1.0
Grade 2	0.4	0.2	0.3	0.9	2.2	0.7
Grades 1 and 2 combined	0.4	0.7	1.4	1.9	5.0	1.7
No	99.6	99.3	98.6	98.1	95.0	98.3
Women						
Grade 1	0.9	0.7	0.9	2.3	1.9	1.3
Grade 2	0.6	0.1	0.4	1.1	1.0	0.6
Grades 1 and 2 combined	1.5	0.8	1.3	3.5	3.0	1.9
No	98.5	99.2	98.7	96.6	97.0	98.1
All						
Grade 1	0.4	0.6	1.0	1.7	2.3	1.1
Grade 2	0.5	0.2	0.3	1.0	1.6	0.6
Grades 1 and 2 combined	0.9	0.7	1.3	2.7	3.9	1.8
No	99.1	99.3	98.7	97.3	96.1	98.2
Bases (weighted)						
Men	*723*	*979*	*847*	*741*	*595*	*3885*
Women	*689*	*987*	*870*	*772*	*661*	*3978*
All	*1412*	*1965*	*1717*	*1512*	*1256*	*7863*
Bases (unweighted)						
Men	*475*	*839*	*807*	*700*	*682*	*3503*
Women	*544*	*1157*	*991*	*820*	*877*	*4389*
All	*1019*	*1996*	*1798*	*1520*	*1559*	*7892*

Table 10.6 Intermittent claudication, by any cardiovascular disorder, age and sex

All

	Men			Women		
	Any cardiovascular disorder			Any cardiovascular disorder		
	Yes	No	**Total**	Yes	No	**Total**
	%	%	%	%	%	%
16-44						
Grade 1	0.6	0.5	0.5	1.7	0.7	0.8
Grade 2	1.2	0.2	0.3	0.4	0.3	0.3
Grades 1 & 2 combined	1.8	0.7	0.8	2.1	1	1.1
No	98.2	99.3	99.2	97.9	99.0	98.9
45-64						
Grade 1	3.5	0.9	1.8	3.5	1.4	2.1
Grade 2	2.4	1.0	1.5	2.2	0.5	1.1
Grades 1 & 2 combined	5.9	1.9	3.3	5.7	1.9	3.2
No	94.1	98.1	96.7	94.3	98.1	96.9
All						
Grade 1	2.5	0.6	1	2.8	0.9	1.3
Grade 2	1.9	0.4	0.7	1.5	0.4	0.6
Grades 1 & 2 combined	4.4	1.1	1.7	4.4	1.2	1.9
No	95.6	98.9	98.3	95.7	98.8	98.1
Bases (weighted)						
16-44	*267*	*2236*	2503	*317*	*2214*	2531
45-64	*466*	*859*	1326	*479*	*946*	1425
All	*733*	*3095*	3829	*796*	*3160*	3956
Bases (unweighted)						
16-44	*249*	*1836*	2085	*345*	*2330*	2675
45-64	*495*	*876*	1371	*597*	*1089*	1686
All	*744*	*2712*	3456	*942*	*3419*	4361

Table 10.7 Intermittent claudication, by IHD or stroke, age and sex

All

Intermittent claudication	Men			Women		
	IHD or stroke			IHD or stroke		
	Yes	No	**Total**	Yes	No	**Total**
	%	%	%	%	%	%
16-44						
Grade 1	[-]	0.5	0.5	[3.0]	0.8	0.8
Grade 2	[5.3]	0.3	0.3	[-]	0.3	0.3
Grades 1 & 2 combined	[5.3]	0.8	0.8	[3.0]	1.1	1.1
No	[94.7]	99.2	99.2	[97]	98.9	98.9
45-64						
Grade 1	6.1	1.2	1.8	3.3	2.0	2.1
Grade 2	4.4	1.1	1.5	2.5	0.9	1.1
Grades 1 & 2 combined	10.5	2.3	3.3	5.8	3.0	3.3
No	89.5	97.7	96.7	94.2	97.0	96.8
All						
Grade 1	5.7	0.8	1.0	3.3	1.2	1.3
Grade 2	4.4	0.5	0.7	2.2	0.5	0.6
Grades 1 & 2 combined	10.1	1.3	1.7	5.4	1.8	1.9
No	89.9	98.7	98.3	94.6	98.2	98.1
Bases (weighted)						
16-44	*12*	*2535*	*2547*	*16*	*2530*	*2546*
45-64	*163*	*1172*	*1335*	*109*	*1323*	*1432*
All	*175*	*3707*	*3882*	*125*	*3853*	*3978*
Bases (unweighted)						
16-44	*14*	*2106*	*2120*	*20*	*2672*	*2692*
45-64	*180*	*1201*	*1381*	*136*	*1561*	*1697*
All	*194*	*3307*	*3501*	*156*	*4233*	*4389*

Table 10.8 Comparison of prevalence of selected cardiovascular conditions among informants aged 40-59 years in 1995 Scottish Health Survey with the 1984-86 Scottish Heart Health Study (SHHS)

All

CVD conditions	Men		Women	
	Health Survey	SHHS	Health Survey	SHHS
	%	%	%	%
Angina	4.3	5.5	3.9	3.9
Heart attack	4.2	4.3	1.7	1.4
Rose angina	3.9	6.3	3.1	8.5
Rose possible myocardial infarction	4.2	7.8	3.5	5.4
Bases[a]	*1461*	*5123*	*1549*	*5236*

[a] Weighted bases in Health Survey, and estimated number of participants in the SHHS.

Table 10.9 Prevalence of any cardiovascular disorder in 1995 Scottish Health Survey and 1994 Health Survey for England, by age and sex

All *1995 Scottish Health Survey and 1994 Health Survey for England*

Country	Age					Total
	16-24	25-34	35-44	45-54	55-64	
	%	%	%	%	%	%
Men						
Scotland	5.2	9.5	16.6	28.0	44.7	19.3
England	7.2	8.4	15.0	23.8	37.4	17.6
Northern England[a]	6.7	8.1	15.0	26.4	39.7	18.6
Women						
Scotland	9.8	11.0	16.6	27.9	40.6	20.2
England	8.3	11.4	15.9	23.5	37.5	18.4
Northern England[a]	5.4	10.2	14.7	21.1	32.6	16.1
All						
Scotland	7.5	10.3	16.6	28.0	42.5	19.8
England	7.8	10.1	15.4	23.6	37.4	18.0
Northern England[a]	6.0	9.2	14.9	23.6	36.2	17.3
Bases (weighted)						
Scotland						
Men	*704*	*965*	*838*	*742*	*597*	*3846*
Women	*688*	*983*	*869*	*777*	*659*	*3976*
All	*1392*	*1948*	*1707*	*1518*	*1256*	*7822*
Bases (unweighted)						
Men						
Scotland	*462*	*829*	*799*	*703*	*684*	*3477*
England	*967*	*1424*	*1319*	*1117*	*984*	*5811*
Northern England	*269*	*389*	*352*	*316*	*287*	*1613*
Women						
Scotland	*541*	*1151*	*990*	*823*	*875*	*4380*
England	*1074*	*1701*	*1496*	*1273*	*1038*	*6582*
Northern England	*294*	*461*	*405*	*346*	*275*	*1781*
All						
Scotland	*1003*	*1980*	*1789*	*1526*	*1559*	*7857*
England	*2041*	*3125*	*2815*	*2390*	*2022*	*12393*
Northern England	*563*	*850*	*757*	*662*	*562*	*3394*

[a] Northern England includes the Northern & Yorkshire and North West health regions.

Table10.10 Prevalence of ischaemic heart disease and of stroke in 1995 Scottish Health Survey and 1994 Health Survey for England, by age and sex

All *1995 Scottish Health Survey and 1994 Health Survey for England*

Country	Age					Total
	16-24	25-34	35-44	45-54	55-64	
	%	%	%	%	%	%
Ischaemic heart disease						
Men						
Scotland	-	0.2	1.1	6.0	17.0	4.0
England	-	0.3	0.5	3.0	10.3	2.5
Northern England [a]	-	-	0.3	4.4	13.4	3.3
Women						
Scotland	0.3	0.4	1.0	3.4	11.4	2.9
England	0.2	0.1	0.3	2.3	5.9	1.5
Northern England [a]	0.3	0.2	0.2	2.0	5.6	1.4
All						
Scotland	0.1	0.3	1.0	4.7	14.0	3.5
England	0.1	0.2	0.4	2.6	8.1	2.0
Northern England [a]	0.2	0.1	0.3	3.1	9.5	2.3
Stroke						
Men						
Scotland	-	0.2	0.1	1.7	3.9	1.0
England	-	0.1	0.1	0.3	2.9	0.6
Northern England [a]	-	-	-	0.3	3.1	0.6
Women						
Scotland	-	0.2	0.2	0.7	1.8	0.5
England	-	0.2	0.3	0.6	1.8	0.5
Northern England [a]	-	0.4	-	0.3	1.4	0.4
All						
Scotland	-	0.2	0.2	1.2	2.8	0.8
England	-	0.1	0.2	0.5	2.3	0.5
Northern England [a]	-	0.2	-	0.3	2.3	0.5
Bases (weighted)						
Scotland						
Men	*722*	*979*	*851*	*748*	*600*	*3900*
Women	*695*	*990*	*870*	*777*	*665*	*3998*
All	*1417*	*1969*	*1721*	*1526*	*1265*	*7898*
Bases (unweighted)						
Men						
Scotland	*474*	*840*	*811*	*708*	*689*	*3522*
England	*968*	*1434*	*1329*	*1127*	*1001*	*5859*
Northern England	*269*	*394*	*353*	*318*	*292*	*1626*
Women						
Scotland	*547*	*1160*	*992*	*825*	*884*	*4408*
England	*1080*	*1723*	*1520*	*1300*	*1059*	*6682*
Northern England	*296*	*472*	*414*	*351*	*285*	*1818*
All						
Scotland	*1021*	*2000*	*1803*	*1533*	*1573*	*7930*
England	*2048*	*3157*	*2849*	*2427*	*2060*	*12541*
Northern England	*565*	*866*	*767*	*669*	*577*	*3444*

[a] Northern England includes the Northern & Yorkshire and North West health regions.

Table 10.11 Observed and age-standardised prevalence of any cardiovascular disorder, by region, age and sex

All *1995*

Any cardiovascular disorder	Region							Total
	Highland & Islands	Grampian & Tayside	Lothian & Fife	Borders, Dumfries & Galloway	Greater Glasgow	Lanarkshire, Ayrshire & Arran	Forth Valley, Argyll & Clyde	
	%	%	%	%	%	%	%	%
Observed prevalence								
Men								
16 - 44	10.5	9.9	11.8	11.4	8.7	9.9	12.8	10.7
45 - 64	29.5	25.9	31.1	32.1	43.4	37.8	44.5	35.4
All	17.1	15.2	17.8	19.4	21.8	20.7	23.7	19.3
Women								
16 - 44	10.2	11.0	12.3	12.7	12.5	17.2	9.8	12.6
45 - 64	37.7	30.3	27.3	33.9	38.2	37.4	33.9	33.7
All	20.3	18.3	17.1	21.0	22.0	25.0	18.3	20.2
Age-standardised prevalence								
Men	15.0	14.1	16.9	16.1	18.9	18.1	21.7	17.4
Women	18.6	17.5	16.5	19.7	20.7	24.0	17.9	19.3
Bases (weighted)								
Men								
16 - 44	*138*	*497*	*606*	*110*	*386*	*426*	*345*	*2508*
45 - 64	*73*	*242*	*273*	*69*	*234*	*268*	*180*	*1338*
All	*211*	*739*	*880*	*179*	*620*	*694*	*525*	*3846*
Women								
16 - 44	*131*	*422*	*586*	*118*	*477*	*448*	*357*	*2540*
45 - 64	*76*	*257*	*273*	*76*	*282*	*278*	*193*	*1436*
All	*208*	*679*	*859*	*194*	*759*	*726*	*551*	*3976*
Bases (unweighted)								
Men								
16 - 44	*203*	*365*	*447*	*168*	*293*	*341*	*273*	*2090*
45 - 64	*149*	*215*	*249*	*128*	*207*	*257*	*182*	*1387*
All	*352*	*580*	*696*	*296*	*500*	*598*	*455*	*3477*
Women								
16 - 44	*248*	*384*	*537*	*228*	*447*	*478*	*360*	*2682*
45 - 64	*172*	*264*	*284*	*165*	*283*	*321*	*209*	*1698*
All	*420*	*648*	*821*	*393*	*730*	*799*	*569*	*4380*

Table 10.12 Observed and age-standardised prevalence of ischaemic heart disease, by region, age and sex

All *1995*

Ischaemic heart disease	Region							Total
	Highland & Islands	Grampian & Tayside	Lothian & Fife	Borders, Dumfries & Galloway	Greater Glasgow	Lanarkshire, Ayrshire & Arran	Forth Valley, Argyll & Clyde	
	%	%	%	%	%	%	%	%
Observed prevalence								
Men								
16 - 44	0.2	-	0.5	1.1	1.0	0.5	0.2	0.4
45 - 64	8.9	5.6	9.3	9.7	12.4	15.2	13.1	10.9
All	3.2	1.8	3.2	4.4	5.3	6.1	4.6	4.0
Women								
16 - 44	-	0	0.4	-	1.5	0.7	0.3	0.5
45 - 64	5.6	4.3	4.2	5.8	9.2	11.3	6.7	7.1
All	2.1	1.7	1.6	2.3	4.4	4.8	2.5	2.9
Age-standardised prevalence								
Men	2.4	1.6	3.0	3.4	4.4	4.8	3.7	3.3
Women	1.8	1.5	1.5	1.8	3.9	3.9	2.3	2.5
Bases (weighted)								
Men								
16 - 44	*140*	*511*	*617*	*110*	*390*	*436*	*348*	*2552*
45 - 64	*73*	*242*	*278*	*69*	*237*	*268*	*180*	*1348*
All	*213*	*753*	*895*	*179*	*628*	*704*	*527*	*3900*
Women								
16 - 44	*132*	*424*	*590*	*118*	*480*	*451*	*362*	*2555*
45 - 64	*78*	*258*	*273*	*76*	*284*	*280*	*193*	*1443*
All	*210*	*681*	*863*	*194*	*764*	*731*	*556*	*3998*
Bases (unweighted)								
Men								
16 - 44	*206*	*374*	*455*	*168*	*296*	*350*	*276*	*2125*
45 - 64	*150*	*216*	*253*	*128*	*211*	*257*	*182*	*1397*
All	*356*	*590*	*708*	*296*	*507*	*607*	*458*	*3522*
Women								
16 - 44	*249*	*386*	*541*	*228*	*450*	*481*	*364*	*2699*
45 - 64	*176*	*265*	*284*	*165*	*287*	*323*	*209*	*1709*
All	*425*	*651*	*825*	*393*	*737*	*804*	*573*	*4408*

Table 10.13 Observed and age-standardised prevalence of any cardiovascular disorder, by social class of chief income earner, age and sex

All *1995*

Any cardiovascular disorder	Social class of chief income earner						Total[a]
	I	II	IIINM	IIIM	IV	V	
	%	%	%	%	%	%	%
Observed prevalence							
Men							
16 - 44	10.8	10.2	9.7	12.0	7.3	16.1	10.7
45 - 64	19.4	30.0	27.7	40.9	45.0	30.0	35.4
All	14.0	17.5	14.8	22.9	19.9	21.3	19.3
Women							
16 - 44	17.0	9.1	15.3	14.2	10.0	15.0	12.6
45-64	30.7	26.8	38.8	34.2	39.7	37.4	33.7
All	21.9	16.1	23.3	21.6	21.2	25.0	20.2
Age-standardised prevalence							
Men	12.4	14.8	14.6	19.5	17.8	19.4	17.4
Women	21.0	14.2	22.7	20.5	20.1	21.0	*19.3*
Bases (weighted)							
Men							
16 - 44	*164*	*626*	*318*	*763*	*352*	*109*	*2508*
45 - 64	*97*	*369*	*125*	*462*	*178*	*67*	*1338*
All	*261*	*995*	*443*	*1225*	*530*	*176*	*3846*
Women							
16 - 44	*162*	*595*	*453*	*650*	*340*	*114*	*2540*
45 - 64	*89*	*384*	*233*	*386*	*206*	*92*	*1436*
All	*251*	*978*	*686*	*1036*	*547*	*205*	*3976*
Bases (unweighted)							
Men							
16 - 44	*140*	*507*	*251*	*635*	*304*	*104*	*2090*
45 - 64	*90*	*355*	*127*	*480*	*202*	*88*	*1387*
All	*230*	*862*	*378*	*1115*	*506*	*192*	*3477*
Women							
16 - 44	*158*	*607*	*534*	*614*	*410*	*135*	*2682*
45 - 64	*92*	*457*	*294*	*412*	*253*	*130*	*1698*
All	*250*	*1064*	*828*	*1026*	*663*	*265*	*4380*

[a]The total includes informants for whom social class was unknown.

Table 10.14 Observed and age-standardised prevalence of ischaemic heart disease, by social class of chief income earner, age and sex

All *1995*

Ischaemic heart disease	Social class of chief income earner						Total[a]
	I	II	IIINM	IIIM	IV	V	
	%	%	%	%	%	%	%
Observed prevalence							
Men							
16 - 44	-	0.5	-	0.5	0.3	1.5	0.4
45 - 64	5.2	8.0	11.6	13.0	12.5	15.1	10.9
All	1.9	3.3	3.3	5.2	4.4	6.7	4.0
Women							
16 - 44	-	0.1	0.7	0.6	0.6	1.0	0.5
45 - 64	5.0	2.9	6.4	9.4	10.1	12.2	7.1
All	1.8	1.2	2.6	3.9	4.2	6.0	2.9
Age standardised prevalence							
Men	1.9	2.6	3.3	3.6	3.8	4.7	3.3
Women	1.7	0.9	2.4	3.4	3.6	4.0	2.5
Bases (weighted)							
Men							
16 - 44	*170*	*640*	*321*	*778*	*354*	*109*	*2552*
45 - 64	*97*	*372*	*127*	*466*	*179*	*68*	*1348*
All	*267*	*1012*	*448*	*1244*	*532*	*177*	*3900*
Women							
16 - 44	*164*	*598*	*454*	*655*	*342*	*114*	*2555*
45 - 64	*89*	*386*	*235*	*387*	*206*	*93*	*1443*
All	*253*	*983*	*689*	*1042*	*548*	*207*	*3998*
Bases (unweighted)							
Men							
16 - 44	*146*	*517*	*255*	*645*	*306*	*104*	*2125*
45 - 64	*90*	*357*	*128*	*484*	*203*	*90*	*1397*
All	*236*	*874*	*383*	*1129*	*509*	*194*	*3522*
Women							
16 - 44	*159*	*609*	*537*	*618*	*412*	*136*	*2699*
45 - 64	*93*	*459*	*297*	*414*	*253*	*132*	*1709*
All	*252*	*1068*	*834*	*1032*	*665*	*268*	*4408*

[a]The total includes informants for whom social class was unknown.

Table 10.15 Prevalence of major risk factors[a], by CVD, age and sex

	All informants			All informants with any cardiovascular disorder			All informants with IHD or stroke		
	16-44	45-64	**Total**	16-44	45-64	**Total**	16-44	45-64	**Total**
Men	%	%	%	%	%	%	%	%	%
Raised BMI									
BMI >25 (kg/m^2)	46.9	72.2	55.6	64.5	79.9	74.3	[12]	81.2	82.0
BMI >30 (kg/m^2)	13.0	21.5	15.9	30.2	31.4	31.0	[9]	35.0	34.8
Current smoker	33.8	33.6	33.7	38.1	33.0	34.8	[5]	39.7	39.1
Smokes 20 or more cigarettes a day	12.8	20.3	15.4	18.2	19.1	18.8	[4]	18.7	19.2
Alcohol consumption									
>21 units per week	34.3	30.2	32.9	42.1	27.9	33.0	[4]	25.6	25.6
>28 units per week	23.4	19.5	22.0	29.6	17.5	21.8	[2]	17.8	17.3
Bases[b]: had interview									
(weighted)	*2553*	*1349*	*3902*	*268*	*474*	*742*	*12*	*168*	*180*
(unweighted)	*2126*	*1398*	*3524*	*250*	*504*	*754*	*14*	*186*	*200*
High blood pressure	2.9	26.0	11.0	17.1	58.8	44.2	[3]	71.0	69.9
Normotensive treated	1.1	12.4	5.1	10.1	33.4	25.2	[2]	55.2	54.7
Hypertensive treated	0.2	4.1	1.5	1.8	11.6	8.1	-	7.4	7.0
Hypertensive untreated	1.6	9.5	4.4	5.3	13.9	10.9	[1]	8.4	8.1
Bases: valid blood pressure measurement									
(weighted)	*1898*	*1014*	*2912*	*193*	*356*	*549*	*7*	*126*	*134*
(unweighted)	*1558*	*1022*	*2580*	*178*	*359*	*537*	*8*	*132*	*140*
Raised total cholesterol									
6.5 mmol/ or over	16.9	34.0	22.9	28.5	35.9	33.2	[5]	34.1	36.8
7.8 mmol/l or over	2.9	7.4	4.5	3.9	8.2	6.6	-	7.6	7.1
Bases: valid cholesterol measurement									
(weighted)	*2062*	*1122*	*3185*	*223*	*385*	*608*	*8*	*130*	*138*
(unweighted)	*1689*	*1142*	*2831*	*202*	*401*	*603*	*10*	*143*	*153*

Continued...

Table 10.15 - continued

1995

	All informants			All informants with any cardiovascular disorder			All informants with IHD or stroke		
	16-44	45-64	**Total**	16-44	45-64	**Total**	16-44	45-64	**Total**
Women	%	%	%	%	%	%	%	%	%
Raised BMI									
BMI >25 (kg/m^2)	38.9	61.4	47.2	49.0	71.4	62.5	[12]	74.5	71.6
BMI >30 (kg/m^2)	13.5	23.8	17.3	22.0	37.8	31.5	[15]	46.1	42.8
Current smoker	35.5	35.8	35.6	38.4	37.4	37.8	[11]	42.4	43.7
Smokes 20 or more cigarettes a day	12.2	15.1	13.2	17.0	15.9	16.3	[5]	24.4	25.0
Alcohol consumption									
>14 units per week	14.7	9.8	12.9	13.2	8.1	10.1	[1]	4.7	4.2
>21 units per week	5.8	3.5	5.0	5.1	2.2	3.4	[1]	1.5	1.4
Bases[b]: had interview									
(weighted)	*2555*	*1443*	*3998*	*319*	*484*	*804*	*16*	*113*	*129*
(unweighted)	*2699*	*1709*	*4408*	*346*	*604*	*950*	*20*	*141*	*161*
High blood pressure	3.1	29.5	12.9	15.0	63.5	45.3	[6]	76.8	72.5
Normotensive treated	2.2	18.7	8.4	10.0	46.5	32.8	[5]	61.2	58.5
Hypertensive treated	0.1	3.1	1.2	0.7	8.7	5.7	[1]	12.0	10.8
Hypertensive untreated	0.7	7.7	3.3	4.2	8.4	6.8	-	3.7	3.2
Bases: valid blood pressure measurement									
(weighted)	*1834*	*1083*	*2917*	*218*	*360*	*577*	*11*	*81*	*92*
(unweighted)	*1907*	*1281*	*3188*	*239*	*446*	*685*	*16*	*99*	*115*
Raised total cholesterol									
6.5 mmol/l or over	9.8	40.2	21.5	11.5	49.4	35.1	[5]	56.0	53.0
7.8 mmol/l or over	1.3	9.5	4.5	2.1	14.0	9.5	[1]	17.1	16.0
Bases: valid cholesterol measurement									
(weighted)	*1843*	*1143*	*2986*	*225*	*372*	*597*	*11*	*86*	*98*
(unweighted)	*1953*	*1347*	*3300*	*247*	*466*	*713*	*16*	*106*	*122*

[a]The lower categories also contain the higher categories. See text for full explanation.
[b]Bases for certain variables may vary slightly from these due to missing data.

Table 10.16 Prevalence of any cardiovascular disorder, by risk factors, age and sex

	Men				Women		
	16-44	45-64	**Total**		16-44	45-64	**Total**
	%	%	%		%	%	%
Body Mass Index (kg/m^2)				**Body Mass Index (kg/m^2)**			
20 or under	6.6	[6]	9.1	20 or under	9.9	13.8	10.6
Over 20-25	7.2	24.8	11.3	Over 20-25	10.9	26.2	15.2
Over 25-30	10.7	33.5	20.8	Over 25-30	13.6	29.9	21.1
Over 30	24.4	51.0	36.7	Over 30	20.8	53.0	37.0
Cigarette smoking				**Cigarette smoking**			
Non-smoker	8.6	31.4	14.3	Non-smoker	11.8	30.8	17.8
Ex-smoker	15.3	39.4	29.1	Ex-smoker	13.1	37.0	24.8
Smokes less than 20 a day	10.1	37.4	16.9	Smokes less than 20 a day	11.6	35.2	19.5
Smokes 20 or more a day	15.3	33.7	23.7	Smokes 20 or more a day	17.6	35.4	25.0
Alcohol consumption				**Alcohol consumption**			
Non/occasional drinker	9.7	43.1	22.1	Non/occasional drinker	13.7	39.9	24.9
Ex-drinker	[7]	58.7	42.3	Ex-drinker	25.9	37.8	32.7
1-21 units per week	9.2	33.4	17.7	1-14 units per week	12.1	31.5	18.8
>21 units per week	13.2	32.8	19.5	>14 units per week	11.4	27.5	15.8
High blood pressure[a]				**High blood pressure**[a]			
Normotensive untreated	8.8	19.7	12.0	Normotensive untreated	10.4	17.3	12.5
Hypertensive untreated	[10]	52.0	48.1	Hypertensive untreated	[9]	36.2	40.8
Total cholesterol (mmol/l)				**Total cholesterol (mmol/l)**			
Less than 5.2	7.6	32.7	11.9	Less than 5.2	10.0	24.5	12.3
5.2, less than 6.5	12.0	33.7	21.2	5.2, less than 6.5	14.9	28.7	20.8
6.5, less than 7.8	19.4	36.3	28.0	6.5, less than 7.8	13.5	37.9	30.3
7.8 or more	14.9	38.1	28.5	7.8 or more	[5]	48.1	43.0

Continued...

Table 10.16 - continued

	Men				Women		
	16-44	45-64	**Total**		16-44	45-64	**Total**
Bases				*Bases*			
BMI (weighted)				*BMI (weighted)*			
20 or under	*178*	*19*	*197*	*20 or under*	*267*	*65*	*331*
Over 20-25	*1145*	*355*	*1500*	*Over 20-25*	*1204*	*485*	*1690*
Over 25-30	*847*	*667*	*1514*	*Over 25-30*	*618*	*530*	*1147*
Over 30	*333*	*293*	*626*	*Over 30*	*333*	*342*	*675*
BMI (unweighted)				*BMI (unweighted)*			
20 or under	*134*	*23*	*157*	*20 or under*	*261*	*76*	*337*
Over 20-25	*926*	*380*	*1306*	*Over 20-25*	*1294*	*551*	*1845*
Over 25-30	*739*	*679*	*1418*	*Over 25-30*	*646*	*633*	*1279*
Over 30	*287*	*299*	*586*	*Over 30*	*354*	*420*	*774*
Cigarette smoking (weighted)				*Cigarette smoking (weighted)*			
Non-smoker	*1317*	*437*	*1754*	*Non-smoker*	*1319*	*617*	*1936*
Ex-smoker	*344*	*456*	*800*	*Ex-smoker*	*318*	*306*	*624*
Smokes less than 20 a day	*525*	*175*	*700*	*Smokes less than 20 a day*	*589*	*295*	*884*
Smokes 20 or more a day	*319*	*268*	*587*	*Smokes 20 or more a day*	*308*	*217*	*525*
Cigarette smoking (unweighted)				*Cigarette smoking (unweighted)*			
Non-smoker	*1066*	*427*	*1493*	*Non-smoker*	*1280*	*722*	*2002*
Ex-smoker	*293*	*460*	*753*	*Ex-smoker*	*349*	*378*	*727*
Smokes less than 20 a day	*432*	*194*	*626*	*Smokes less than 20 a day*	*668*	*348*	*1016*
Smokes 20 or more a day	*297*	*303*	*600*	*Smokes 20 or more a day*	*381*	*250*	*631*
Alcohol consumption (weighted)				*Alcohol consumption (weighted)*			
Non/occasional drinker	*253*	*148*	*401*	*Non/occasional drinker*	*538*	*398*	*936*
Ex-drinker	*40*	*61*	*101*	*Ex-drinker*	*56*	*76*	*132*
1-21 units per week	*1340*	*726*	*2066*	*1-14 units per week*	*1562*	*820*	*2382*
>21 units per week	*856*	*403*	*1259*	*>14 units per week*	*371*	*142*	*513*
Alcohol consumption (unweighted)				*Alcohol consumption (unweighted)*			
Non/occasional drinker	*197*	*161*	*358*	*Non/occasional drinker*	*553*	*509*	*1062*
Ex-drinker	*42*	*67*	*109*	*Ex-drinker*	*67*	*94*	*161*
1-21 units per week	*1106*	*737*	*1843*	*1-14 units per week*	*1664*	*930*	*2594*
>21 units per week	*734*	*422*	*1156*	*>14 units per week*	*389*	*165*	*554*
High blood pressure (weighted)				*High blood pressure (weighted)*			
Normotensive untreated	*1803*	*741*	*2545*	*Normotensive untreated*	*1762*	*757*	*2518*
Hypertensive untreated	*29*	*95*	*124*	*Hypertensive untreated*	*13*	*83*	*96*
High blood pressure (unweighted0				*High blood pressure (unweighted0*			
Normotensive untreated	*1473*	*738*	*2211*	*Normotensive untreated*	*1825*	*877*	*2702*
Hypertensive untreated	*32*	*105*	*137*	*Hypertensive untreated*	*18*	*103*	*121*
Total cholesterol(weighted)				*Total cholesterol(weighted)*			
Less than 5.2	*952*	*201*	*1154*	*Less than 5.2*	*981*	*177*	*1159*
5.2, less than 6.5	*732*	*536*	*1268*	*5.2, less than 6.5*	*671*	*506*	*1177*
6.5, less than 7.8	*283*	*294*	*577*	*6.5, less than 7.8*	*157*	*347*	*504*
7.8 or more	*58*	*83*	*141*	*7.8 or more*	*24*	*108*	*132*
Total cholesterol (unweighted)				*Total cholesterol (unweighted)*			
Less than 5.2	*723*	*203*	*926*	*Less than 5.2*	*989*	*188*	*1177*
5.2, less than 6.5	*629*	*528*	*1157*	*5.2, less than 6.5*	*745*	*576*	*1321*
6.5, less than 7.8	*252*	*309*	*561*	*6.5, less than 7.8*	*178*	*426*	*604*
7.8 or more	*55*	*92*	*147*	*7.8 or more*	*29*	*150*	*179*

[a]Informants were considered hypertensive if their systolic blood pressure was 160 mmHg or over or their diastolic blood pressure was 95 mmHg or over or they were taking medication affecting blood pressure.

Table 10.17 Prevalence of ischaemic heart disease or stroke, by risk factors, age and sex

	Men				Women		
	16-44	45-64	**Total**		16-44	45-64	**Total**
	%	%	%		%	%	%
Body Mass Index (kg/m^2)				**Body Mass Index (kg/m^2)**			
20 or under	-	[2]	1.3	20 or under	1.1	5.5	2.0
Over 20-25	0.1	7.9	1.9	Over 20-25	0.4	4.9	1.7
Over 25-30	0.8	11.0	5.3	Over 25-30	0.8	5.7	3.1
Over 30	1.0	19.7	9.7	Over 30	1.1	14.6	7.9
Cigarette smoking				**Cigarette smoking**			
Non-smoker	0.1	6.0	1.6	Non-smoker	0.4	4.8	1.8
Ex-smoker	1.9	16.2	10.0	Ex-smoker	0.6	11.5	6.0
Smokes less than 20 a day	0.1	19.5	5.0	Smokes less than 20 a day	0.8	9.3	3.6
Smokes 20 or more a day	0.9	11.4	5.7	Smokes 20 or more a day	1.2	9.3	4.6
Alcohol consumption				**Alcohol consumption**			
Non/occasional drinker	0.9	17.6	7.0	Non/occasional drinker	0.8	13.6	6.2
Ex-drinker	[1]	25.3	16.1	Ex-drinker	4.3	8.9	7.0
1-21 units per week	0.4	11.4	4.2	1-14 units per week	0.6	5.7	2.3
>21 units per week	0.4	10.5	3.6	>14 units per week	0	3.8	1.1
High blood pressure[a]				**High blood pressure**[a]			
Normotensive untreated	0.2	4.9	1.6	Normotensive untreated	0.4	2.5	1.0
Normotensive treated	[4]	55.4	49.7	Normotensive treated	[4]	24.6	22.1
Hypertensive treated	-	[9]	[9]	Hypertensive treated	[1]	[10]	[10]
Hypertensive untreated	[1]	11.1	8.6	Hypertensive untreated	-	3.6	3.1
Total cholesterol (mmol/l)				**Total cholesterol (mmol/l)**			
Less than 5.2	0.1	8.1	1.5	Less than 5.2	0.1	3.0	0.6
5.2, less than 6.5	0.1	12.9	5.5	5.2, less than 6.5	1.0	6.4	3.3
6.5, less than 7.8	2.3	11.6	7.0	6.5, less than 7.8	1.6	9.6	7.1
7.8 or more	-	11.9	6.9	7.8 or more	[1]	13.6	11.8

Continued...

Table 10.17 - continued

	Men				Women		
	16-44	45-64	**Total**		16-44	45-64	**Total**
Bases				*Bases*			
BMI (weighted)				*BMI (weighted)*			
20 or under	*179*	*20*	*199*	*20 or under*	*272*	*66*	*338*
Over 20-25	*1170*	*358*	*1528*	*Over 20-25*	*1212*	*487*	*1699*
Over 25-30	*863*	*671*	*1534*	*Over 25-30*	*619*	*531*	*1150*
Over 30	*335*	*294*	*629*	*Over 30*	*334*	*343*	*677*
BMI (unweighted)				*BMI (unweighted)*			
20 or under	*136*	*25*	*161*	*20 or under*	*265*	*79*	*344*
Over 20-25	*944*	*382*	*1326*	*Over 20-25*	*1303*	*553*	*1856*
Over 25-30	*753*	*683*	*1436*	*Over 25-30*	*648*	*635*	*1283*
Over 30	*288*	*301*	*589*	*Over 30*	*356*	*423*	*779*
Cigarette smoking (weighted)				*Cigarette smoking (weighted0*			
Non-smoker	*1337*	*437*	*1774*	*Non-smoker*	*1325*	*618*	*1943*
Ex-smoker	*351*	*458*	*809*	*Ex-smoker*	*319*	*308*	*627*
Smokes less than 20 a day	*535*	*179*	*715*	*Smokes less than 20 a day*	*596*	*298*	*894*
Smokes 20 or more a day	*326*	*272*	*598*	*Smokes 20 or more a day*	*311*	*218*	*529*
Cigarette smoking (unweighted)				*Cigarette smoking (unweighted)*			
Non-smoker	*1080*	*427*	*1507*	*Non-smoker*	*1286*	*725*	*2011*
Ex-smoker	*298*	*462*	*760*	*Ex-smoker*	*350*	*380*	*730*
Smokes less than 20 a day	*442*	*198*	*640*	*Smokes less than 20 a day*	*675*	*353*	*1028*
Smokes 20 or more a day	*303*	*307*	*610*	*Smokes 20 or more a day*	*384*	*251*	*635*
Alcohol consumption (weighted)				*Alcohol consumption (weighted)*			
Non/occasional drinker	*258*	*151*	*409*	*Non/occasional drinker*	*542*	*398*	*940*
Ex-drinker	*39*	*61*	*100*	*Ex-drinker*	*56*	*77*	*133*
1-21 units per week	*1366*	*729*	*2095*	*1-14 units per week*	*1572*	*826*	*2397*
>21 units per week	*871*	*407*	*1277*	*>14 units per week*	*373*	*142*	*515*
Alcohol consumption (unweighted)				*Alcohol consumption (unweighted)*			
Non/occasional drinker	*201*	*164*	*365*	*Non/occasional drinker*	*556*	*511*	*1067*
ex-drinker	*41*	*67*	*108*	*Ex-drinker*	*67*	*96*	*163*
1-21 units per week	*1125*	*741*	*1866*	*1-21 units per week*	*1675*	*937*	*2612*
>21 units per week	*747*	*425*	*1172*	*>21 units per week*	*392*	*165*	*557*
Blood pressure (weighted)				*Blood pressure (weighted)*			
Normotensive untreated	*1834*	*748*	*2581*	*Normotensive untreated*	*1773*	*761*	*2534*
Normotensive treated	*22*	*126*	*147*	*Normotensive treated*	*41*	*202*	*243*
Hypertensive treated	*3*	*41*	*44*	*Hypertensive treated*	*1*	*33*	*35*
Hypertensive untreated	*31*	*96*	*127*	*Hypertensive untreated*	*13*	*83*	*96*
Blood pressure (unweigthed)				*Blood pressure (unweigthed)*			
Normotensive untreated	*1495*	*744*	*2239*	*Normotensive untreated*	*1837*	*883*	*2720*
Normotensive treated	*20*	*128*	*148*	*Normotensive treated*	*44*	*244*	*288*
Hypertensive treated	*4*	*40*	*44*	*Hypertensive treated*	*3*	*45*	*48*
Hypertensive untreated	*34*	*106*	*140*	*Hypertensive untreated*	*18*	*104*	*122*
Total cholesterol(weighted)				*Total cholesterol(weighted)*			
Less than 5.2	*969*	*201*	*1170*	*Less than 5.2*	*989*	*177*	*1166*
5.2, less than 6.5	*746*	*539*	*1285*	*5.2, less than 6.5*	*673*	*506*	*1179*
6.5, less than 7.8	*288*	*298*	*586*	*6.5, less than 7.8*	*157*	*351*	*507*
7.8 or more	*59*	*83*	*143*	*7.8 or more*	*24*	*109*	*133*
Total cholesterol (unweighted)				*Total cholesterol (unweighted)*			
Less than 5.2	*736*	*203*	*939*	*Less than 5.2*	*998*	*188*	*1186*
5.2, less than 6.5	*641*	*531*	*1172*	*5.2, less than 6.5*	*747*	*578*	*1325*
6.5, less than 7.8	*256*	*314*	*570*	*6.5, less than 7.8*	*178*	*430*	*608*
7.8 or more	*56*	*93*	*149*	*7.8 or more*	*30*	*151*	*181*

[a]Informants were considered hypertensive if their systolic blood pressure was 160 mmHg or over or their diastolic blood pressure was 95 mmHg or over or they were taking medication affecting blood pressure.

11 GENERAL HEALTH, USE OF HEALTH SERVICES, PRESCRIBED MEDICINES AND DENTAL HEALTH

Andrew Shaw

SUMMARY

- Around three-quarters of both men and women reported that in general their health was 'very good' or 'good'. However, fewer older informants (55-64) felt this way (55% of men and 65% of women). Social class variations were substantial (e.g., twice as many Social Class IV as Social Class II informants reported 'fair' or 'bad' health).

- One-third (35%) of informants said they had a longstanding illness or disability. This proportion increased with age from 22% (16-24 year olds) to 57% (55-64 year olds).

- In the *two weeks* preceding the interview, acute sickness was reported by 15% of informants, including 5% who said their activities were limited every day. A higher proportion of women (17%) and 55-64 year olds (20%) said they were acutely sick.

- In the *six months* preceding the interview, 16% of women and 11% of men reported suffering from symptoms of gastroenteritis associated with food poisoning.

- In the *two weeks* preceding the interview, 22% of women and 14% of men consulted a GP. Age made no systematic difference, though older men were more likely than young men to have visited a GP. People with a cardiovascular condition were more likely to have consulted a GP (27% of women and 21% of men).

- In the preceding *12 months*, 11% of informants had been an inpatient. Overall, more women than men were inpatients, but among 55-64 year olds the reverse was true. One in three (35%) had attended hospital as an outpatient. Slightly more women and older informants were outpatients, but the pattern associated with inpatient stays was not evident.

- Well over half of women (63%) but fewer men (43%) had their blood pressure measured by a doctor or nurse in the preceding 12 months. Most informants (73%) had *never* had their cholesterol level measured by a doctor or nurse, though 43% of those aged 55-64 years had done.

- More women (42%) than men (32%) were taking prescribed medicines when interviewed. Most 45-64 year olds were taking medicine, while most younger people were not. Four in ten 55-64 year olds were taking more than one medicine.

- Around four in ten women aged under 35 but very few older women were using the contraceptive pill. One in four women aged 45-54 years and one in six aged 55-64 years were on HRT.

- One in six 45-54 year olds and four in ten 55-64 year olds had none of their own teeth. Nearly all people (95%) with their own teeth brushed them daily (though 12% of 45-64 year old men and of men in Social Classes IIIM and IV did not brush daily).

- Around two-thirds of women and one-half of men reported that, on average, they visited a dentist at least once every six months. But nearly one-third of men did not go bi-annually.

11.1 INTRODUCTION

This chapter has five sections. The first examines the general health of the population as assessed by informants. The second outlines the prevalence of gastroenteritis in a six month period. The third explores use of health services, including GP consultations and hospital attendances. The fourth section summarises the possession and consumption of prescribed medicines and the final section looks at dental health. The introduction to each section describes the survey questions and the reasons for their inclusion.

11.2 GENERAL HEALTH

11.2.1 Introduction

This section is concerned with informants' perceptions of their general health, longstanding illnesses (over a period of time) and acute sickness (within the two weeks preceding the interview). The question wordings have largely been taken from the General Household Survey (GHS). The questions were also identical to those used in recent Health Surveys for England and certain comparisons are made with results from the 1995 English survey.

These health measures provide valuable indicators of the general health of the population and the prevalence of illness within it. However, a degree of caution is required. Data based on self-assessments of health may not be wholly reliable due to variations in *interpretation, readiness to report and knowledge*. Firstly, responses depend to some extent on attitudes, expectations and judgements which are likely to vary significantly in the population. Hence, we expect different interpretations of 'good health' or whether a certain condition represents a longstanding illness. If interpretations were to vary systematically according to characteristics such as age or social class, then comparisons of different groups would be affected.

Secondly, some illnesses, particularly mental ill health, may be under-reported due to reluctance to reveal this information.[1] Thirdly, informants may not be aware of their condition. Again this is likely to affect reported levels of mental illness. It is also a particular problem in classifying longstanding conditions. Illnesses were coded into broad categories on the basis of the International Classification of Diseases, which is used as a means of classifying on the basis of cause. The findings presented here rely on informants' reports of 'what is the matter' with them. Clearly this could reflect the symptoms rather than the cause and so, for example, someone with cancer might have their condition coded to the site or system, rather than as a neoplasm. Furthermore, the extent of reporting of causes and symptoms may depend on informants' knowledge of their condition, which in turn is a reflection of whether they have received and understood a doctor's diagnosis.

Nevertheless, obtaining informants' self-assessments of their health is valuable as it provides information about the health of the whole population, and therefore extends the picture that can be obtained from an examination of doctor and hospital records. Also, it is thought that self-perceptions of health may indicate potential demand for health services.

11.2.2 Perception of general health

Informants were asked to rate their health as 'very good', 'good', 'fair', 'bad' or 'very bad'. Three-quarters (77%) said that their health was 'good' or 'very good', nearly one in five (18%) said it was 'fair' and only one in twenty (5%) felt that it was 'bad' or 'very bad'. **Table 11.1**

Overall, there was no difference between the proportions of men and women reporting good health. However, as one would expect, this proportion varied by age and in doing so reveals a gender difference among older informants.

The proportion reporting good health was 80% or more among those in age groups under 45 years, but then declined to 60% among 55-64 year olds. The decline was greater among men, among whom only 55% of 55-64 years olds reported good health compared with 65% of women in that age group.

Poor health was relatively uncommon in all the age groups surveyed, though the decline in health by age, especially for men, is underlined. The proportion reporting 'bad' or 'very bad' health rose sharply to 8% among 45-54 year olds and 12% among the oldest age group (16% of men though only 8% of women).

In regional terms, only Greater Glasgow diverged greatly from the national picture. Here, the proportion reporting 'very good' health was limited to 28%, while 9% - twice the national rate - said their health was 'bad' or 'very bad'. **Table 11.2**

Informants in Scotland were slightly less likely to report 'very good' health than their counterparts in England (35% compared with 39%). With the same proportion (42%) reporting 'good' health, the combined rates for 'very good' and 'good' health were 77% and 81% respectively. This reflects lower levels of reported good health among young and older age groups in Scotland. Whereas 86% of young adults (16-24) in England reported good health, only 80% of those in Scotland did so. Among all 55-64 year olds, the respective rates were 68% and 61%, while among men of this age they were 67% and just 55%. In contrast, there were no significant differences between those aged 35-44 years. **Table 11.2**

Overall, the difference between informants in Scotland and those in Northern England (comprising the two regions of Northern & Yorkshire and North West) was a small one, though it remained statistically significant. Whereas in Scotland, 77% reported 'good' or 'very good' health, in Northern England 79% did so. Furthermore, the difference in these proportions for young adults aged 16-24 was much greater (80% compared with 87%).

Social class[2] differences were far greater than regional ones, affecting men and women equally. Moving across from Social Class I to Social Class V the proportion reporting good health fell in each successive social class. The result is a three-fold difference in the proportion of Social Class I (12%) compared to that of Social Class V (35%) informants who did *not* report 'good' or 'very good' health. **Table 11.3**

11.2.3 Longstanding illness and disability

In order to estimate the extent of chronic sickness within the Scottish population, informants were asked whether they had any longstanding illness, disability or infirmity that affected them over a period of time and, if so, to describe its nature. Those who said they had a longstanding illness were also asked whether it limited their activities in any way. These descriptions were coded so that, as far as possible, they could be aggregated into groups corresponding to the main headings of the Ninth Revision of the International Classification of Diseases.[3] (The difficulties involved in

classifying conditions based on self-reported data have already been noted in Section 11.2.1.)

Prevalence of longstanding illness and disability

Approximately one-third (35%) of informants said they had a longstanding illness or disability, including 11% who reported more than one. Differences by gender were not observed, either overall or within sub-groups. Age, though, had a sizeable impact. The proportion reporting an illness or disability increased from 22% among young adults to 31% among the 35-44 year olds and then accelerated to reach 57% among 55-64 year olds. Furthermore, over one-quarter of the older age group reported more than one illness or disability. **Table 11.4**

Informants with a long-standing illness or disability were asked whether this limited their activities in any way. Just over one-half (56%) - or one in five of all informants - said that it did so. However, there were significant age differences. Two-thirds of 55-64 year olds with an illness or disability said that their activities were limited in some way, implying that nearly four in ten of all those in this age group had a limiting condition. In contrast, most 16-24 year olds with an illness or disability said that their activities were not limited. As a result, less than a tenth of this age group - though twice as many women as men - had a limiting condition. **Table 11.4**

Regional differences were modest but not wholly negligible. The proportion reporting an illness or disability was three in ten in Grampian & Tayside but four in ten in Lanarkshire, Ayrshire & Arran. In two regions there was a significant difference between men and women. More men than women in Borders, Dumfries & Galloway reported an illness or disability, whereas the reverse was true in Grampian & Tayside. The proportions reporting limiting illnesses and disabilities reflect this pattern. The lowest percentage was among informants from Grampian & Tayside (15%) and the highest among those from Lanarkshire, Ayrshire & Arran (25%) and Greater Glasgow (24%). **Table 11.5**

In 1995, the prevalence of self-reported longstanding illness and disability in Scotland (35%) and England (36%) was almost identical and showed no clear age or sex differences. (Table not shown.)

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Social class differences were also relatively modest, with one exception. Those in Social Class V were more likely than others (46% compared with 30% to 37% in other Social Classes) to have said they had an illness or disability. (Table not shown.)

Types of longstanding illness and disability

Conditions relating to the musculo-skeletal system (such as arthritis, rheumatism and back conditions) were by some way the most common, for both men and women. Overall, 13% - or 130 persons per thousand - reported conditions of this type. The reported rate of such conditions rose sharply with age, affecting over one-quarter of 55-64 year olds. In contrast, the rate of the second most common type of illness or disability - conditions of the respiratory system (principally asthma) - both varied much less and appeared to be lowest among the middle age groups (35-54 years).**Table 11.6**

Conditions of the circulatory system (mainly cardiovascular conditions) and of the digestive system (including stomach ulcers and bowel/colon complaints) were the only other types to be mentioned by at least five percent of informants. Prevalence of both increased with age, most markedly for circulatory system illnesses and disabilities. This set of conditions, which was rare among those under 45 years, affected one-fifth of 55-64 year olds.

The regional patterns of illness and disability were quite similar. However, the prevalence of musculo-skeletal system conditions in Greater Glasgow and Lanarkshire, Ayrshire & Arran was notably higher than in other regions. **Table 11.7**

The most prevalent types of illness and disability were particularly common among people, especially women, in Social Class V. For instance, 20% of women and 17% of men in this social class reported conditions of the musculo-skeletal system. Otherwise, there were no clear patterns of social class differences. (Table not shown.)

11.2.4 Acute sickness

Informants were asked whether, in the two weeks preceding the interview, they had been ill or injured to an extent which reduced their activities at home, at work or in their free time. Those who said they had been are described as having suffered acute sickness (which is consistent with the definition of acute sickness used in the GHS and in the Health Survey for England). In order to estimate the severity of their sickness, informants were also asked how many days the condition limited their activity.

Acute sickness was reported by 15% of informants, including 5% who said their activities were limited every day and a further 6% who had at least four days sickness. The extent of sickness reported by these people - a mean of 7.6 days - meant that the mean number of days of sickness for the whole population was 1.1 over the preceding fortnight. **Table 11.8**

More women (17%) reported acute sickness than men (13%). This reflects differences in the age bands covering 25-54 years. However, only among 25-34 year olds did women who had been sick spend significantly more days being so. Clearly, this difference could reflect the effect of pregnancy and family-planning related problems.

Both the rates and periods of sickness increased with age. A fifth of 55-64 year olds reported acute sickness, nearly half of whom were limited for the entire 14 days. In contrast, the majority of young adults were affected by their sickness for less than a week.

Among regions, Greater Glasgow is prominent for its high prevalence of self-reported acute sickness (19%). Periods of sickness were also relatively high (a mean of 8.4 days). In contrast, informants in Grampian & Tayside reported both a low rate of acute sickness (12%) and relatively short durations (a mean of 6.8 days). **Table 11.9**

In 1995, the overall prevalence of self-reported acute sickness was identical in Scotland and England. The rates for both sexes and all but one age group were very similar. The exception was among informants aged 55-64: in Scotland, 20% reported acute sickness, whereas in England 17% did so (a statistically significant difference, though clearly not a large one).

Social class differences were evident among women but not men. Women in Social Classes IV and V were much more likely than those in Social Classes I and II to report acute sickness (21% compared with 13%). (Table not shown.)

11.3 PREVALENCE OF GASTROENTERITIS

As part of the Health Survey, informants were asked about symptoms of gastroenteritis associated with food poisoning - that is, diarrhoea or vomiting - in the six month period before the interview. In this chapter, food poisoning is defined as having diarrhoea or vomiting three or more times within a 24 hour period, and which lasted no more than two weeks. Informants were also asked whether they consulted a doctor and whether they had any time off paid work due to the illness.[4]

Food poisoning (proven or suspect) is statutorily notifiable in Scotland.[5] However, because many patients with mild food poisoning may not always require medical treatment, it is possible that many cases will not be notified to designated medical officers of the Health Board. Results from the Health Survey, therefore, may provide a more accurate estimate of the prevalence of food poisoning among the Scottish population than that derived from medical records. It should be noted that foodborne diseases that do not present with gastroenteritis were not covered. On the other hand, cases of gastroenteritis due to non-infectious causes may be included in these estimates (although exclusion of cases longer than two weeks duration was intended to minimise this problem).

Approximately one in seven informants (14%) said they had suffered from this type of illness in the six months preceding the interview. The incidence of these conditions was higher among women (16%) than men (11%). There was no strong age pattern, though prevalence rates were highest among 25-34 year olds for both sexes. Regional and social class variations were negligible. **Table 11.10**

Most of those who suffered from diarrhoea and/or vomiting did not consult a doctor, although one in three (33%) did so. More women (37%) than men (27%) consulted a doctor. It is likely that informants who did not consult a doctor had only minor symptoms; this lack of medical consultation may also give some indication of the likely extent to which routine health statistics under-estimate the incidence of food poisoning in the population.

One quarter (26%) of those who suffered this type of illness had time off work as a result. The picture is somewhat unclear because whether informants were in paid work at the time of their illness is not known. Using work status at time of interview as a proxy for this, it seems that a majority - about six in ten - of those in work did *not* take time off due to this illness. No pattern of regional or social class differences was revealed.

11.4 USE OF HEALTH SERVICES

11.4.1 Introduction

This section reports the rates at which people consulted GPs, attended hospital as inpatients or outpatients, and had their blood pressure and cholesterol levels monitored by health professionals. Special attention is given to comparing the use of services by those with and without 'doctor-diagnosed' cardiovascular (CVD) conditions and, for those with such a condition, whether their use of health services was in connection with their CVD condition.[6]

Clearly the accuracy of the data depend on informants' recall. This may be fallible in two respects: firstly, events may be forgotten and at an increasing rate as time elapses; secondly, the timing of events may be mis-reported. As the salience of the events in question is likely to be high, it may be assumed that the former produces only a modest under-reporting. Clearly, people may forget that their blood pressure was taken once many years ago. However, very few people report never having had this measured. So the more significant concern is inaccurate dating of events and, in particular, telescoping (that is, bringing events forward in time). This is likely to increase reported rates of use within specified periods, and to do so variably, so that more salient events, such as a hospital visit, are recalled more accurately than visits to GPs. For this reason questions and analysis of rates of GP consultation were based on a limited (two week) period prior to interview, whereas hospital visits were based on a much longer period of twelve months.

11.4.2 GP consultations

Informants were asked whether they had talked to a doctor on their own behalf, apart from a visit to a hospital, during the fortnight prior to interview. Those saying that they had were assumed to have consulted a GP.

Men and women differed significantly in the rates at which they consulted GPs. Overall, 22% of women but only 14% of men contacted a GP in the two weeks preceding the interview. This sex difference was apparent in all age groups.

Furthermore, among those who had consulted a GP, fewer men than women did so more than once during this two week period (12% and 21% respectively). **Table 11.11**

There was no general increase in the rate of consultation according to age, though men in the oldest age group (55-64 years) were noticeably more likely to have visited a GP than younger men. Nor was there evidence of significant regional differences. There was, though, some social class variation. For both men and women, consultation rates were lowest in Social Class I and highest in Social Class V. **Tables 11.12 , 11.13**

As one would expect, a higher proportion of people with (doctor-diagnosed) CVD conditions consulted a GP within the past fortnight (21% of men and 27% of women). Eight per cent of these informants (the same proportion for both men and women) said their consultation was connected with their CVD condition. This meant that the proportion who consulted with regard only to other conditions was not significantly different from the proportions of people without a CVD condition who consulted a GP. (Table not shown.)

People with CVD conditions who had not consulted a GP about their condition in the preceding fortnight were asked when they had last done so. In total, 22% of people with a CVD condition reported consulting a GP about their condition within the preceding month. Similar proportions had consulted from one to less than three months, and from three months to less than one year ago. However, three in ten had not consulted a GP about their condition for at least one year, and 6% said they had never consulted a doctor outside of a hospital about their CVD condition.

Age rather than sex appears to impact on frequency of consulting GPs about CVD conditions. Half of 55-64 year olds with a CVD condition had consulted a GP within the preceding three months, whereas only a quarter of those aged under 35 years had done so. This may reflect the greater severity of CVD conditions among older informants (see Chapter 10).

11.4.3 Inpatient stays in hospital

An inpatient stay was defined to include a stay in hospital for at least one night. Just over one informant in ten (11%) reported that they had stayed in hospital overnight during the preceding twelve months. By a ratio of three to two, more women than men had been inpatients. However, there was a strong interaction between age and sex: while the proportion of women who were inpatients decreased with age, that among men increased. As a result, under age 45, women were much more likely than men to be inpatients. Indeed, women of child-bearing age were at least twice as likely as men to have been inpatients. This pattern is then reversed, such that significantly more men (12%) than women (8%) aged 55-64 reported an inpatient stay in hospital. **Table 11.14**

People with (doctor-diagnosed) CVD conditions were more likely than those without to have been inpatients during this one year period. Of those who were inpatients, one-third (33%) were in hospital because of their CVD condition. Among men, the difference between those with a CVD condition and those without increased markedly with age, and explains the overall increase in inpatient numbers among older men. Among men with a CVD condition, those aged 45-64 were twice as likely as their younger counterparts to report an inpatient stay (20% compared with 8%). By contrast, among men with no CVD condition, a steady 6% or 7% were inpatients among all age groups.

Overall, regional rates of inpatient stays were fairly uniform with one noteworthy exception. Among both men and women the lowest rates (5% and 8% respectively) were found in Grampian & Tayside. (Table not shown.)

Social class differences in inpatient rates were low or negligible, though it appears that slightly fewer of those in Social Classes I and II than those in other social classes were inpatients. (Table not shown.)

11.4.4 Outpatient visits to hospital

Outpatient visits included visits to casualty and day-patient treatments. One informant in three (35%) visited hospital as an outpatient in the twelve months prior to interview. Slightly more women (37%) than men (32%) were outpatients, as were slightly more informants aged 45 and over (37%) than those under 45 years (33%). But there was not a strong age and sex pattern similar to that for inpatient stays. **Table 11.15**

Nearly half of informants (46%) with (doctor-diagnosed) CVD conditions attended hospital as an outpatient; 31% of this group visited because of their condition. The proportion attending did not differ greatly by sex or age (overall). Among men with a CVD condition, though, the proportion who were outpatients was higher among those aged 45-64 than among younger age groups; and the proportion who were attending because of their CVD condition was much higher among those aged 45-64.

Overall, outpatient rates varied only between 31% in Highland & Islands and 39% in Forth Valley, Argyll & Clyde. In part, this reflects comparatively low attendance rates reported by CVD informants in Highland & Islands and Lothian & Fife. (Table not shown.)

Outpatient attendance showed little relation to social class, though people in Social Classes I and II had the lowest rate (32%). (Table not shown.)

11.4.5 Blood pressure monitoring

Informants were asked a number of questions about their past experience of having their blood pressure measured by a doctor or nurse. The vast majority of informants (97% of women and 89% of men) had had their blood pressure measured by a doctor or nurse at some point in their lives.

Over half of women of all ages reported that their blood pressure had been measured recently, that is, within the twelve months preceding the interview. Among men, it was not until the 45-54 age group that half or more had their blood pressure measured within the past year. Younger men were decreasingly likely to report blood pressure measurement within the last year. Indeed, nearly as many men aged 16-24 reported never having had their blood pressure taken as reported this having been done recently (27% compared with 31%). Only 12% of women aged 16-24 years reported no measurement having ever been taken. **Table 11.16**

The regional figures on blood pressure monitoring were remarkably uniform. In every region between 2% and 5% of women and 9% and 12% of men reported never having had this measured by a doctor or nurse. The proportions reporting a measurement having been taken within the preceding year ranged only from 57% to 66% among women and 39% to 47% among men. **Table 11.17**

The distributions by social class were as even as those for regions, with just one exception: 18% of men in Social Class V said their blood pressure had never been measured. (Table not shown.)

People with a CVD condition were very likely to report that their blood pressure had been measured in the last year (74%) or at least within three years (89%). Again there was a sex difference. Around four-fifths of women in all age groups reported a measurement in the last year, a proportion matched only among men aged 55-64. By contrast, only just over half of men aged under 45 reported a recent blood pressure measurement. **Table 11.18**

Among those who had their blood pressure measured at some point, the vast majority of informants remember being told whether their blood pressure was normal or not (87% of men and 91% of women were told). Regional differences were very small, though it is noticeable that among both men and women the highest proportions who claimed they were not told their blood pressure were in Lanarkshire, Ayrshire & Arran (18% and 14% respectively compared with 13% and 9% overall). (Table not shown.)

11.4.6 Cholesterol monitoring

Informants were also asked about their past experience of having their cholesterol measured by a doctor or nurse. Most (73%) reported that they had never had their cholesterol level measured. There were, though, sizeable differences with respect to age and some differences between men and women. The proportion who reported having a test rose sharply with age, from only 6% of 16-24 year olds to 43% of 55-64 year olds. The increase was greatest among men, rising from the same rate as women in the youngest age group to half (50%) of men aged 55-64 years (compared with 37% of women in this age group). **Table 11.19**

The timing of informants' most recent cholesterol level measurements underlines the concentration of testing among older adults. Thirty per cent of 55-64 year old informants were tested within the three years preceding the interview, a majority of whom were tested within the past year. In contrast, only 14% of 25-34 year olds were tested in this three year period and only 6% within the past year.

Overall, the rate of recent cholesterol testing (within 12 months) was, in effect, the same in all regions (between 8% and 10%). However, there were significant differences in the proportion of informants who had ever been tested. In Greater Glasgow, Borders, Dumfries & Galloway, and Lanarkshire, Ayrshire & Arran a little over three in ten informants had had a cholesterol level test; in Highland & Islands and Lothian & Fife only two in ten had had a test. **Table 11.20**

Social class appears to have noticeably influenced the extent of testing among men but not among women. Only 15% of men in Social Class V had ever been tested, compared with 40% of those in Social Class I. There was also a significant, though smaller, difference between Social Classes II and IIIM (respectively, 37% and 29% had ever had a test compared with 31% overall). **Table 11.21**

People with a CVD condition were much more likely than others to have had a cholesterol level measurement (46% compared with 23%). Nevertheless, a majority said they had never been tested. The age and gender pattern within both groups was similar, with older people, and especially older men, relatively more likely to have had a test. Indeed, six in ten of men with a CVD condition had had their cholesterol measured, half of whom reported that this had most recently been done within the last twelve months. (Table not shown.)

11.5 PRESCRIBED MEDICINES

11.5.1 Introduction

This section reports on the number and types of prescribed medicines which informants were taking and outlines the use of oral contraceptives and hormone replacement therapy (HRT).

Information on prescribed medicines was collected by nurses, that on oral contraceptives was gathered in the self-completion part of the interview, while interviewers asked women aged over 24 years about HRT. Nurses asked informants whether they were '*taking or using any medicines, pills, ointments, puffers or injections prescribed for you by a doctor?*' Where possible, nurses used medicine containers to record the name of each medication. Medicine classification was based on the British National Formulary (BNF).[7] Though contraceptive pills were recorded by nurses when mentioned, they have been excluded from the analyses of prevalence and type of medication.

11.5.2 Medicines taken: number and category

Overall, 37% of informants were taking prescribed medicines at the time of interview, including 9% who were taking two medicines, 4% taking three and 5% who were taking four or more. More women (42%) than men (32%) were taking medicine. **Table 11.22**

Use of prescribed medicines was strongly related to age. Most informants aged under 45 years were not taking medicines, whereas half of those aged 45-54 and nearly two thirds of those aged 55-64 were doing so. This pattern was particularly pronounced among women: 60% of those aged 45-54 and 69% of those aged 55-64 were taking medicine (compared with 40% and 57% respectively among men).

Furthermore, older informants were very much more likely to have been taking more than one medicine. As many as four in ten of those aged 55-64 were taking more than one medicine, as were one in four of those aged 45-54. In contrast, barely one in ten of under 35 year olds were taking more than one medicine.

Medicines were classified into 41 pharmacological groups based on the BNF. However, analysis of types or categories of medicine is based upon 14 broad groupings. Endocrine (13%), central nervous system (12%) and cardiovascular (10%) medicines were being taken by at least one woman in ten. Among men, central nervous system (9%), cardiovascular (8%) and respiratory (7%) medicines were most common. The pattern of medicine taking by men and women was similar (with the exception of endocrine medicines). **Table 11.23**

Five categories of medicine were more prevalent among older age groups. Cardiovascular medicines were rare among those aged under 35 years but were being taken by three in ten 55-64 year olds (33% of women and 29% of men). Use of central nervous system medicines and, among women, endocrine medicines also rose very substantially among informants aged 45 and over. One type of medicine - respiratory - appeared to show a marginal decrease in use with age. Certainly, this type of medicine was by far the most commonly taken by informants under the age of 25, a reflection of the relatively high prevalence of respiratory illness in this age group (see Section 11.2.3 and Table 11.6).

11.5.3 Medicines and cardiovascular disease

This section summarises the difference in medicine taking between those with and without a CVD condition. Two contextual points should be borne in mind. First, those classified as having a CVD condition may not have been suffering ill health at the time of interview. Secondly, the age profile of people with a CVD condition was a significantly older one.

Informants with a CVD condition were much more likely than those with no condition to be taking medicines: among those with a (doctor-diagnosed) CVD condition, 61% of men and 64% of women were taking medicines; the equivalent figures for those with no condition were 25% of men and 35% of women. However, only a minority of people with a CVD condition were taking a cardiovascular medicine (39% of men and 41% of women). There were, though, huge variations by age. Only one in ten of those aged under 45 was taking a cardiovascular medicine, compared with over four in ten of 45-54 year olds and more than six in ten 55-64 year olds. **Table 11.24**

Informants with a CVD condition reported noticeably higher rates of taking gastro-intestinal, central nervous system, endocrine and musculo-skeletal medicine.

11.5.4 Use of contraceptive pills and injections

In the self-completion part of the interview, women aged 16 years and over who were still menstruating were asked whether they were '*taking the contraceptive pill or having a contraceptive injection*'.

The proportion of menstruating women who were using the pill was substantial among women aged under 35, but small among older women. Just over four in ten 16-24 year olds (41%) were using the pill, as were nearly four in ten (38%) of 25-34 year olds. In sharp contrast, only 10% of women aged 35-44 were using the pill, even though 90% of this group were still menstruating. **Table 11.25**

11.5.5 Hormone replacement therapy

Women aged over 24 years were asked whether they were currently, or had been, on hormone replacement therapy (HRT). Overall, 11% were on HRT when interviewed and 7% had been in the past. However, these figures were much greater among older women. A quarter (26%) of 45-54 year olds were on HRT, along with one-sixth (16%) of 55-64 year olds. **Table 11.26**

Most users started on HRT between the age of 45 and 54 years, although at least a quarter started at a younger age. The average (median) age at which women started was almost identical for current and past users (48 and 47 years respectively). However, the women who were on HRT when interviewed had already spent considerably longer on the therapy than past users. Half (51%) of current users had been on HRT for at least three years, whereas nearly two-thirds (63%) of past users did not spend as much as one year on HRT. (Table not shown.)

11.6 DENTAL HEALTH

11.6.1 Introduction

In 1991, in *Health Education for Scotland* the Scottish Office established dental and oral health as a priority for health policy.[8] This reflected a very poor record of dental health in the Scottish population. Targets for the year 2000 were set for the dental health of children aged 5 years and for adults of 45-54 years. Subsequently, *The Oral Health Strategy for Scotland,* published by the Scottish Office in 1995, suggested that a target of less than 10% of people aged 45-54 years to be without their own teeth could be achieved.[9] In addition, *The Oral Health Strategy* established further targets for 12, 18 and 35-44 year olds and proposed action to achieve all targets.

While recognising the contribution required of Health Boards, the dental profession and other bodies, the strategy document states that 'oral health is determined largely by the actions and inactions of each of us as individuals'. The Health Survey measures two of the important behavioural factors of individuals, namely regular brushing with a fluoride toothpaste and frequency of visits to a dentist. Before describing these results, this section begins with the Health Survey's initial question on oral health which checked whether each informant had all or some of her or his own teeth.

11.6.2 Prevalence of false teeth

Nearly every informant under 35 years of age had all or some of their own teeth and among 35-44 year olds only one in 20 did not. However, a sharp rise in this proportion was observed among both 45-54 and, especially, 55-64 year olds. Among the former group, 17% were without their own teeth, a figure which considerably exceeds the target of under 10% by the year 2000. Among the older age group as many as four in ten had none of their own teeth. **Table 11.27**

Among women in these age groups the proportions without their own teeth were larger than among men (20% among 45-54 year olds and 45% among 55-64 year olds compared with figures for men of 13% and 34% respectively). Alongside this substantial age affect was a sizeable difference according to social class. For example, twice as many people in Social Class IIIM (14%) as in Social Class II (7%) were without their own teeth. The difference between Social Class I and Social Class V was very large (3% without any of their own teeth compared with 24%). Women in Social Class V were clearly the most likely not to have any of their own teeth (27%).

Table 11.28

Any regional differences were overshadowed by those of age, social class and sex. **Table 11.29**

11.6.3 Type of toothpaste

The vast majority (91%) of informants with their own teeth stated that they used a toothpaste with fluoride. However, the proportion who did so was noticeably lower among 45-54 year olds (85%) and 55-64 year olds (80%). Over 10% of both men and women in these age groups used non-fluoride toothpaste, while 7% of men aged 55-64 did not use toothpaste. Regional and social class differences with regard to this were very small. **Table 11.30**

11.6.4 Frequency of brushing teeth

A very high number of informants (95%) brushed their teeth at least once a day and seven in ten claimed to do so more than once. However, rates of daily brushing were lower in several groups. Firstly, men were several times more likely than women not to brush each day (9% compared with 2%). Older men (45 years and over) were even more unlikely to do so (12% compared with 7% among younger men). There were social class differences among both sexes, but they were greater for men. The proportion of men not brushing daily was 5% or less in Social Classes I, II and IIINM, rising to 12% in Social Classes IIIM and IV and 20% among those in Social Class V. The proportion of women who were not brushing daily did not exceed 5% in any social class, although it was still notably higher in Social Classes IV and V than in Social Classes I and II. **Tables 11.31, 11.32**

Combining the proportions using fluoride toothpaste with frequency of brushing provides figures for those following the behaviour recommended for the maintenance of good oral health. Overall, 88% did brush daily with fluoride toothpaste. However, the proportion was noticeably higher among younger women and lower among older men. Indeed, only 77% of men aged 45-64 brushed daily with fluoride.

11.6.5 Frequency of visiting a dentist

Regular visits to a dentist is another of the three actions which contribute greatly to good oral health (the third is to eat a sensible diet). Informants with some or all of their own teeth were asked how frequently they went to a dentist for a routine check-up. Around two-thirds of women and one-half of men stated that, on average, they visited a dentist at least once every six months. However, nearly one in three men visited less frequently than bi-annually (15%) or never (16%). Comparable figures among women were significantly lower but far from negligible (10% were visiting less than every two years and 8% never visited). **Table 11.33**

The proportion of people visiting a dentist every six months did vary by age but not greatly. Men aged 16-24 and 35-44 had relatively high rates of frequent attendance (56% and 54% respectively went every six months). Among women, seven in ten of 25-44 year olds visited every six months. However, the lowest rate of frequent visiting among women (59% among 55-64 year olds) remained above the highest rate observed among men. The proportion attending very infrequently or never was highest among the oldest age group. Among informants aged 55-64, as many as four men in ten and one woman in four visited a dentist for a check-up either very rarely or never.

The overall rate of frequent (six monthly) check-ups varied by region from 54% (Greater Glasgow and Lanarkshire, Ayrshire & Arran) to 64% (Grampian & Tayside and Borders, Dumfries & Galloway). Social class differences were greater, with 70% of those in Social Class I attending every six months compared with 45% of those in

Social Class V. However, differences among the other social classes were smaller, with 65% of those in Social Class II and 52% of those in Social Class IIIM attending frequently. Note, though, that 38% of men in Social Class IIIM rarely or never had a check-up. **Tables 11.34, 11.35**

References and notes

1 Gray R and Taylor A. General Health, Use of Services and Prescribed Medicines. In Colhoun H and Prescott-Clarke P (eds.). *Health Survey for England 1994*. HMSO, London, 1996; p86.

2 Social class is based on the occupation of the chief income earner within an informant's household. See the Glossary in the Technical Report for details.

3 *The International Classification of Diseases and Related Health Problems (Ninth Revision)*. WHO, Geneva, 1977.

4 It should be noted that there is no validated set of questions used in surveys to determine incidence of food poisoning. The questions included in the Health Survey were developed for the survey and, although they were piloted, they have not been externally validated.

5 Scottish Office Home and Health Department. *The Investigation and Control of Foodborne and Waterborne Disease in Scotland.* HMSO, Edinburgh, 1995.

6 Informants who were told by a doctor that they had ever had hypertension, angina, a heart attack, a heart murmur, abnormal heart rhythm/beat, other heart trouble, a stroke and/or diabetes. The prevalence and risk of CVD conditions are examined in detail in Chapter 10.

7 British Medical Association and Royal Pharmaceutical Society of Great Britain. *The British National Formulary 27.* London, September 1994.

8 The Scottish Office Home and Health Department. *Health Education in Scotland: a National Policy Statement,* HMSO, Edinburgh, 1991.

9 The Scottish Office Department of Health. *The Oral Health Strategy for Scotland,* HMSO, Edinburgh, 1995.

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Table 11.1 Self-reported general health, by age and sex

All *1995*

Self-reported general health	**Age**					**Total**
	16-24	25-34	35-44	45-54	55-64	
	%	%	%	%	%	%
Men						
Very good	30	36	45	34	24	34
Good	50	49	41	39	31	43
Fair	19	14	12	18	29	17
Bad	1	1	3	6	12	4
Very bad	0	1	1	3	4	1
Women						
Very good	30	39	45	31	25	35
Good	51	42	38	42	40	42
Fair	17	17	13	20	27	18
Bad	2	2	3	5	7	4
Very bad	1	0	1	1	2	1
All						
Very good	30	38	45	33	25	35
Good	50	45	39	41	36	42
Fair	18	15	12	19	28	18
Bad	2	2	3	5	9	4
Very bad	1	0	1	2	3	1
Bases (weighted)						
Men	*723*	*979*	*851*	*749*	*600*	*3902*
Women	*695*	*990*	*870*	*777*	*665*	*3998*
All	*1418*	*1969*	*1721*	*1527*	*1265*	*7900*
Bases (unweighted)						
Men	*475*	*840*	*811*	*709*	*689*	*3524*
Women	*547*	*1160*	*992*	*825*	*884*	*4408*
All	*1022*	*2000*	*1803*	*1534*	*1573*	*7932*

Table 11.2 Self-reported general health, by region and sex

All *1995*

Self-reported general health	**Region**							**Total**
	Highland & Islands	Grampian & Tayside	Lothian & Fife	Borders, Dumfries & Galloway	Greater Glasgow	Lanarkshire, Ayrshire & Arran	Forth Valley, Argyll & Clyde	**Scotland/ (England)**
	%	%	%	%	%	%	%	**%**
Men								
Very good	38	39	37	34	28	32	33	34 (41)
Good	44	42	43	47	39	43	44	43 (40)
Fair	14	16	16	14	22	18	18	17 (14)
Bad	3	2	3	3	8	5	3	4 (4)
Very bad	2	0	1	2	3	2	2	1 (1)
Women								
Very good	39	39	37	43	27	35	34	35 (36)
Good	42	42	44	40	45	37	45	42 (44)
Fair	16	14	16	15	20	23	18	18 (16)
Bad	1	3	2	2	6	4	2	3 (3)
Very bad	1	1	1	-	2	1	1	1 (1)
All								
Very good	39	39	37	39	28	33	33	35 (39)
Good	43	42	43	43	42	40	44	42 (42)
Fair	15	15	16	14	21	21	18	18 (15)
Bad	2	3	3	3	7	4	3	4 (3)
Very bad	1	1	1	1	2	1	1	1 (1)
Bases (weighted)								
Men	*213*	*753*	*896*	*179*	*629*	*704*	*527*	*3902*
Women	*210*	*681*	*863*	*194*	*764*	*731*	*556*	*3998*
All	*423*	*1434*	*1759*	*373*	*1393*	*1435*	*1083*	*7900*
Bases (unweighted)								
Men	*356*	*590*	*709*	*296*	*508*	*607*	*458*	*3524*
Women	*425*	*651*	*825*	*393*	*737*	*804*	*573*	*4408*
All	*781*	*1241*	*1534*	*689*	*1245*	*1411*	*1031*	*7932*

Table 11.3 Self-reported general health, by social class of chief income earner and sex

All *1995*

Self-reported general health	**Social class of chief income earner**						**Total**[a]
	I	II	IIINM	IIIM	IV	V	
	%	%	%	%	%	%	%
Men							
Very good	46	40	38	30	30	19	34
Good	41	44	44	42	41	43	43
Fair	11	13	15	20	22	24	17
Bad	2	2	1	5	5	11	4
Very bad	-	1	1	2	1	3	1
Women							
Very good	47	44	36	32	27	21	35
Good	41	41	41	42	42	46	42
Fair	10	13	17	21	25	21	18
Bad	2	2	4	4	4	11	3
Very bad	-	0	2	1	2	1	1
All							
Very good	46	42	37	31	29	20	35
Good	41	43	42	42	41	45	42
Fair	10	13	16	20	24	22	18
Bad	2	2	3	5	5	11	4
Very bad	-	0	2	2	2	2	1
Bases (weighted)							
Men	*267*	*1012*	*448*	*1244*	*532*	*179*	*3902*
Women	*253*	*983*	*689*	*1042*	*548*	*207*	*3998*
All	*520*	*1995*	*1136*	*2286*	*1080*	*386*	*7900*
Bases (unweighted)							
Men	*236*	*874*	*383*	*1129*	*509*	*196*	*3524*
Women	*252*	*1068*	*834*	*1032*	*665*	*268*	*4408*
All	*488*	*1942*	*1217*	*2161*	*1174*	*464*	*7932*

[a]The total includes informants whose social class was unknown.

Table 11.4 Prevalence of longstanding illness or disability, by age and sex

All *1995*

Number of longstanding illnesses or disabilities	**Age**					**Total**
	16-24	25-34	35-44	45-54	55-64	
	%	%	%	%	%	%
Men						
None	79	75	70	56	41	66
One	18	20	23	28	29	23
Two	2	4	5	10	18	7
Three	0	0	1	4	8	2
Four or more	0	0	1	2	4	1
Total with illness or disability	21	25	30	46	59	34
Total with *limiting* illness or disability	5	12	15	26	41	18
Women						
None	77	71	68	57	45	64
One	18	21	23	27	29	23
Two	4	6	6	11	15	8
Three	1	1	2	4	7	3
Four or more	1	0	1	1	5	1
Total with illness or disability	23	29	32	43	55	36
Total with *limiting* illness or disability	10	15	17	29	35	21
All						
None	78	73	69	57	43	65
One	18	21	23	28	29	23
Two	3	5	6	10	16	8
Three	0	1	2	4	7	2
Four or more	0	0	1	1	4	1
Total with illness or disability	22	27	31	43	57	35
Total with *limiting* illness or disability	8	13	16	28	38	20
Bases (weighted)						
Men	*723*	*979*	*851*	*749*	*600*	*3902*
Women	*695*	*990*	*870*	*777*	*665*	*3998*
All	*1418*	*1969*	*1721*	*1527*	*1265*	*7900*
Bases (unweighted)						
Men	*475*	*840*	*811*	*709*	*689*	*3524*
Women	*547*	*1160*	*992*	*825*	*884*	*4408*
All	*1022*	*2000*	*1803*	*1534*	*1573*	*7932*

Table 11.5 Prevalence of longstanding illness or disability, by region and sex

All *1995*

Number of longstanding illnesses or disabilities	**Region**							**Total**
	Highland & Islands	Grampian & Tayside	Lothian & Fife	Borders, Dumfries & Galloway	Greater Glasgow	Lanarkshire, Ayrshire & Arran	Forth Valley, Argyll & Clyde	
	%	%	%	%	%	%	%	%
Men								
None	69	74	68	63	60	61	64	66
One	23	19	23	26	26	23	27	23
Two	6	5	6	8	8	11	6	7
Three	2	2	1	2	4	3	3	2
Four or more	0	0	1	1	2	2	0	1
Total with illness or disability	31	26	32	37	40	39	36	34
Total with *limiting* illness/disability	15	13	14	23	25	25	18	18
Women								
None	66	67	66	71	63	59	64	64
One	24	23	22	23	21	26	26	23
Two	8	6	8	5	9	10	6	8
Three	1	3	2	1	4	3	2	3
Four or more	1	2	1	0	3	2	1	1
Total with illness or disability	34	33	34	29	37	41	36	36
Total with *limiting* illness/disability	19	19	19	16	23	25	20	21
All								
None	68	70	67	67	62	60	64	65
One	23	21	23	24	23	24	27	23
Two	7	5	7	6	9	10	6	8
Three	2	2	1	2	4	3	3	2
Four or more	1	1	1	1	2	2	1	1
Total with illness or disability	32	30	33	33	38	40	36	35
Total with *limiting* illness/disability	17	15	16	19	24	25	19	20
Bases (weighted)								
Men	*213*	*753*	*896*	*179*	*629*	*704*	*527*	*3902*
Women	*210*	*681*	*863*	*194*	*764*	*731*	*556*	*3998*
All	*423*	*1434*	*1759*	*373*	*1393*	*1435*	*1083*	*7900*
Bases (unweighted)								
Men	*356*	*590*	*709*	*296*	*508*	*607*	*458*	*3524*
Women	*425*	*651*	*825*	*393*	*737*	*804*	*573*	*4408*
All	*781*	*1241*	*1534*	*689*	*1245*	*1411*	*1031*	*7932*

Table 11.6 Type of longstanding illness or disability, by age and sex

All *1995*

Type of longstanding illness or disability	**Age**					**Total**
	16-24	25-34	35-44	45-54	55-64	
	%	%	%	%	%	%
Men						
II Neoplasms and benign growths	-	1	0	0	1	0
III Endocrine and metabolic	0	0	2	4	5	2
V Mental disorders	0	1	3	4	3	2
VI Nervous system	1	3	3	5	4	3
VI Eye	1	1	1	1	2	1
VI Ear	0	1	1	2	3	2
VII Circulatory system	0	1	3	10	22	6
VIII Respiratory system	12	8	6	5	9	8
IX Digestive system	2	3	5	8	10	5
X Genito-urinary system	0	0	1	1	3	1
XII Skin	1	1	2	1	1	1
XIII Musculo-skeletal system	3	8	12	18	28	13
Infectious disease	0	-	0	0	-	0
Blood disorders	-	0	0	0	0	0
Other complaints	-	-	0	0	-	0
Women						
II Neoplasms and benign growths	-	1	1	1	3	1
III Endocrine and metabolic	2	2	3	4	8	3
V Mental disorders	2	2	2	4	3	3
VI Nervous system	2	4	5	6	3	4
VI Eye	1	0	1	0	1	1
VI Ear	1	0	2	1	2	1
VII Circulatory system	1	1	3	8	19	6
VIII Respiratory system	9	8	6	6	10	8
IX Digestive system	1	4	4	6	9	5
X Genito-urinary system	1	3	3	2	3	2
XII Skin	2	3	1	1	1	2
XIII Musculo-skeletal system	5	6	10	20	27	13
Infectious disease	1	0	0	0	0	0
Blood disorders	0	1	1	1	2	1
Other complaints	0	0	-	0	0	0
Bases (weighted)						
Men	*723*	*979*	*851*	*749*	*600*	*3902*
Women	*695*	*990*	*870*	*777*	*665*	*3998*
Bases (unweighted)						
Men	*475*	*840*	*811*	*709*	*689*	*3524*
Women	*547*	*1160*	*992*	*825*	*884*	*4408*

Table 11.7 Type of longstanding illness or disability, by region and sex

All *1995*

Type of longstanding illness or disability	**Region**							**Total**
	Highland & Islands	Grampian & Tayside	Lothian & Fife	Borders, Dumfries & Galloway	Greater Glasgow	Lanarkshire, Ayrshire & Arran	Forth Valley, Argyll & Clyde	
	%	%	%	%	%	%	%	%
Men								
II Neoplasms and benign growths	0	0	1	1	0	0	1	0
III Endocrine and metabolic	2	2	2	3	2	2	2	2
V Mental disorders	1	1	2	2	4	2	3	2
VI Nervous system	3	3	2	6	3	4	2	3
VI Eye	1	1	2	1	1	2	1	1
VI Ear	1	1	1	2	1	3	1	2
VII Circulatory system	3	4	4	5	8	10	8	6
VIII Respiratory system	9	5	9	7	10	9	7	8
IX Digestive system	5	4	5	5	6	5	4	5
X Genito-urinary system	0	0	1	0	1	2	1	1
XII Skin	2	1	1	2	1	1	3	1
XIII Musculo-skeletal system	10	10	10	14	17	16	13	13
Infectious disease	0	-	0	-	-	0	-	0
Blood disorders	-	0	0	0	0	0	-	0
Other complaints	0	0	-	-	0	-	-	0
Women								
II Neoplasms and benign growths	1	1	1	1	1	2	2	1
III Endocrine and metabolic	3	4	3	3	4	3	3	3
V Mental disorders	2	3	2	1	4	3	3	3
VI Nervous system	4	3	5	3	5	3	5	4
VI Eye	1	0	0	1	1	1	1	1
VI Ear	1	2	0	1	1	2	0	1
VII Circulatory system	6	5	4	4	8	8	5	6
VIII Respiratory system	8	7	7	5	8	9	9	8
IX Digestive system	4	5	5	3	5	6	4	5
X Genito-urinary system	1	3	2	2	2	3	2	2
XII Skin	2	2	1	0	2	2	3	2
XIII Musculo-skeletal system	11	10	14	10	17	16	10	13
Infectious disease	1	0	-	-	1	-	0	0
Blood disorders	-	0	1	-	1	1	1	1
Other complaints	-	0	0	-	0	1	-	0
Bases (weighted)								
Men	*213*	*753*	*896*	*179*	*629*	*704*	*527*	*3902*
Women	*210*	*681*	*863*	*194*	*764*	*731*	*556*	*3998*
Bases (unweighted)								
Men	*356*	*590*	*709*	*296*	*508*	*607*	*458*	*3524*
Women	*425*	*651*	*825*	*393*	*737*	*804*	*573*	*4408*

Table 11.8 Self-reported acute sickness in two week period, by age and sex

All *1995*

Days of acute sickness	**Age**					**Total**
	16-24	25-34	35-44	45-54	55-64	
	%	%	%	%	%	%
Men						
None	89	88	89	86	80	87
1-3 days	4	5	3	2	4	4
4-6 days	2	3	2	3	3	3
7-13 days	3	2	3	2	2	2
Every day	2	2	3	7	11	4
Mean number of days for all men	0.72	0.67	0.79	1.30	1.88	1.01
Total with acute sickness (%)	11	12	11	14	20	13
Mean number of days for men with acute sickness	6.45	5.62	7.38	9.32	9.57	7.73
Women						
None	88	85	84	80	80	83
1-3 days	4	5	6	5	4	5
4-6 days	4	2	3	4	3	3
7-13 days	2	3	2	3	5	3
Every day	3	5	5	7	7	5
Mean number of days for all women	0.81	1.10	1.11	1.64	1.72	1.26
Total with acute sickness (%)	12	15	16	20	20	17
Mean number of days for women with acute sickness	6.51	7.16	7.01	8.24	8.52	7.57
All						
None	88	86	87	83	80	85
1-3 days	4	5	4	4	4	4
4-6 days	3	3	3	3	3	3
7-13 days	3	2	2	3	4	3
Every day	2	3	4	7	9	5
Mean number of days for all informants	0.76	0.89	0.95	1.47	1.79	1.14
Total with acute sickness (%)	12	14	13	17	20	15
Mean number of days for informants with acute sickness	6.48	6.49	7.16	8.67	9.01	7.64
Bases (weighted)						
Men	*723*	*979*	*851*	*749*	*600*	*3902*
Women	*695*	*990*	*870*	*777*	*665*	*3998*
All	*1418*	*1969*	*1721*	*1527*	*1265*	*7900*
Bases (unweighted)						
Men	*475*	*840*	*811*	*709*	*689*	*3524*
Women	*547*	*1160*	*992*	*825*	*884*	*4408*
All	*1022*	*2000*	*1803*	*1534*	*1573*	*7932*

Table 11.9 Self-reported acute sickness in two week period, by region and sex

All *1995*

Days of acute sickness	Region							Total
	Highland & Islands	Grampian & Tayside	Lothian & Fife	Borders, Dumfries & Galloway	Greater Glasgow	Lanarkshire, Ayrshire & Arran	Forth Valley, Argyll & Clyde	
	%	%	%	%	%	%	%	%
Men								
None	90	90	88	87	82	86	87	87
1-3 days	3	4	4	4	5	3	3	4
4-6 days	1	2	3	2	3	3	1	3
7-13 days	2	1	3	1	3	1	4	2
Every day	5	2	2	5	7	6	5	4
Mean number of days for all men	.92	.63	.79	1.05	1.50	1.20	1.13	1.01
Total with acute sickness (%)	10	10	12	13	18	14	13	13
Mean number of days for men with acute sickness	8.81	6.57	6.52	8.01	8.28	8.30	8.64	7.73
Women								
None	85	85	84	85	80	82	85	83
1-3 days	3	5	6	4	5	4	4	5
4-6 days	3	3	3	2	3	5	3	3
7-13 days	4	3	2	3	5	4	2	3
Every day	5	4	4	6	7	5	6	5
Mean number of days for all women	1.26	1.05	1.04	1.24	1.65	1.31	1.27	1.26
Total with acute sickness (%)	15	15	16	15	20	18	15	17
Mean number of days for women with acute sickness	8.27	6.93	6.53	8.43	8.46	7.39	8.19	7.57
All								
None	87	88	86	86	81	84	86	85
1-3 days	3	4	5	4	5	4	3	4
4-6 days	2	2	3	2	3	4	2	3
7-13 days	3	2	2	2	4	3	3	3
Every day	5	3	3	6	7	5	5	5
Mean number of days for all informants	1.08	.83	.92	1.15	1.58	1.25	1.20	1.14
Total with acute sickness (%)	13	12	14	14	19	16	14	15
Mean number of days for informants with acute sickness	8.50	6.78	6.53	8.24	8.38	7.79	8.39	7.64
Bases (weighted)								
Men	*213*	*753*	*896*	*179*	*629*	*704*	*527*	*3902*
Women	*210*	*681*	*863*	*194*	*764*	*731*	*556*	*3998*
All	*423*	*1434*	*1759*	*373*	*1393*	*1435*	*1083*	*7900*
Bases (unweighted)								
Men	*356*	*590*	*709*	*296*	*508*	*607*	*458*	*3524*
Women	*425*	*651*	*825*	*393*	*737*	*804*	*573*	*4408*
All	*781*	*1241*	*1534*	*689*	*1245*	*1411*	*1031*	*7932*

Table 11.10 Prevalence of gastroenteritis in six month period, by age and sex

All *1995*

Gastroenteritis	**Age**					**Total**
	16-24	25-34	35-44	45-54	55-64	
	%	%	%	%	%	%
Men						
Yes	10	15	11	9	9	11
No	90	85	89	91	91	89
Women						
Yes	18	19	16	15	12	16
No	82	81	84	85	88	84
All						
Yes	14	17	14	12	11	14
No	86	83	86	88	89	86
Bases (weighted)						
Men	*634*	*877*	*761*	*673*	*536*	*3481*
Women	*604*	*839*	*787*	*699*	*566*	*3495*
All	*1238*	*1716*	*1549*	*1373*	*1101*	*6976*
Bases (unweighted)						
Men	*407*	*745*	*716*	*631*	*610*	*3109*
Women	*472*	*983*	*893*	*737*	*758*	*3843*
All	*879*	*1728*	*1609*	*1368*	*1368*	*6952*

Table 11.11 Rate of GP consultation in two week period, by age and sex

All *1995*

Consulted GP	Age					Total
	16-24	25-34	35-44	45-54	55-64	
	%	%	%	%	%	%
Men						
Yes	11	13	14	13	18	14
No	89	87	86	87	82	86
Women						
Yes	22	24	18	24	22	22
No	78	76	82	76	78	78
All						
Yes	16	19	16	19	20	18
No	84	81	84	81	80	82
Bases (weighted)						
Men	*723*	*979*	*851*	*749*	*599*	*3901*
Women	*695*	*990*	*870*	*777*	*665*	*3998*
All	*1418*	*1969*	*1721*	*1527*	*1264*	*7899*
Bases (unweighted)						
Men	*475*	*840*	*811*	*709*	*688*	*3523*
Women	*547*	*1160*	*992*	*825*	*884*	*4408*
All	*1022*	*2000*	*1803*	*1534*	*1572*	*7931*

Table 11.12 Rate of GP consultation in two week period, by region and sex

All *1995*

Consulted GP	Region							Total
	Highland & Islands	Grampian & Tayside	Lothian & Fife	Borders, Dumfries & Galloway	Greater Glasgow	Lanarkshire, Ayrshire & Arran	Forth Valley, Argyll & Clyde	
	%	%	%	%	%	%	%	%
Men								
Yes	15	11	13	13	15	15	15	14
No	85	89	87	87	85	85	85	86
Women								
Yes	21	21	22	22	22	23	23	22
No	79	79	78	78	78	77	77	78
Bases (weighted)								
Men	*213*	*752*	*896*	*179*	*629*	*704*	*527*	*3901*
Women	*210*	*681*	*863*	*194*	*764*	*731*	*556*	*3998*
Bases (unweighted)								
Men	*356*	*589*	*709*	*296*	*508*	*607*	*458*	*3523*
Women	*425*	*651*	*825*	*393*	*737*	*804*	*573*	*4408*

Table 11.13 Rate of GP consultation in two week period, by social class of chief income earner and sex

All *1995*

Consulted GP	Social class of chief income earner						Total[a]
	I	II	IIINM	IIIM	IV	V	
	%	%	%	%	%	%	%
Men							
Yes	11	13	12	14	16	19	14
No	89	87	88	86	84	81	86
Women							
Yes	17	19	23	22	25	27	22
No	83	81	77	78	75	73	78
Bases (weighted)							
Men	*267*	*1012*	*448*	*1244*	*531*	*179*	*3901*
Women	*253*	*983*	*689*	*1042*	*548*	*207*	*3998*
Bases (unweighted)							
Men	*236*	*874*	*383*	*1129*	*508*	*196*	*3523*
Women	*252*	*1068*	*834*	*1032*	*665*	*268*	*4408*

[a]The total includes informants whose social class was unknown.

Table 11.14 Rate of hospital attendance as an inpatient in last 12 months, by age and sex

All *1995*

Inpatient stay in last 12 months	**Age**					**Total**
	16-24	25-34	35-44	45-54	55-64	
	%	%	%	%	%	%
Men						
With CVD condition	[3]	11	8	20	19	15
No CVD condition	6	7	7	7	6	7
All men	6	7	7	10	12	8
Women						
With CVD condition	16	21	21	13	11	15
No CVD condition	12	18	11	11	7	12
All women	12	18	13	11	8	13
All informants						
With CVD condition	11	17	14	16	15	15
No CVD condition	9	12	9	9	6	10
All	9	13	10	11	10	11
Bases (weighted)						
Men						
With CVD condition	*37*	*92*	*139*	*208*	*265*	*741*
No CVD condition	*667*	*873*	*699*	*534*	*330*	*3104*
All men	*723*	*979*	*850*	*749*	*599*	*3901*
Women						
With CVD condition	*67*	*108*	*144*	*217*	*267*	*804*
No CVD condition	*620*	*875*	*725*	*560*	*392*	*3172*
All women	*695*	*990*	*870*	*777*	*665*	*3998*
All informants						
With CVD condition	*104*	*200*	*283*	*425*	*533*	*1544*
No CVD condition	*1288*	*1749*	*1424*	*1094*	*722*	*6276*
All	*1418*	*1969*	*1721*	*1527*	*1264*	*7899*
Bases (unweighted)						
Men						
With CVD condition	*26*	*85*	*139*	*200*	*303*	*753*
No CVD condition	*436*	*744*	*659*	*503*	*380*	*2722*
All men	*475*	*840*	*810*	*709*	*688*	*3522*
Women						
With CVD condition	*57*	*125*	*164*	*240*	*364*	*950*
No CVD condition	*484*	*1026*	*826*	*583*	*511*	*3430*
All women	*547*	*1160*	*992*	*825*	*884*	*4408*
All informants						
With CVD condition	*83*	*210*	*303*	*440*	*667*	*1703*
No CVD condition	*920*	*1770*	*1485*	*1086*	*891*	*6152*
All	*1022*	*2000*	*1802*	*1534*	*1572*	*7930*

Table 11.15 Rate of hospital attendance as an outpatient in last 12 months, by age and sex

All *1995*

Outpatient in last 12 months	**Age**					**Total**
	16-24	25-34	35-44	45-54	55-64	
	%	%	%	%	%	%
Men						
With CVD condition	[37]	40	37	46	47	44
No CVD condition	33	29	29	26	29	29
All men	33	30	31	32	37	32
Women						
With CVD condition	51	45	48	50	45	47
No CVD condition	27	38	34	39	33	35
All women	29	39	36	42	38	37
All informants						
With CVD condition	46	43	43	48	46	46
No CVD condition	30	34	32	33	31	32
All	31	35	33	37	37	35
Bases (weighted)						
Men						
With CVD condition	*37*	*92*	*139*	*208*	*265*	*741*
No CVD condition	*667*	*873*	*699*	*534*	*330*	*3104*
All men	*723*	*979*	*850*	*749*	*599*	*3901*
Women						
With CVD condition	*67*	*108*	*144*	*217*	*267*	*804*
No CVD condition	*620*	*875*	*725*	*560*	*392*	*3172*
All women	*695*	*990*	*870*	*777*	*665*	*3998*
All informants						
With CVD condition	*104*	*200*	*283*	*425*	*533*	*1544*
No CVD condition	*1288*	*1749*	*1424*	*1094*	*722*	*6276*
All	*1418*	*1969*	*1721*	*1527*	*1264*	*7899*
Bases (unweighted)						
Men						
With CVD condition	*26*	*85*	*139*	*200*	*303*	*753*
No CVD condition	*436*	*744*	*659*	*503*	*380*	*2722*
All men	*475*	*840*	*810*	*709*	*688*	*3522*
Women						
With CVD condition	*57*	*125*	*164*	*240*	*364*	*950*
No CVD condition	*484*	*1026*	*826*	*583*	*511*	*3430*
All women	*547*	*1160*	*992*	*825*	*884*	*4408*
All informants						
With CVD condition	*83*	*210*	*303*	*440*	*667*	*1703*
No CVD condition	*920*	*1770*	*1485*	*1086*	*891*	*6152*
All	*1022*	*2000*	*1802*	*1534*	*1572*	*7930*

Table 11.16 Blood pressure monitoring, by age and sex

All *1995*

Most recent blood pressure measurement	Age					Total
	16-24	25-34	35-44	45-54	55-64	
	%	%	%	%	%	%
Men						
Within 12 months	31	39	40	50	58	43
One year but less than three	24	25	28	23	21	25
Three years or more[a]	18	23	26	22	17	22
Never	27	12	5	5	3	11
Women						
Within 12 months	64	70	55	63	62	63
One year but less than three	16	19	23	20	22	20
Three years or more[a]	8	10	22	16	15	14
Never	12	1	1	1	1	3
All						
Within 12 months	47	55	48	56	60	53
One year but less than three	20	22	25	22	21	22
Three years or more[a]	13	17	24	19	16	18
Never	20	6	3	3	2	7
Bases (weighted)						
Men	*721*	*977*	*851*	*749*	*600*	*3898*
Women	*695*	*990*	*870*	*777*	*665*	*3998*
All	*1416*	*1967*	*1721*	*1527*	*1265*	*7896*
Bases (unweighted)						
Men	*473*	*837*	*811*	*709*	*689*	*3519*
Women	*546*	*1160*	*992*	*825*	*884*	*4407*
All	*1019*	*1997*	*1803*	*1534*	*1573*	*7926*

[a]Includes a small number who could not recall when their blood pressure was last measured.

Table 11.17 Blood pressure monitoring, by region and sex

All *1995*

Most recent blood pressure measurement	Region							Total
	Highland & Islands	Grampian & Tayside	Lothian & Fife	Borders, Dumfries & Galloway	Greater Glasgow	Lanarkshire, Ayrshire & Arran	Forth Valley, Argyll & Clyde	
	%	%	%	%	%	%	%	%
Men								
Within 12 months	43	42	40	39	47	42	47	43
One year but less than three	22	28	24	29	22	26	20	25
Three years or more[a]	24	20	23	23	20	22	22	22
Never	11	9	12	9	11	10	11	11
Women								
Within 12 months	57	60	63	64	65	63	66	63
One year but less than three	22	21	19	22	18	22	19	20
Three years or more[a]	16	17	15	12	14	13	13	14
Never	5	2	4	2	3	2	3	3
Bases (weighted)								
Men	*210*	*753*	*896*	*179*	*629*	*703*	*527*	*3898*
Women	*209*	*681*	*863*	*194*	*764*	*731*	*556*	*3998*
Bases (unweighted)								
Men	*352*	*590*	*709*	*296*	*508*	*606*	*458*	*3519*
Women	*424*	*651*	*825*	*393*	*737*	*804*	*573*	*4407*

[a]Includes a small number who could not recall when their blood pressure was last measured.

Table 11.18 Blood pressure monitoring for those with a CVD condition, by age and sex

Doctor-diagnosed CVD condition *1995*

Most recent blood pressure measurement	**Age**					**Total**
	16-24	25-34	35-44	45-54	55-64	
	%	%	%	%	%	%
Men						
Within 12 months	[49]	55	59	73	80	69
One year but less than three	[40]	12	23	15	13	17
Three years or more[a]	[10]	33	17	12	7	13
Never	-	-	1	-	0	0
Women						
Within 12 months	83	81	77	76	80	79
One year but less than three	12	12	13	16	14	14
Three years or more[a]	6	7	10	7	6	7
Never	-	-	-	-	-	-
All						
Within 12 months	71	69	68	75	80	74
One year but less than three	22	12	18	16	14	15
Three years or more[a]	7	19	13	10	6	10
Never	-	-	0	-	0	0
Bases (weighted)						
Men	*37*	*92*	*139*	*207*	*267*	*741*
Women	*67*	*108*	*143*	*216*	*267*	*802*
All	*104*	*200*	*283*	*423*	*534*	*1544*
Bases (unweighted)						
Men	*26*	*85*	*139*	*199*	*304*	*753*
Women	*57*	*125*	*163*	*239*	*364*	*948*
All	*83*	*210*	*302*	*438*	*668*	*1701*

[a]Includes a small number of informants who could not recall when their blood pressure was last measured.

Table 11.19 Cholesterol monitoring, by age and sex

All *1995*

Most recent cholesterol measurement	**Age**					**Total**
	16-24	25-34	35-44	45-54	55-64	
	%	%	%	%	%	%
Men						
Within 12 months	2	7	12	16	20	11
One year but less than three	3	8	16	15	15	11
Three years or more[a]	2	5	10	17	16	9
Never	94	80	62	53	50	69
Women						
Within 12 months	3	5	6	10	15	8
One year but less than three	3	8	10	11	12	9
Three years or more[a]	1	5	8	10	10	7
Never	94	82	75	69	63	77
All						
Within 12 months	2	6	9	13	17	9
One year but less than three	3	8	13	13	13	10
Three years or more[a]	1	5	9	14	13	8
Never	94	81	68	61	57	73
Bases (weighted)						
Men	*715*	*970*	*841*	*739*	*584*	*3849*
Women	*685*	*975*	*859*	*768*	*658*	*3945*
All	*1400*	*1945*	*1700*	*1507*	*1242*	*7794*
Bases (unweighted)						
Men	*470*	*833*	*801*	*698*	*673*	*3475*
Women	*536*	*1144*	*978*	*811*	*874*	*4343*
All	*1006*	*1977*	*1779*	*1509*	*1547*	*7818*

[a]Includes a small number of informants who could not recall when their cholesterol was last measured.

Table 11.20 Cholesterol monitoring, by region and sex

All *1995*

Most recent cholesterol measurement	**Region**							**Total**
	Highland & Islands	Grampian & Tayside	Lothian & Fife	Borders, Dumfries & Galloway	Greater Glasgow	Lanarkshire, Ayrshire & Arran	Forth Valley, Argyll & Clyde	
	%	%	%	%	%	%	%	%
Men								
Within 12 months	13	11	9	12	11	11	9	11
One year but less than three	8	12	8	12	12	15	11	11
Three years or more[a]	5	8	6	15	13	10	10	9
Never	75	69	77	61	64	64	70	69
Women								
Within 12 months	5	8	7	6	8	7	10	8
One year but less than three	7	9	6	8	9	12	9	9
Three years or more[a]	5	6	4	12	11	6	7	7
Never	83	78	82	74	72	75	74	77
All								
Within 12 months	9	9	8	9	10	9	9	9
One year but less than three	7	11	7	10	10	13	10	10
Three years or more[a]	5	7	5	13	12	8	9	8
Never	79	73	80	68	68	69	72	73
Bases (weighted)								
Men	*210*	*745*	*883*	*177*	*616*	*695*	*524*	*3849*
Women	*207*	*676*	*850*	*193*	*747*	*719*	*553*	*3945*
All	*417*	*1421*	*1733*	*370*	*1363*	*1413*	*1076*	*7794*
Bases (unweighted)								
Men	*351*	*584*	*696*	*292*	*499*	*599*	*454*	*3475*
Women	*419*	*645*	*811*	*392*	*717*	*791*	*568*	*4343*
All	*770*	*1229*	*1507*	*684*	*1216*	*1390*	*1022*	*7818*

[a]Includes a small number of informants who could not recall when their cholesterol was last measured.

Table 11.21 Cholesterol monitoring, by social class of chief income earner and sex

All *1995*

Most recent cholesterol measurement	**Social class of chief income earner**						**Total**[b]
	I	II	IIINM	IIIM	IV	V	
	%	%	%	%	%	%	%
Men							
Within 12 months	10	12	9	10	12	5	11
One year but less than three	17	13	11	11	8	7	11
Three years or more[a]	13	12	13	7	8	3	9
Never	60	63	67	71	72	85	69
Women							
Within 12 months	10	5	9	9	7	10	8
One year but less than three	7	11	9	8	9	9	9
Three years or more[a]	12	9	7	5	7	8	7
Never	71	75	76	78	78	74	77
All							
Within 12 months	10	9	9	10	9	8	9
One year but less than three	12	12	10	10	8	8	10
Three years or more[a]	13	10	9	6	7	6	8
Never	65	69	73	74	75	79	73
Bases (weighted)							
Men	*261*	*1004*	*442*	*1225*	*528*	*174*	*3849*
Women	*252*	*980*	*677*	*1026*	*541*	*200*	*3945*
All	*514*	*1983*	*1119*	*2251*	*1069*	*374*	*7794*
Bases (unweighted)							
Men	*232*	*869*	*376*	*1110*	*504*	*190*	*3475*
Women	*250*	*1063*	*819*	*1016*	*656*	*259*	*4343*
All	*482*	*1932*	*1195*	*2126*	*1160*	*449*	*7818*

[a]Includes a small number of informants who could not recall when their cholesterol was last measured.
[b]The total includes informants whose social class was unknown.

Table 11.22 Prevalence of prescribed medicine taking, by age and sex

All *1995*

Number of medicines taken	**Age**					**Total**
	16-24	25-34	35-44	45-54	55-64	
	%	%	%	%	%	%
Men						
None	80	79	70	60	43	68
One	12	12	18	21	20	16
Two	5	6	7	9	14	8
Three	2	2	3	4	7	3
Four	1	1	1	2	6	2
Five or more	0	0	0	4	9	2
Women						
None	74	71	65	40	31	58
One	15	19	21	30	23	22
Two	6	5	7	13	18	10
Three	2	2	4	8	11	5
Four	1	1	1	4	6	2
Five or more	1	1	1	4	11	3
All						
None	77	75	67	50	37	63
One	14	15	20	25	21	19
Two	6	6	7	11	16	9
Three	2	2	4	6	9	4
Four	1	1	1	3	6	2
Five or more	0	1	1	4	10	3
Bases (weighted)						
Men	*629*	*875*	*758*	*673*	*532*	*3467*
Women	*588*	*822*	*783*	*697*	*563*	*3453*
All	*1217*	*1697*	*1542*	*1369*	*1095*	*6919*
Bases (unweighted)						
Men	*405*	*744*	*712*	*630*	*606*	*3097*
Women	*460*	*967*	*889*	*734*	*754*	*3804*
All	*865*	*1711*	*1601*	*1364*	*1360*	*6901*

Table 11.23 Category of prescribed medicines taken, by age and sex

All *1995*

Medicines	Age					Total
	16-24	25-34	35-44	45-54	55-64	
	%	%	%	%	%	%
Men						
Cardiovascular	0	1	4	14	29	8
Gastrointestinal	1	3	6	9	14	6
Respiratory	11	8	6	6	8	7
Central nervous system	2	4	8	13	20	9
Infections	4	3	4	2	3	3
Endocrine	0	1	2	3	5	2
Obstetrics and gynaecology	-	-	-	1	1	0
Cytotoxic	-	0	0	0	0	0
Nutrition and blood	-	0	0	1	2	1
Musculo-skeletal	1	2	4	7	11	5
Eye, ear, nose and throat	2	2	3	1	3	2
Skin	3	2	3	3	2	3
Other	-	-	-	-	-	-
None of these	80	79	70	60	43	68
Women						
Cardiovascular	1	2	5	16	33	10
Gastrointestinal	1	3	5	10	14	6
Respiratory	10	7	6	8	11	8
Central nervous system	5	8	11	17	22	12
Infections	3	4	3	3	4	3
Endocrine	2	3	7	30	25	13
Obstetrics and gynaecology	-	0	1	1	1	1
Cytotoxic	-	0	0	2	1	1
Nutrition and blood	3	4	2	4	4	3
Musculo-skeletal	2	3	5	8	14	6
Eye, ear, nose and throat	2	1	2	3	4	2
Skin	2	4	3	2	3	3
Other	0	0	-	-	-	0
None of these	74	71	65	40	31	58
Bases (weighted)						
Men	*629*	*875*	*758*	*673*	*532*	*3467*
Women	*588*	*822*	*783*	*697*	*563*	*3453*
Bases (unweighted)						
Men	*405*	*744*	*712*	*630*	*606*	*3097*
Women	*460*	*967*	*889*	*734*	*754*	*3804*

Table 11.24 Category of prescribed medicines taken by people with a CVD condition, by age and sex

Doctor-diagnosed CVD condition *1995*

Medicines	Age					Total
	16-24	25-34	35-44	45-54	55-64	
	%	%	%	%	%	%
Men						
Cardiovascular	[4]	6	19	46	62	39
Gastrointestinal	-	11	7	14	19	13
Respiratory	[8]	7	5	5	10	7
Central nervous system	[7]	13	13	20	26	19
Infections	-	2	3	4	3	3
Endocrine	[6]	7	7	8	7	8
Obstetrics and gynaecology	-	-	-	2	1	1
Cytotoxic	-	-	-	0	-	0
Nutrition and blood	-	3	-	3	3	3
Musculo-skeletal	-	5	10	10	14	10
Eye, ear, nose and throat	-	-	4	1	3	2
Skin	[1]	1	4	2	2	2
Other	-	2	1	-	-	0
None of these	[80]	65	48	37	20	39
Women						
Cardiovascular	[5]	10	16	47	69	41
Gastrointestinal	[7]	11	5	10	21	13
Respiratory	[9]	7	5	10	13	10
Central nervous system	[11]	16	20	22	26	21
Infections	-	2	4	4	6	4
Endocrine	[10]	12	16	38	29	25
Obstetrics and gynaecology	-	-	0	1	0	0
Cytotoxic	-	-	-	-	0	0
Nutrition and blood	[9]	5	1	4	5	4
Musculo-skeletal	[4]	4	4	13	15	10
Eye, ear, nose and throat	[5]	1	1	4	4	3
Skin	[2]	6	2	0	5	3
Other	-	1	1	0	1	1
None of these	[58]	60	56	30	14	36
Bases (weighted)						
Men	*31*	*89*	*125*	*183*	*235*	*663*
Women	*52*	*88*	*130*	*191*	*229*	*691*
Bases (unweighted)						
Men	*22*	*80*	*122*	*172*	*266*	*662*
Women	*45*	*102*	*149*	*212*	*315*	*823*

Table 11.25 Contraceptive pill use, by age

Women aged 16-54 *1995*

Contraceptive pill or injection	**Age**				**Total**
	16-24	25-34	35-44	45-54	
	%	%	%	%	%
Women					
Using pill	41	38	10	1	23
Not using pill	59	62	90	99	77
(Menstruating)	56	55	80	52	61
(Not menstruating)	3	7	10	46	16
Bases (weighted)	*673*	*982*	*848*	*761*	*3265*
Bases (unweighted)	*533*	*1149*	*970*	*803*	*3455*

Table 11.26 Hormone replacement therapy, by age

Women aged 25-64 *1995*

HRT	**Age**				**Total**
	25-34	35-44	45-54	55-64	
	%	%	%	%	%
Women					
Yes- now	1	4	26	16	11
Yes - in past	1	3	13	14	7
No	98	93	61	70	83
Bases (weighted)	*990*	*869*	*777*	*664*	*3301*
Bases (unweighted)	*1160*	*991*	*825*	*883*	*3859*

Table 11.27 Prevalence of false teeth, by age and sex

All *1995*

Teeth	Age					Total
	16-24	25-34	35-44	45-54	55-64	
	%	%	%	%	%	%
Men						
All own teeth	92	83	70	54	36	69
Some false/some own	8	16	25	33	30	22
All false teeth	0	2	5	13	34	9
Women						
All own teeth	96	85	71	45	26	66
Some false/some own	4	13	24	35	30	21
All false teeth	0	2	5	20	45	13
All						
All own teeth	94	84	70	49	31	68
Some false/some own	6	14	25	34	30	21
All false teeth	0	2	5	17	40	11
Bases (weighted)						
Men	*723*	*979*	*851*	*749*	*600*	*3902*
Women	*695*	*990*	*870*	*777*	*665*	*3998*
All	*1418*	*1969*	*1721*	*1527*	*1265*	*7900*
Bases (unweighted)						
Men	*475*	*840*	*811*	*709*	*689*	*3524*
Women	*547*	*1160*	*992*	*825*	*884*	*4408*
All	*1022*	*2000*	*1803*	*1534*	*1573*	*7932*

Table 11.28 Prevalence of false teeth, by social class of chief income earner and sex

All *1995*

Teeth	Social class of chief income earner						Total[a]
	I	II	IIINM	IIIM	IV	V	
	%	%	%	%	%	%	%
Men							
All own teeth	78	74	70	64	65	61	69
Some false/some own	18	20	22	25	24	19	22
All false teeth	4	6	8	11	11	20	9
Women							
All own teeth	78	72	69	61	58	49	66
Some false/some own	19	21	21	22	23	25	21
All false teeth	3	7	10	17	19	27	13
All							
All own teeth	78	73	69	62	61	54	68
Some false/some own	18	20	21	24	24	22	21
All false teeth	3	7	10	14	15	24	11
Bases (weighted)							
Men	*267*	*1012*	*448*	*1244*	*532*	*179*	*3902*
Women	*253*	*983*	*689*	*1042*	*548*	*207*	*3998*
All	*520*	*1995*	*1136*	*2286*	*1080*	*386*	*7900*
Bases (unweighted)							
Men	*236*	*874*	*383*	*1129*	*509*	*196*	*3524*
Women	*252*	*1068*	*834*	*1032*	*665*	*268*	*4408*
All	*488*	*1942*	*1217*	*2161*	*1174*	*464*	*7932*

[a]The total includes informants whose social class was unknown.

Table 11.29 Prevalence of false teeth, by region and sex

All *1995*

Teeth	Region							Total
	Highland & Islands	Grampian & Tayside	Lothian & Fife	Borders, Dumfries & Galloway	Greater Glasgow	Lanarkshire, Ayrshire & Arran	Forth Valley, Argyll & Clyde	
	%	%	%	%	%	%	%	%
Men								
All own teeth	73	73	71	64	69	62	69	69
Some false/some own	19	19	21	24	23	25	22	22
All false teeth	8	8	8	12	8	13	9	9
Women								
All own teeth	65	68	70	60	62	64	69	66
Some false/some own	24	18	21	27	23	22	17	21
All false teeth	12	14	9	13	15	15	14	13
All								
All own teeth	69	71	70	62	65	63	69	68
Some false/some own	21	19	21	26	23	23	19	21
All false teeth	10	11	9	13	12	14	11	11
Bases (weighted)								
Men	*213*	*753*	*896*	*179*	*629*	*704*	*527*	*3902*
Women	*210*	*681*	*863*	*194*	*764*	*731*	*556*	*3998*
All	*423*	*1434*	*1759*	*373*	*1393*	*1435*	*1083*	*7900*
Bases (unweighted)								
Men	*356*	*590*	*709*	*296*	*508*	*607*	*458*	*3524*
Women	*425*	*651*	*825*	*393*	*737*	*804*	*573*	*4408*
All	*781*	*1241*	*1534*	*689*	*1245*	*1411*	*1031*	*7932*

Table 11.30 Type of toothpaste used, by age and sex

All/some own teeth *1995*

Type of toothpaste	**Age**					**Total**
	16-24	25-34	35-44	45-54	55-64	
	%	%	%	%	%	%
Men						
Flouride	95	95	93	84	77	90
Non-flouride	3	3	5	10	13	6
Does not use toothpaste	1	1	1	2	7	2
Don't know	1	1	1	4	4	2
Women						
Flouride	93	97	95	85	83	92
Non-flouride	5	2	5	13	14	7
Does not use toothpaste	0	0	0	1	0	0
Don't know	2	1	1	1	2	1
All						
Flouride	94	96	94	85	80	91
Non-flouride	4	3	5	11	13	6
Does not use toothpaste	1	1	1	1	4	1
Don't know	1	1	1	3	3	1
Bases (weighted)						
Men	*723*	*964*	*808*	*652*	*396*	*3542*
Women	*695*	*968*	*827*	*620*	*369*	*3479*
All	*1417*	*1932*	*1635*	*1272*	*765*	*7021*
Bases (unweighted)						
Men	*474*	*826*	*770*	*603*	*442*	*3115*
Women	*546*	*1135*	*936*	*647*	*490*	*3754*
All	*1020*	*1961*	*1706*	*1250*	*932*	*6869*

Table 11.31 Frequency of teeth brushing, by age and sex

All/some own teeth *1995*

Frequency	Age					Total
	16-24	25-34	35-44	45-54	55-64	
	%	%	%	%	%	%
Men						
More than once a day	64	62	65	56	50	60
Once a day	29	30	29	33	37	31
Less than once a day	8	8	6	11	13	9
Women						
More than once a day	83	84	85	79	78	82
Once a day	16	14	14	20	21	16
Less than once a day	2	3	2	2	1	2
All						
More than once a day	73	73	75	67	63	71
Once a day	22	22	21	26	29	23
Less than once a day	5	5	4	6	7	5
Bases (weighted)						
Men	*723*	*964*	*808*	*652*	*396*	*3542*
Women	*695*	*968*	*827*	*620*	*369*	*3479*
All	*1417*	*1932*	*1635*	*1272*	*765*	*7021*
Bases (unweighted)						
Men	*474*	*826*	*770*	*603*	*442*	*3115*
Women	*546*	*1135*	*936*	*647*	*490*	*3754*
All	*1020*	*1961*	*1706*	*1250*	*932*	*6869*

Table 11.32 Frequency of teeth brushing, by social class of chief income earner and sex

All/some own teeth *1995*

Frequency	Social class of chief income earner						Total[a]
	I	II	IIINM	IIIM	IV	V	
	%	%	%	%	%	%	%
Men							
More than once a day	76	69	62	54	53	47	60
Once a day	22	27	33	34	36	33	31
Less than once a day	2	4	5	12	12	20	9
Women							
More than once a day	94	88	83	80	75	64	82
Once a day	6	12	16	19	20	31	16
Less than once a day	1	1	2	2	4	5	2
All							
More than once a day	85	78	75	65	64	56	71
Once a day	14	19	23	27	28	32	23
Less than once a day	1	3	3	7	8	12	5
Bases (weighted)							
Men	*257*	*949*	*411*	*1104*	*471*	*143*	*3542*
Women	*246*	*910*	*617*	*865*	*443*	*151*	*3479*
All	*503*	*1859*	*1028*	*1969*	*914*	*294*	*7021*
Bases (unweighted)							
Men	*227*	*809*	*344*	*968*	*442*	*145*	*3115*
Women	*243*	*975*	*736*	*834*	*529*	*185*	*3754*
All	*470*	*1784*	*1080*	*1802*	*971*	*330*	*6869*

[a]The total includes informants whose social class was unknown.

Table 11.33 Frequency of attending a dentist, by age and sex

All/some own teeth *1995*

Frequency	Age					Total
	16-24	25-34	35-44	45-54	55-64	
	%	%	%	%	%	%
Men						
More often than every 6 months	4	2	3	3	3	3
Every 6 months	52	45	51	46	42	48
Every 12 months	12	17	16	14	12	14
Every 24 months	5	5	3	3	4	4
At longer intervals	13	16	14	15	17	15
Never	15	15	14	20	22	16
Women						
More often than every 6 months	5	3	3	4	4	4
Every 6 months	59	66	68	58	55	62
Every 12 months	13	13	11	13	13	12
Every 24 months	5	4	4	4	3	4
At longer intervals	11	8	7	12	15	10
Never	8	7	7	10	10	8
All						
More often than every 6 months	5	3	3	3	3	3
Every 6 months	55	55	59	52	48	55
Every 12 months	12	15	13	13	12	13
Every 24 months	5	4	3	3	4	4
At longer intervals	12	12	10	13	16	12
Never	11	11	11	15	17	12
Bases (weighted)						
Men	*723*	*964*	*808*	*652*	*396*	*3542*
Women	*695*	*968*	*827*	*620*	*369*	*3479*
All	*1417*	*1932*	*1635*	*1272*	*765*	*7021*
Bases (unweighted)						
Men	*474*	*826*	*770*	*603*	*442*	*3115*
Women	*546*	*1135*	*936*	*647*	*490*	*3754*
All	*1020*	*1961*	*1706*	*1250*	*932*	*6869*

Table 11.34 Frequency of attending a dentist, by region and sex

All/some own teeth *1995*

Frequency	Region							Total
	Highland & Islands	Grampian & Tayside	Lothian & Fife	Borders, Dumfries & Galloway	Greater Glasgow	Lanarkshire, Ayrshire & Arran	Forth Valley, Argyll & Clyde	
	%	%	%	%	%	%	%	%
Men								
More often than every 6 months	4	2	3	2	2	5	2	3
Every 6 months	46	53	49	54	43	41	48	48
Every 12 months	12	15	14	17	15	14	14	14
Every 24 months	7	2	6	4	4	4	4	4
At longer intervals	19	14	15	15	13	18	11	15
Never	13	13	13	8	23	18	21	16
Women								
More often than every 6 months	6	6	3	4	4	3	3	4
Every 6 months	59	67	65	67	57	59	63	62
Every 12 months	11	12	12	10	12	11	16	12
Every 24 months	6	1	4	5	4	6	2	4
At longer intervals	13	8	9	9	10	13	8	10
Never	6	5	7	4	13	8	7	8
All								
More often than every 6 months	5	4	3	3	3	4	3	3
Every 6 months	52	60	57	61	51	50	56	55
Every 12 months	12	13	13	14	13	13	15	13
Every 24 months	6	2	5	4	4	5	3	4
At longer intervals	16	12	12	12	11	16	9	12
Never	10	10	10	6	18	13	14	12
Bases (weighted)								
Men	*197*	*693*	*822*	*158*	*577*	*616*	*479*	*3542*
Women	*185*	*587*	*785*	*168*	*652*	*623*	*480*	*3479*
All	*382*	*1279*	*1608*	*326*	*1229*	*1239*	*959*	*7021*
Bases (unweighted)								
Men	*319*	*527*	*638*	*254*	*457*	*515*	*405*	*3115*
Women	*369*	*549*	*736*	*330*	*608*	*675*	*487*	*3754*
All	*688*	*1076*	*1374*	*584*	*1065*	*1190*	*892*	*6869*

Table 11.35 Frequency of attending a dentist, by social class of chief income earner and sex

All/some own teeth *1995*

Frequency	Social class of chief income earner						Total[a]
	I	II	IIINM	IIIM	IV	V	
	%	%	%	%	%	%	%
Men							
More often than every 6 months	7	3	3	1	4	3	3
Every 6 months	55	54	53	42	48	33	48
Every 12 months	18	16	11	14	12	12	14
Every 24 months	3	4	2	5	5	2	4
At longer intervals	8	13	15	16	13	26	15
Never	9	11	16	22	18	24	16
Women							
More often than every 6 months	4	4	3	3	3	2	4
Every 6 months	74	68	63	59	56	52	62
Every 12 months	11	13	12	12	13	12	12
Every 24 months	3	4	3	4	3	4	4
At longer intervals	7	6	11	12	13	12	10
Never	2	4	8	9	12	17	8
All							
More often than every 6 months	6	4	3	2	3	2	3
Every 6 months	64	61	59	50	52	43	55
Every 12 months	14	15	12	13	12	12	13
Every 24 months	3	4	3	5	4	3	4
At longer intervals	7	10	12	14	13	19	12
Never	6	8	11	16	15	21	12
Bases (weighted)							
Men	*257*	*949*	*411*	*1104*	*471*	*143*	*3542*
Women	*246*	*910*	*617*	*865*	*443*	*151*	*3479*
All	*503*	*1859*	*1028*	*1969*	*914*	*294*	*7021*
Bases (unweighted)							
Men	*227*	*809*	*344*	*968*	*442*	*145*	*3115*
Women	*243*	*975*	*736*	*834*	*529*	*185*	*3754*
All	*470*	*1784*	*1080*	*1802*	*971*	*330*	*6869*

[a]The total includes informants whose social class was unknown.

12 PSYCHOSOCIAL WELL-BEING

Susan Purdon and Bob Erens

SUMMARY

- Women (19%) were more likely than men (12%) to have a high GHQ12 score of four or more.
- Among men, the proportion with a high GHQ12 score increased with age, from 9% of those aged 16-24 to 17% of those aged 45-64. Among women, there was no consistent trend by age.
- There were no significant differences between Scotland and England in the proportions of men and women with a high GHQ12 score.
- Looking at regions within Scotland, there were few significant differences in the proportions with a high GHQ12 score except that informants in Greater Glasgow were more likely than average to have a high GHQ12 score (especially women).
- There was a strong association between GHQ12 scores and economic activity status. Men and women who were unemployed were much more likely to have a high GHQ12 score than those in work or in full-time education.
- Informants who drank or smoked heavily were significantly more likely than average to have high GHQ12 scores.
- High GHQ12 scores were associated with a number of measures on self-reported health status, most strongly with perceptions of general health. However, it is unclear whether this is a genuine association or a by-product of the GHQ itself.
- Among men, logistic regression showed that the three best discriminators between those with high and those with normal GHQ12 scores were economic activity status, marital status and levels of alcohol consumption. Among women, five variables were significant predictors of high GHQ12 scores: economic activity status, marital status, age, region, and number of cigarettes smoked.

12.1 INTRODUCTION

The Scottish Health Survey used the General Health Questionnaire (GHQ) to assess the general psychological well-being of informants. The GHQ was designed to be a self-administered questionnaire which could be used to detect psychiatric disorders in the general population.[1] The version used for the Health Survey is based on twelve questions (GHQ12) which ask informants about their general level of happiness, depression, anxiety, self-confidence, and stress in the period of a few weeks before the interview. The questions were contained on a form which was completed by informants themselves at the end of the first stage interview.[2] (A copy of the GHQ12 may be found in Appendix A in the Technical Report.)

Each informant was given a score between zero and twelve based on his or her responses to the twelve questions. The number of items for which the informant claimed to have experienced a particular symptom or type of behaviour 'more than usual' or 'much more than usual' over the past few weeks is counted, and the total is the score for that person.[3] The higher the score the greater the likelihood that the informant has a psychiatric disorder.

The questions on the GHQ12 ask about changes from normal functioning but not about how long those changes have persisted. As a result, the GHQ detects psychiatric disorders of a range of durations, including those that may be of very short duration. This should be borne in mind when interpreting the results. The prevalence figures presented in this chapter estimate the percentages of the population with a possible psychiatric disorder *at a particular point in time* and are most useful for comparing sub-groups within the population. It is not possible to deduce the *incidence* of psychiatric disorders from this data.

A threshold score of *four or more* on the GHQ12 has been used to identify informants with a potential psychiatric disorder (and references to informants with a 'high' GHQ12 score refer to those with scores at this threshold level).

The following analysis looks at the scores on the GHQ12 in terms of sex, age, region, social class and a number of other demographic, behavioural and health characteristics.

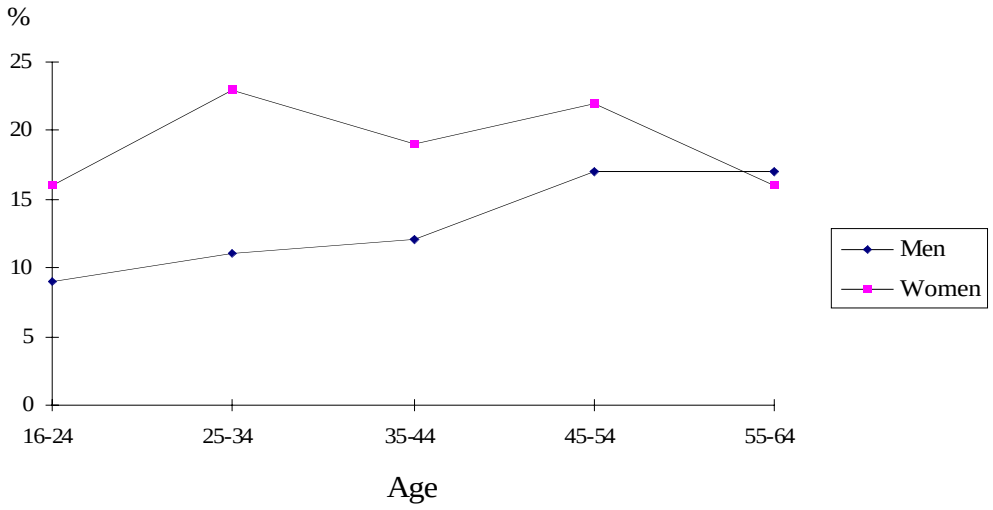
12.2 AGE AND SEX VARIATIONS

Overall, women were more likely than men to have a high GHQ12 score: 19% of women had a score of four or more compared with 13% of men. This finding is consistent with a number of other population surveys using the GHQ12.[4,5,6]

The difference between men and women was greatest for those aged 16-34: in this age range, the percentage of women having a GHQ12 score of four or more was nearly twice that of men.

Among men, the proportion with a high GHQ12 score increased with age, from 9% of those aged 16-24 to 17% of those aged 45-64. The pattern with age among women was more complex: both the youngest (16-24) and the oldest (55-64) age groups were the least likely to have high GHQ12 scores, and there was no consistent pattern for the age-groups in between. Women aged 25-34 and 45-54 were the most likely to have a high GHQ12 score (23% and 22% respectively). **Table 12.1 and Figure 12A**

Figure 12A: Percentage with a GHQ12 score of 4 or more, by age and sex



Because the relationship between high GHQ12 scores and age is not particularly strong, none of the survey estimates presented in this chapter have been standardised by age.

12.3 COMPARING SCOTLAND WITH ENGLAND

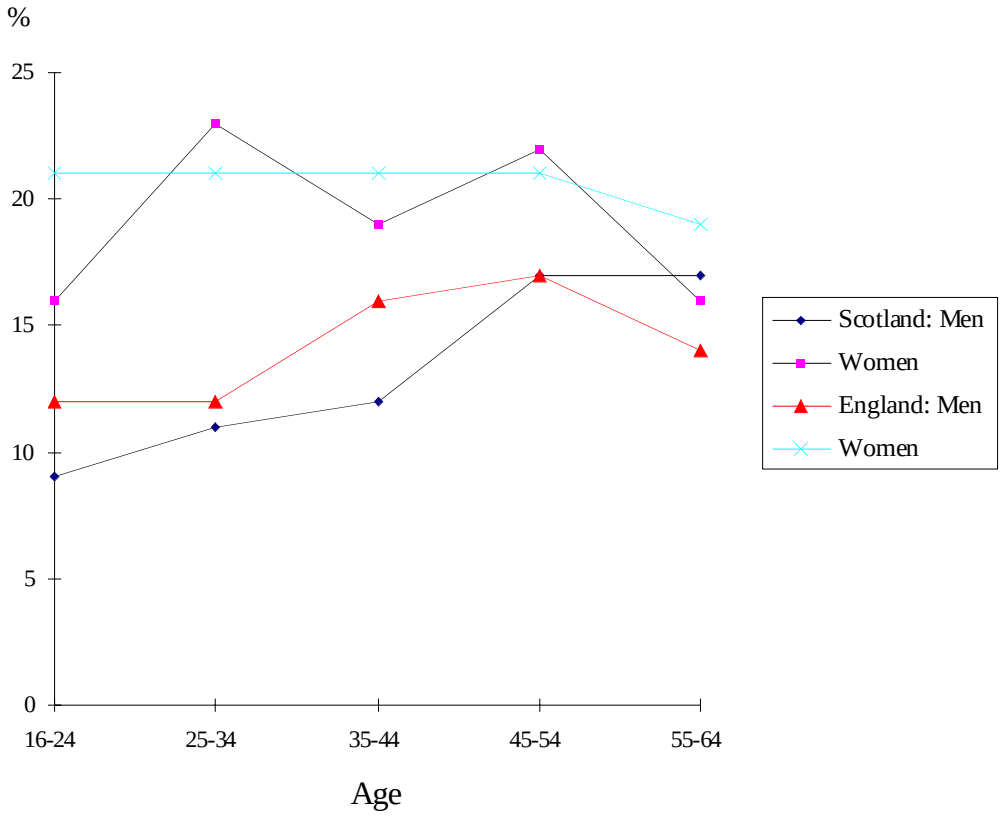
A comparison of the Health Survey results with data from the 1995 Health Survey for England shows no significant differences between the two countries overall. Among 16-64 year olds, the proportion of men with a high GHQ12 score was 13% in Scotland and 14% in England; the equivalent figures for women were 19% in Scotland and 21% in England.

This overall agreement between the Scottish and English results does, however, conceal some specific differences by age. Among men, the data suggest that men in Scotland aged 35-44 were less likely to have a high GHQ12 score than men in England within the same age group (although the differences were small). Among women the differences between countries were more marked: whereas the English data revealed no clear trend with age, among Scottish women, as was noted above, those aged 16-24 and 55-64 were less likely to have a high GHQ12 score than were those in the other age groups; in consequence, in these two age groups, women in Scotland were a bit less likely than those in England to have a high GHQ12 score, but there were no marked differences for other age groups. **Table 12.2 and Figure 12B**

12.4 REGIONAL AND AREA TYPE VARIATIONS

Table 12.3 shows GHQ12 scores by region. For either sex, there were few significant regional differences in the proportions with high GHQ12 scores. One notable exception was that informants of both sexes in Greater Glasgow were more likely than average to have a high GHQ12 score, with the difference being particularly marked for women. By contrast, women in the Highland and Islands were *less* likely than average to have a high GHQ12 score. **Table 12.3**

Figure 12B: Percentage with a GHQ12 score of 4 or more, by age and sex: a comparison of Scotland and England



There is no obvious explanation for the higher GHQ12 scores in Greater Glasgow. It cannot be explained by age differences between regions since the pattern of higher GHQ12 scores was consistent across all age groups. The explanation is likely to lie in a complex combination of personal, social, and, possibly, area type effects.

Table 12.4 shows GHQ12 scores by residential area type. The pattern by sex was broadly the same, with informants living in urban areas or city centres the most likely to have a high GHQ12 score, followed by those living in suburban areas. High GHQ12 scores were less prevalent than average for residents of small country towns or rural areas. **Table 12.4**

12.5 VARIATIONS BY SOCIAL CLASS, ACTIVITY STATUS AND MARITAL STATUS

12.5.1 Social class

Table 12.5 shows GHQ12 scores by social class of the chief income earner within the informant's household (see the Glossary in the Technical Report for a description of social class derivations). Among men, those in Social Classes I and II were the least likely to have high GHQ12 scores. Compared with men in the other social classes, those in Social Class V were much more likely to have a high GHQ12 score (24% had a score of four or more). Among women, those in Social Class I were the least likely to have a high GHQ12 score. **Table 12.5**

12.5.2 Economic activity status

The percentage with a high GHQ12 score was particularly marked for men and women whose main activity status was described as 'permanently unable to work' (41% of men and 45% of women in this activity status had a GHQ12 score of four or more). By definition, however, many of the informants falling into this category had a physical illness or disability of some kind[7] and, as is discussed further in Section 12.8, interpreting high GHQ12 scores as a marker of psychiatric disorders among those with a physical illness may be somewhat misleading.

Of possibly greater significance is the fact that, among men, the prevalence of a high GHQ12 score was found to be considerably above average for those classed as 'unemployed' (26%), while it was lower than average for men in work or in education (9% and 8% respectively).

Among women, the prevalence of a high GHQ12 score was above average for women who were 'unemployed' (39%) or 'looking after the home' (24%), and, as for men, it was lower than average for women in work or in education (15% and 17% respectively). In these latter two categories, women were more likely than men to have high GHQ12 scores. **Table 12.6**

12.5.3 Marital status

For both sexes there was a relationship between GHQ12 scores and marital status. The prevalence of high scores was above average for those who were widowed or divorced, and higher still among those who were separated. **Table 12.7**

12.6 RELATIONSHIP WITH DRINKING, SMOKING, AND PHYSICAL ACTIVITY

This section explores the relationships between high GHQ12 scores and drinking, smoking, and physical exercise. However, it should be noted that this analysis cannot establish causal links between variables. For example, the relationship between smoking and GHQ12 suggests that heavy smokers were more likely to have psychiatric disorders than other people. While the most plausible inference may be that those prone to such disorders (e.g., depression) are more likely to smoke heavily than others (so that the disorder causes the smoking), it cannot be demonstrated that the causal relationship is in this direction.

12.6.1 Drinking

Among men, those drinking more than 50 units of alcohol a week on average, and ex-drinkers, were the most likely to have a high GHQ12 score (21% and 27% respectively). The pattern was broadly the same for women, although the small number of women who consumed 35 or more units a week makes it more difficult to test the hypothesis that the prevalence of high GHQ12 scores is greater for this group of women. (Because of the small sample base, Table 12.8 does not distinguish between women drinking 21-34 units, and those drinking 35 or more units, a week.)
Table 12.8

12.6.2 Smoking

Table 12.9 gives GHQ12 scores by the mean number of cigarettes smoked per day (divided into four broad categories). For both sexes there was a relationship between these variables: the prevalence of high GHQ12 scores was lower than average for non-smokers; at the other extreme, the prevalence of high GHQ12 scores was greater than average for men and women who smoked 20 or more cigarettes a day. **Table 12.9**

12.6.3 Physical activity

Survey informants were divided into categories according to the frequency and intensity of physical activity they normally undertake (see Chapter 2 for details). Table 12.10 shows the relationship between this categorisation and the GHQ12. For men, the most apparent difference in GHQ12 scores is between those who did no moderate or vigorous activity in an average week (i.e., those categorised in level 0) and those who normally did at least some moderate or vigorous physical activity: among men in level 0, the prevalence of high GHQ12 scores was 21% (compared with an overall average for men of 13%). For women, the relationship between GHQ12 scores and physical activity was much weaker. However, for both sexes, the percentage with a high GHQ12 score was lowest in level 5. **Table 12.10**

12.7 RELATIONSHIP WITH SELF-REPORTED HEALTH MEASURES

The Health Survey included a number of questions about informants' own perceptions of their health, including their general health, long-standing illness or disability, and acute sickness over the two week period prior to interview. The detailed responses to these questions were described in Chapter 11. This section looks at their relationship with informants' GHQ12 scores.

Table 12.11 shows a very strong relationship between GHQ12 and all three of these other variables, especially self-reported general health. Among those who said their general health was 'good' or 'very good', only 9% of men and 15% of women had a high GHQ12 score. By contrast, among those who rated their general health as 'bad' or 'very bad', 52% of men and 59% of women had a high GHQ12 score.

There was also a clear relationship between GHQ12 and long-standing illness. Informants who reported having a long-standing illness were significantly more likely than those who did not to have a high GHQ12 score: among men, the figures were 22% and 9% respectively, and among women they were 27% and 15%. After reallocating those who claimed to have a long-standing mental health problem (so that those with a long-standing illness only have self-reported *physical* illnesses), the degree of association was reduced to some extent but was still high (the percentage of those with a long-standing physical illness with a high GHQ12 score fell to 20% for men and 24% for women). (Table not shown.)

Large differences were also found when comparing informants who had an acute sickness in the two week period preceding the interview with those who had not. Among the former, 30% of men and 37% of women had a high GHQ12 score, while among the latter the equivalent figures were 11% for men and 16% for women.
Table 12.11

A number of factors could explain these associations. Firstly, informants may take their current mental health into consideration when assessing their general state of health. This could explain at least part of the relationship between self-reported general health and the GHQ12, as well as that between acute sickness and the GHQ12. However, it is also known[8] that people with a physical illness are over-represented among the false positive identifications of those with a psychiatric disorder made by the GHQ12. That is, those with a physical illness may answer the GHQ12 questions so that they appear to have a psychiatric disorder when in fact they do not. (Their apparent symptoms of poor mental health, such as not being able to enjoy normal day-to-day activities, may actually be symptoms associated with their physical illness.) A third possible explanation for the association between self-reported health and the GHQ12 is that physical illness is, in fact, genuinely associated with mental health

problems. The data does not provide any good means of testing between these three possibilities.

12.8 MULTIVARIATE ANALYSIS OF THE GHQ12 SCORES

The analysis reported on above has shown that high GHQ12 scores are associated with a range of survey variables including sex, age, region, area type, social class, activity status, marital status, smoking, drinking, and physical activity. This wide range of associations suggests that a profile of those with high GHQ12 scores might be quite complex. To test this, main-effect logistic regression models (one for men and one for women) were fitted to the data (using forward stepwise variable selection). The GHQ12 score was, for this purpose, divided into a binary variable, with a score of four or more being coded as 1. The independent variables tested in the model were all the behavioural and personal characteristics found to have an association with the GHQ12 in the earlier sections.

The logistic regression model fitted to the data for men suggested that three variables - activity status, marital status, and estimated weekly alcohol consumption - could, when combined, give a reasonably accurate profile of men with high GHQ12 scores. In particular, these three variables were sufficient to explain the associations observed between high GHQ12 scores and other variables such as age and region.

The logistic regression model fitted to the data for women suggested that an accurate profile of women with high GHQ12 scores would be somewhat more complex than that for men. Five variables were found to be significant, independent predictors of high GHQ12 scores - activity status, marital status, age group, region (in particular a split between Greater Glasgow and the rest of Scotland), and cigarette smoking.

The change in the odds of having a high GHQ12 score associated with each category of independent variable is shown in Table 12.12. **Table 12.12**

It should be emphasised that the logistic regression models are not designed to identify the causes of high GHQ12 scores in individuals. Their purpose is simply to identify those survey variables that, in association, discriminate best between those with a high GHQ12 score and those without. It is not necessarily the case that variables that discriminate well are causal factors.

References and notes

1 Goldberg D and Willians P. *A User's Guide to the General Health Questionnaire.* NFER-NELSON.

2 Completed questionnaires containing the GHQ12 were obtained from 7857 informants, which was 99% of those interviewed. Because of missing values on individual items, it was not possible to obtain a GHQ12 score for a further 83 informants. Overall, 97% of informants completed the GHQ12 without any assistance, and 3% were given help completing the form by the interviewer or another household member (e.g., because of reading, language or eyesight problems).

3 Each of the twelve items in the GHQ has four possible responses. The Health Survey used the 'GHQ scoring' method which treats each item as a bimodal response scale by weighting the responses 0,0,1,1 to indicate non-possession or possession of the item in the question. Thus, every informant is assigned a score of 0 or 1 for each of the 12 items, and the number of symptoms are counted. See Goldberg D and Williams P, *A User's Guide to the General Health Questionnaire, NFER-NELSON,* (p.11) for a discussion of the scoring method.

4 Colhoun H and Prescott-Clarke P, eds. *Health Survey for England 1994*. HMSO, London, 1996; see also previous years of the Health Survey for England.

5 Meltzer H, Gill B, Petticrew M, Hinds, K. *The Prevalence of Psychiatric Morbidity Among Adults Living in Private Households.* HMSO, London, 1995.

6 Cox BD et al. *The Health and Lifestyle Survey.* The Health Promotion Trust, London, 1987.

7 Among those classified as 'permanently unable to work', 97% reported having a long-standing illness or disability, of whom 93% reported at least one physical illness.

8 Goldberg D and Willians P. *A User's Guide to the General Health Questionnaire*. NFER-NELSON.

CHAPTER 12 - LIST OF TABLES

Table 12.1 GHQ12 score, by age and sex

All with a valid GHQ12 score *1995*

GHQ12 score	Age					Total
	16-24	25-34	35-44	45-54	55-64	
	%	%	%	%	%	%
Men						
0	61	60	62	59	57	60
1-3	29	29	25	24	25	27
4	5	3	4	4	2	4
5	1	2	2	2	3	2
6	0	1	1	3	3	1
7	1	2	1	2	2	1
8	1	1	1	1	2	1
9	1	1	1	2	1	1
10+	1	2	2	3	4	2
Women						
0	54	51	57	56	57	55
1-3	30	26	24	23	27	26
4	4	6	4	6	4	5
5	3	3	3	3	2	3
6	5	3	3	2	2	3
7	1	3	2	2	3	2
8	1	1	2	2	1	1
9	0	1	1	2	1	1
10+	2	5	4	6	3	4
Bases (weighted)						
Men	*709*	*962*	*834*	*737*	*583*	*3825*
Women	*684*	*975*	*854*	*768*	*645*	*3924*
Bases (unweighted)						
Men	*467*	*822*	*795*	*694*	*670*	*3448*
Women	*540*	*1141*	*976*	*811*	*858*	*4326*

Table 12.2 Comparison of GHQ12 score for Scotland and England, by age and sex

All with a valid GHQ12 score *1995*

GHQ12 score of 4 or more	Age					Total
	16-24	25-34	35-44	45-54	55-64	
	%	%	%	%	%	%
Men						
Scotland	9	11	12	17	17	13
England	12	12	16	17	14	14
Women						
Scotland	16	23	19	22	16	19
England	21	21	21	21	19	21
Bases (weighted)						
Scotland						
Men	*709*	*962*	*834*	*737*	*583*	*3825*
Women	*684*	*975*	*854*	*768*	*645*	*3924*
Bases (unweighted)						
Men						
Scotland	*467*	*822*	*795*	*694*	*670*	*3448*
England	*906*	*1372*	*1343*	*1161*	*963*	*5745*
Women						
Scotland	*540*	*1141*	*976*	*811*	*858*	*4326*
England	*1058*	*1697*	*1477*	*1351*	*1093*	*6676*

Table 12.3 GHQ12 score, by region and sex

All with a valid GHQ12 score *1995*

GHQ12 score	Region							Total
	Highland & Islands	Grampian & Tayside	Lothian & Fife	Borders, Dumfries & Galloway	Greater Glasgow	Lanarkshire, Ayrshire & Arran	Forth Valley, Argyll & Clyde	
	%	%	%	%	%	%	%	%
Men								
0	64	61	59	68	54	61	61	60
1-3	25	27	30	21	28	24	25	27
4 or more	11	12	12	11	18	14	13	13
Women								
0	67	57	53	62	47	54	58	55
1-3	21	25	28	22	27	27	25	26
4 or more	12	18	19	16	26	19	18	19
Bases (weighted)								
Men	*211*	*742*	*879*	*176*	*608*	*695*	*515*	*3825*
Women	*205*	*671*	*851*	*191*	*736*	*715*	*554*	*3924*
Bases (unweighted)								
Men	*351*	*579*	*693*	*291*	*491*	*595*	*448*	*3448*
Women	*415*	*642*	*814*	*387*	*712*	*786*	*570*	*4326*

Table 12.4 GHQ12 score, by residential area type and sex

All with a valid GHQ12 score *1995*

GHQ12 score	Residential area type					Total
	Urban/city centre	Small country town	Suburban	Rural residential/ village	Rural agricultural	
	%	%	%	%	%	%
Men						
0	58	62	59	60	69	60
1-3	26	28	27	27	22	27
4 or more	16	10	14	13	10	13
Women						
0	52	63	52	59	62	55
1-3	25	22	28	23	21	26
4 or more	23	16	20	17	17	19
Bases (weighted)						
Men	*493*	*343*	*2252*	*518*	*217*	*3835*
Women	*499*	*310*	*2368*	*565*	*180*	*3924*
Bases (unweighted)						
Men	*457*	*340*	*1896*	*495*	*259*	*3448*
Women	*544*	*381*	*2482*	*663*	*255*	*4326*

Table 12.5 GHQ12 score, by social class of chief income earner and sex

All with a valid GHQ12 score *1995*

GHQ12 score	Social class of chief income earner						Total[a]
	I	II	IIINM	IIIM	IV	V	
	%	%	%	%	%	%	%
Men							
0	58	61	58	63	62	50	60
1-3	32	30	28	23	24	26	27
4 or more	10	9	14	14	13	24	13
Women							
0	61	55	55	58	47	52	55
1-3	26	27	23	24	30	25	26
4 or more	14	18	22	17	23	23	19
Bases (weighted)							
Men	*264*	*992*	*442*	*1218*	*521*	*176*	*3825*
Women	*248*	*968*	*681*	*1020*	*541*	*197*	*3924*
Bases (unweighted)							
Men	*233*	*859*	*375*	*1103*	*496*	*190*	*3448*
Women	*246*	*1051*	*823*	*1014*	*656*	*257*	*4326*

[a]The total includes informants whose social class was unknown.

Table 12.6 GHQ12 score, by economic activity status and sex

All with a valid GHQ12 score *1995*

GHQ12 score	Economic activity status						Total[c]
	Full time student	In work	Unemployed[a]	Permanently unable to work	Other activity[b]		
	%	%	%	%	%		%
Men							
0	58	65	53	28	56	*	60
1-3	34	26	21	31	33	*	27
4 or more	8	9	26	41	12	*	13
	Full time student	In work	Unemployed[a]	Permanently unable to work	Looking after home/other activity	Retired	
Women							
0	52	60	38	22	50	56	55
1-3	32	25	23	33	26	25	26
4 or more	17	15	39	45	24	19	19
Bases (weighted)							
Men	*294*	*2734*	*309*	*347*	*140*	*	*3825*
Women	*277*	*2265*	*108*	*189*	*862*	*222*	*3924*
Bases (unweighted)							
Men	*180*	*2408*	*310*	*382*	*168*	*	*3448*
Women	*204*	*2413*	*133*	*243*	*332*	*1001*	*4326*

[a]Includes those unable to work due to temporary illness.
[b]Because of the small number of retired men in the sample, they are included in the 'other activity' category.
[c]The total includes informants whose activity status was unknown.

Table 12.7 GHQ12 score, by marital status and sex

All with a valid GHQ12 score *1995*

GHQ12 score	Marital status						Total
	Married	Co-habiting	Widowed	Divorced	Separated	Single	
	%	%	%	%	%	%	%
Men							
0	61	59	47	54	46	60	60
1-3	26	30	29	21	19	28	27
4 or more	12	11	24	25	35	12	13
Women							
0	58	49	48	45	37	53	55
1-3	24	28	29	28	28	29	26
4 or more	18	23	24	28	35	18	19
Bases (weighted)							
Men	*2237*	*229*	*47*	*120*	*76*	*1116*	*3825*
Women	*2324*	*230*	*138*	*207*	*146*	*879*	*3924*
Bases (unweighted)							
Men	*1872*	*194*	*75*	*202*	*117*	*988*	*3448*
Women	*2302*	*241*	*242*	*362*	*241*	*938*	*4326*

Table 12.8 GHQ12 score, by estimated alcohol consumption level and sex

All with a valid GHQ12 score *1995*

GHQ12 score	Estimated alcohol consumption level (units per week)								Total[a]
	Never drank	Ex-drinker	<1	1-10	>10-21	>21-35	>35-50	>50	
	%	%	%	%	%	%	%	%	%
Men									
0	69	46	63	63	62	57	59	51	60
1-3	22	27	19	26	27	31	27	28	27
4 or more	9	27	18	13	11	12	15	21	13
	Never drank	Ex-drinker	<1	1-7	>7-14	>14-21	>21		
Women									
0	61	47	53	56	54	57	45	*	55
1-3	23	24	27	24	29	25	32	*	26
4 or more	17	30	20	20	17	18	24	*	19
Bases (weighted)									
Men	*112*	*96*	*281*	*1051*	*1013*	*662*	*288*	*303*	*3825*
Women	*251*	*131*	*650*	*1632*	*734*	*317*	*197*	*	*3924*
Bases (unweighted)									
Men	*88*	*103*	*259*	*954*	*883*	*602*	*265*	*283*	*3448*
Women	*274*	*158*	*754*	*1763*	*813*	*346*	*210*	*	*4326*

[a]The total includes informants whose alcohol consumption level was unknown.

Table 12.9 GHQ12 score, by current smoking status and sex

All with a valid GHQ12 score *1995*

GHQ12 score	Current smoking status (cigarettes per day)				Total[a]
	Not a current smoker	Light (1-9)	Moderate (10-19)	Heavy (20 or more)	
	%	%	%	%	%
Men					
0	62	62	59	51	60
1-3	27	23	25	28	27
4 or more	11	15	17	21	13
Women					
0	58	47	52	45	55
1-3	25	29	27	27	26
4 or more	17	24	20	28	19
Bases (weighted)					
Men	*2531*	*220*	*485*	*584*	*3825*
Women	*2518*	*284*	*598*	*521*	*3924*
Bases (unweighted)					
Men	*2222*	*192*	*435*	*594*	*3448*
Women	*2686*	*315*	*695*	*627*	*4326*

[a]The total includes informants whose current smoking status was unknown.

Table 12.10 GHQ12 score, by physical activity level and sex

All with a valid GHQ12 score *1995*

GHQ12 score	Frequency-intensity level						Total[a]
	0	1	2	3	4	5	
	%	%	%	%	%	%	%
Men							
0	51	62	61	63	62	67	60
1-3	28	28	27	25	28	25	27
4 or more	21	10	12	12	11	8	13
Women							
0	52	56	57	54	56	55	55
1-3	27	25	25	25	27	30	26
4 or more	22	19	18	20	18	14	19
Bases (weighted)							
Men	*863*	*620*	*653*	*773*	*378*	*515*	*3825*
Women	*1012*	*705*	*789*	*867*	*336*	*194*	*3924*
Bases (unweighted)							
Men	*818*	*558*	*582*	*735*	*311*	*419*	*3448*
Women	*1096*	*770*	*883*	*980*	*367*	*204*	*4326*

[a]The total includes informants whose frequency-intensity level was unknown.

Table 12.11 Relationship of psychosocial well-being to self-reported health measures, by sex

All with a valid GHQ12 score *1995*

GHQ12 score	Self reported health			Long-standing illness		Acute sickness in last two weeks		Total[a]
	Very good/ good	Fair	Bad/ very bad	Yes	No	Yes	No	
	%	%	%	%	%	%	%	%
Men								
0	66	48	17	47	67	34	64	60
1-3	25	32	31	31	24	36	25	27
4 or more	9	20	52	22	9	30	11	13
Women								
0	61	37	12	43	61	34	59	55
1-3	24	33	28	30	24	29	25	26
4 or more	15	31	59	27	15	37	16	19
Bases (weighted)								
Men	*2948*	*666*	*211*	*1290*	*2535*	*498*	*3327*	*3825*
Women	*3041*	*715*	*169*	*1393*	*2532*	*645*	*3280*	*3924*
Bases (unweighted)								
Men	*2602*	*622*	*224*	*1258*	*2190*	*469*	*2979*	*3448*
Women	*3286*	*827*	*213*	*1611*	*2715*	*724*	*3602*	*4326*

[a]The total is for all informants.

Table 12.12 Estimated odds ratios from logistic regression of high GHQ12 scores

1995

Variable	Odds ratio	Approximate 95% C.I[a].	Variable	Odds ratio	Approximate 95% C.I[a].
Men			**Women**		
Economic activity (p<0.001)			Age (p<0.001)		
Full time student	0.88	0.55, 1.42	16-24[b]	1.00	
In work[b]	1.00		25-34	1.59	1.15, 2.21
Unemployed	3.29	2.43, 4.45	35-44	1.30	0.90, 1.86
Permanently unable to work	6.43	4.93, 8.40	45-54	1.39	0.96, 2.02
Other	1.33	0.77, 2.28	55-64	0.74	0.49, 1.14
Marital status (p=0.003)			Region (p=0.001)		
Married[b]	1.00		Highland & Islands[b]	1.00	
Co-habiting	0.90	0.56, 1.43	Grampian & Tayside	1.62	1.00, 2.64
Widowed	1.27	0.61, 2.65	Lothian & Fife	1.81	1.12, 2.90
Divorced	1.34	0.83, 2.16	Borders, Dumfries & Galloway	1.54	0.85, 2.78
Separated	2.98	1.75, 5.08	Greater Glasgow	2.44	1.52, 3.92
Single	1.03	0.80, 1.32	Lanarkshire, Ayrshire & Arran	1.60	0.99, 2.59
			Forth Valley, Argyll & Clyde	1.64	1.00, 2.68
Alcohol consumption (p=0.013)					
Never drank[b]	1.00		Economic activity (p<0.001)		
Ex-drinker	3.06	1.26, 7.43	Full time student	1.32	0.88, 1.98
<1 unit percent	2.50	1.12, 5.58	In work[b]	1.00	
1-10 units per week	1.87	0.87, 4.03	Unemployed	3.59	2.35, 5.49
>10-21 units per week	1.82	0.84, 3.92	Permanently unable to work	4.47	3.22, 6.22
>21-35 units per week	2.02	0.93, 4.40	Retired	2.02	1.29, 3.14
>35-50 units per week	2.66	1.18, 6.00	Looking after home/other	1.74	1.42, 2.13
>50 units percent	3.25	1.46, 7.21			
			Marital status (p=0.006)		
			Married[b]	1.00	
			Co-habiting	1.15	0.82, 1.63
			Widowed	1.52	0.97, 2.37
			Divorced	1.32	0.94, 1.87
			Separated	1.96	1.35, 2.85
			Single	1.06	0.80, 1.40
			Current smoking status (p=0.001)		
			Not current smoker[b]	1.00	
			Light smoker (1-9 cigarettes per day)	1.45	1.07, 1.96
			Moderate smoker (10-19 cigarettes per day)	1.03	0.82, 1.31
			Heavy smoker (20 or more cigarettes per day)	1.49	1.18, 1.88

[a]C.I. = confidence interval. Weighted data was used in the logistic regression analysis and the odds ratios can be assumed to be approximately unbiased. However as a consequence of using weighted data, the confidence intervals may be slightly too narrow.
[b]Reference category

13 ACCIDENTS

Susan Purdon

SUMMARY

- Information was collected on non-fatal accidents about which a hospital was visited or a doctor consulted.
- The estimated annual accident rate was higher for men than for women (24 per 100 for men, and 15 per 100 for women). For men, there was a very marked inverse relationship between age and accident rate. A similar, but weaker, relationship was observed for women.
- With the exception of those aged 55-64, men consistently had a higher accident rate than women of the same age, but the difference was most marked for those aged 16-34, where the accident rate for men was double that for women of the same age.
- For 58% of accidents help or advice was given at a hospital, and for 54% of accidents help or advice was given by a GP or nurse at a GP's surgery. In 20% of cases informants saw a doctor *and* visited a hospital.
- The average annual work-based accident rate was 12 per 100 for men and 4 per 100 for women. For both sexes the work-based accident rate was particularly high for those aged 16-24.
- Work-based accident rates were found to differ by SIC group, with those working in the agriculture, forestry and fishing, manufacturing, and construction industries having the highest accident rates at over 10 per 100.
- The accident rate for accidents outside of work was found to be associated with frequency of participation in sports. In particular, for those aged 16-44, the non-work accident rate rose from 14 per 100 for men undertaking no moderate or vigorous exercise in a average week and 11 per 100 for women, to more than double these rates for those undertaking moderate or vigorous activity three or more times in an average week.
- There was a very clear relationship between work-based accidents and social class, the accident rate being consistently above the average for those in Social Classes IIIM, IV and V.

13.1 INTRODUCTION AND BACKGROUND

Reducing the number of accidents is a priority for improving health in Scotland.[1] However, achieving a reduction in the number of accidents needs some understanding of how accidents in general occur and to whom. In particular information is needed on the frequency and nature of accidents, about which very little is currently known. A module of questions in the Health Survey fills part of this gap, providing information about the number and causes of non-fatal accidents, the location of accidents and the injuries incurred, and providing detail about the personal characteristics of accident victims.

13.1.1 Accident classification and recall period

The term 'accident' covers a very broad range of events ranging from, say, serious car accidents to, at the other extreme, accidents resulting in minor cuts or bruises. Some means is needed of identifying those of sufficient severity to be of importance in a health context. For the purpose of the Health Survey, accidents were considered to fall into the category of interest if advice about the accident was sought from either a doctor or at a hospital.[2]

Informants were asked to recall how many accidents they had had in the 12 months prior to interview about which they saw a doctor, nurse or other health professional. For those having had at least one accident, detailed information about the nature and cause of the most recent accident was collected.

The reference period of 12 months prior to interview was chosen so as to be sufficiently long to generate details of enough accidents for analysis purposes yet at the same time short enough for informants to accurately remember all, or at least a high proportion of, their accidents. The choice of reference period can be critical when making inferences from recalled events such as accidents. If the reference period is too long then there is a possibility of bias since some accidents from the earlier part of the reference period may be forgotten and, perhaps, other accidents from before the start of the reference period wrongly remembered as being within the reference period. An assumption is made throughout this chapter that the estimates presented are approximately unbiased: there is no internal evidence in the data about the validity of this assumption, and there is no satisfactory external data against which to validate the results.

13.1.2 Coverage of accidents

The survey does not cover all accidents. Fatal accidents are, by definition, excluded. In addition there will be under-representation of accidents that lead to long-term hospitalisation - in particular all accidents leading to twelve months' hospitalisation will be excluded. Accidents that lead to a move out of the household population into the institutional population will also be excluded. Consequently, the accident rates presented in this chapter will be slight under-estimates of true accident rates, although, given that the great majority of accidents do not lead to death, long-term hospitalisation or a move to an institution, the downward bias should be small.

13.1.3 Derivation of accident rates and weighting to compensate for selection bias

Because any one informant may have had more than one accident during the reference period of twelve months, comparisons between sub-groups are based upon the mean number of reported accidents over the reference period. Such an approach tends to give very low figures (typically around 0.2) so, to aid comparisons, the means have been multiplied by a factor of 100 to give an annual accident rate per 100 persons.

Although informants were asked to specify the total number of accidents they had had over the reference period, detailed information was collected on only the most recent accident. Using the raw data to derive estimates about the kinds of accidents people have would lead to biases in the estimates in that this selection process leads to the over-representation of accidents to people for whom accidents are relatively uncommon events. To avoid this bias, analyses that use the detailed data on individual accidents use weighted data. The weight per informant is calculated as equal to the total number of accidents in the reference period.[3] On average, the weights will be largest for those groups with the highest accident rates.[4]

13.2 THE INCIDENCE OF ACCIDENTS AND THEIR CHARACTERISTICS

13.2.1 The incidence of accidents by age and sex

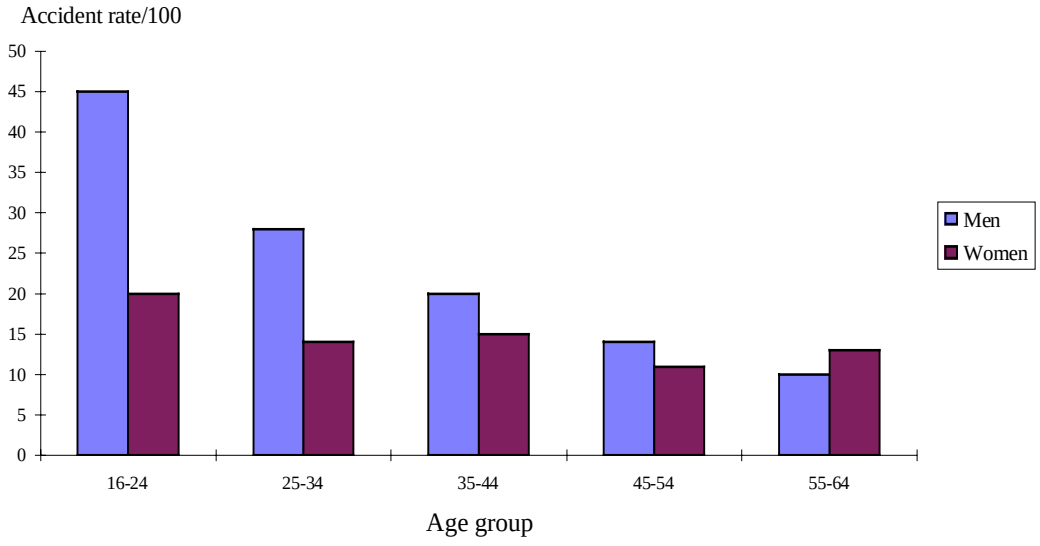
Overall, 18% of men and 13% of women of working age had at least one accident about which they saw a doctor or visited a hospital in the twelve months prior to interview. Three percent of men and 1% of women reported having had more than one such accident.

For men, there was a very marked inverse relationship between age and the likelihood of having had an accident in the reference period, with 30% of men aged 16-24, and 22% of men aged 25-34, having had at least one accident. A similar, but weaker, relationship was observed for women, with 17% of women aged 16-24 having had at least one accident compared with a figure of around 11% for women aged 25 and over. **Table 13.1**

13.2.2 Estimated annual accident rates by age and sex

Table 13.1 also gives estimates of the annual accident rate per 100 persons by age and sex. The average accident rate was 24 per 100 for men and 15 per 100 for women. With the exception of those aged 55-64, men consistently had a higher accident rate than did women of the same age, but the difference was most marked for those aged 16-34, where the accident rate for men was double that for women of the same age. The trends are illustrated in Figure 13A. **Table 13.1, Figure 13A**

Figure 13A: Annual accident rates, by age and sex



13.2.3 Comparison with England

A comparison with data on accidents from the 1995 Health Survey for England[5] showed very little difference in the age-sex specific accident rates between the two countries. **Table 13.2**

13.2.4 Cause of accident

Informants who had at least one accident in the reference period were asked to describe the cause of the accident. Their responses were coded by interviewers into nine categories of accident:

hit by a falling object
fall, slip or trip
road traffic accident
sports or recreational accident
use of tool or implement, or piece of electrical or mechanical equipment
burn or scald
animal or insect bite or sting
another person (including attacks)
other cause

If 'other cause' was coded then the interviewer recorded a short description of the accident. On subsequent inspection of these descriptions it was found that accidents caused by lifting heavy objects were mentioned on enough occasions to merit being listed as an extra category of accident. Consequently, Table 13.3 includes 'lifting' as a separate category.

Some caution is needed in the interpretation of the data on accident type and circumstances derived from this coding. What is coded in individual cases will depend firstly upon how the informant describes the accident, and secondly on how the interviewer interprets that description. For example, an accident in which a person sprains their ankle when jogging may be described as a fall by one informant ('I fell and sprained my ankle') and as a sporting accident by another ('I sprained my ankle when I was out jogging'). If the informant describes the accident to the interviewer as 'I fell and sprained my ankle when I was running', then some interviewers may code this as a fall automatically whereas others may probe further, establish that 'running' was actually jogging, and code it as a sporting accident. Interviewers were briefed to code more than one category per accident if appropriate, the intention being to collect as full a description of the accident as possible in order to avoid these sorts of classification problems.

One obvious implication of this ambiguity in coding is that rates cannot be reliably derived for different types of accident. For example, it would not be realistic to assume that all sporting accidents were coded as such and estimates of the number of sporting accidents occurring per 100 persons would be an underestimate.

Table 13.3 gives, by age and sex, the categories of accident recorded by interviewers. Some clear trends emerge. For example, accidents were more likely to be recorded as 'sports or recreational' for men than for women, and for younger rather than older informants. The most commonly coded type of accident for women, across all age groups, was a fall or trip. Men's accidents were more evenly divided between falls, sports accidents and accidents caused by the use of a tool or other implement.

Table 13.3

13.2.5 Location of accidents

The location of accidents also differed by age and sex. A higher percentage of the accidents suffered by women happened in the home or garden - 39% of accidents to women happened in the home or garden, compared with 24% of accidents to men. In contrast, a higher percentage of men's than women's accidents happened at a workplace or other public building, or in a place for sports or recreation.

As well as these differences by sex, there were also trends by age. In particular the percentage of accidents happening in a place for sports or recreation was significantly higher for men aged 16-34 and for women aged 16-24 than for those in older age-groups. **Table 13.4**

Table 13.5 shows the location of falls, slips and trips (the most common type of accident) by age. **Table 13.5**

13.2.6 Type of injury

Informants were asked to describe the injuries incurred in their most recent accident using twelve categories of injury:

broken bones
dislocated joints
losing consciousness
straining or twisting a part of the body
cutting, piercing or grazing a part of the body
bruising, pinching or crushing a part of the body
swelling or tenderness in some part of the body
something stuck in the eye, throat, ear or other part of the body
burning or scalding
poisoning
other injury to internal parts of the body
animal or insect bite or sting

For each accident, all relevant categories were recorded.

Table 13.6 gives the distribution of types of injury by sex and broad age band. Few, if any, of the differences were significant, the main types of injury recorded by both sexes and by the different age-groups being swelling or tenderness, straining or twisting, cuts and grazes, and bruising. Compared with accidents to women, accidents to men were slightly more likely to have resulted in cuts or grazes. For both sexes, around 15% of accidents resulted in broken bones. **Table 13.6**

13.2.7 Source of help or advice about accidents

By definition advice was given by either a doctor, nurse or other health professional for all of the accidents reported on (although in a proportion of cases the informant saw a nurse at a doctor's surgery rather than the doctor). In 58% of cases help or advice was given at a hospital and in 54% of cases help or advice was given by a GP or a nurse at a GP's surgery. In 20% of cases advice was given by both a GP and at a hospital, although the order of visit was not established. Only in 8% of cases was advice given only by some other medical professional (such as a doctor at a workplace).

Table 13.7 gives the source of advice by age and sex. Some differences are apparent but there are no clear patterns. Table 13.8, however, which shows the source of advice by the type of area informants lived in,[6] gives a much clearer pattern. For example, advice was sought from a hospital in respect of 71% of the accidents to those living in urban areas, compared with around half of those living in small country towns, villages or other rural areas. Suburban areas fell between these two extremes at 60%. Furthermore, advice was sought from a hospital but not a GP (thus excluding those referred to a hospital by a GP) in respect of almost half of the accidents suffered by those in urban areas, compared with less than one-third in rural areas. These figures suggest that where advice is sought from was dependent not only upon the severity and type of accident but also upon geographical location. **Tables 13.7, 13.8**

Table 13.9 shows the relationship between type of injury and the source of advice. The patterns are largely as might be expected. Advice was sought from a hospital for most accidents that resulted in broken bones (88%) or that caused consciousness loss (83%). In contrast, for accidents resulting in straining or twisting of a part of the body, informants most commonly sought advice only from their GP (49%). **Table 13.9**

13.2.8 Prevention of accidents

Informants were asked to judge whether or not anything could have been done to prevent their accident. For 41% of accidents, informants judged that nothing could have been done. In a further 41% of accidents, informants judged they could have prevented it themselves, and in 21% of accidents informants judged that others could have prevented the accident. For a small proportion of accidents it was thought that the accident could have been prevented by both the informant themselves *and* by others.

To an extent, judgements about preventability differed according to the location of the accident. Informants judged that just 40% of accidents occurring in a place for sport or recreation could have been prevented, compared with around 60% for accidents occurring elsewhere. **Table 13.10**

13.3 ACCIDENTS AT WORK

13.3.1 Accidents at work by age and sex

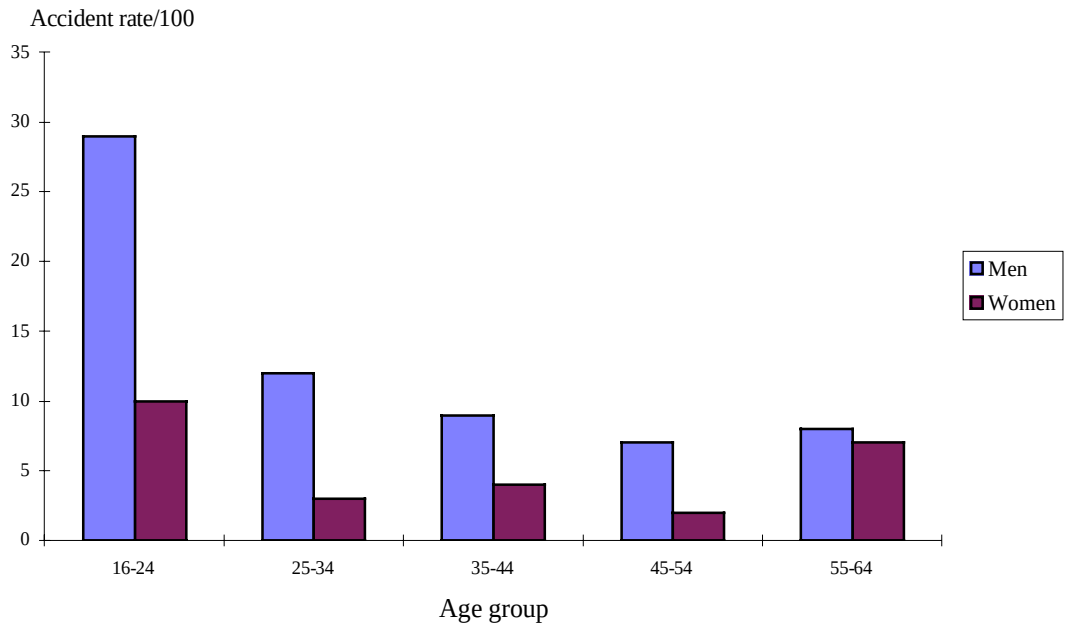
For those in a paid job (71% of men and 58% of women), 46% of the accidents to men and 29% of the accidents to women, happened when they were at work. The sample numbers are too small to detect any trends by age in these figures. **Tables 13.11, 13.12**

Rather more informative than the ratio between work-based accidents and non-work based accidents are the work-based accident rates themselves. These are calculated as the total number of work-based accidents in a twelve month period divided by the number of people in work, giving an accident rate per person in work. The denominator can be estimated from the survey data as the number whose main activity status at the time of interview was ‘in paid employment’. This leads to a slight upward bias in the estimates of work-based accident rates since the denominator excludes some persons whose main activity was other than ‘in paid work’ but who nevertheless had a paid job. Some students for example might fall into this category. Nevertheless the biases should be small.

Table 13.13 gives the estimated work-based accident rates per 100 persons in work by age and sex. A very clear pattern emerges: men had higher work-based accident rates than women across all age groups, and, for both sexes, the work-based accident rate

was particularly high for those aged 16-24. The average work-based accident rate for men was 12 per 100 and for women was 4 per 100. **Table 13.13, Figure 13B**

Figure 13B: Annual work-based accident rates, by age and sex



13.3.2 Causes of accidents at work

The most common cause of work-based accidents (as recorded by the interviewer - see Section 13.2.4 for a discussion of the interpretation of 'cause') was the use of a tool, implement or piece of electrical or mechanical equipment (35% of work-based accidents). One in five (21%) work-based accidents involved a fall or slip and 11% were recorded as being caused by lifting some object. There were no major differences in the distribution of causes by sex. **Table 13.14**

13.3.3 Accidents at work by SIC group[7]

Table 13.15 gives the estimated work-based accident rates by the SIC group of the informant. As might be expected, accident rates were significantly higher than the overall average for those working in the agriculture, forestry and fishing, manufacturing, and construction industries, at over 10 accidents per 100.[8]

Table 13.15, Figure 13C

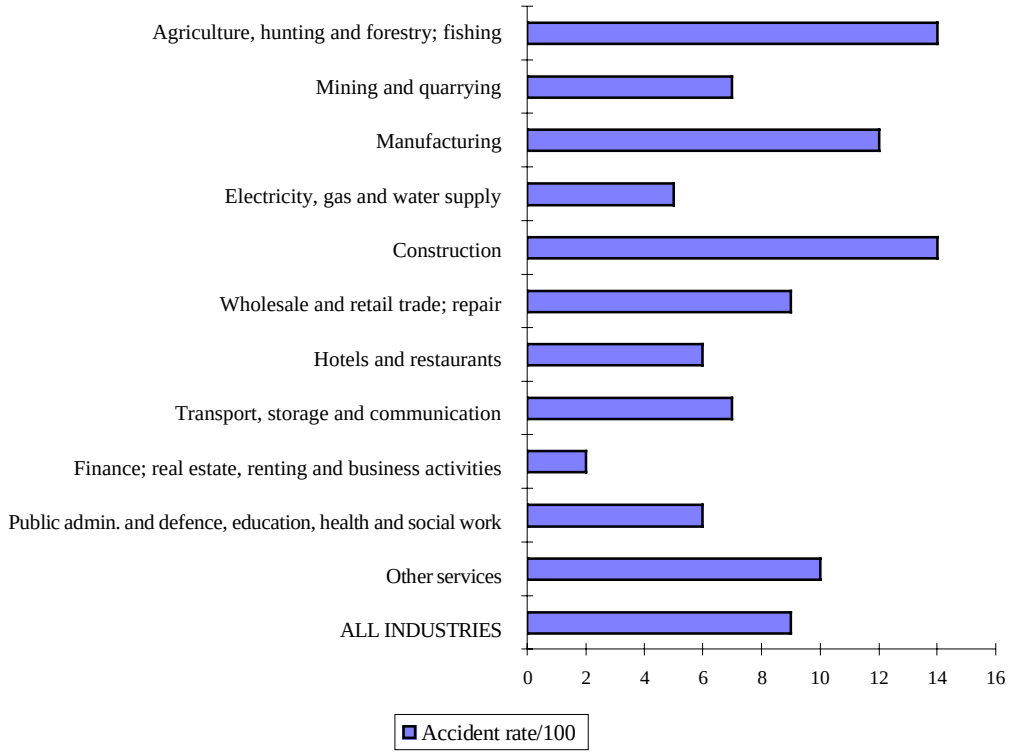
13.3.4 Location of work-based accidents

Overall, 65% of all work-based accidents happened indoors. Not surprisingly this percentage differed by SIC group, from 42% for those working in agriculture, hunting and fishing, mining, electricity, gas and water supply, and construction combined, to 79% for those working in wholesale and retail trades. **Table 13.16**

13.3.5 Time off work

For 53% of accidents at work, informants reported having to take time off work. The sample numbers are too small for any differences by age or sex to be detected. (Table not shown.)

Figure 13C: Annual work-based accident rates, by SIC group



13.4 ACCIDENTS OUTSIDE OF WORK

13.4.1 Accident rates for non-work accidents by age and sex

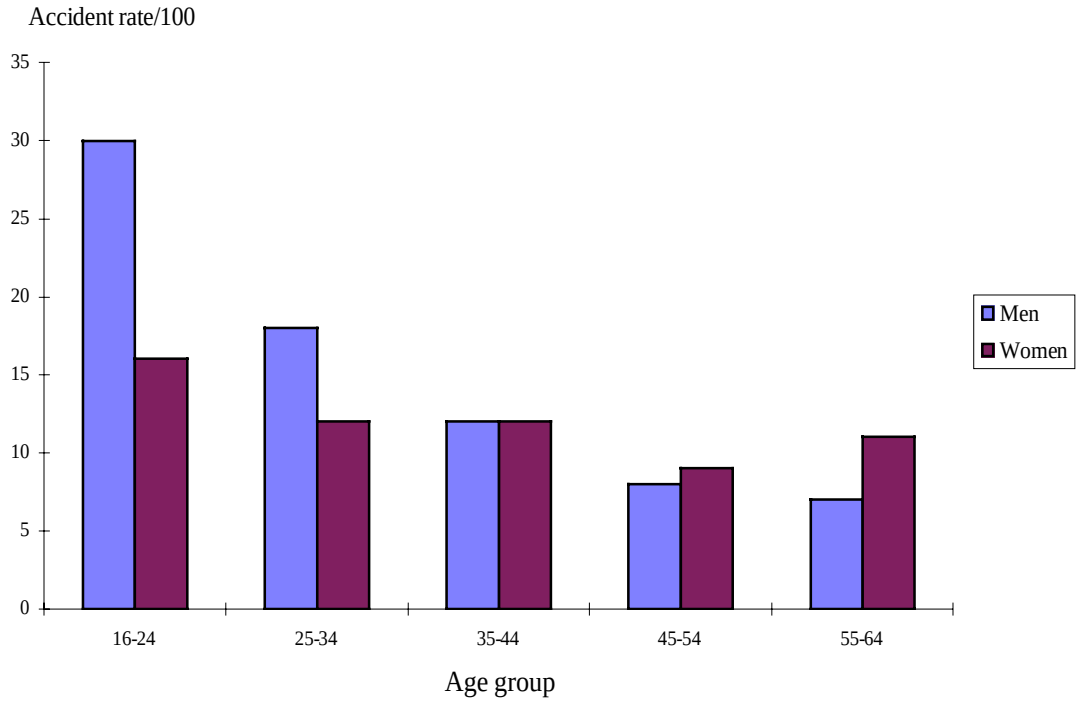
Although a fairly high proportion of accidents to informants occurred at work, the majority of accidents occurred outside of the workplace (64% of accidents to men and 83% of accidents to women, these percentages including informants who were not in work). The rates for accidents outside of work, by age and sex, are given in Table 13.17.

The pattern by age and sex was broadly the same for non-work accidents as for work-based accidents, with the accident rate being significantly higher than average for those aged 16-24 of both sexes. However, the difference between the sexes, both overall and within age-groups, was less marked, the non-work accident rates being only slightly lower for women (at 12 per 100) than for men (at 15 per 100). The figures suggest that women aged 55-64 actually had a slightly higher non-work accident rate than did men of the same age. **Table 13.17, Figure 13D**

13.4.2 Accidents outside of work and sports participation

As might be expected, given that a fairly high proportion of accidents happen in places for sports or recreation (see Table 13.4), there is an association between frequency of participation in sports and non-work accident rates. The correlation is particularly high for those aged 16-44, the accident rate for men of this age group rising from 14 per 100 for those who, in an average week, undertook no sports of a moderate or vigorous intensity, to 33 per 100 for those who, in a average week, undertook sports of moderate to vigorous intensity three or more times a week. The figures for women of this age group were 11 per 100 and 23 per 100 respectively. **Table 13.18**

Figure 13D: Annual non-work accident rates, by age and sex



13.5 ACCIDENTS AND SOCIAL CLASS

Table 13.19 gives 'work-based accident', 'non-work accident' and 'all accident' rates by age group, sex and social class.

There is no obvious relationship between social class and the non-work accident rate, the accident rate within groups defined by age and sex being broadly constant across the social classes.

In contrast, there is a very clear relationship between social class and the work-based accident rate, the accident rate being consistently above average for those in Social Classes IIIM, IV and V. The difference between the social classes was particularly marked for men aged 16-44: those in manual occupations had a work-based accident rate more than three times that for those in non-manual occupations. **Table 13.19**

13.6 REGIONAL VARIATIONS IN ACCIDENT RATES

'Work-based accident', 'non-work accident' and 'all accident' rates by age group, sex and region are given in Table 13.20. **Table 13.20**

Although there appears to be some variation in the accident rates by region none of the observed differences were statistically significant. Nevertheless, there are differences between the regions that partially explain even the small variations observed. For example, men in Highland & Islands and in Borders, Dumfries & Galloway were more likely than average to be working in agriculture, forestry and fishing and in construction (the SIC groups with the highest work-based accident rates), whereas men in Greater Glasgow were more likely to be working in the service sectors where the work-based accident rate was lower than average. These differences partially explain the observed differences in work-based accident rates by region. (Table not shown.)

References and notes

1 The Scottish Office. *Scotland's Health: A Challenge To Us All: A National Policy Statement.* HMSO, Edinburgh, 1991.

2 In a few instances informants included consultations with a nurse and these have been accepted.

3 In a small number of cases the number of reported accidents was very large. In these cases a maximum weight of six was applied. The weights were applied after firstly multiplying them by the more general weights used to adjust for unequal probabilities of selection and non-response bias (as described in the Technical Report).

4 In particular, men aged 16-24.

5 The equivalent accidents in the 1995 Health Survey for England were described as 'major' accidents.

6 The classification of areas to urban/city centre, small country town, suburban, rural residential/village, and rural agricultural sub-groups was based on interviewers' assessments of the type of area the address was located in.

7 Central Statistical Office. *Standard Industrial Classification of Economic Activities*. HMSO, London, 1992.

8 In a few cases the SIC group of the informant may have changed between the time of accident and the time of interview. Any such changes could have a small biasing effect on the accidents rates per SIC group reported.

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Table 13.1 Number of accidents in twelve months prior to interview, by age and sex

All *1995*

Number of accidents	**Age**					**Total**
	16-24	25-34	35-44	45-54	55-64	
	%	%	%	%	%	%
Men						
0	70	78	84	88	90	82
1	21	18	14	11	10	15
2	5	2	2	1	0	2
3+	4	2	0	1	0	1
Accident rate per 100 persons	45	28	20	14	10	24
Standard error of the accident rate	4.6	2.3	2.3	1.6	1.4	1.1
Women						
0	83	88	87	90	89	87
1	15	10	11	10	10	11
2	2	1	2	0	0	1
3+	1	0	0	0	1	0
Accident rate per 100 persons	20	14	15	11	13	15
Standard error of the accident rate	2.5	1.6	1.5	1.5	1.3	0.8
Bases (weighted)						
Men	*724*	*980*	*851*	*749*	*601*	*3905*
Women	*696*	*991*	*871*	*778*	*665*	*4001*
Bases (unweighted)						
Men	*475*	*840*	*811*	*709*	*689*	*3524*
Women	*547*	*1160*	*992*	*825*	*884*	*4408*

Table 13.2 Comparison of annual accident rates per 100 persons for Scotland and England, by age and sex

All *1995*

Accident rate per 100 persons	**Age**					**Total**
	16-24	25-34	35-44	45-54	55-64	
			Per 100 persons			
Men						
Scotland	45	28	20	14	10	24
England	42	34	18	17	11	24
Women						
Scotland	20	14	15	11	13	15
England	23	13	12	12	13	14
Bases Scotland (weighted)						
Men	*724*	*980*	*851*	*749*	*601*	*3905*
Women	*696*	*991*	*871*	*778*	*665*	*4001*
Bases Men (unweighted)						
Scotland	*475*	*840*	*811*	*709*	*689*	*3524*
England	*931*	*1395*	*1386*	*1183*	*1000*	*5895*
Bases Women (unweighted)						
Scotland	*547*	*1160*	*992*	*825*	*884*	*4408*
England	*1084*	*1738*	*1502*	*1380*	*1120*	*6824*

Table 13.3 Causes of accident, by age and sex

Accidents[a] *1995*

Cause of accident	Age					Total
	16-24	25-34	35-44	45-54	55-64	
	%	%	%	%	%	%
Men						
Hit by a falling object	6	4	6	4	3	5
Fall, slip or trip	23	22	25	32	38	25
Road traffic accident	2	7	5	3	3	4
Sports or recreational accident	28	23	13	7	-	20
Use of tool, implement or equipment	20	25	13	20	22	20
Burn or scald	4	-	6	5	-	3
Animal or insect bite or sting	2	1	4	3	7	3
Another person (including attacks)	12	9	6	4	2	9
Lifting	1	4	6	5	11	4
Other cause	6	8	17	19	16	11
Women						
Hit by a falling object	6	4	1	4	7	4
Fall, slip or trip	32	48	40	50	56	44
Road traffic accident	8	8	9	8	2	7
Sports or recreational accident	17	8	6	4	-	8
Use of tool, implement or equipment	10	9	11	8	14	10
Burn or scald	4	2	5	2	1	3
Animal or insect bite or sting	4	3	5	6	6	5
Another person (including attacks)	10	5	6	-	1	5
Lifting	5	4	3	4	3	4
Other cause	7	10	16	16	10	11
Bases (weighted)						
Men	*321*	*271*	*168*	*103*	*62*	*925*
Women	*141*	*140*	*132*	*82*	*86*	*582*
Bases (unweighted)						
Men	*141*	*189*	*140*	*90*	*71*	*631*
Women	*82*	*137*	*123*	*86*	*96*	*524*

Columns add to more than 100% because in a few cases more than one cause was recorded.

[a]Accidents are weighted because details are collected on just one accident per informant. See Section 13.1.3 of text for details.

Table 13.4 Location of accident, by age and sex

Accidents[a] *1995*

Location of accident	Age					Total
	16-24	25-34	35-44	45-54	55-64	
	%	%	%	%	%	%
Men						
Home or garden	11	26	30	34	42	24
Place for sports or recreation	32	27	19	13	4	24
Other outdoors	24	22	21	27	27	23
Workplace or public building	33	25	30	25	28	29
Women						
Home or garden	22	50	37	41	47	39
Place for sports or recreation	25	8	8	9	3	12
Other outdoors	27	26	30	39	28	29
Workplace or public building	27	16	24	10	22	21
Bases (weighted)						
Men	*321*	*271*	*168*	*103*	*62*	*925*
Women	*141*	*140*	*132*	*82*	*86*	*582*
Bases (unweighted)						
Men	*141*	*189*	*140*	*90*	*71*	*631*
Women	*82*	*137*	*123*	*86*	*96*	*524*

[a]Accidents are weighted because details are collected on just one accident per informant. See Section 13.1.3 of text for details.

Table 13.5 Location of falls, slips and trips, by age

All accidents involving falls, slips or trips *1995*

Location of accidents	Age					Total
	16-24	25-34	35-44	45-54	55-64	
	%	%	%	%	%	%
Home or garden	20	52	34	39	49	38
Place for sports or recreation	20	8	13	7	4	11
Other outdoors	31	18	34	43	33	30
Workplace or public building	29	22	19	12	14	20
Bases (weighted)	*120*	*126*	*94*	*73*	*72*	*486*
Bases (unweighted)	*59*	*108*	*95*	*74*	*89*	*425*

Table 13.6 Type of injury, by age and sex

Accidents[a] *1995*

Type of injury	**Men**		**Women**		**Total**
	16-44	45-64	16-44	45-64	
	%	%	%	%	%
Broken bones	16	13	12	17	15
Dislocated joints	4	3	4	2	4
Losing consciousness	2	8	5	4	4
Straining or twisting a part of the body	33	21	37	31	32
Cutting, piercing or grazing a part of the body	33	33	24	23	30
Bruising, pinching or crushing a part of the body	27	26	29	37	28
Swelling or tenderness in some part of the body	38	24	42	36	37
Something stuck in the eye, throat, ear or other part of the body	7	9	2	2	5
Burning or scalding	3	3	4	2	3
Poisoning	3	1	2	2	2
Other injury to internal parts of the body	2	2	3	-	2
Animal or insect bite or sting	2	3	3	4	2
Other injury	2	0	1	2	1
Bases (weighted)	*761*	*166*	*415*	*168*	*1510*
Bases (unweighted)	*471*	*162*	*344*	*182*	*1159*

Columns add to more than 100% because in some cases more than one type of injury was recorded.

[a]Accidents are weighted because details are collected on just one accident per informant. See Section 13.1.3 of text for details.

Table 13.7 Source of advice about accidents, by age and sex

Accidents[a] *1995*

Source of advice	Age					Total
	16-24	25-34	35-44	45-54	55-64	
	%	%	%	%	%	%
Men						
Hospital/not GP	42	40	30	42	36	39
GP/not hospital[b]	27	26	45	34	43	32
Both hospital and GP[b]	25	26	19	19	10	22
Other medical professional	6	8	7	5	12	7
Women						
Hospital/not GP	36	34	43	28	36	36
GP/not hospital[b]	42	31	32	39	42	37
Both hospital and GP[b]	15	19	15	21	18	17
Other medical professional	7	16	9	13	5	10
All						
Hospital/not GP	40	38	35	36	36	38
GP/not hospital[b]	31	28	39	36	43	34
Both hospital and GP[b]	22	23	17	20	14	20
Other medical professional	7	11	8	9	7	8
Bases (weighted)						
Men	*321*	*271*	*168*	*103*	*62*	*925*
Women	*141*	*140*	*132*	*82*	*86*	*582*
All	*462*	*411*	*300*	*185*	*148*	*1507*
Bases (unweighted)						
Men	*141*	*189*	*140*	*90*	*71*	*631*
Women	*82*	*137*	*123*	*86*	*96*	*524*
All	*223*	*326*	*263*	*176*	*167*	*1155*

[a]Accidents are weighted because details are collected on just one accident per informant. See Section 13.1.3 of text for details.
[b]Visits to a GP include those to a nurse at a GP's surgery.

Table 13.8 Source of advice about accidents, by residential area type

Accidents[a] *1995*

Source of advice	Residential area type					
	Urban/city centre	Small country town	Suburban	Rural residential/ village	Rural agricultural	
	%	%	%	%	%	%
Hospital/not GP	49	31	40	29	21	38
GP/not hospital[b]	24	38	31	46	46	34
Both hospital and GP[b]	22	23	20	16	30	20
Other medical professional	6	7	9	9	3	8
Bases (weighted)	*147*	*119*	*939*	*220*	*85*	*1510*
Bases (unweighted)	*127*	*101*	*684*	*166*	*81*	*1159*

[a]Accidents are weighted because details are collected on just one accident per informant. See Section 13.1.3 of text for details.
[b]Visits to a GP include those to a nurse at a GP's surgery.

Table 13.9 Source of advice, by type of injury

Accidents[a] *1995*

Source of advice						*Bases (weighted, unweighted in brackets)*
		Hospital/not GP	GP/not hospital[b]	Both hospital and GP[b]	Other medical professional	
Broken bones	%	53	11	35	1	*222 (182)*
Dislocated joints	%	[30]	[31]	[30]	[9]	*53 (41)*
Losing consciousness	%	[63]	[9]	[20]	[9]	*59 (48)*
Straining or twisting a part of the body	%	24	49	19	8	*490 (388)*
Cutting, piercing or grazing a part of the body	%	45	24	25	7	*446 (325)*
Bruising, pinching or crushing a part of the body	%	37	24	30	9	*430 (349)*
Swelling or tenderness in some part of the body	%	37	26	28	9	*563 (409)*
Something stuck in the eye, throat, ear or other part of the body	%	43	21	34	3	*78 (50)*

[a]Accidents are weighted because details are collected on just one accident per informant. See Section 13.1.3 of text for details.
[b]Visits to a GP include those to a nurse at a GP's surgery

Table 13.10 Whether accident could have been prevented, by location of accident

Accidents[a] *1995*

Who accident could be prevented by	**Location**				**Total**
	Home or garden	Place for sports or recreation	Other outdoors	Workplace or public building	
	%	%	%	%	%
Accident could have been prevented:					
- by informant	57	31	33	37	41
- by others	8	10	29	35	21
Accident could not have been prevented	36	60	41	32	41
Bases (weighted)	*442*	*295*	*386*	*387*	*1510*
Bases (unweighted)	*371*	*191*	*331*	*266*	*1159*

Columns add to more than 100% because in some cases informants claimed an accident could have been prevented both by themselves and others.

[a]Accidents are weighted because details are collected on just one accident per informant. See Section 13.1.3 of text for details.

Table 13.11 Percentage of persons in paid work, by age and sex

1995

Sex	Age					Total
	16-24	25-34	35-44	45-54	55-64	
	%	%	%	%	%	%
Men	49	84	86	76	49	71
Women	44	65	71	67	32	58
Bases (weighted)						
Men	*723*	*980*	*851*	*749*	*600*	*3903*
Women	*695*	*990*	*870*	*777*	*665*	*3997*
Bases (unweighted)						
Men	*475*	*840*	*811*	*709*	*689*	*3524*
Women	*547*	*1160*	*992*	*825*	*884*	*4408*

Table 13.12 Percentage of accidents occurring at work, by age and sex

Accidents of those in paid work at the time of accident[a] *1995*

Sex	Age					Total
	16-24	25-34	35-44	45-54	55-64	
	%	%	%	%	%	%
Men	44	43	48	54	[58]	46
Women	37	21	27	20	[49]	29
Bases (weighted)						
Men	*234*	*228*	*142*	*74*	*38*	*716*
Women	*81*	*91*	*99*	*54*	*32*	*357*
Bases (unweighted)						
Men	*98*	*159*	*117*	*66*	*40*	*480*
Women	*50*	*96*	*88*	*55*	*29*	*318*

[a]Accidents are weighted because details are collected on just one accident per informant. See Section 13.1.3 of text for details.

Table 13.13 Work-based annual accident rates per 100 persons, by age and sex

Those in work at time of interview *1995*

Accident rate	**Age**					**Total**
	16-24	25-34	35-44	45-54	55-64	
			Per 100 persons in work			
Men						
Accident rate per 100 persons	29	12	9	7	8	12
Standard error of the accident rate	5.7	1.7	1.8	1.5	1.5	1.1
Women						
Accident rate per 100 persons	10	3	4	2	7	4
Standard error of the accident rate	2.6	0.9	1.1	0.6	1.9	0.7
Bases (weighted)						
Men	*358*	*826*	*732*	*572*	*292*	*2779*
Women	*307*	*641*	*617*	*517*	*216*	*2299*
Bases (unweighted)						
Men	*248*	*700*	*672*	*516*	*310*	*2446*
Women	*238*	*726*	*684*	*529*	*273*	*2450*

Table 13.14 Causes of work-based accidents, by sex

Work-based accidents[a] *1995*

Cause of accident	**Sex**		**Total**
	Men	Women	
	%	%	%
Hit by a falling object	8	7	8
Fall, slip or trip	22	21	21
Road traffic accident	3	1	3
Sports or recreational accident	1	-	1
Use of tool, implement or equipment	36	34	35
Burn or scald	3	2	3
Animal or insect bite or sting	5	4	5
Another person (including attacks)	3	7	4
Lifting	8	17	11
Other cause	14	8	13
Bases (weighted)	*330*	*100*	*431*
Bases (unweighted)	*226*	*85*	*311*

Columns add to more than 100% because in a few cases more than one cause was recorded.
[a]Accidents are weighted because details are collected on just one accident per informant. See Section 13.1.3 of text for details.

Table 13.15 Work-based accident rates per 100 persons, by SIC group

Those in work at time of interview *1995*

SIC Group	Work-based accident rate per 100 persons	*Base (weighted)*	*Base (unweighted)*
Agriculture, hunting, and forestry	14	*117*	*131*
Fishing	[21]	*6*	*6*
Mining and quarrying	7	*86*	*79*
Manufacturing	12	*946*	*881*
Electricity, gas and water supply	5	*57*	*54*
Construction	14	*370*	*326*
Wholesale and retail trade; repair	9	*704*	*657*
Hotels and restaurants	6	*207*	*217*
Transport, storage and communication	7	*277*	*254*
Financial intermediation	1	*169*	*158*
Real estate, renting and business activities	2	*379*	*365*
Public admin. and defence	8	*367*	*341*
Education	4	*377*	*383*
Health and social work	7	*678*	*701*
Other services	11	*224*	*229*
ALL*	9	*5078*	*4814*

*Includes informants without an SIC code.

Table 13.16 Location of work-based accidents, by broad SIC grouping

Work-based accidents *1995*

Combined SIC group	Percentage of accidents occurring indoors	*Base (weighted)*	*Base (unweighted)*
Agriculture, hunting, and forestry; fishing	[17]	*18*	*15*
Mining and quarrying	[51]	*6*	*7*
Manufacturing	69	*110*	*70*
Electricity, gas and water supply	[20]	*3*	*4*
Construction	[51]	*53*	*45*
Wholesale and retail trade; repair	[79]	*66*	*44*
Hotels and restaurants	[100]	*12*	*6*
Transport, storage and communication	[42]	*19*	*13*
Finance; real estate, renting and business activities	[76]	*11*	*9*
Public admin. and defence; education; health and social work	82	*89*	*73*
Other services	[11]	*26*	*15*

* Includes informants without an SIC code

Table 13.17 Accident rates per 100 persons for non-work accidents, by age and sex

All *1995*

Accident rate	Age					Total
	16-24	25-34	35-44	45-54	55-64	
			Per 100 persons			
Men						
Accident rate per 100 persons	30	18	12	8	7	15
Standard error of the accident rate	3.7	2.0	1.7	1.2	1.0	0.9
Women						
Accident rate per 100 persons	16	12	12	9	11	12
Standard error of the accident rate	2.3	1.4	1.2	1.4	1.1	0.7
Bases (weighted)						
Men	*724*	*980*	*851*	*749*	*601*	*3905*
Women	*696*	*991*	*871*	*778*	*665*	*4001*
Bases (unweighted)						
Men	*475*	*840*	*811*	*709*	*689*	*3524*
Women	*547*	*1160*	*992*	*825*	*884*	*4408*

Table 13.18 Non-work accident rates per 100 persons, by frequency of sporting activity, age and sex

All *1995*

Frequency of sporting activity[a]	Men		Women		Total
	16-44	45-64	16-44	45-64	
			Per 100 persons		
0	14	7	11	10	10
1	15	9	12	10	13
2	22	11	15	6	17
3 or more	33	[1]	23	[23]	28
Total	19	8	13	10	14
Bases (weighted)					
0	*952*	*964*	*1149*	*946*	*4012*
1	*705*	*270*	*767*	*356*	*2098*
2	*401*	*75*	*413*	*105*	*994*
3 or more	*494*	*40*	*226*	*36*	*797*
Total	*2553*	*1349*	*2555*	*1443*	*7900*
Bases (unweighted)					
0	*837*	*1004*	*1235*	*1134*	*4210*
1	*571*	*282*	*809*	*405*	*2067*
2	*329*	*70*	*420*	*129*	*948*
3or more	*389*	*42*	*235*	*41*	*707*
Total	*2126*	*1398*	*2699*	*1709*	*7932*

[a]Number of moderate or vigorous sports undertaken in an average week.

Table 13.19 Accident rates per 100 persons, by age, sex and social class of informant

All *1995*

Accident rate per 100 persons	Social class of informant				Total[b]
	I and II	IIINM	IIIM	IV and V	
			Per 100 persons		
Men 16-44					
Work-based accident rate[a]	4	5	23	16	14
Non-work accident rate	16	23	16	20	19
All accident rate	20	28	36	32	30
Men 45-64					
Work-based accident rate[a]	4	-	13	6	7
Non-work accident rate	7	7	6	10	8
All accident rate	11	7	13	13	12
Women 16-44					
Work-based accident rate[a]	3	2	10	8	5
Non-work accident rate	13	12	11	12	13
All accident rate	16	14	18	17	16
Women 45-64					
Work-based accident rate[a]	2	1	5	7	4
Non-work accident rate	10	9	11	10	10
All accident rate	12	9	13	13	12
Bases (weighted)					
Men 16-44	*607*	*268*	*768*	*485*	*2553*
Men 45-64	*447*	*103*	*509*	*249*	*1349*
Men 16-44 in paid work	*572*	*247*	*663*	*364*	*1915*
Men 45-64 in paid work	*352*	*79*	*282*	*134*	*864*
Women 16-44	*507*	*852*	*163*	*565*	*2555*
Women 45-64	*355*	*421*	*133*	*436*	*1443*
Women 16-44 in paid work	*424*	*628*	*113*	*340*	*1566*
Women 45-64 in paid work	*225*	*217*	*65*	*214*	*733*
Bases (unweighted)					
Men 16-44	*552*	*221*	*646*	*423*	*2126*
Men 45-64	*426*	*105*	*525*	*294*	*1396*
Men 16-44 in paid work	*522*	*198*	*541*	*306*	*1620*
Men 45-64 in paid work	*312*	*72*	*281*	*143*	*826*
Women 16-44	*576*	*892*	*194*	*638*	*2699*
Women 45-64	*434*	*485*	*173*	*505*	*1709*
Women 16-44 in paid work	*480*	*629*	*124*	*360*	*1648*
Women 45-64 in paid work	*260*	*228*	*71*	*226*	*802*

[a]Calculated per 100 persons in work

[b]The total column includes those for whom a social class could not be attributed.

Table 13.20 Accident rates per 100 persons, by region, age and sex

All *1995*

Accident rate per 100 persons	Region							Total
	Highland & Islands	Grampian & Tayside	Lothian & Fife	Borders, Dumfries & Galloway	Greater Glasgow	Lanarkshire, Ayrshire & Arran	Forth Valley, Argyll & Clyde	
				Per 100 persons				
Men 16-44								
Work-based accident rate[a]	21	17	10	20	8	14	16	14
Non-work accident rate	20	16	19	19	20	18	25	19
All accident rate	36	30	27	35	25	29	37	30
Men 45-64								
Work-based accident rate[a]	8	9	4	16	8	6	6	7
Non-work accident rate	8	7	5	8	8	7	13	8
All accident rate	14	14	8	20	12	10	17	12
Women 16-44								
Work-based accident rate[a]	4	4	4	8	3	5	7	5
Non-work accident rate	16	12	13	7	13	15	14	13
All accident rate	19	15	15	13	14	18	19	16
Women 45-64								
Work-based accident rate[a]	1	3	5	3	2	1	10	4
Non-work accident rate	8	13	9	9	10	8	11	10
All accident rate	9	15	12	10	11	8	16	12
Bases (weighted)								
Men 16-44	*140*	*511*	*618*	*110*	*390*	*436*	*348*	*2553*
Men 45-64	*73*	*242*	*278*	*69*	*239*	*268*	*180*	*1349*
Men 16-44 in paid work	*110*	*392*	*466*	*88*	*258*	*341*	*262*	*1915*
Men 45-64 in paid work	*51*	*190*	*196*	*48*	*118*	*145*	*116*	*864*
Women 16-44	*132*	*424*	*590*	*118*	*480*	*451*	*362*	*2555*
Women 45-64	*78*	*258*	*273*	*76*	*284*	*280*	*193*	*1443*
Women 16-44 in paid work	*81*	*268*	*358*	*74*	*266*	*269*	*249*	*1566*
Women 45-64 in paid work	*43*	*143*	*156*	*48*	*124*	*120*	*100*	*733*
Bases (unweighted)								
Men 16-44	*206*	*374*	*456*	*168*	*296*	*350*	*276*	*2126*
Men 45-64	*150*	*216*	*253*	*128*	*212*	*257*	*182*	*1398*
Men 16-44 in paid work	*162*	*297*	*350*	*135*	*191*	*276*	*209*	*1620*
Men 45-64 in paid work	*94*	*157*	*163*	*80*	*93*	*129*	*110*	*826*
Women 16-44	*249*	*386*	*541*	*228*	*450*	*481*	*364*	*2699*
Women 45-64	*176*	*265*	*284*	*165*	*287*	*323*	*209*	*1709*
Women 16-44 in paid work	*153*	*249*	*329*	*145*	*246*	*282*	*244*	*1648*
Women 45-64 in paid work	*90*	*135*	*149*	*99*	*104*	*128*	*97*	*802*

[a]Calculated per 100 persons in work

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