

diet

dental health

smoking

obesity

physical activity

mental health

# The Scottish Health Survey

## 2003

Summary of Key Findings

asthma

alcohol

cardiovascular disease



# The Scottish Health Survey

Summary of Key Findings

2003



ISBN: 0 7559 4782 7

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Astron B42805 11/05

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# INTRODUCTION

The **Scottish Health Survey** provides reliable information on the health and health-related behaviours of people living in private households. Among the Surveys' aims are to estimate the prevalence of a range of health conditions and to monitor progress towards Scottish health and dietary targets.

The 2003 survey is the third in a series which began in 1995 with a survey of adults aged 16-64. The 1998 survey also included children aged 2-15 and adults aged 65-74 for the first time. The 2003 survey did not have any age limits and included children from 0 upwards and adults aged 16+. All three surveys were commissioned by what is now the Scottish Executive Health Department. The first two surveys were conducted by the Joint Health Surveys Unit (JHSU) of the National Centre for Social Research (NatCen) and the Department of Epidemiology and Public Health at University College London (UCL). In 2003, the JHSU collaborated with the MRC Social and Public Health Sciences Unit (MRC SPHSU) at the University of Glasgow.

## **Conducting the survey**

Each survey takes place at a fresh sample of addresses throughout Scotland. Interviewers call at each address to ask for co-operation, which is entirely voluntary. Two samples were selected for the 2003 survey: a general population (main) sample in which all adults and up to two children were eligible to be selected in each household; and a child boost sample in which up to two children were eligible to be selected in additional households in the same areas. The survey involved an interview and a nurse visit.

Interviewers collected information about:

- general health, long-standing illness and acute sickness;
- cardiovascular disease and related conditions;
- respiratory symptoms, including asthma;
- eating habits, including fruit and vegetable consumption;
- smoking and drinking;
- physical activity;
- recent accidents;
- dental health;
- use of health services;
- demographic and other background details.

They also measured height and weight.

Nurses collected information about prescribed medicines, vitamins and gastro-enteritis. They measured blood pressure, lung function and waist, hip, mid-upper arm circumference and arm length, as appropriate depending on the informant's age. They also collected saliva samples from those aged 4 and over, and blood samples from those aged 11 and over. Some informants aged 16 and over were also asked to provide a urine sample, and some aged 35 and over were asked to have an ECG reading.

## **Response to the survey**

At least one interview was conducted at approximately 67% of all eligible households in the main sample and at 77% of households in the child boost sample. A total of 8,148 adults and 3,324 children were interviewed, of whom 5,444 adults and 2,224 children saw a nurse. The overall response rate was estimated to be 60% among all adults, with 40% of all those eligible seeing a nurse. The corresponding figures for children were 72% and 48%.

## **Results**

The full results of 2003 Scottish Health Survey are published in a report that consists of 23 chapters across four volumes, published as a set as 'The Scottish Health Survey 2003'. Volume 1 presents results for cardiovascular disease and Volume 2 presents the remaining results for adults, Volume 3 presents results for children and Volume 4 provides methodological information and survey documentation. The full report is available on the web at [www.scotland.gov.uk/Topics/Statistics/17861/10352](http://www.scotland.gov.uk/Topics/Statistics/17861/10352). A series of Health Board tables including some of the key indicators presented in the report are also available at this website.

This booklet presents selected key findings from the 2003 survey, including differences by gender, age, income, area deprivation and socio-economic classification (defined according to the householder with the highest income). The full report also includes comparisons between Scotland and England. Although some noteworthy differences were found, similarities were more common. Comparisons are also made with the results of the 1995 and 1998 Scottish Health Surveys. While there was little change in some areas, significant progress has been made in some, such as increasing levels of physical activity and decreasing smoking prevalence.

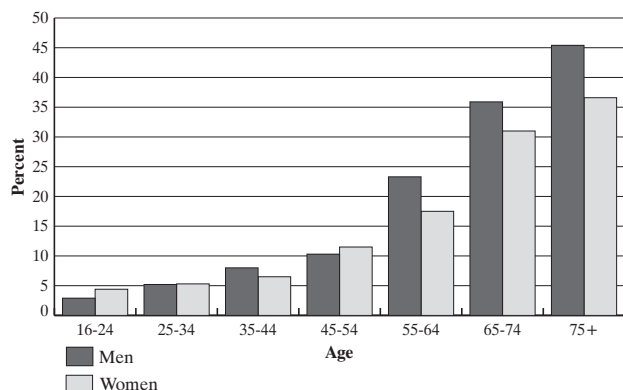
# ADULTS

## CARDIOVASCULAR DISEASE

*(Volume 1: Chapter 1)*

Just under 15% of men and women aged 16+ had any cardiovascular disorder, this increased markedly with age. The largest difference between men and women was seen in the prevalence of heart attack (reported by 4.2% of men and 2.4% of women). Overall the prevalence of ischaemic heart disease (IHD) or stroke was 9.6% for men and 8.0% for women, this increased with age to 37.3% of men and 28.9% of women aged 75+.

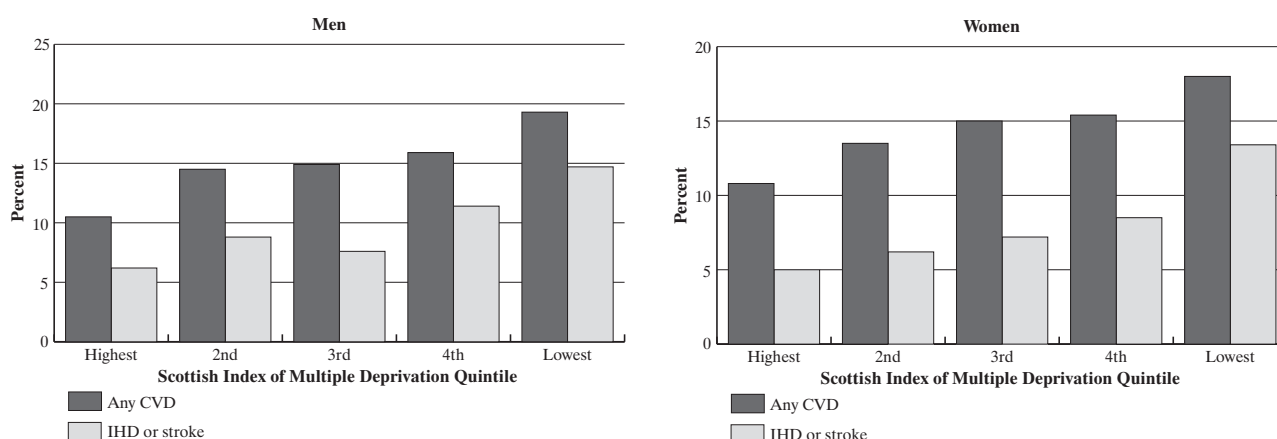
### Proportion with any CVD condition by age and sex



*Volume 1: Chapter 1, Figure 1A*

Both cardiovascular disease and IHD or stroke were more common in households where the household reference person was employed in semi-routine and routine occupations than in managerial and professional occupations. The chart shows how prevalence of any CVD disorder, and IHD or stroke, increased as deprivation increased.

### Prevalence of any CVD, IHD or stroke, by Scottish Index of Multiple Deprivation quintile and sex (age-standardised)



*Volume 1: Chapter 1, Figure 1B*

### Use of health services

A quarter of those with CVD had consulted a GP in the past two weeks. Just over half of those with CVD had attended hospital (not necessarily in connection with their CVD) as outpatients, day patients or at casualty, and a quarter had been inpatients in the 12 months before the interview. One in four men and one in eight women reported ever having a surgical procedure because of their CVD condition.

**Risk factors for cardiovascular disease**

The mean level of total cholesterol was 5.4 mmol/l in men and 5.6 mmol/l in women; 63% of men and 67% of women had a cholesterol level above 5.0 mmol/l. Almost four times as many men as women had an HDL-cholesterol level below 1 mmol/l (higher levels of HDL-cholesterol protect against heart disease). The mean level of fibrinogen was 2.8 g/l for men and 3.1 g/l for women aged 16 and over, and increased with age in both groups. C-reactive protein levels also increased with age. Other risk factors are reported on later in this summary.

**ALCOHOL CONSUMPTION**

*(Volume 2: Chapter 1)*

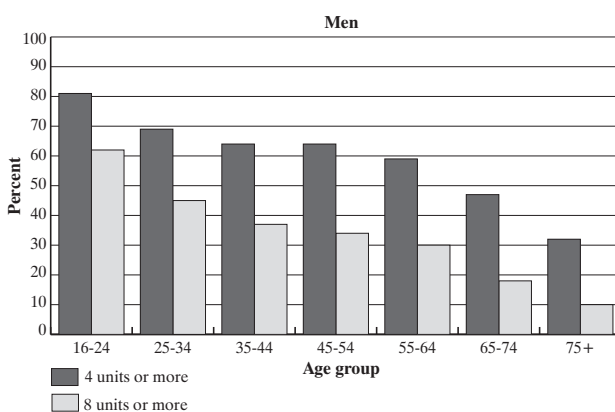
27% of men reported usual alcohol consumption in excess of the recommended limit of 21 units per week. (A unit is, for example, half a pint of normal strength beer, a small glass of wine, or a single measure of spirits.) This was less common in men over 65. The proportion of women who reported usual alcohol consumption in excess of the recommended limit of 14 units per week was half that of men. The proportion of women exceeding 14 units per week decreased with age.

On average, men drank 17.2 units of alcohol and women 6.5 units per week. Weekly levels of consumption were highest among women in managerial and professional households and in the highest income households; consumption decreased along with household income, and was lowest for women in semi-routine and routine occupations.

Among men who reported drinking alcohol in the past week, two-thirds drank more than the recommended level of 4 units of alcohol and one-third more than 8 units (the level used to define ‘binge’ drinking) on the heaviest drinking day. Among women, more than half reported drinking more than the recommended 3 units on their heaviest drinking day in the past week; one-quarter drank more than 6 units (binge drinking). This decreased with age in men and women.

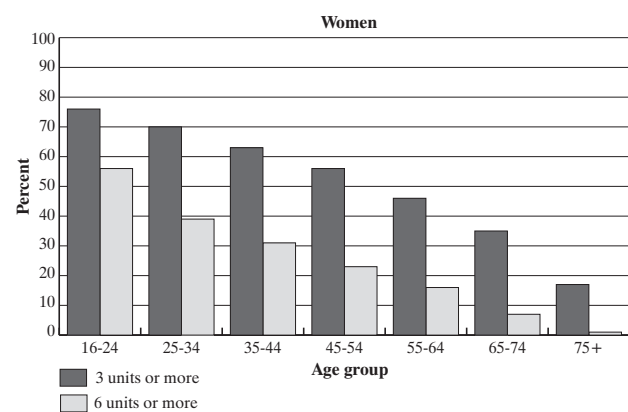
Reported binge drinking in the past week was more common in men from households with lower income or living in the most deprived areas of Scotland and was lowest for men in managerial and professional occupations.

**Proportion of men who had drunk in the past week who exceeded government guidelines on daily alcohol consumption (4 units), and binge drinking (8 units), by age**



*Volume 2, Chapter 1, Figure 1C*

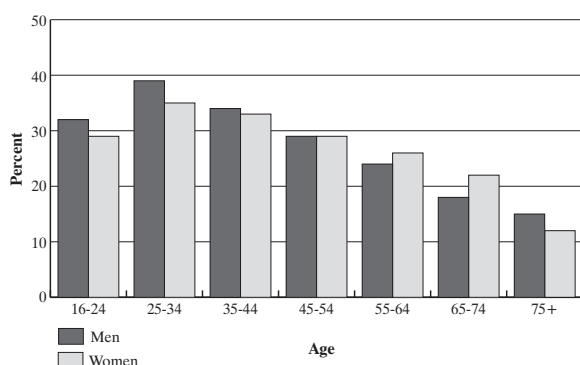
**Proportion of women who had drunk in the past week who exceeded government guidelines on daily alcohol consumption (3 units), and binge drinking (6 units), by age**



*Volume 2, Chapter 1, Figure 1D*

**SMOKING***(Volume 2: Chapter 2)*

Fewer than three in ten men and women aged 16+ reported that they smoked cigarettes. As the chart illustrates, this was highest in those aged 25-34 (39% of men and 35% of women) and fell with age to 15% of men and 12% of women aged 75+.

**Cigarette smoking prevalence by age and sex**

*Volume 2: Chapter 2, Figure 2A*

The prevalence of cigarette smoking in adults aged 16-64 decreased from 35% in 1998 to 31% in 2003, already meeting the Scottish Executive's 2005 smoking target.

	Men 16-64 %	Women 16-64 %	Total 16-64 %
1995	34	36	35
1998	36	33	34
2003	32	31	31

Of current smokers, 38% of men and 33% of women smoked 20 or more cigarettes a day.

Within NS-SEC of the household reference person, 41% of men and 39% of women in semi-routine and routine households currently smoked, compared with 17% of men and 16% of women in professional and managerial households. Similar patterns were found for household income and area deprivation. 51% of men and 45% of women in the lowest household income quintile were cigarette smokers compared with 15% of men and 13% of women in the highest income quintile. Smoking prevalence was 27 percentage points higher for men, and 29 percentage points higher for women, living in the most deprived area quintile than the least deprived quintile.

27% of men and women current and ex-smokers had received medical advice to give up smoking, around one in 10 having received the advice in the previous year. Current and ex-smokers in semi-routine and routine households were twice as likely to have been advised to give up smoking than those in professional and managerial households. Similar patterns were found between current and ex-smokers in the highest and lowest income quintiles, and between those in the most and least deprived area quintiles.

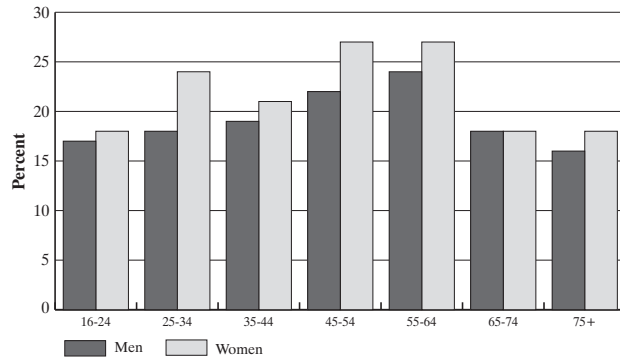
The proportion of non-smokers aged 16-74 who reported being exposed to second-hand smoke declined between 1998 and 2003.

**FRUIT AND VEGETABLE CONSUMPTION**

*(Volume 2: Chapter 3)*

On average, women consumed 3.2 portions of fruit and vegetables per day and men consumed 3.0 portions. One in five (20% of men and 22% of women) consumed the recommended amount of five or more portions per day. As the chart illustrates, the proportion consuming at least five portions a day increased with age in both sexes up to the age of 55-64, and declined thereafter.

**Proportion eating five or more portions of fruit and vegetables per day, by age and sex**



*Volume 2: Chapter 3, Figure 3A*

Over half of men had consumed fresh fruit (56%) or vegetables (52%) on the previous day. The figures for women were higher: 64% and 55%, respectively. Women were also more likely than men to have eaten salad and dried fruit.

Fruit and vegetable consumption varied by socio-economic group and was highest among those in managerial and professional households (3.6 portions for men, 3.8 for women) and lowest among those in semi-routine and routine households (2.3 and 2.6 portions, respectively). One in eight men and one in seven women in semi-routine and routine households consumed five or more portions a day, compared with more than a quarter of men and women in managerial and professional households. Consumption of fruit and vegetables decreased as household income decreased and as area deprivation increased.

**EATING HABITS**

*(Volume 2: Chapter 3)*

The consumption of ice-cream (once a week or more), biscuits (once a day or more), and cakes (twice a week or more) declined between 1995 and 2003. However, there was no change in the proportion consuming sweets and chocolates or non-diet soft drinks at least once a day. Women’s consumption of crisps and other savoury snacks did not change but men’s consumption increased, particularly among those aged 35 and over. People in semi-routine and routine households, the lowest income households, and the most deprived areas were more likely to consume non-diet soft drinks or crisps/savoury snacks at least once a day, chips and meat products at least twice a week, and to add salt to their food, than those in managerial and professional households, the highest income households and the least deprived areas.

Fewer people consumed at least two slices of any bread a day in 2003 than in 1995. Potato, pasta and rice consumption has remained the same since 1995 but the proportion who reported consuming chips at least twice a week was lower in 2003 than 1995, particularly among men. The consumption of poultry at least twice a week increased between 1995 and 2003 while there was a slight decline in the consumption of meat products (such as burgers, sausages, bridies) at least twice a week. White fish consumption declined for both men and women. The use of butter on bread increased between 1995 and 2003, particularly among those aged under 45, though margarine was the most commonly reported type of spread used overall. The consumption of full fat milk declined between 1995 and 2003.

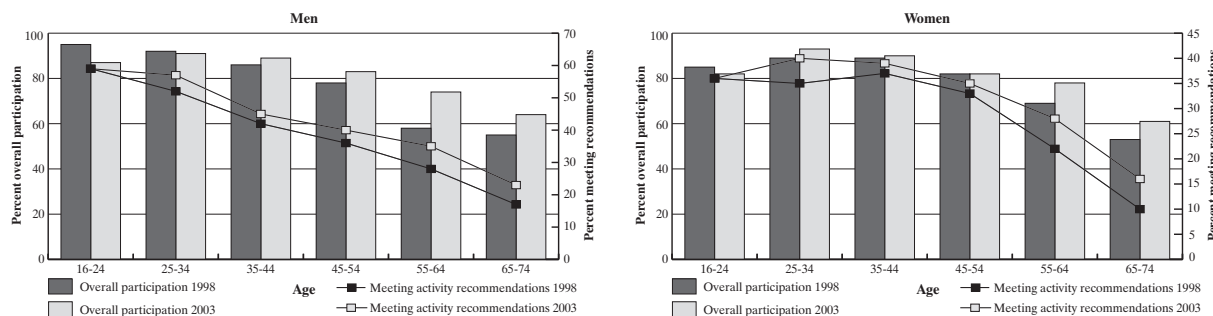
Fewer people reported adding salt to their food at the table in 2003 than in 1995. The use of vitamin and other dietary supplements increased between 1998 and 2003.

**PHYSICAL ACTIVITY**

*(Volume 2: Chapter 4)*

More than four-fifths of adults aged 16-74 were physically active for at least 15 minutes in the last four weeks. The proportions of men and women aged 16-74 meeting the physical activity recommendations (30 minutes of at least moderate exercise on most days of the week) increased from 41% in 1998 to 44% in 2003 in men, and from 30% in 1998 to 33% in 2003 in women. Increases in physical activity participation were particularly marked for men and women aged 55-74. The chart shows how physical activity decreases with age.

**Overall levels of participation in physical activity, and the proportion meeting recommendations, 1998 and 2003, by age and sex**



*Volume 2: Chapter 4, Figure 4A*

The most common activity type among men was sports and exercise, followed by heavy housework and walking. For women, the most common activity type was heavy housework followed by sports and exercise and walking.

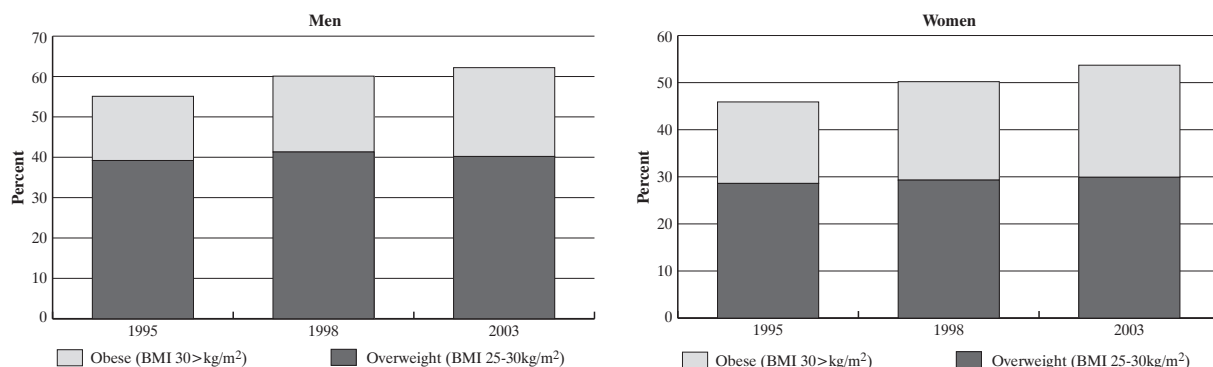
39% of men and 35% of women spent an average of four hours or more sitting at a screen per weekday. More people did so at the weekend. (Time spent sitting at a screen at work, school or college was not counted.)

**ANTHROPOMETRIC MEASURES, OVERWEIGHT, AND OBESITY**

*(Volume 2: Chapter 5)*

Obesity depends on a person's weight relative to their height. Mean body mass index (BMI) was approximately the same in men (27.0 kg/m<sup>2</sup>) and in women (27.2 kg/m<sup>2</sup>). 65% of men and 60% of women were either overweight (BMI over 25-30 kg/m<sup>2</sup>) or obese (BMI >30 kg/m<sup>2</sup>). Men were more likely than women to be overweight (43% vs 34%). However, women were more likely than men to be obese (26% vs 22%), or morbidly obese (BMI over >40 kg/m<sup>2</sup>) (3.4% vs 1.6%).

**Prevalence of overweight and obesity, 1995, 1998, 2003 by sex**



*Volume 2: Chapter 5, Figure 5B*

Among both sexes, there was a steady upward trend in mean BMI from 1995 to 2003, from 26.0 kg/m<sup>2</sup> in 1995, to 26.4 kg/m<sup>2</sup> in 1998 and 26.9 kg/m<sup>2</sup> in 2003 among men, and from 25.7 kg/m<sup>2</sup> in 1995, to 26.3 kg/m<sup>2</sup> in 1998 and 26.9 kg/m<sup>2</sup> in 2003 among women. The proportion of adults who were either overweight or obese increased significantly between 1995 and 2003, from 56% to 64% in men, and from 47% to 57% in women. The proportion who were morbidly obese more than doubled in this time.

Men in semi-routine and routine households stood out as the least likely to be overweight or obese (BMI > 25 kg/m<sup>2</sup>). Men in small employer and own account worker households were the most likely to be obese (BMI > 30 kg/m<sup>2</sup>) while those in managerial and professional households were the least likely to be. Women in semi-routine and routine households were more likely to be overweight or obese than those in managerial and professional households (63% and 57% respectively). The same pattern was evident for obesity and morbid obesity.

Men in the highest income households were more likely than those in the lowest to be overweight or obese (70% and 53% respectively). This was also true for the prevalence of obesity (21% vs 16%). Women in the highest income households were the least likely to be obese. Morbid obesity was around three times higher among women in the lowest income households than in the highest.

People living in the most deprived areas were more likely than those in the least deprived to be obese or morbidly obese.

## **GENERAL HEALTH**

*(Volume 2: Chapter 6)*

Three-quarters of adults rated their general health in general to be 'very good' or 'good' and just under one in ten rated it as 'bad' or 'very bad'. The prevalence of self-reported bad/very bad health varied significantly with age, increasing to 15% of those aged 75+. Two-fifths of adults had a long-standing illness or disability, with around a quarter having a limiting long-standing illness. Long-standing illness prevalence increased with age, from around one sixth of those aged 16-24 to two-thirds of those aged 75+. Around a third of adults with a limiting long-standing illness rated their health as 'very good' or 'good'. Poor self-assessed health, long-standing illness and acute sickness were all associated with socio-economic status.

## **PSYCHOSOCIAL HEALTH**

*(Volume 2: Chapter 6)*

Women were more likely than men to have a high GHQ12 score, which indicates a possible psychiatric disorder (17% versus 13%). Similarly, women were less likely than men to have a GHQ12 score of zero, which could be considered to be an indicator of psychological well-being, (61% versus 68%). Among those aged 16-64, the proportion of men with a high GHQ12 has not changed since 1995 but it declined slightly for women (from 19% in 1995 to 17% in 2003). In contrast, the prevalence of GHQ scores of zero increased significantly over time, particularly among men. 60% of men scored zero in 1995 compared with 62% in 1998 and 68% in 2003. The corresponding increase for women was from 55% in 1995 and 1998 to 61% in 2003. The prevalence of high GHQ12 scores was highest among those in semi-routine and routine households, the lowest income quintile households, and the most deprived area quintile.

The SF-12 questionnaire, which measures health-related quality of life, was used to assess the extent to which health impacts on people's daily lives. This showed that older people were more likely than younger people to say that poor health and pain affected their lives. Poor physical health was more likely to impact on the lives of people in the most deprived areas than the least. The same pattern was true among women in relation to poor mental health.

**USE OF HEALTH SERVICES***(Volume 2: Chapter 6)*

Overall, women were more likely than men to have consulted a GP in the past two weeks (20% vs 16%) but the reverse was true among those aged 65 and over. Over a third of men and women had visited hospital as an outpatient during the previous 12 months; 9% of men and 13% of women had been admitted as inpatients. The use of hospital services increased with age, and was more common among those with poor self-assessed health. People in the most deprived areas were more likely to have consulted a GP in the past two weeks or been an inpatient or an outpatient in the past year.

42% of men and 54% of women aged 16 and over were taking at least one prescription medication (excluding contraceptives). The use of medication increased with age. One in five women aged 16-54 were using contraceptive medication. The proportion of those aged 16-64 taking three or more prescribed medicines increased between 1995 and 2003, from 8% to 13% in men, and from 10% to 17% in women. The number of medicines taken per person also increased in this period.

**DENTAL HEALTH***(Volume 2: Chapter 6)*

Women were more likely than men to have all false teeth (18% vs 12%). The proportion of adults aged 16-64 with all false teeth declined between 1998 and 2003, from 8% to 5% in men, and from 11% to 7% in women. Most adults with some or all of their own teeth brushed their teeth at least once a day, though women were more likely than men to brush more than once a day (81% versus 63%). Over two-thirds of women and just over half of men attend a dentist at least once every six months, with the oldest age group least likely to attend. People in semi-routine and routine households were the most likely to have all false teeth, to not brush once a day, and to never attend a dentist.

**ACCIDENTS***(Volume 2: Chapter 7)*

For the purposes of defining annual accident rates in the Scottish Health Survey, 'accidents' are defined as non-fatal accidents about which advice was sought from a doctor, nurse or other health professional or which required a visit to hospital.

Men's accident rates among those aged 16-64 decreased from 24 in 1995 and 23 in 1998, to 19 per 100 in 2003. For women, rates decreased from 24 in 1995 and 14 in 1998, to 12 per 100 in 2003. The annual accident rates in 2003 for adults aged 16 and over were estimated to be 17 per 100 men, and 13 per 100 women. Accident rates were highest for men aged 16-24 (28 per 100). After the age of 55, accident rates for women start to exceed those for men.

The annual work-based accident rate was estimated to be 8 accidents per 100 men aged 16-64 in work, and 3 per 100 for women. Work-based accident rates were higher than average for men in lower supervisory or technical households, or semi-routine or routine households.

The annual non-work accident rate was estimated at 12 per 100 persons for men aged 16 and over, and 11 per 100 for women. Time was taken off work as a result of 58% of men's accidents and 55% of women's accidents.

Apart from among men aged 16-24, accidents were most commonly described as falls, slips or trips (63% of women's accidents and 40% of men's accidents). A sport or recreational activity was the most common cause of accidents for young men. Informants judged that about half of these accidents could have been prevented.

## RESPIRATORY HEALTH

*(Volume 2: Chapter 8)*

There was a small but significant increase between 1998 and 2003 in the proportion of adults aged 16-74 with doctor-diagnosed asthma (from 11% to 13% for men, and from 12% to 14% for women). More than a quarter of men and women aged 16+ reported a history of wheezing. 16% had experienced wheezing attacks in the past twelve months. Half of those who reported wheezing said their symptoms interfered with their daily activities.

Almost a third of those who had had an attack of wheezing or asthma in the five years before the interview had not received any advice or treatment for their condition. Almost all of those who had received treatment or advice had been treated by a general practitioner (93% of men, 92% of women). 34% of men and 28% of women had received treatment from a nurse: this increased significantly between 1998 and 2003.

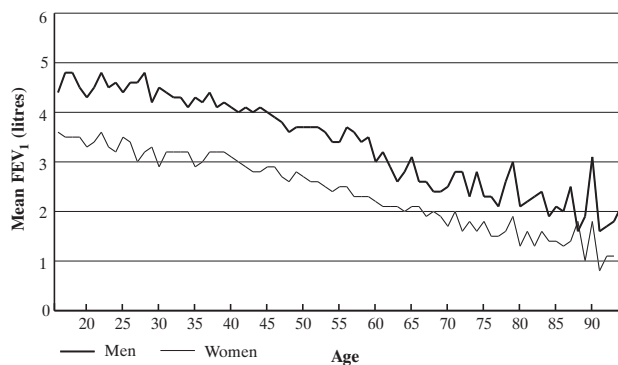
The prevalence of wheezing in the last 12 months was higher among those in semi-routine and routine households than in managerial and professional households. Wheezing in the past 12 months was also more common among those in low income households and in the most deprived areas. One in three adults who smoke 20 or more cigarettes a day reported wheezing in the past 12 months, compared with just over one in ten of those who have never smoked regularly.

## LUNG FUNCTION

*(Volume 2: Chapter 8)*

Measured lung function increased with height and decreased with age. Mean FEV<sub>1</sub> was lower among those with respiratory symptoms and doctor-diagnosed asthma than among those without these conditions. Current smokers of 20 or more cigarettes a day had mean FEV<sub>1</sub> values 0.19 litres lower among men, and 0.24 litres lower among women, than informants of the same sex who had never regularly smoked. For both men and women, mean FEV<sub>1</sub> decreased as deprivation increased. The pattern was more marked among those aged 45+.

### Mean FEV<sub>1</sub>, by age and sex



*Volume 2: Chapter 8, Figure 8A*

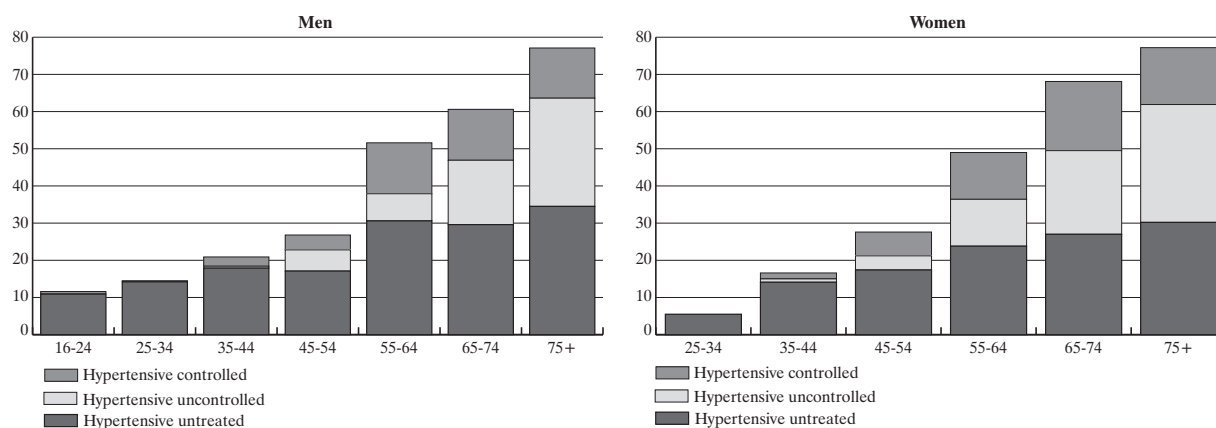
## BLOOD PRESSURE

*(Volume 2: Chapter 9)*

Mean systolic blood pressure (SBP) was 132.3 mmHg in men and 127.1 mmHg in women. Mean SBP increased with age for both sexes, the increase was more marked in women than in men. Mean SBP was higher among men than women up to the age of 65, thereafter women's mean SBP was higher. Mean diastolic blood pressure (DBP) was 74.5 mmHg in men and 73.6 mmHg in women and was similar in both sexes for all age groups. Unlike SBP, which increased continuously with age, DBP in men and women increased with age up to 54 and decreased thereafter.

One-third of informants aged 16 and over had high blood pressure (defined as SBP equal to or greater than 140 mmHg or DBP equal to or greater than 90 mmHg or on medication to treat hypertension). As the chart shows, this increased markedly with age in both sexes: from 12% of men and 2% of women aged 16-24 to 77% of men and women aged 75+. (Informants were defined as 'hypertensive untreated' if they had raised blood pressure but were not on any medication to treat it; informants who were on blood pressure medication but who had high blood pressure were defined as 'hypertensive uncontrolled'; those on blood pressure medication who had a normal blood pressure reading were defined as 'hypertensive controlled'.)

### Hypertension prevalence by age and sex



Volume 2: Chapter 9, Figure 9B

Of those with high blood pressure readings, more than three-fifths of men and half of women were not on treatment. Of those who were on treatment, fewer than half had successfully controlled blood pressure. There was no significant association between blood pressure levels and socio-economic status or household income. Area deprivation was significantly associated with the prevalence of high blood pressure among women, but not men (27.3% of women in the least deprived areas had high blood pressure compared with 35.8% in the most).

### DIABETES

(Volume 2: Chapter 10)

3.8% of men and 3.7% of women aged 16+ had doctor-diagnosed diabetes. Diabetes prevalence increased with age in both sexes, reaching around 10% in men and women aged 65+. Type 2 diabetes accounted for most cases of diagnosed diabetes. Diabetes prevalence increased in men and women aged 16-64 between 1995, 1998 and 2003. Men and women in semi-routine and routine households had the highest prevalence of doctor-diagnosed diabetes. The prevalence of doctor-diagnosed diabetes was higher among men and women in households in the lowest income quintile or living in the most deprived areas.

The prevalence of smoking or exceeding the recommended weekly alcohol consumption level was lower among informants with type 2 diabetes than among those without type 2 diabetes, but those with type 2 diabetes had lower physical activity levels. The prevalence of obesity, raised waist-hip ratio, or raised waist circumference was higher among informants with type 2 diabetes than those without, but declined with age among men and women with type 2 diabetes.

The prevalence of high blood pressure (systolic  $\geq 140$  mmHg or diastolic  $\geq 90$  mmHg or on medication prescribed for high blood pressure) was much higher in informants aged 35+ with type 2 diabetes (66% of men and 75% of women) than those without type 2 diabetes (40% and 42%).

# CHILDREN

## ALCOHOL CONSUMPTION

*(Volume 3: Chapter 1)*

Three in ten children aged 8-15 had ever tried an alcoholic drink. This increased with age: 7% of boys and 2% of girls aged 8 had ever tried an alcoholic drink, compared with 77% of boys and 78% of girls aged 15. Children’s experience of alcohol was not related to their household’s socio-economic classification or income, nor by the deprivation level of the area where they lived.

12% of boys and 10% of girls aged 13-15 had drunk alcohol in the week prior to the interview; this increased with age from 5% of boys and 4% of girls aged 13, to 18% of boys and 20% of girls aged 15. The mean number of alcohol units consumed in the last week also increased with age, from 0.5 for boys and girls aged 13 to 2.6 units for boys and 3.0 units for girls aged 15. The proportions of children drinking alcohol in the last week were at similar levels in 2003 and 1998, though the mean number of units consumed by children aged 15 has increased.

Children aged 13 to 15 were most often with their parents when they drank alcohol (55% of girls, 43% of boys) but a third of children usually drank with a group of friends of both sexes, and girls were also likely to mention friends of the same sex.

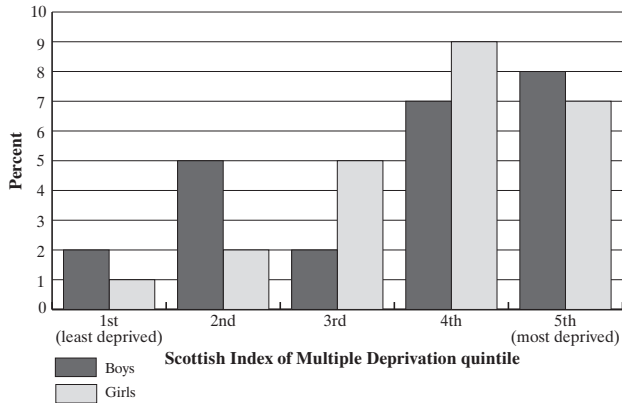
## SMOKING

*(Volume 3: Chapter 2)*

Although children report their smoking and alcohol use in confidential self-completion questionnaires, figures from the Scottish Schools Adolescent Lifestyle and Substance Use Survey suggest that the Scottish Health Survey underestimates self-reported smoking prevalence, especially among older children. 17% of boys and 20% of girls reported they had ever smoked a cigarette. 2% of children aged 8-15 reported regularly smoking (at least one cigarette per week). This was much more common among older children: 11% of boys and 12% of girls aged 15 reported smoking regularly. 5% of children aged 8-15 reported having smoked in the previous week. This increased with age, from 2% at age 12 to 29% at age 15.

Overall, 7% of boys and 6% of girls aged 8-15 had a saliva cotinine value of 15 ng/ml or above, indicating that they had recently smoked. This prevalence increased steeply with age among older children: 4% of boys and 6% of girls aged 13 had a cotinine value of 15 ng/ml or more, rising to 30% for both sexes at age 15. As the chart below shows, for both boys and girls, there was a significant association between the proportion of children with a cotinine value of 15 ng/ml or more and area deprivation.

**Proportion of children aged 4-15 with a saliva cotinine level of 15 ng/ml or more, by Scottish Index of Multiple Deprivation quintile and sex**



*Volume 3: Chapter 2, Figure 2C*

Overall, 86% of girls and 83% of boys aged 8-15 reported being exposed to other people's smoke, with 61% of boys and 64% of girls exposed to second-hand smoke in their own home or the homes of other people. Among children aged 12-15, girls were more likely than boys to report being exposed to second-hand smoke (91% compared with 86%).

## FRUIT AND VEGETABLE CONSUMPTION

*(Volume 3: Chapter 3)*

On average, children aged 5-15 consumed 2.6 portions of fruit and vegetables per day. Only 12% consumed the recommended amount of five or more portions per day, while the same proportion consumed none at all. Over six in ten children had consumed fresh fruit, half had drunk fruit juice and four in ten had consumed vegetables on the previous day. Consumption was similar in boys and girls. Fresh fruit consumption was higher among children aged 5-11 than among those aged 12-15 for both sexes. Children whose mothers had eaten five or more portions of fruit and vegetables on the previous day were more likely than other children to have eaten five or more portions themselves.

Fruit and vegetable consumption varied by socio-economic group and was higher among children in managerial and professional households than among those in semi-routine and routine households.

As the table below illustrates, children in the highest income households were more likely than those in the lowest income households to have consumed five portions of fruit and vegetables, and were less likely to have consumed no portions at all. Those in the most deprived areas consumed, on average, fewer portions per day and were more likely to have eaten no fruit or vegetables at all, than those in the least deprived communities.

### Fruit and vegetable consumption, by equivalised household income quintile

	Boys			Girls		
	Mean portions per day	% no fruit or vegetables	% 5 or more portions	Mean portions per day	% no fruit or vegetables	% 5 or more portions
1st (highest)	3.2	6	18	3.0	10	19
5th (lowest)	2.3	15	10	2.1	19	9

## EATING HABITS

*(Volume 3: Chapter 3)*

Boys and girls were equally likely to consume sugary foods and snacks. Six in ten children aged 2-15 consume sweets and chocolates at least once a day. Three in ten consume cakes, scones and pastries at least twice a week. Around a half usually eat biscuits once a day or more. Over four in ten usually drink non-diet soft drinks once a day or more, while around a quarter drink them more than once a day.

Around three-quarters of children eat at least 2-3 slices of bread a day, though only one in seven children eat high fibre bread. More boys (74%) than girls (65%) reported eating breakfast cereals at least 5-6 times a week. 55% of boys and 53% of girls reported that they eat chips twice a week or more.

Boys were more likely than girls to eat meat products, such as sausages and burgers, at least twice a week (48% vs 39%). Boys were also more likely than girls to report eating white fish once a week or more (45% vs 39%). Consumption of red meat (beef, lamb, pork), poultry and oily fish was very similar between the sexes. Three in ten children use butter on bread; half drink low fat milk (skimmed or semi-skimmed). Consumption of low fat milk increased markedly with age, from under three in ten aged 2-3 to almost two-thirds aged 14-15.

20% of girls and 16% of boys reported usually adding salt to their food at the table. 17% of children were taking some kind of vitamin or mineral supplement.

Eating habits varied by socio-economic group, household income and area deprivation. Children in semi-routine and routine households, the lowest income quintile, and the most deprived area quintile were more likely to consume sweets/chocolates or non-diet soft drinks at least once a day, chips and meat products at least twice a week, and to add salt to their food, than those in managerial and professional households, the highest income quintile and the least deprived area quintile.

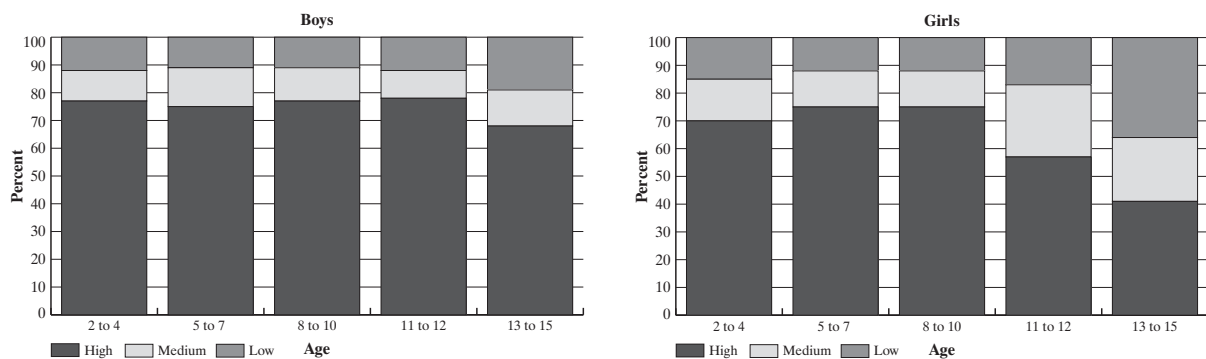
Children living in semi-routine and routine households, households with the lowest income, and the most deprived areas were less likely to consume 2-3 slices of high fibre bread a day; potatoes, pasta or rice at least five days a week; poultry at least twice a week; white or oily fish at least once a week; to use low fat milk or to take dietary supplements than those living in managerial and professional households, the highest income households, or the least deprived areas.

## PHYSICAL ACTIVITY

*(Volume 3: Chapter 4)*

Children’s physical activity levels were categorised as ‘high’ (at least 60 minutes of activity on seven days a week); ‘medium’ (30-59 minutes’ activity seven days a week); and ‘low’ (fewer than 30 minutes’ activity, or not active at all, on seven days a week). Physical activity during school lessons was not included in these definitions. 74% of boys and 63% of girls aged 2-15 had a high physical activity level (the level of activity currently recommended for children). A further 12% of boys and 18% of girls had a medium activity level (the recommended level for children who are currently inactive). 13% of boys and 19% of girls had a low activity level. As the chart shows, activity levels declined with age among girls (but not among boys) after the age of 8-10.

### Proportion with high, medium and low activity levels, by age and sex



*Volume 3: Chapter 4, Figure 4C*

Boys’ activity levels did not vary to any great extent by socio-demographic factors. In contrast, there was a tendency for girls’ activity levels to increase as household income decreased, and as area deprivation increased. There was a small increase between 1998 and 2003 in the proportion of children who did at least 60 minutes’ physical activity on 7 days: from 72% to 74% for boys and from 59% to 63% for girls.

The most common type of physical activity children reported in the previous seven days was walking (92% of boys and 94% of girls) followed by active play (91% of boys and 88% of girls) and sports and exercise (73% of boys and 68% of girls).

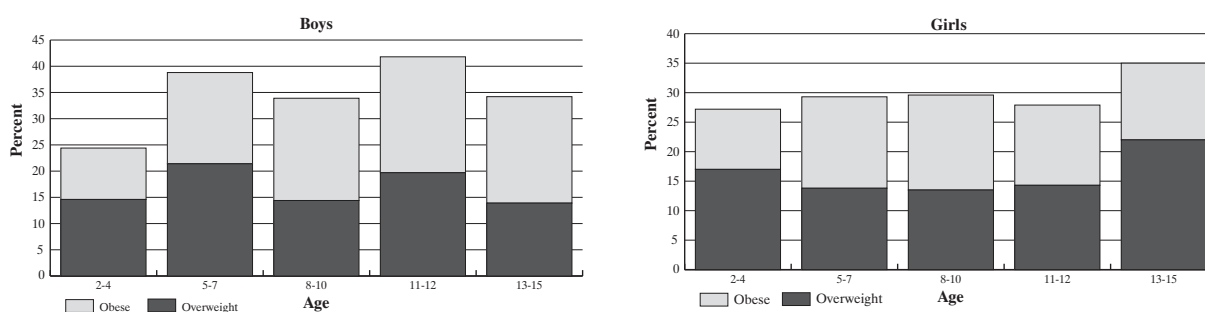
Time spent in front of a screen (TV, computer, video game) was included in the survey as a measure of physical inactivity. Boys spent an average of 2.6 hours a day, and girls 2.3 hours, sitting in front of a screen outside school hours. There was a linear increase with age in time spent sitting at a screen: 32% of boys and 24% of girls aged 13-15 spent on average four hours or more sitting at a screen a day. The odds of children meeting the physical activity recommendations decreased significantly as the time spent in front of a screen increased.

## ANTHROPOMETRIC MEASURES, OVERWEIGHT, AND OBESITY *(Volume 3: Chapter 5)*

Mean height increased steadily with age for both boys (98.9 cm in age group 2-4 to 166.6 cm in those 13-15) and girls (from 98.1 cm to 160.7 cm). Boys aged 13-15 were around 6 cm taller than girls at that age. Boys' average weight increased from 16.7 kg aged 2-4 to 58.9 kg aged 13-15. The average weight of girls increased from 16.2 kg aged 2-4 to 56.7 kg aged 13-15. Mean body mass index (BMI) increased steadily with age for both sexes, from 16.8 kg/m<sup>2</sup> aged 2-4 to 21.0 kg/m<sup>2</sup> aged 13-15 in boys, and from 16.7 kg/m<sup>2</sup> to 21.9 kg/m<sup>2</sup> in girls.

Using the UK BMI reference values for obesity, a greater proportion of boys (35%) than girls (30%) were either overweight or obese. The prevalence of obesity in boys was 18% overall, ranging from 10% at age 2-4 to a peak of 22% at age 11-12. The prevalence of obesity in girls was 14%, ranging from 10% aged 2-4 to 16% aged 8-10. There was an increase between 1998 and 2003 in boys in the prevalence of overweight including obesity (from 29% to 35%) and of obesity (from 14% to 18%) but no change for girls.

### Prevalence of overweight and obesity by age and sex



*Volume 3: Chapter 5, Figure 5A*

There was no clear association between overweight and obesity and socio-economic classification among boys. The lowest prevalence of obesity in girls was among those in managerial and professional households (11%) and the highest prevalence (18%) in small employer and own account worker households. The prevalence of overweight did not vary significantly by level of area deprivation for boys or girls.

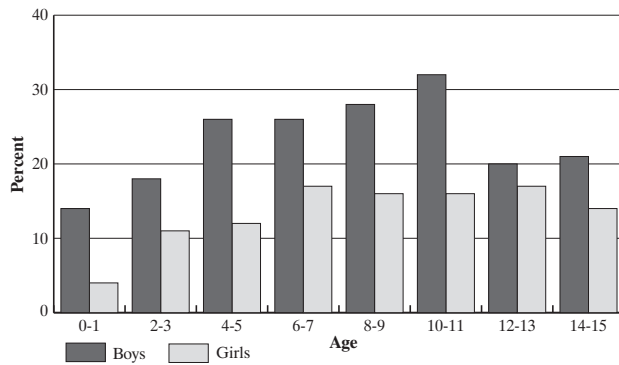
Household income was associated with rates of overweight and obesity. The prevalence of overweight including obesity in boys was lowest in the lowest income quintile (30%). The prevalence for the other groups ranged between 35% in the highest quintile to 37% in the 4th. For girls the reverse was true: those in the lowest two income quintiles had the highest prevalence of overweight including obesity.

## GENERAL HEALTH

*(Volume 3: Chapter 6)*

More than nine in ten children had 'very good' or 'good' self-assessed general health. The proportion with 'very good' health declined with age and was highest among those aged 0-1 (69% for boys, 81% for girls) and lowest among those aged 14-15 (53% and 47% respectively). 23% of boys and 14% of girls had a long-standing illness. Almost twice as many boys as girls had a limiting long-standing illness (9% vs 5%). The most common types of illness reported for boys were of the respiratory system followed by mental, behavioural and personality disorders. The most common illnesses reported for girls were of the respiratory system followed by skin complaints.

**Prevalence of long-standing illness, by age and sex**



*Volume 3: Chapter 6, Figure 6A*

Poor self-assessed health and long-standing illness was more common among children in semi-routine and routine households than in managerial and professional households.

**PSYCHOSOCIAL HEALTH**

*(Volume 3: Chapter 6)*

Girls were more likely than boys to have a high GHQ12 score, which indicates a possible psychiatric disorder (12% versus 5%). The proportion of boys with a high GHQ score was the same in 1998 and 2003, while it increased from 8% in 1998 to 12% in 2003 in girls. Behavioural problems in children aged 4-12 (as measured by the Strengths and Difficulties Questionnaire) were more common in boys (10%) than girls (7%). Behavioural problems were more common in children from semi-routine and routine households, low income households, and the most deprived areas, than in children from professional and managerial households, high income households and the least deprived areas.

**DENTAL HEALTH**

*(Volume 3: Chapter 6)*

Nearly all children aged six and over had attended a dentist at some point. 7% of children in the most deprived area quintile had never been to a dentist, compared with 1% in the least deprived quintile. Children in the most deprived quintile were more likely to have had teeth removed, and less likely to have teeth judged as perfectly healthy, than children in the least deprived quintile. Dental health and treatment habits for all children aged 2-15 changed little between 1998 and 2003.

**ACCIDENTS**

*(Volume 3: Chapter 7)*

Accident rates are based on non-fatal accidents about which advice was sought from a doctor or which required a visit to hospital. Overall, there was little change in accident rates from 1998 to 2003. The accident rate in 2003 was 25 per 100 for boys and 16 per 100 for girls aged 2-15. For each age group, accident rates were higher for boys.

Accident rates were higher in children from households with lower income (23 per 100 in the lowest household income quintile, compared with 18 per 100 for those in the highest quintile). The accident rate for children aged 0-15 living in the most deprived areas was 25 per 100 persons, compared with 19 per 100 in the least deprived.

Falls, slips or trips accounted for two-thirds of girls' accidents and over half of boys'. Three-quarters of accidents in children aged 0-5 were falls, slips or trips; three out of four accidents in this age-group occurred in the home or garden. With increasing age, accidents were more likely to occur in places for sports or recreation. Almost half of all accidents were judged to have been preventable.

About one-third of injuries as a result of accidents involved swelling or tenderness in some part of the body, one-third bruising, pinching or crushing, and one-third cutting or grazing. Half of these accidents to children aged 4-15 resulted in time being taken off school.

## **RESPIRATORY HEALTH**

*(Volume 3: Chapter 8)*

Respiratory symptoms and asthma were more common in boys than in girls. 29% of boys and 20% of girls aged 0-15 had a history of wheezing, and 16% of boys and 12% of girls reported having wheezed in the past twelve months. 20% of boys and 12% girls reported having doctor-diagnosed asthma.

Under one in ten (7%) children who reported wheezing-related symptoms in the last twelve months said they had, on average, more than one attack per month. 64% of girls and 57% of boys who reported wheezing said their symptoms interfered with their daily activities.

The prevalence of wheezing and doctor-diagnosed asthma tended to be higher in children in households in lower socio-economic groups and more deprived areas. This was particularly marked in younger children aged 2-6.

## **BLOOD PRESSURE**

*(Volume 3: Chapter 9)*

Mean systolic blood pressure (SBP) was 109.0 mmHg for boys and 106.6 mmHg for girls aged 5-15. Mean SBP increased with height and age for boys and girls.

Mean diastolic blood pressure (DBP) was 61.6 mmHg for boys and 64.6 mmHg for girls aged 5-15. Mean DBP did not vary by age or height for either sex.

Mean pulse pressure was higher in boys (47.5 mmHg) than girls (41.9 mmHg). Pulse pressure increased with age and height for both sexes.

After controlling for height, mean SBP was higher among children whose body mass index (BMI) was in the top fifth than those in the bottom fifth. The difference was more obvious among children aged 10-15 than in younger children.

## **INFANT MEASUREMENTS AND BREASTFEEDING**

*(Volume 3: Chapter 10)*

The mean length of infants at birth was 51.5 cm. Mean head circumference at birth was 34.7 cm. Mean birth weight was 3.4 kg (3.5 kg in boys and 3.2 kg in girls). Mean birth weight was generally lower among infants in semi-routine and routine households (3.2 kg in boys and girls) than among those in managerial and professional households (3.6 kg in boys, 3.3 kg in girls).

Two-thirds of infants were breastfed initially. Half were breastfed beyond one month and one in five beyond six months of age. 84% of infants in managerial and professional households were breastfed initially compared with 55% of infants in semi-routine and routine households.

All infants aged one year and over had had at least one immunisation.

Findings in this booklet are taken from:

**The Scottish Health Survey 2003**

**A survey carried out on behalf of the Scottish Executive Health Department**

<b>Volume 1</b>	<b>Cardiovascular disease</b>
<b>Volume 2</b>	<b>Adults</b>
<b>Volume 3</b>	<b>Children</b>
<b>Volume 4</b>	<b>Technical Report</b>

**Edited by Catherine Bromley, Kerry Sproston and Nicola Shelton**

*Joint Health Surveys Unit*

*The National Centre for Social Research and*

*Department of Epidemiology and Public Health, University College London*

ISBN 07559 4823 8

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The full report, and a set of tables with selected results for each Health Board, is also available on the web at [www.scotland.gov.uk/Topics/Statistics/17861/10352](http://www.scotland.gov.uk/Topics/Statistics/17861/10352). The two previous reports (1995 and 1998) are available at the same address.

The survey data (anonymised) will be lodged with the Data Archive at the University of Essex.

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Astron B42805 11/05

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ISBN 0-7559-4782-7



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