

Data on the use of the pill can be compared for 1983, 1989 and 1995 (Figure 3.11, page 163). The proportion of women aged 18–49 years using the pill increased from 24% in 1983 to 28% in 1989 but changed little to 1995 (27%). The highest usage continues to be in the age group 20–24 years.

It is estimated that over 85% of all HIV infection in Australia has been transmitted by unsafe sexual contact between men (NCHECR 1999). Of men who have sex with men, the percentage engaging in unprotected anal intercourse is the principal indicator of unsafe sexual behaviour. Surveys in Sydney during the 1990s found that, of men who have sex with men, around 30% reported unprotected anal sex with regular partners in the previous 6 months. Around 15% reported unprotected anal sex with casual partners in the previous 6 months. Surveys carried out in other capital cities show similar levels of unsafe sexual behaviour (NCHECR 1999).

3.5 Biomedical factors

Body weight

The association between overweight or obesity and health problems such as coronary heart disease, stroke, heart failure, type 2 diabetes, osteoarthritis, sleep apnoea, gallstones, and reproductive problems among women is well documented (NHLBI 1998). Overweight and obesity accounted for over 4% of the total burden of disease in Australia in 1996 (AIHW: Mathers et al. 1999).

Being underweight is also associated with poor health, including conditions such as osteoporosis, ulcers, mental conditions such as depression and eating disorders (Gilmore 1999).

Inappropriate body weight is due mainly to an imbalance between energy intake (diet) and energy expenditure (physical activity). Other factors, including genetics and environment, also play a role (Pi-Sunyer 1993).

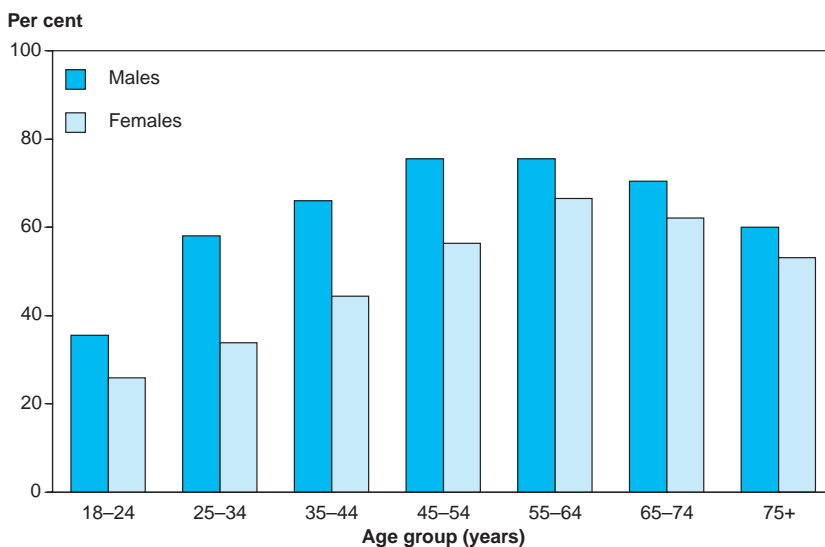
Among those who are overweight, weight loss reduces the incidence and severity of high blood pressure, high blood cholesterol, diabetes and osteoarthritis (NHLBI 1998).

Body mass index (BMI) is used to estimate the prevalence of underweight, normal weight, overweight and obesity in a population.

In 1995, just over 7.4 million adult Australians (56% of those aged 18 years and over) were overweight or obese (BMI \geq 25). Of these, over 2.4 million (or 19% of the adult population) were obese (BMI \geq 30). Men were more likely to be overweight or obese than were women, 64% compared with 49%. The proportion of overweight or obese people increased with age and peaked in the age groups 45–54 and 55–64 years for men (76%) and 55–64 years for women (67%) (Figure 3.12) (AIHW 1999c).

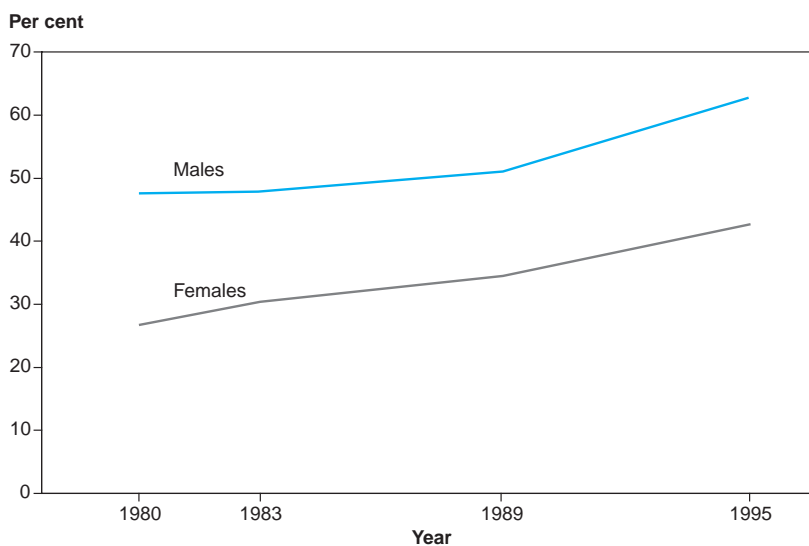
In 1995, the proportion of overweight or obese children and adolescents aged 2–17 years was 21% for boys and 23% for girls.

In 1995, the proportion of underweight (BMI $<$ 18.5) women aged 18 years and over was almost 3%. However, among women aged 18–24 years the prevalence was over 6%. The proportion of underweight men aged 18 years and over was less than 1%. The proportion of underweight children and adolescents aged 2–17 years was 6% for boys and 5% for girls.



Source: AIHW analysis of the 1995 National Nutrition Survey.

Figure 3.12: Proportion of overweight or obese adults, 1995



Note: Capital cities only.

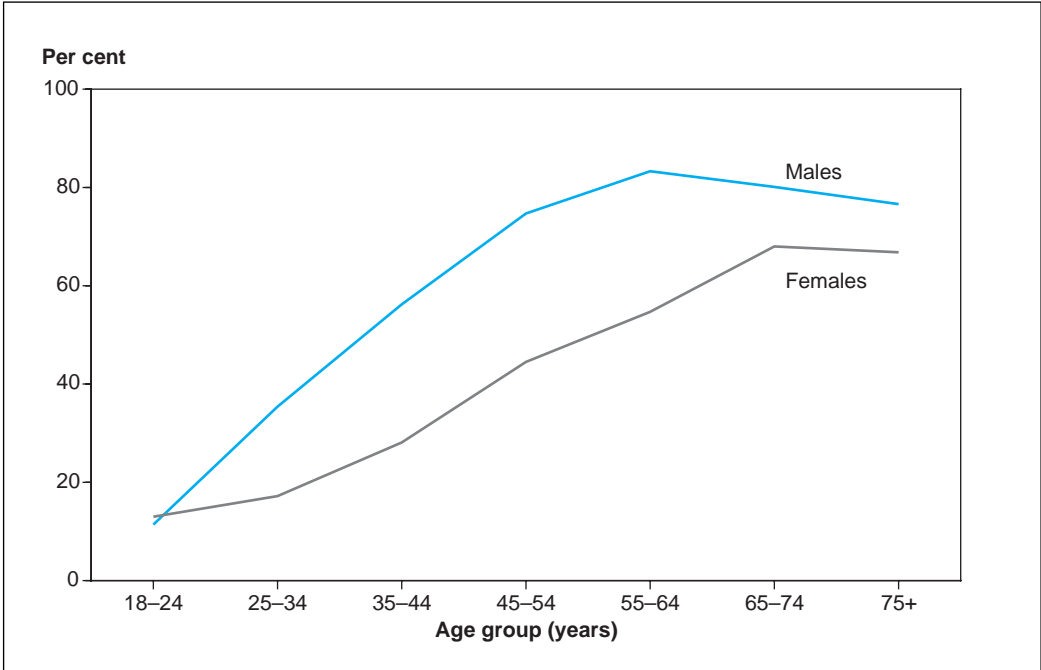
Sources: NHF Risk Factor Prevalence Surveys; ABS National Nutrition Survey.

Figure 3.13: Proportion of overweight or obese adults, 25-64 years, 1980 to 1995

There have been significant increases in the proportions of overweight and obese Australians over the last 15 years. Trend data from the Risk Factor Prevalence Surveys and the National Nutrition Survey show that the proportion of overweight or obese women aged between 25 and 64 years (living in Australian capital cities only) has increased from 27% in 1980 to 43% in 1995. Similarly, the proportion of overweight or obese men increased from 48% to 63% over this period (Figure 3.13). The proportion of obese men has increased dramatically from 8% in 1980 to 18% in 1995 and the proportion of obese women has increased from 7% to 16%. On average, women in 1995 weighed 4.8 kg more than their counterparts in 1980, and men 3.6 kg more (AIHW 1999c).

Although BMI is used as the main classification of overweight and obesity, the waist-to-hip ratio (WHR) and waist circumference are also useful measures of increased disease risk due to overweight and obesity (NHLBI 1998; WHO 1997).

Fat located in the abdominal region is associated with greater risk of diabetes, coronary heart disease and high blood pressure, independent of BMI (Albu et al. 1997; Björntorp 1992; Lemieux et al. 1996). A high WHR (WHR > 0.9 in men and 0.8 in women) is used to identify those individuals at increased risk of cardiovascular disease. In 1995, 53% of adult men and 35% of adult women could be regarded as at increased risk from cardiovascular disease due to a high WHR (ABS 1996b). For both men and women, WHR increased with age (Figure 3.14).



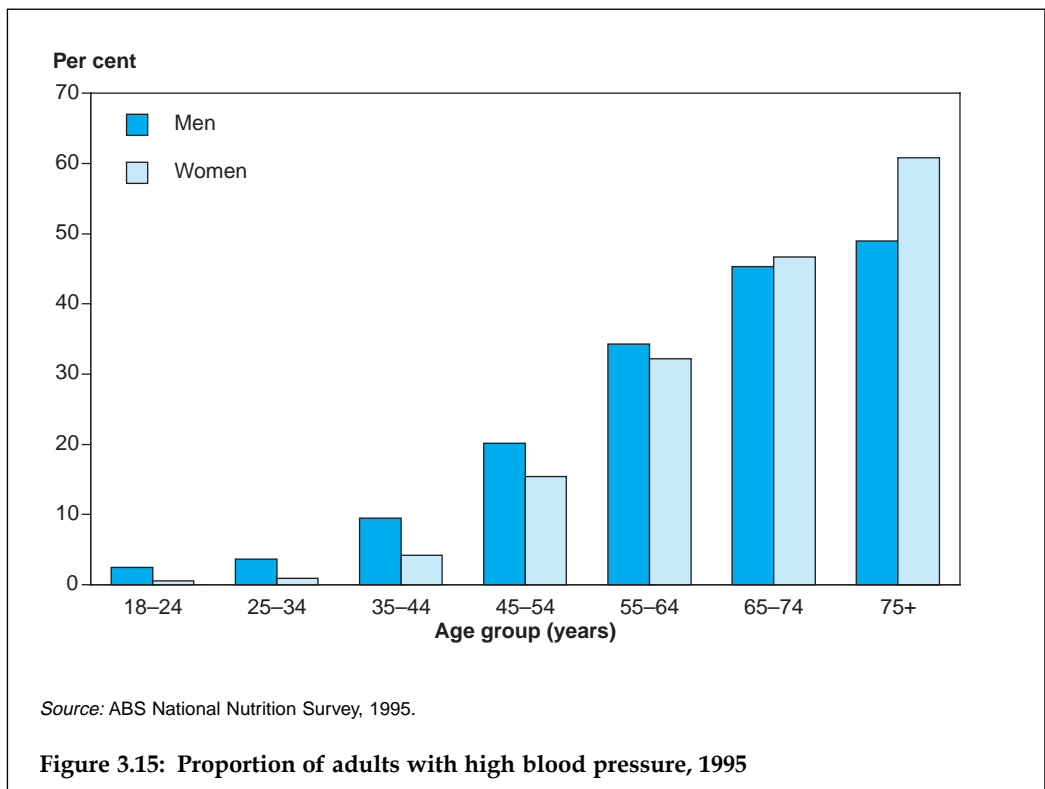
Source: AIHW analysis of the ABS 1995 National Nutrition Survey.

Figure 3.14: Proportion of adults with waist-to-hip ratio >0.9 for men and >0.8 for women, 1995

Changes in waist circumference reflect changes in risk for chronic disease, although populations differ in the level of risk associated with a particular waist circumference cut-off (Dowling & Pi-Sunyer 1993; Han et al. 1997). Although there are currently no standard cut-offs for waist circumferences that indicate increased risk, the WHO suggests that waist circumferences greater than 94 cm in men and greater than 80 cm in women indicate increased risk (WHO 1997). Waist circumferences greater than 102 cm and 88 cm for men and women respectively indicate substantially increased risk. Note that these waist circumference measures are for Caucasians. Risk cut-offs for other populations have not yet been developed. In 1995, 35% of men had a waist circumference greater than 94 cm and 37% of women had a waist circumference greater than 80 cm. Almost 19% of men had a waist circumference greater than 102 cm and 23% of women had a waist circumference greater than 88 cm. For both men and women, waist circumferences generally increased with age.

Blood pressure

High blood pressure is a major risk factor for coronary heart disease, stroke, heart failure, peripheral vascular disease and renal failure. The risk of disease increases as the level of blood pressure increases. When high blood pressure is controlled by medication, the risk of disease is reduced, but not to the levels of unaffected people (Kannel 1991). It is estimated that in 1996 high blood pressure was responsible for over 5% of the total burden of disease among Australians (AIHW: Mathers et al. 1999).

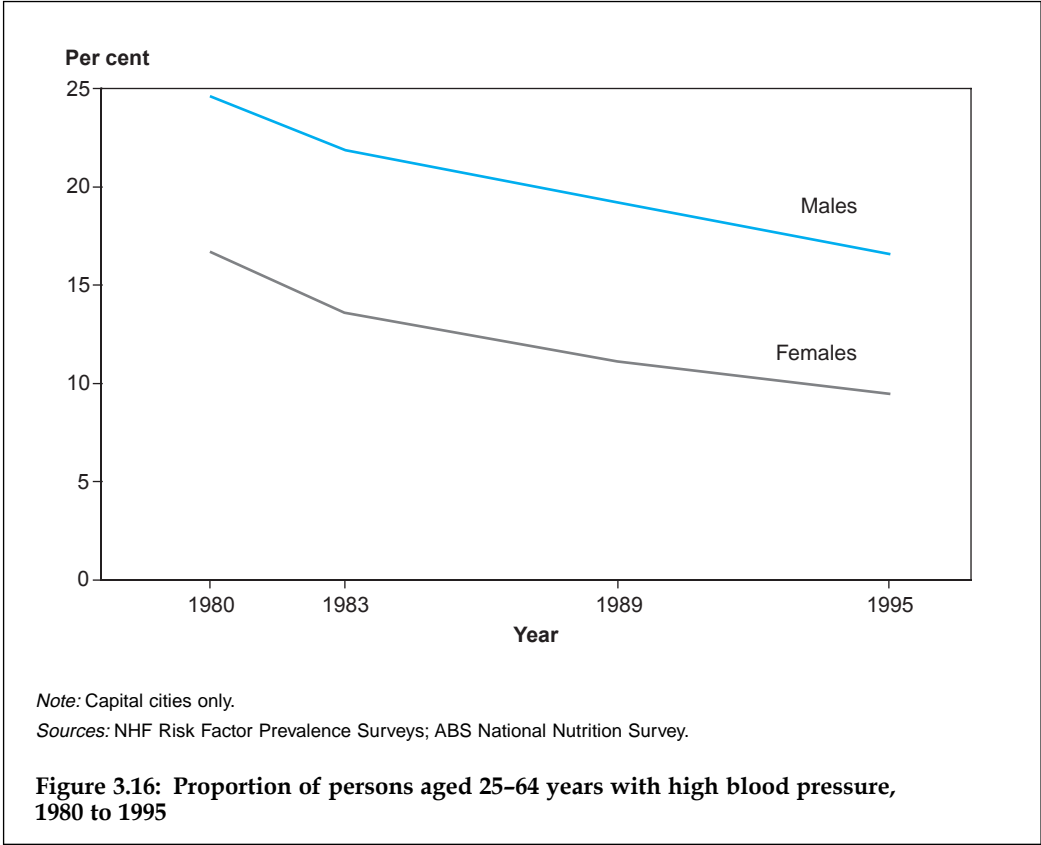


In terms of predicting ill health, both systolic (SBP) and diastolic blood pressures (DBP) are predictors of cardiovascular disease. Each reduction of 10–14 mmHg in SBP and 5–6 mmHg in DBP reduces the occurrence of stroke by two-fifths, of coronary heart disease by one-sixth, and of cardiovascular disease by one-third (Chalmers 1999).

The 1995 National Nutrition Survey reported that around 2.2 million Australians aged 18 years and over had high blood pressure—17% of men and 15% of women. The proportion of men and women with high blood pressure increases with age (Figure 3.15, page 167).

Along with the decline in the proportion of people with high blood pressure and/or receiving treatment since the 1980s, there has also been a significant decline in average blood pressure levels during the same period (Figure 3.16). This decline occurred equally among those not on medication for high blood pressure as among those on medication (AIHW 1999c; Bennett & Magnus 1994).

High blood pressure was the most common problem managed by general practitioners in 1998–99, accounting for about 6% of all conditions managed (AIHW GPSCU: Britt et al. 1999).



Biomedical and lifestyle factors that are major causes of high blood pressure include excess body fat, alcohol consumption, physical inactivity, dietary salt intake and complex dietary patterns with a low intake of fruit and vegetables and high saturated fat (Puddey et al. 1987; Cutler et al. 1997; Appel et al. 1997). Stress raises blood pressure transiently but in the long term may have indirect effects by influencing eating, drinking, smoking and physical activity patterns (Beilin 1997). Cigarette smoking increases the risk of heart attack and stroke threefold in hypertensive individuals.

Box 3.5: High blood pressure

Blood pressure is the force exerted by blood on the walls of the arteries and is written as systolic/diastolic (e.g. 120/80 mmHg, stated as '120 over 80').

The continuous relationship between blood pressure levels and cardiovascular disease risk, and the 'arbitrary' nature of the definition of high blood pressure, have contributed to the variation in the definitions issued by various national and international authorities for population surveys and clinical guidelines.

For use in Australian surveys, high blood pressure has been defined as:

- *systolic blood pressure (SBP) greater than or equal to 160 mmHg and/or*
- *diastolic blood pressure (DBP) greater than or equal to 95 mmHg and/or,*
- *receiving medication for high blood pressure.*

New classifications for the clinical management of high blood pressure have recently been released by the World Health Organization (1999). These guidelines define hypertension as an SBP of 140 mmHg or greater and/or a DBP of 90 mmHg or greater in subjects who are not receiving medication for high blood pressure.

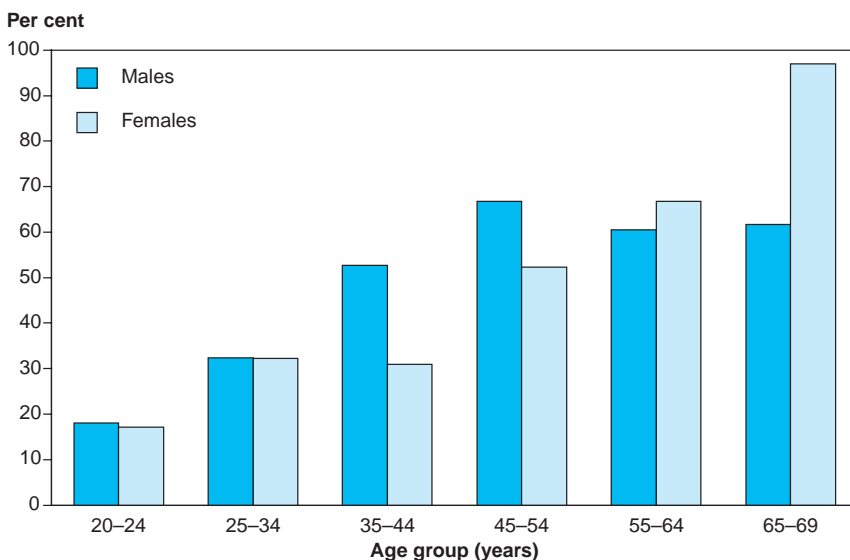
A review of the classifications of high blood pressure used in Australia will begin in 2000 to establish national standards for population surveys.

Blood cholesterol

High blood cholesterol is a major risk factor for coronary heart disease and possibly for some types of stroke. It is one of the main causes of the process by which the blood vessels that supply the heart and other parts of the body become clogged. High blood cholesterol causes nearly 3% of the total burden of disease of Australians (AIHW: Mathers et al. 1999).

For most people, saturated fat in the diet is regarded as the main factor that raises blood cholesterol levels. Cholesterol in foods can also raise blood cholesterol levels, but less than saturated fat does. Genetic factors can affect blood cholesterol—some people have high cholesterol levels regardless of their saturated fat and cholesterol dietary intake and are at increased risk from coronary heart disease (Bouchard et al. 1997).

The risk of heart disease increases steadily in a curvilinear manner from a low base with increasing blood cholesterol levels. Total blood cholesterol levels above 5.5 mmol/L are an indication of a greatly increased risk of developing coronary heart disease. Levels above 6.5 mmol/L are considered to indicate extremely high risk (NHF 1987).



Note: Capital cities only.

Source: 1989 NHF Risk Factor Prevalence Study.

Figure 3.17: Proportion of persons aged 20-69 years with raised blood cholesterol, 1989

The last national survey to measure blood cholesterol levels in Australia was conducted by the National Heart Foundation in 1989. It was estimated that over 4.5 million Australian adults (aged 20-69 years) had high-risk cholesterol levels. Over 47% of men and 39% of women had blood cholesterol levels above 5.5 mmol/L (Bennett & Magnus 1994). In men, there was a rapid increase in the prevalence of elevated total cholesterol after age 34. In women, the increase occurred a decade later, after age 44, and the level exceeded that of men after the age of 55 (Figure 3.17). In terms of those at very high risk of cardiovascular disease, over 15% of men and women aged 20-69 years had blood cholesterol levels of 6.5 mmol/L or more.

There was little change during the 1980s in Australia in average blood cholesterol levels or in the proportion of people with levels of 6.5 mmol/L or more (Bennett & Magnus 1994). There are no recent data for Australia. New Zealand reported a fall in average levels between 1989 and 1997, and a fall in the proportion of people with levels of 6.5 mmol/L or more (Russell et al. 1999).

A recent Australian study, the Long-term Intervention with Pravastatin in Ischaemic Disease (LIPID) trial, showed that the cholesterol-lowering drug treatment pravastatin reduces the risk of death from coronary heart disease by around 24% in people with established coronary heart disease (LIPID Study Group 1998). This and other international studies have clearly shown that lipid-lowering drugs are of benefit to prevent events both in people with coronary heart disease and in those without clinical manifestations of coronary heart disease.

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