Health across the life stages

KEY POINTS

- The proportion of females having caesarean sections has continued to increase over the latest decade, from 21% in 1998 to 31% in 2007.
- The perinatal death rate of babies born to Indigenous mothers in 2007 was twice that of other babies (20.1 compared with 9.8 per 1,000 births).
- Death rates among children and young people halved in the two decades to 2007, largely due to fewer deaths from transport accidents.
- More children are being vaccinated against major preventable childhood diseases, with 91% (the target level) being fully vaccinated at 2 years of age—but only 82% of 5 year olds are covered.
- Land transport accidents and intentional self-harm accounted for 2 in every 5 deaths (42%) among young Australians (aged 15–24 years) in 2007.
- The main causes of death in 25–64 year olds in 2007 were coronary heart disease for males (14% of their deaths) and breast cancer for females (12%).
- For older people, the main causes of death are heart disease, stroke and cancer.
- At age 65, Australian males can now expect to live a further 19 years to almost 84 years of age, and females a further 22 years to almost 87.

Health can be discussed in many ways and this chapter presents a 'life stages' view of the health of Australians. It covers a range of age groups, from babies (and their mothers), through the early childhood and adolescent stages to the 'working age' years and finally to those aged 65 years and over.

The chapter begins with an overview of how some general factors vary with age, such as self-assessed health status, death rates and the main causes of death. It then discusses the five age groups in turn, sketching their special social and personal features, and summarising the main aspects of their health.

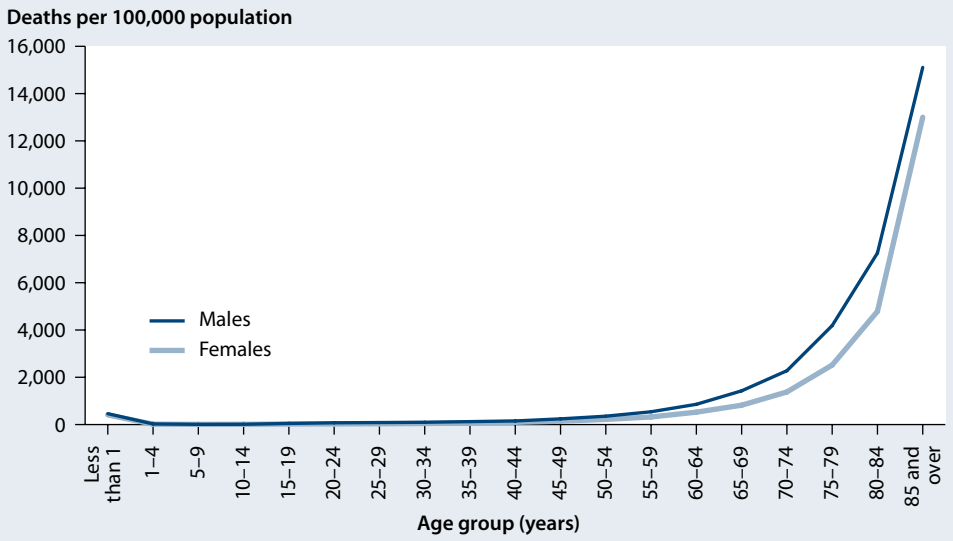
Why take this life stage perspective? First, several of these age groups are already a long-established focus of the health system. For example, there are specialist health professionals and services dedicated to expectant mothers and childbirth, to infants and other children, and to the elderly. This chapter should be of special interest to those professionals.

Second, this approach can help to lay out a whole-of-life story that is difficult to obtain in other ways. It can be seen that some health problems are largely confined to certain age groups but a range of problems—such as injury—run throughout life and only their prominence varies with age. Also, many problems may only become pronounced in older ages but their seeds begin in childhood with factors such as smoking, poor diet and obesity (see Chapter 3). Information such as this provides a long-range view that is important for health planning.

However, readers should note that the story presented here is only a rough guide to how health changes across the life stages because it relies on a 'snapshot' view of the various age groups as they are now, rather than following individuals over time. When today's children reach their later decades, for example, new social and medical circumstances may give them a different health profile from today's elderly.

6.1 How does health status vary with age?

Most aspects of health status vary with age, with problems usually increasing over the life stages. For example, based on data from the Australian Bureau of Statistics' (ABS) 2007–08 National Health Survey (NHS), the proportion of people aged 15 years and over who rated their health as only fair or poor generally doubled between each life stage, from 7% of 15–24 year olds to 13% of 25–64 year olds and to 31% of people aged 65 years and over. In 2007, death rates also increased markedly with age. The exception was in the infant group (aged under 1 year) where death rates were much higher than for children overall and were exceeded only by people from the age of 55 years and over (Figure 6.1). After infancy, the death rate dropped dramatically and was at its lowest among those aged 5–14 years. It then increased progressively and was highest among those aged 85 years and over (see also Table 2.1).



Source: ABS 2008b.

Figure 6.1: Number of deaths by age group, 2007

The leading causes of death also vary with age, reflecting different exposure to environmental factors and to the underlying ageing processes (see Section 2.6). For example, the most common causes of death for infants are conditions emerging from the perinatal period, followed by congenital anomalies (ABS 2009a). Injury and poisoning is the most common cause of death among children and young people, and remains the leading cause for males aged 25–44 years. However, for females aged 25–44 years, cancer emerges as the most common cause of death. Cancer then becomes the most common cause of death for males and females aged 45–64 years, followed by cardiovascular disease. This pattern persists for males aged 65–84 years but cardiovascular disease becomes the most prominent cause of death for females of this age. For both males and females aged 85 years and over, cardiovascular disease is the leading cause of death.

In the remainder of this chapter, information is presented for each selected life stage and also by sex where important differences exist between males and females. Sections include information about various aspects of health (for example, self-reported health status, health conditions, disability, mortality and use of health services) and key risk and protective factors for health (for example, smoking and alcohol consumption).

6.2 Mothers and babies

Recent years have seen some notable trends in births and the health of Australian mothers and babies. During the 17 years to 2007, the number of births fluctuated between about 254,000 and 263,000 per year until 2004, before increasing sharply to over 290,000 in 2007. During this period, the proportion of multiple births increased, as did rates of caesarean section. This section presents information on these topics, as well as others including birthweight, pre-term births and congenital anomalies.

Mothers

Maternal age

There has been an upward trend in maternal age in recent years. Data from the National Perinatal Data Collection show that in 2007 the average age of all females who gave birth was 29.9 years, compared with 28.9 in 1998. The average age of first-time mothers was 28.2 years in 2007, an increase from 27.0 in 1998. In 2007, 4.1% of all females who gave birth were aged less than 20 years (compared with 5.1% in 1998) and 22.3% were aged 35 years or more, a marked increase from 15.7% in 1998.

Method of birth

In 2007, about 6 in 10 females who gave birth had spontaneous vaginal births, about 3 in 10 had caesarean sections and just over 1 in 10 had births involving forceps or vacuum extraction delivery (Table 6.1).

Nationally, the proportion of females having caesarean sections has increased progressively and markedly over the latest decade (from 21.1% in 1998 to 30.9% in 2007). However, the 2007 rate was only marginally higher than that in 2006 (30.8%). In 2007, of all females who gave birth, 18.1% had a caesarean section without labour while 12.8% had a caesarean section following labour. The proportion of females having caesarean sections was much higher in private hospitals than in public hospitals (41.5% and 27.8% respectively) in 2007.

Table 6.1: Method of birth, all mothers, by state and territory, 2007

Method of birth	NSW[(a)]	Vic[(a)]	Qld	WA[(a)]	SA	Tas	ACT[(b)]	NT[(a)]	Australia
					Number				
Total mothers	94,588	71,189	59,228	29,630	19,467	6,216	5,419	3,759	289,496
					Per cent				
Non-instrumental vaginal	60.3	55.6	58.5	54.1	56.5	61.4	58.7	63.6	57.9
Forceps	3.5	5.6	2.0	2.5	4.1	3.2	6.2	1.9	3.6
Vacuum extraction	7.2	8.0	6.5	10.7	7.1	7.3	6.1	4.9	7.5
Caesarean section	29.0	30.8	33.1	32.7	32.3	28.0	28.9	29.6	30.9
Labour	12.2	13.0	12.7	12.6	15.1	13.7	10.9	14.0	12.8
No labour	16.8	17.8	20.4	20.2	17.3	14.4	18.0	15.6	18.1
Not stated	—	—	—	—	—	—	—	—	—
Not stated	0.1	—	—	—	—	—	—	—	—
Total	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**

— Nil or rounded to zero.

(a) For these four jurisdictions, 'Non-instrumental vaginal' includes all females who had a vaginal breech birth, whether or not instruments were used. For the remaining jurisdictions, vaginal breech births are only included where instruments were not used.

(b) 16.1% of females who gave birth in the ACT were non-ACT residents. Care must be taken when interpreting percentages. For example, 27.5% of ACT resident females had a caesarean section compared with 36.4% of non-ACT residents who gave birth in the ACT.

Note: For multiple births, the method of birth of the first-born baby was used.

Source: Laws & Sullivan 2009.

Statistics from 2007 show differences between the states and territories in the use of interventions to assist in births (Table 6.1). Western Australia, South Australia and Queensland reported caesarean rates above the national average (32.7%, 32.3% and 33.1% respectively). The Australian Capital Territory and Victoria recorded the highest percentages of forceps delivery (6.2% and 5.6%). The percentage of vacuum extractions varied considerably, from a high of 10.7% in Western Australia to 4.9% in the Northern Territory.

Aboriginal and Torres Strait Islander mothers

Aboriginal and Torres Strait Islander mothers tend to be younger than non-Indigenous mothers, with average ages of 25.2 years and 30.1 years respectively among those giving birth in 2007 (Laws & Sullivan 2009). One in 5 (19.5%) Aboriginal or Torres Strait Islander mothers were teenagers, compared with 3.5% of non-Indigenous mothers.

Indigenous mothers had higher rates of non-instrumental vaginal birth (70.6%) than non-Indigenous mothers (57.4%) and lower rates of delivery by caesarean section (24.2% and 31.1% respectively).

Maternal mortality

A maternal death is defined as:

> the death of a woman while pregnant or within 42 days of the termination of the pregnancy, irrespective of the duration and site of the pregnancy, from any cause related to or aggravated by the pregnancy or its management, but not from accidental or incidental causes (WHO 1992).

Maternal deaths occur infrequently in Australia. In the most recent triennial report, covering the period 2003–2005, there were 65 maternal deaths reported over the 3 years (Sullivan et al. 2008).

Maternal deaths are classified as direct deaths (those from pregnancy complications such as obstetric embolisms and bleeding) and indirect deaths (those from pre-existing diseases aggravated by pregnancy, such as heart disease). There were 29 direct maternal deaths (44.6%) and 36 indirect deaths (55.4%) reported in 2003–2005. The maternal mortality ratio, calculated using direct and indirect deaths, was 8.4 deaths per 100,000 females who gave birth (Sullivan et al. 2008).

International comparisons are difficult due to differences in definitions and lack of denominator data. The maternal mortality ratio for the United Kingdom was 13.95 per 1,000 maternities for 2003–2005 (defined as pregnancies resulting in a livebirth at any gestation or stillbirth occurring at 24 weeks or more) (Lewis 2007).

Babies

Births

In 2007, there were 294,205 births reported to the National Perinatal Data Collection, an average of 806 per day (Laws & Sullivan 2009). These births included 292,027 live births, 2,177 fetal deaths and 1 for which the outcome was undetermined. Over the decade up to 2007, the number of births fluctuated between about 254,000 and 257,000 per year between 1998 and 2004, before increasing sharply by 5.9% between 2004 and 2005, 3.6% between 2005 and 2006, and then a further 4.3% between 2006 and 2007 (Figure 6.2).

Numbers of births registered with the various Registrars of Births, Deaths and Marriages in Australia are very similar to those reported to the National Perinatal Data Collection. In 2007, there were 285,200 live births registered, the highest number ever recorded. The previous peak was in 1971 when 276,400 births were registered. The number of births fell sharply during the remainder of the 1970s, before increasing from the early 1980s to reach 264,200 in 1992. Over the following decade, the number of registered births generally declined, but increased from 2002 (ABS 2008a).

The total fertility rate, which is the number of babies per female, was 1.93 in 2007. Compared with projections for 2005–2010, Australia's rate is lower than those of the United States (2.1) and New Zealand (2.0), and most developing countries. The world average is 2.6 babies per female (ABS 2008a).

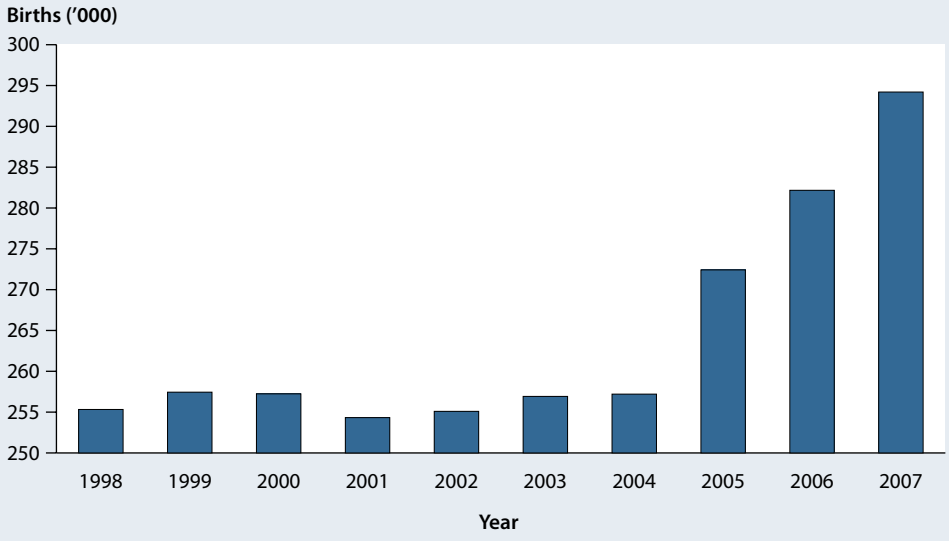
Data from the Australian and New Zealand Assisted Reproduction Database show that there were 9,842 births to females who had assisted reproduction technology (ART) treatment in Australia in 2007. These births included 9,717 live births, 114 fetal deaths and 11 babies with an unknown birth outcome.

Sex

Male births exceed female births in Australia, as in other developed countries. In 2007, Australia's male births accounted for 51.4% of all live births (149,977 males compared with 141,995 females) (Laws & Sullivan 2009). This proportion was similar across the states and territories, and has changed little over time.

Multiple births

The rate of multiple births in Australia has risen steadily since the early 1980s. This can be attributed to an increasing average age of mothers giving birth, and growing use of fertility drugs and assisted conceptions.



Source: Laws and Sullivan 2009.

Figure 6.2: Number of births reported to the National Perinatal Data Collection, 1998 to 2007

There were 9,115 twin and 228 triplet births in 2007, representing 3.1% and 0.1% of all births in Australia, respectively. The associated multiple birth rate was 31.8 per 1,000 births, up from 29.8 in 1998.

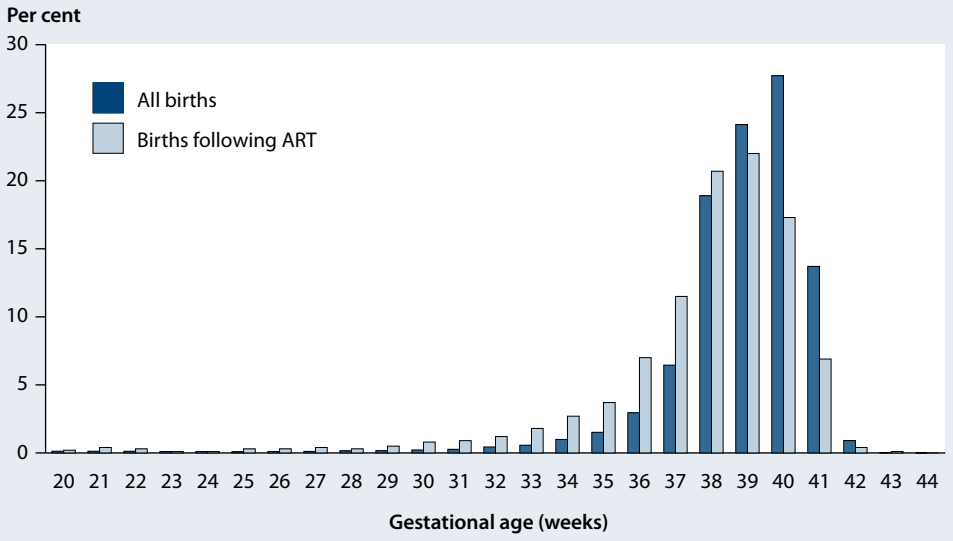
Of the 9,842 births resulting from ART treatment, 18.7% (1,844) were multiple births. This included 1,796 twins (18.2%) and 48 higher order multiples (0.5%).

Gestational age

In 2007, the average gestational age of all babies born was 38.8 weeks. For babies of at least 20 weeks' gestation born to females who had ART treatment, the average was 37.7 weeks. Figure 6.3 shows the differing distributions in gestational age at birth of all babies and babies born following ART.

The great majority of babies (90.9%) were born at term—that is, 37–41 weeks' gestation. Only 0.9% were born post-term, at 42 weeks' or more gestation. Preterm births—those occurring before 37 weeks' gestation—may be associated with neonatal problems that cause significant illness and mortality in newborn babies and are sometimes associated with long-term disabilities. Of all births in 2007, 23,953 (8.1%) were preterm. The Northern Territory had the highest proportion of preterm births, at 10.4% of all births, and New South Wales reported the lowest, at 7.4%.

Preterm birth was more likely for babies of multiple births. Whereas 6.6% of single births were preterm, 53.7% of twins and almost all triplets (99.6%) were preterm. Over one-fifth of babies born following ART treatment were preterm (21.0%). Of ART twins, 64.9% were preterm, and all higher order multiples were preterm.



ART Assisted reproduction technology.

Note: '20 weeks' includes four babies of less than 20 weeks' gestation.

Sources: Australian and New Zealand Assisted Reproduction Database; National Perinatal Data Collection.

Figure 6.3: Distribution of gestational age for all births and births following ART, 2007

Birthweight

A key indicator of infant health is the proportion of babies with low birthweight. This is because these babies have a greater risk of poor health and dying, require a longer period of hospitalisation after birth and are more likely to develop significant disabilities. For babies, a 'low birthweight' means less than 2,500 grams, 'very low birthweight' means less than 1,500 grams and 'extremely low birthweight' means less than 1,000 grams.

In 2007, 17,976 (6.2%) liveborn babies were of low birthweight. Of these, 2,956 (1.0% of the total) were of very low birthweight and, of these, 1,288 (0.4% of the total) were of extremely low birthweight. There has been very little change in the proportion of liveborn babies of low birthweight over the last 10 years. Across the states and territories, the proportion ranged from 5.7% in New South Wales to 7.9% in the Northern Territory. Female liveborn babies were more likely to be of low birthweight (6.9%) than male babies (5.9%). Of liveborn babies conceived after ART, 15.7% were of low birthweight.

The average birthweight of liveborn babies in Australia in 2007 was 3,374 grams (Table 6.2). Averages by state and territory ranged from 3,290 grams in the Northern Territory to 3,395 grams in Tasmania. The average birthweight of liveborn male babies (3,430 grams) was 123 grams higher than female babies (3,307 grams). For liveborn single babies, the average birthweight was 3,404 grams, higher than for twins (2,387 grams), and triplets and other multiple births (1,648 grams). The average birthweight of liveborn babies conceived after ART was 3,141 grams.

Table 6.2: Live births by birthweight and state and territory, 2007

Birthweight (g)	NSW	Vic	Qld	WA	SA	Tas	ACT[(a)]	NT	Australia
Average	3,382	3,370	3,385	3,357	3,359	3,395	3,365	3,290	3,374
					Number				
Total	95,387	71,778	59,827	29,885	19,620	6,268	5,495	3,767	292,027
					Per cent				
Less than 1,000	0.4	0.5	0.4	0.4	0.5	0.4	0.6	0.6	0.4
1,000–1,499	0.5	0.6	0.6	0.5	0.6	0.7	0.6	1.1	0.6
1,500–1,999	1.1	1.3	1.3	1.3	1.1	1.4	1.9	1.4	1.3
2,000–2,499	3.7	3.9	3.9	4.0	4.2	4.2	4.2	4.8	3.9
2,500–2,999	14.9	15.3	14.4	15.5	15.7	14.0	14.6	19.0	15.0
3,000–3,499	36.4	35.7	35.0	36.6	36.0	33.9	34.8	35.7	35.9
3,500–3,999	31.1	30.7	31.6	30.5	30.4	31.5	30.5	27.1	30.9
4,000–4,499	10.2	10.1	10.7	9.4	10.0	11.8	10.8	8.9	10.2
4,500 and over	1.7	1.8	1.9	1.5	1.5	2.1	2.0	1.4	1.8
Not stated	0.1	—	—	—	—	—	—	—	—
Total	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**
Less than 1,500	*0.9*	*1.1*	*1.1*	*1.0*	*1.1*	*1.1*	*1.2*	*1.6*	*1.0*
Less than 2,500	*5.7*	*6.3*	*6.3*	*6.4*	*6.4*	*6.7*	*7.2*	*7.9*	*6.2*

— Nil or rounded to zero.

(a) 16.1% of females who gave birth in the ACT were non-ACT residents. Care must be taken when interpreting percentages. For example, the percentage of live births of ACT residents who gave birth in the ACT where the birthweight was less than 1,500 grams was 0.7% and where the birthweight was less than 2,500 grams the percentage was 5.0%.

Source: Laws & Sullivan 2009.

Babies of Aboriginal and Torres Strait Islander mothers

Among mothers recorded in the National Perinatal Data Collection who identified as being Aboriginal or Torres Strait Islander, there were 10,879 live births and 147 fetal deaths in 2007, representing 3.7% of all births.

Indigenous babies are much more likely to be preterm and of low birthweight than those born to other Australian mothers. In 2007, 13.7% of babies of Aboriginal and Torres Strait Islander mothers were classified as preterm compared with 7.9% of babies of non-Indigenous mothers. The proportion of low birthweight in liveborn babies of Aboriginal and Torres Strait Islander mothers was 12.5% in 2007, twice that of babies of non-Indigenous mothers (5.9%). The average birthweight of liveborn babies of Indigenous mothers was 3,182 grams.

Admission to special care or intensive care nurseries

Among all liveborn babies in 2007, 14.5% were admitted to a special care nursery (SCN) or neonatal intensive care unit (NICU). The proportion was higher for multiple births, and especially for triplets. Of all liveborn triplets, 93.8% were admitted to a SCN or NICU, compared with 57.1% of twins and 13.1% of single babies. For live births of Indigenous mothers, the proportion admitted to a SCN or NICU was 19.9%, and for live births of non-Indigenous mothers the proportion was 14.3%.

Perinatal mortality

Perinatal deaths are those that occur in the period shortly before or after birth. In this report, the count of perinatal deaths includes stillbirths (fetal deaths) and deaths of infants within the first 28 days of life (neonatal deaths), where the fetus or infant weighed at least 400 grams or was of at least 20 weeks' gestation.

In 2007, there were 3,024 perinatal deaths reported to the National Perinatal Data Collection—2,177 fetal deaths, 846 neonatal deaths and 1 death where the outcome was undetermined. The main causes of perinatal death in the jurisdictions where data were available were congenital abnormalities (anomalies) (23.5%), maternal conditions (13.8%) and unexplained antepartum death (12.6%).

The perinatal death rate for 2007 using data from the National Perinatal Data Collection was 10.3 per 1,000 births. Overall, the perinatal death rate has remained at around 10 per 1,000 births over the most recent decade (fluctuating between 9.8 and 10.5 per 1,000 births between 1998 and 2007). Fetal deaths (7.4 per 1,000 births) accounted for 72.0% of perinatal deaths, and neonatal deaths (2.9 per 1,000 live births) for 28.0%. Young maternal age, maternal Indigenous status and multiple gestation were associated with higher rates of perinatal deaths. The perinatal death rate of babies born to Indigenous mothers was 20.1 per 1,000 births, whereas it was 9.8 for babies born to non-Indigenous mothers.

Congenital anomalies

Congenital anomalies are structural or functional defects that occur during fetal development and are present at birth. These lifelong conditions are among the most common causes of childhood mortality, illness and disability. The rates of congenital anomalies are monitored in each jurisdiction, with the exception of the Northern Territory (AIHW NSPU: Abeywardana & Sullivan 2008a). Table 6.3 gives descriptions and rates for the most common congenital anomalies reported to the Australian Congenital Anomalies Monitoring System for the 2-year periods 1998–1999, 2000–2001 and 2002–2003.

Table 6.3: Most common congenital anomalies reported to the Australian Congenital Anomalies Monitoring System

Specific congenital anomalies	Among births[a]			Among pregnancies[b]		
	1998–1999	2000–2001	2002–2003	1998–1999	2000–2001	2002–2003
	Number per 10,000 total births[c]					
Transposition of the great vessels: abnormal development of the heart where the aorta exits from the right ventricle and the pulmonary artery from the left ventricle.	4.1	3.8	4.2	4.2	4.5	4.7
Cystic kidney: abnormal development of the kidney(s) resulting in the formation of multiple cysts.	4.7	4.8	4.6	5.7	6.0	5.3
Renal agenesis/dysgenesis: abnormal development of the kidney(s) resulting in the complete absence or disorganised development of the kidneys	5.1	4.9	4.9	6.5	5.7	5.6
Hydrocephaly: dilation of the brain's ventricles (fluid spaces) with or without head enlargement, but not associated with neural tube defects or primary brain atrophy.	4.9	5.1	4.8	7.5	7.2	6.8
Trisomy 18 (Edwards syndrome): presence of all or part of an extra chromosome 18, resulting in multi-system anomalies	2.4	1.7	2.0	6.6	6.1	7.1
Polydactyly: abnormal development of the hands and/or feet resulting in extra digits (fingers or toes)	8.7	9.1	8.9	9.6	10.2	9.7
Neural tube defects: abnormal development of the brain and/or spinal cord due to incomplete closure of the neural tube in the very early part of pregnancy	4.8	4.6	4.2	11.6	11.0	9.8
Cleft lip and/or cleft palate: abnormal development of the mouth resulting in a gap in the upper lip and/or roof of the mouth	17.0	17.2	17.3	19.0	18.9	18.8
Hypospadias: abnormal development of the male external genitalia resulting in an abnormal site for the opening of the urethra (tube from the bladder)[d]	52.5	50.3	46.4	59.6	54.1	47.5
Trisomy 21 (Down syndrome): the presence of all or part of an extra chromosome 21, resulting in multi-system anomalies	11.2	11.9	11.1	22.3	24.3	26.3

(a) Data about congenital anomalies at birth are collected by all states and territories except the Northern Territory about all births (live births and stillbirths, including terminations of pregnancy, occurring after 20 weeks' gestation).

(b) New South Wales, Victoria, Western Australia and South Australia collect information about congenital anomalies from terminations of pregnancy before 20 weeks' gestation and this is combined with information collected about congenital anomalies from births to generate rates in pregnancy.

(c) The rate of anomalies among births and among pregnancies (births and terminations of pregnancy before 20 weeks' gestation combined) are both calculated using the number of total births in the calendar year in which the pregnancy ended for the denominator.

(d) Hypospadias occurs only in male babies. Rates are thus calculated using the total number of male births in the calendar years in which the pregnancy ended for the denominator.

Sources: Abeywardana et al. 2007; Abeywardana & Sullivan 2008a.

Individual conditions vary in severity and in their potential for long-term disability. Babies born with renal agenesis or trisomy 18 do not usually survive infancy. Cleft lip, cleft palate and hypospadias can be corrected surgically, and may need no further intervention. Polydactyly does not always require intervention. For an affected baby, these anomalies can occur alone or with other anomalies. Some frequently seen groups are described as syndromes. Down syndrome and Edwards syndrome, more correctly referred to as trisomy 21 and trisomy 18 respectively, are now known to be due to additional chromosomal material in individual cells. Pregnancy affected by these two chromosomal conditions can occur at any age, but the risks increase sharply after a woman reaches the age of 35 years.

Prenatal screening and diagnostic tests are available to detect most of these conditions during pregnancy. The prenatal diagnosis of a major birth defect can assess the severity of the condition(s) before delivery. This allows parents to make an informed decision about continuing a pregnancy if the condition is known to be incompatible with life or result in an extremely poor quality of life. If the pregnancy is continued, parents have time before the birth to adjust to the situation. Arrangements can be made for the mother to give birth at a centre with facilities for the baby's care and treatment.

Preventing neural tube defects in pregnancy

Three serious malformations (anencephaly, spina bifida and encephalocoele) result when the neural tube fails to close properly in the first few weeks of pregnancy. (The neural tube is a structure in the embryo that develops into the brain and spinal cord.) Closure requires the substance folate, derived from the vitamin folic acid, which cannot be stored in the body. To ensure adequate levels of folate in the first weeks of pregnancy, females need to ensure they have ample intake in their diet before conception. Since many pregnancies are not planned, reducing neural tube defects in the community means that all females of reproductive age need to consume an adequate amount of folic acid.

Various programs have been tried over the past 20 years to increase folic acid consumption: health promotion campaigns, providing supplements and voluntary fortification of food with folic acid. However, these have not produced a sustained increase in folic acid intake among the target female populations. Mandatory folic acid fortification of foods has been a more successful way to increase folic acid intake. In the United States there was a 19% reduction (Honein et al. 2001) and in Canada a 46% reduction (De Wals et al. 2007) in neural tube defects within 3 years of mandatory food fortification with folic acid.

Table 6.3 shows little decrease in the rate of neural tube defects among pregnancies in Australia between 1998 and 2003. Since 13 September 2009, it has been mandatory for industry to fortify bread flour in Australia with 200–300 µg folic acid per 100 grams of flour. The effect of this will be assessed after 2 years (Abeywardana & Sullivan 2008b).

6.3 Children and young people

Childhood and youth spans a number of major developmental phases in life—infancy, early childhood, 'school age' childhood, adolescence and early adulthood. It is a crucial period for establishing positive health and social behaviours at a time when children and young people are undergoing rapid emotional, physical and intellectual changes, and when they begin the transition from childhood to adolescence to independent adulthood. During this period, children and young people acquire a wide range of skills and behaviours through their family, social and community environments. Along with biological factors, this influences their physical and psychological health, their social development and their

educational achievements. This section provides an overview of the health and wellbeing of Australia's children and young people. For more detailed information refer to *A picture of Australia's children 2009* and *Young Australians: their health and wellbeing 2007* (AIHW 2007c, 2009a).

In this report, children are defined as those aged 0–14 years and young people as those aged 15–24 years.

Children

Most Australian children enjoy good health, as indicated by low and declining rates of infant and childhood deaths; declines in specific conditions such as communicable diseases, asthma and injuries; and improved survival from cancer, particularly leukaemia. Most children are also physically active and almost all children are immunised. However, there are a number of areas of concern—diabetes and dental decay are on the rise and too many children spend more than the recommended time in front of a video screen (including television and computers), are overweight or obese, and are not eating recommended amounts of vegetables.

In 2008, there were almost 4.1 million children aged 0–14 years in Australia, accounting for almost one-fifth (19%) of the total population—2.1 million boys and 2 million girls. As proportions of their respective populations, Indigenous children made up 36% compared with 19% for non-Indigenous children. This reflects the younger age structure of Aboriginal and Torres Strait Islander people.

Health and disability

To present a picture of the health of Australia's children, various measures of health status have been included in this section, such as the burden of disease, the prevalence and incidence of long-term conditions, hospitalisations and mortality. Table 6.4 shows the main health conditions that cause ill health and mortality among children, according to these measures.

Burden of disease and long-term health conditions

The 'burden of disease' measure is described in Chapter 2. Briefly, it measures the combined effects of premature death, illness or disability for various disorders or injuries. Chronic and long-term conditions account for a large proportion of the burden of disease among children, and can affect growth and physical, social and emotional development. It is estimated that, in 2003, almost one-quarter of the burden of disease in children was due to mental disorders—anxiety and depression, attention-deficit hyperactivity disorder and autism spectrum disorders. Another 18% was due to chronic respiratory conditions (mostly asthma) and 16% to neonatal conditions (Table 6.4). Less than one-quarter of the burden was due to deaths. Asthma was the leading specific cause of disease burden for both male and female children. Among males this was followed by autism spectrum disorders, anxiety and depression, and low birthweight; in females, the next leading causes were anxiety and depression, low birthweight, and birth trauma and asphyxia (Begg et al. 2007).

These results are consistent with prevalence data from the 2007–08 NHS, where asthma was the most frequently reported long-term condition among children (affecting an estimated 415,200 Australian children: 10%). Hayfever and allergic rhinitis (7%) and undefined allergies (5%) were also common conditions reported among children. Long-term mental or behavioural problems were also identified in the survey as a significant childhood problem, affecting around 5% or 213,800 Australian children,

according to parents' reports (Table 6.4). Commonly reported problems were behavioural and emotional problems with usual onset in childhood or adolescence (2.2%), anxiety-related problems (1.8%) and problems of psychological development (1.7%). (Note that more than one problem may have been reported for a child.)

Although many children have a long-term condition, not all these conditions result in limitations to activities or participation that restrict the child's full involvement in society. According to the 2007–08 NHS, 27% or 1.5 million Australian children had at least one long-term condition and, of these, over a third (532,100) also had disability.

Long-term conditions such as cancer and diabetes are uncommon in childhood, but a considerable number of children are affected by them each year. Type 1 diabetes most often appears during childhood or adolescence and requires ongoing management to control and reduce the risk of complications. According to the National Diabetes Register, in 2007 there were 987 new cases of Type 1 diabetes among children, an increase since 2000 when there were 758 new cases. The rate of new cases in 2007 (24 per 100,000 children) was significantly higher than that in 2000 (19 per 100,000). Incidence rates were similar for boys and girls and increased with age, with rates twice as high among 10–14 year olds as for 0–4 year olds (31.3 per 100,000 compared with 15.1 in 2007) (AIHW 2009d).

For cancer, there were an average of 572 new cases diagnosed annually among children between 2002 and 2006—a rate of 14 per 100,000 children (15 and 13 per 100,000 boys and girls respectively), the same rate as in the 5-year period 1996–2000. The most common types in these cases were lymphoid leukaemia, cancer of the brain and myeloid leukaemia (4.2, 1.9 and 1.1 per 100,000 children respectively). In 2006, these cancers accounted for half of all cancers diagnosed among children (AIHW Australian Cancer Database). Overall survival from cancer, and for leukaemia in particular, continues to improve. Five-year relative survival for children with leukaemia increased from 64% to 83% between 1982–1986 and 1998–2004. For all childhood cancers the corresponding increase was from 67% to 79%.

Hospitalisations

Similar to the picture for prevalence and burden of disease, respiratory conditions were the most common cause for hospitalisations among children in 2007–08. They accounted for 103,742 hospitalisations—19% of the 558,791 total for children that year (Table 6.4). Upper respiratory tract diseases and chronic lower respiratory diseases were the most common reasons for these respiratory hospitalisations, accounting for 27% and 21% respectively.

The second leading cause of hospitalisation for children was injury and poisoning (67,767 hospitalisations: 12% of the total), and this was the leading cause of hospitalisation for those aged 10–14 years. Overall, boys were 1.6 times as likely to be hospitalised for injury as girls (2,031 compared with 1,248 per 100,000 respectively). The most common reason for these hospitalisations was falls, accounting for around 39% of all child injury hospitalisations, while land transport accidents (traffic and non-traffic) accounted for a further 13%.

Table 6.4: Leading conditions that cause ill health and mortality, various measures, children aged 0–14 years

Parent-reported prevalence (2007–08)		Hospitalisations (2007–08)		Infant mortality (2007)		Child (1–14 years) mortality (2007)		Burden of disease and injury (DALYs)[a] (2003)	
Condition	Per cent of all children	Condition	Per cent of all child hospitalisations	Condition	Per cent of all infant deaths	Condition	Per cent of all child deaths	Condition	Per cent of all child DALYs
Respiratory diseases	17.4	Respiratory conditions	18.6	Perinatal conditions	47.7	Injury and poisoning	36.8	Mental disorders	22.6
Eye and adnexa disorders	10.1	Injury and poisoning	12.1	Congenital anomalies	25.8	Cancer	17.0	Chronic respiratory	18.1
Ill defined conditions[b]	6.7	Perinatal conditions	10.3	Ill defined conditions[b]	12.1	Diseases of the nervous system	9.9	Neonatal conditions	15.6
Mental and behavioural problems	5.3	Digestive conditions	10.2	Injury and poisoning	3.0	Circulatory conditions	6.3	Congenital conditions	11.6
Ear and mastoid disorders[c]	3.2	Ill defined conditions[b]	6.9	Diseases of the nervous system	2.3	Ill defined conditions[b]	6.3	Injuries	7.4

(a) Disability-adjusted life years (see Chapter 2).

(b) Parent-reported prevalence, hospitalisations and deaths from Ill defined conditions include those for which a more specific diagnosis could not be made or where signs or symptoms could not be determined. This refers to the ICD-10 chapter 'Signs, symptoms, and abnormal clinical and laboratory findings' (WHO 1992).

(c) Diseases of skin and subcutaneous tissue were in equal 5th position with ear and mastoid disorders.

Note: The conditions listed above are based on the ICD-10 chapter level headings, except for the burden of disease data, where conditions are grouped using a different methodology.

Sources: ABS 2009b; AIHW National Hospital Morbidity Database; AIHW National Mortality Database; Begg et al. 2007.

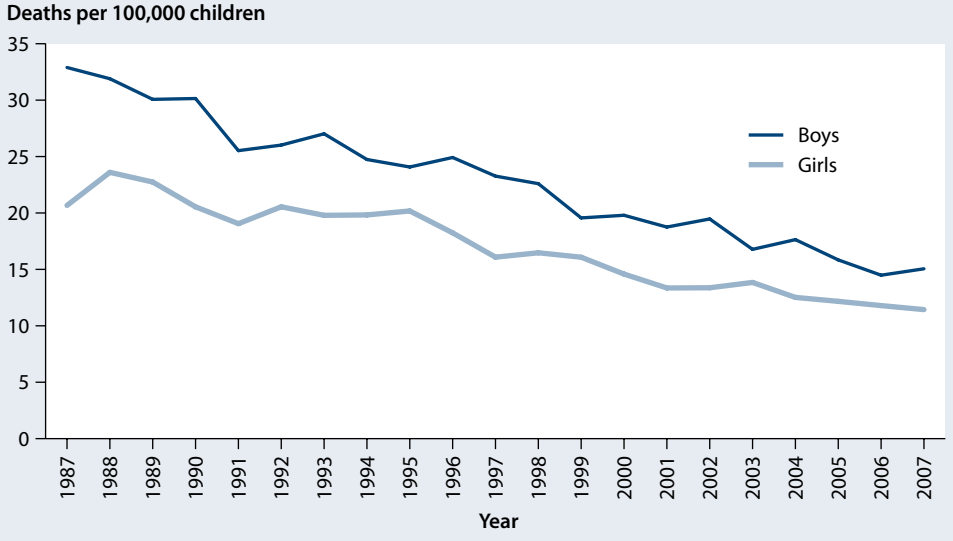
Mortality

Infant and child death rates provide insight into the social and environmental conditions in which Australia's children grow and develop. In 2007, there were 1,709 deaths among children, with over two-thirds (70%) of these deaths occurring among infants (children aged less than 1 year). There were 1,203 infant deaths—a rate of 4.2 deaths per 1,000 live births (4.5 for males and 3.9 for females; see the Glossary for the definitions of infant and child mortality rates). The number of deaths among 1–14 year olds was considerably lower—506 deaths (a rate of 13 per 100,000: 15 and 11 deaths per 100,000 for boys and girls respectively).

Over the last two decades there has been a large decline in the child death rate (including infants). Infant mortality rates almost halved between 1987 and 1998 (from 8.7 to 5.0 deaths per 1,000 live births), but remained comparatively stable between 1998 and 2007. The death rate for those aged 1–14 years declined steadily over the 21-year period, with rates halving from 27 to 13 deaths per 100,000 children (Figure 6.4). This decrease is mainly due to a large decline in transport accident death rates over the period (AIHW 2009a).

Mortality rates among Indigenous children are much higher than those among non-Indigenous children—almost two and a half times as high in 2003–2007. For infants the respective death rates were 10 and 4 deaths per 1,000 live births; and for those aged 1–14 years the rates were 30 and 14 deaths per 100,000 children. Note that these data are based on deaths in New South Wales, Queensland, Western Australia, South Australia and the Northern territory only, due to data quality issues.

The death rate in 2003–2007 among children aged 0–14 years living in remote and very remote areas was also twice as high as that for children living in major cities, reflecting the high proportion of Indigenous children living in outlying areas.



Source: AIHW National Mortality Database.

Figure 6.4: Mortality for children aged 1–14 years, 1987–2007

The leading causes of death differ for infants and 1–14 year olds (Table 6.4). In 2007, the leading causes of death among infants were perinatal conditions (48% of all infant deaths), congenital anomalies (26%), and ill defined conditions (12%; mostly sudden infant death syndrome (SIDS)). Among those aged 1–14 years the leading causes were injuries (37% of total deaths), cancer (17%) and diseases of the nervous system (10%). The leading causes of injury death among 1–14 year olds were land transport accidents and accidental drowning (61 and 39 deaths respectively).

Health determinants

The health of children and adults is influenced by the interaction of many so-called protective or risk factors. Protective factors promote positive health and development and include factors such as good dental health, infant breastfeeding, physical activity and sound nutrition. Factors that increase the risk of ill health in children include overweight and obesity, tobacco use and exposure to tobacco smoke. Wider environmental influences also play a major role in children's health and wellbeing, such as the educational, social and emotional wellbeing of families. Those wider issues are covered elsewhere in this report and in other special Australian Institute of Health and Welfare (AIHW) reports about children (AIHW 2009a). The following discussion covers a selection of important influences.

Dental health

Good oral health in childhood contributes to better teeth and gums in adulthood—less decay and the loss of fewer natural teeth. While Australia compares favourably internationally on child dental decay, ranking 7th out of 27 OECD (Organisation for Economic Co-operation and Development) countries in 2002, tooth decay among our children has been increasing in recent years. The latest available data on dental decay are from the 2003–04 Child Dental Health Survey, where it was reported that over half of all children aged 6 and 12 years were free from dental decay (51% and 58% respectively), although only 45% of 14 year olds were. Between 1999 and 2003–04, the proportion of children free from dental decay declined by 8 percentage points each for children aged 6 and 14 years, and 7 percentage points for children aged 12 years (Child Dental Health Survey, unpublished data).

Immunisation coverage and vaccine-preventable diseases

Immunisation against childhood diseases is important in preventing childhood illness and mortality, and over the last decade immunisation coverage has increased considerably although coverage among older children is still below the target. The coverage needs to exceed 90% of the population in order to interrupt the spread of vaccine-preventable diseases (Lister et al. 1999).

According to the Australian Childhood Immunisation Register, most 1 and 2 year olds were fully immunised as at 30 September 2009—92% and 91% respectively. However, coverage at 5 years of age was 83%, which was below the target. Between September 1998 and September 2009 the proportion of 2 year olds who were fully immunised increased from 69% to 91%, while among 6 year olds coverage increased from 81% to 88% between September 2002 and September 2008 (see Section 3.5 for further information on immunisation coverage). Note that, from 31 March 2008, the age of reporting for the proportion of fully immunised older children on the Australian Childhood Immunisation Register changed from 6 to 5 years of age, so no data will be available for the proportion of fully immunised 6 year olds after September 2008.

In line with increased immunisation coverage, notification rates for a number of vaccine-preventable diseases have fallen dramatically over the last decade. Between 1998 and 2008, there were no notifications for poliomyelitis or diphtheria among children, and only 1 notification for tetanus. Notification rates for rubella and measles fell from 7 and 6 notifications per 100,000 children in 1998 to 0.1 and 0.6 respectively in 2008. Notification rates for pneumococcal disease declined rapidly between 2002 and 2008, from 23 to 8 notifications per 100,000 children. However, the notification rate for pertussis (whooping cough) increased sharply between 2007 and 2008, from 16 to 118 per 100,000. Periodic epidemics of pertussis occur every 3–5 years in Australia, as the protection from the childhood vaccine decreases in adolescents and adults, resulting in the transmission of the disease to children who have not completed the recommended doses of the vaccine.

Breastfeeding

Infants are born with an immune system that is not fully developed. Breastmilk contains antibodies from their mothers so that, along with the superior nutritional value of breastmilk, this provides the best start for infants and reduces the risk of illness and death from infectious diseases.

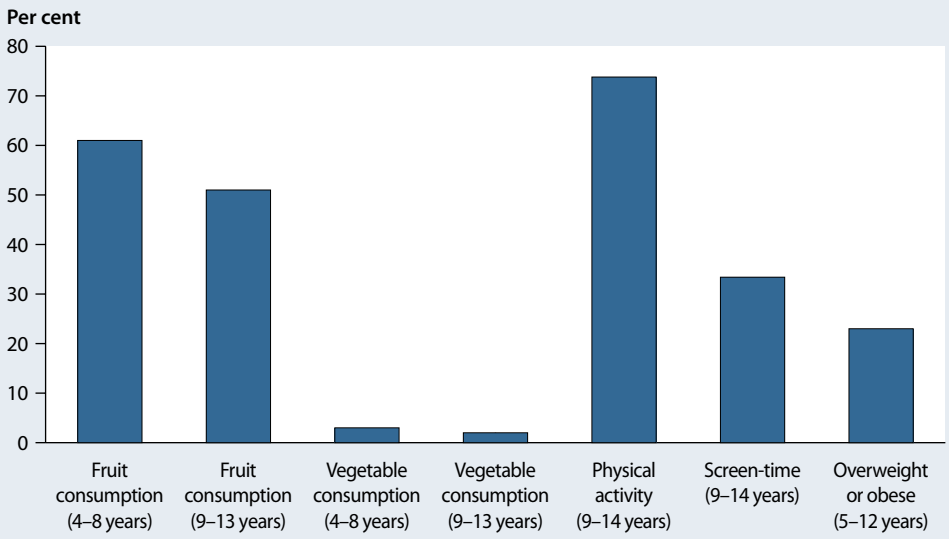
Growing up in Australia: the Longitudinal Study of Australian Children provides information on 'predominantly breastfed' infants in 2004 (studying 5,000 infants aged 0–1 year). For this group, the proportion of infants predominantly breastfed (that is, the infant's main source of nourishment is breastmilk) fell from 91% at birth to 46% at 4 months of age and 14% at 6 months. Notably, the proportion dropped by 11 percentage points between birth and 1 week of age. As that proportion declined with age, there was an increase in the proportion of infants who were 'complementary breastfed' (that is, receiving food and liquid in addition to breastmilk). For example, at 6 months of age, 40% of infants were complementary breastfed, compared with 11% at 1 month (see AIHW 2009a for more information).

Nutrition, physical activity and body weight

Regular physical activity and good nutrition reduce cardiovascular risk, both in their own right and by improving levels of cardiovascular risk factors such as overweight and obesity, high blood pressure and Type 2 diabetes. They may also improve the psychosocial wellbeing of children (Biddle 2004).

Nutrition

Good nutrition is important in supporting the rapid growth and development that occurs during infancy and childhood. Specific dietary guidelines have been developed for this age group. The Dietary Guidelines for Children and Adolescents in Australia (NHMRC 2003) recommend that 4–11 year olds eat one serve of fruit and two to three serves of vegetables daily, and 12–18 year olds eat three serves of fruit and four serves of vegetables daily. Based on data from the 2007 Australian National Children's Nutrition and Physical Activity Survey, 61% of children aged 4–8 years and around half (51%) of children aged 9–13 years met the recommendations for daily serves of fruit (excluding juice). This increased to 93% and 90% respectively with the inclusion of juice. However, very few children met the recommended daily serves of vegetables (excluding potatoes)—3% of 4–8 year olds and 2% of 9–13 year olds. Even with the inclusion of potatoes, the proportions remained low (22% and 14% respectively) (Figure 6.5).



Notes

1. For fruit and vegetable consumption, physical activity and screen time use, per cent refers to the proportion of children meeting the guidelines.
2. Data for overweight and obese children are from the 2007–08 NHS (see ABS 2009b).

Source: 2007 Australian National Children's Nutrition and Physical Activity Survey, unpublished data; ABS 2009b.

Figure 6.5: Children meeting recommended fruit, vegetable, physical activity and screen time guidelines, and who are overweight or obese, 2007

Physical activity

National physical activity guidelines have been developed around the intensity, duration and frequency of physical activity that is good for children's health. Based on the 2007 Australian National Children's Nutrition and Physical Activity Survey, three-quarters of 9–14 year olds met the national physical activity guidelines for moderate to vigorous physical activity—that is, up to several hours of moderate to vigorous physical activity every day of the week. The guidelines also recommend that children not exceed more than 2 hours of non-educational screen time per day (for example, watching movies or playing computer games). In 2007, only one-third of children aged 9–14 years met the guidelines for screen time use. Boys were more likely to meet the guidelines for physical activity, whereas girls were more likely to meet the guidelines for screen time (AIHW 2009a).

Overweight and obesity

Overweight and obesity increases a child's risk of poor health and is a risk factor for developing asthma, cardiovascular conditions and Type 2 diabetes later in life. Based on measured height and weight in the NHS surveys, the prevalence of overweight or obesity increased among children aged 5–12 years from 21% in 1995 to 23% in 2007–08 (ABS 2009b). The corresponding increase was larger for those aged 13–17 years—from 21% to 29%. Of the 23% of 5–12 year olds who were overweight or obese in 2007–08, 16% were overweight but not obese and 7% were obese. However, over three-quarters (77%) of children aged 5–12 years were within the normal weight range in 2007–08. The prevalence of overweight or obesity was similar between boys and girls overall (22% and 23% respectively).

Exposure to tobacco smoke and tobacco use among children

Infants and children are particularly vulnerable to the harmful effects of environmental tobacco smoke because they have less developed respiratory, immune and nervous systems, and have limited control over their exposure. Based on the AIHW National Drug Strategy Household Survey in 2007, around 8% of Australian households with children under 15 years of age had at least one household member who smoked inside the home—a large decrease from 31% in 1995 (see Figure 3.6). This decline coincided with an increase in the proportion of households where someone smoked only outside the home (from 17% to 29%) (AIHW 2009a).

Tobacco use at a young age is a key predictor of continued smoking in adulthood. According to the 2005 Australian Secondary Students' Alcohol and Drug Survey, an estimated 44,200 (or 5%) of 12–14 year olds were current smokers, a considerable decline from 1984 when the rate was 17%.

Young people

Most young Australians—defined here as those aged 15–24 years—are generally healthy and well. This is indicated by declining death rates, particularly from transport accidents; declines in some chronic diseases, such as asthma and cancer; and declines in vaccine-preventable diseases. However, there are a number of areas of concern. There are rising rates of obesity and sexually transmissible infections (such as chlamydia and gonococcal infections), and far too many young people are not meeting recommended levels of physical activity or vegetable consumption, are using an illicit drug, are consuming alcohol at harmful levels, are involved in road transport accidents, and are burdened by mental disorders.

In 2008, there were almost 3 million young people aged 15–24 years in Australia, accounting for 14% of the total population (1.5 million males and 1.5 million females). Indigenous young people only accounted for 4% of all young people in that year (108,400). However, they accounted for a higher proportion of their population than did non-Indigenous young people among theirs (20% compared with 14% respectively).

Health and disability

Various health status measures can be used to provide a profile of the health of young Australians. The following measures have been included in this section: burden of disease, prevalence and incidence of long-term conditions, hospitalisations and mortality. Table 6.5 shows the main health conditions that cause ill health and mortality among young people, according to these measures. Depending on what measure is examined, the leading causes of illness and mortality differ because they measure different aspects of health at different stages of the disease process.

Burden of disease and long-term health conditions

Long-term health conditions (also called chronic conditions) remain a significant challenge for Australia's young people because these conditions can affect normal growth and development, quality of life, long-term health and wellbeing, and successful participation in society, education and employment. Each condition's overall effect can be described as a 'burden of disease', a summary measure that is described in Chapter 2. In 2003, almost half (49%) of the estimated burden of disease in young people was due to mental disorders (accounting for 47% of the male burden and 51% of the female burden), 18% was due to

injuries (largely road traffic accidents and suicide and self-inflicted injuries) and 9% was due to neurological and sense disorders (Table 6.5). Around one-fifth of the burden was due to mortality. Anxiety and depression was the leading specific cause of disease burden for both males and females. The next leading specific causes of disease burden then differ markedly for males and females—substance use disorders, road traffic accidents, and schizophrenia for young males; and asthma, migraine and eating disorders for young females (Begg et al. 2007).

Prevalence data from the ABS 2007 National Survey of Mental Health and Wellbeing confirm that many young people experience mental health disorders. An estimated 1 in 4 young people aged 16–24 years (26%; 671,100) had experienced a mental health disorder in the 12 months before the survey—a higher proportion than any other age group. In 2007, females aged 16–24 years were more likely to have experienced a mental health disorder than males of the same age (30% and 23% respectively). The most commonly reported mental health disorders among 16–24 year olds were anxiety disorders (15%), substance use disorders (13%) and affective disorders (6%).

Almost two-thirds (64%; 1.8 million) of young people had at least one long-term condition in 2007–08, and of these almost a third (569,200) also had disability, according to the NHS. The most frequently reported long-term conditions were hayfever and allergic rhinitis (17%) and short-sightedness (17%), followed by asthma (11%). The prevalence of self-reported asthma has declined since 2001, when the rate was 16%. Of the estimated 318,800 young people with asthma in 2007–08, over one-third (38%) had taken at least one health action for their asthma in the previous 12 months—25% discussed asthma self-management with a general practitioner (GP) or specialist, and 18% had days away from work, school or study (ABS 2009b).

In young people, diabetes is relatively uncommon, although still important. In 2007, there were 443 new cases of Type 1 diabetes among young people aged 15–24 years—a rate of 15 new cases per 100,000 young people, the same as in 2000, according to the National Diabetes Register. The number and rate for young people was substantially lower than for children. The incidence rate for Type 1 diabetes was significantly higher for young males than for young females (19 compared with 12 per 100,000 respectively).

Cancer is another disease that is relatively uncommon in young people, but it is still one of their leading causes of death. Over the period 2002–2006, an average of 874 new cases of cancer were diagnosed annually among those aged 15–24 years—a rate of 31 per 100,000 of that age (33 and 30 per 100,000 males and females respectively). The most common types diagnosed in young people were melanoma of the skin and Hodgkin lymphoma (7.7 and 3.9 per 100,000 young people respectively) and cancer of the testis (3.5 per 100,000 males). In 2006, these cancers accounted for 47% of all cancers diagnosed among young people (AIHW Australian Cancer Database).

As with other age groups, cancer survival among young people continues to improve—their 5-year relative survival rates for melanoma of the skin and Hodgkin lymphoma increased from 93% to 96% and 87% to 97% respectively between 1982–1986 and 1998–2004. For their overall cancer survival the corresponding increase was from 78% to 86%.

Table 6.5: Leading conditions that cause ill health and mortality, various measures, for young people aged 15–24 years

Self-reported prevalence (2007–08)		Hospitalisations (2007–08)		Mortality (2007)		Burden of disease and injury (DALYs)[a] (2003)	
Condition	% of all youth	Condition	% of all youth hospitalisations	Condition	% of all youth deaths	Condition	% of all youth DALYs
Disorders of eye and adnexa	28.2	Pregnancy and childbirth	20.8	Injury and poisoning	66.8	Mental disorders	48.9
Respiratory diseases	27.7	Digestive conditions	17.2	Cancer	9.9	Injuries	18.3
Musculoskeletal diseases	13.8	Injury and poisoning	14.7	Ill defined conditions[b]	5.6	Neurological and sense disorders	8.6
Mental and behavioural problems	12.2	Mental and behavioural disorders	7.4	Nervous system diseases	4.7	Genitourinary diseases	4.8
Ill defined conditions[b]	7.8	Ill defined conditions[b]	5.4	Diseases of the circulatory system	4.5	Chronic respiratory diseases	4.5

(a) Disability-adjusted life years (see Chapter 2).

(b) Parent-reported prevalence, hospitalisations and deaths from Ill defined conditions include those for which a more specific diagnosis could not be made or where signs or symptoms could not be determined. This refers to the ICD-10 chapter 'Signs, symptoms, and abnormal clinical and laboratory findings' (WHO 1992).

Note: The conditions listed above are based on the ICD-10 chapter level headings, except for the burden of disease data, where conditions are grouped using a different methodology.

Sources: ABS 2009b; AIHW National Hospital Morbidity Database; AIHW National Mortality Database; Begg et al. 2007.

Sexually transmissible infections can cause significant long-term health problems and they remain a major public health concern in Australia (DoHA 2005). In 2008, there were 39,582 notifications for chlamydia, donovanosis, syphilis and gonococcal infections among young Australians—a rate of 1,319 notifications per 100,000 young people and 57% of all notifications for sexually transmissible infections that year. Over the decade from 1998 to 2008, chlamydia notification rates increased fivefold (from 241 to 1,195 notifications per 100,000 young people), and gonococcal infection notification rates also increased (from 83 to 113). In contrast, syphilis notification rates are low and fell slightly between 2006 and 2008 (from 13 to 11 notifications per 100,000 young people) (NNDSS 2009). In 2008, there were 112 HIV notifications for those aged 18–24 years (87 for males and 25 for females), a rate of 6.1 notifications per 100,000 young people, higher than the 5.2 in 1998 (National Centre in HIV Epidemiology and Clinical Research, unpublished data).

Hospitalisations

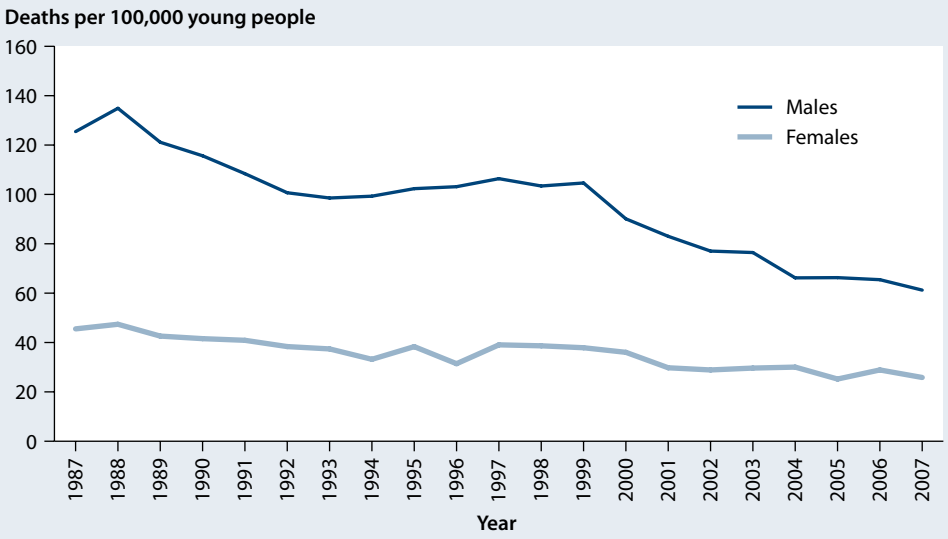
In 2007–08 there were 537,414 hospitalisations for young people, with pregnancy and childbirth the most common cause for hospitalisation (21% of their hospitalisations), followed by digestive conditions (17%), and injury and poisoning (15%) (Table 6.5). The most common causes for hospitalisation for digestive conditions were diseases of the oral cavity, salivary glands and jaw, and diseases of the appendix. Transport accidents, falls and assaults were the most common reasons for injury hospitalisations of young people.

Mortality

In 2007, there were 1,300 deaths among Australians aged 15–24 years—a rate of 44 deaths per 100,000 young people, and representing 1% of total Australian deaths that year. Males accounted for over two-thirds (71%) of these deaths among young people. The male death rate remained consistently higher than the female rate (over twice as high) between 1987 and 2007. However, overall death rates among young people have fallen considerably and the gap in rates between the sexes has been narrowing. Between 1987 and 2007 the overall rate halved (from 86 to 44 deaths per 100,000) and the rate declined faster for males than females (declines of 51% and 43% respectively) (Figure 6.6).

This overall decline in mortality over recent decades can largely be attributed to a halving of the death rate from injury and poisoning. However, in 2007 injury and poisoning remained by far the leading cause of death among young people, accounting for 869 deaths—67% of all their deaths. Furthermore, land transport accidents and intentional self-harm were the leading causes of injury and poisoning deaths among young people (35% and 28% of injury and poisoning deaths respectively), and together accounted for 42% of all deaths in young people. Death rates among males were 3 times as high as among females for land transport accidents (15 and 5 deaths per 100,000 respectively) and intentional self-harm (12 and 4 deaths per 100,000 respectively). Cancers (malignant neoplasms) were the second leading cause of death and accounted for 10% or 127 deaths among young people (a rate of 4 per 100,000 population). A quarter of cancer deaths among young people were due to lymphoid or myeloid leukaemia, with a further 11% due to brain cancer.

In 2003–2007, death rates among Indigenous young people were 2.5 times as high as for non-Indigenous young people (113 and 45 deaths per 100,000 respectively), based on deaths in New South Wales, Queensland, Western Australia, South Australia and the Northern Territory only.



Source: AIHW National Mortality Database.

Figure 6.6: Mortality for young people aged 15–24 years, 1987–2007

Health determinants

The health behaviours of young people—including levels of physical activity, eating habits, substance use and sexual practices—are important determinants of their current and future health status, and these are discussed in this section. There are also many other factors, such as environmental, social, economic and cultural factors, which can affect their overall health and wellbeing, and these are discussed in other parts of this report.

Nutrition, physical activity and body weight

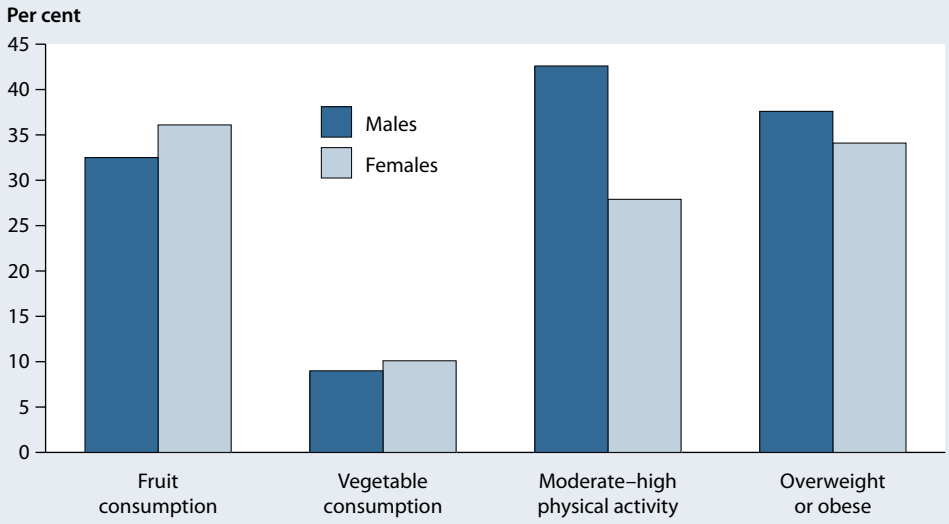
Good nutrition and physical activity have many benefits for the health and wellbeing of young people, and are important in maintaining good health. They are also critical factors in determining a person's body weight.

Nutrition

The National Health and Medical Research Council has developed a set of dietary guidelines to maintain the best health and reduce the risk of chronic disease. For young people aged 15–18 years the guidelines recommend three serves of fruit and four serves of vegetables per day, and, for 19–24 year olds, two serves of fruit and five serves of vegetables per day (DoHA & NHMRC 2005). According to the 2007–08 NHS, 1 in 3 (34%) young people met the recommendations for daily serves of fruit and 1 in 10 (10%) met the recommended number of serves of vegetables (Figure 6.7). Most young people usually consumed some fruit and vegetables each day but at levels below the recommended number of serves (59% of young people did not meet the recommended levels for fruit and correspondingly 89% did not meet them for vegetables). A small proportion of young people did not eat any fruit or vegetables (7% and 1% respectively) (AIHW analysis of the 2007–08 NHS).

Physical activity

According to the 2007–08 NHS, one-third (35%) of young people participated in moderate to high levels of physical activity in the 2 weeks before the survey (43% of males and 28% of females) (Figure 6.7). However, 27% were sedentary (no exercise or very low levels), with females slightly more likely to be sedentary than males (29% and 25% respectively). Adolescents (15–17 year olds) were more active than young adults (40% doing moderate to high levels of physical activity compared with 33% for 18–24 year olds) (AIHW analysis of the 2007–08 NHS).



Sources: ABS 2009b; AIHW analysis of the 2007–08 NHS CURF version 2.

Figure 6.7: Young people aged 15–24 years meeting recommended fruit, vegetable and physical activity guidelines, and who are overweight or obese, 2007–08

Overweight and obesity

Overweight and obesity affects young people's psychological wellbeing and increases the risk of developing chronic conditions and adult obesity. According to measured height and weight data from the 2007–08 NHS, over one-third (36%) of young adults aged 15–24 years were overweight or obese—23% were overweight but not obese and 13% were obese. Young males were more likely to be overweight or obese than young females (38% and 34% respectively) (Figure 6.7). The prevalence of overweight and obesity among 15–24 year olds increased over the last decade—from 29% to 36% for overweight or obese and 8% to 13% for obesity between 1995 and 2007–08 (unpublished data from the 2007–08 NHS).

Tobacco, alcohol and other substance abuse

Youth is a stage in life when many people begin to experiment with substances that can cause immediate and long-term health and social problems. This section briefly discusses the use of tobacco, alcohol and illicit drugs among young Australians, according to results from the National Drug Strategy Household Survey.

Tobacco smoking

In 2007, an estimated 17% of young people aged 15–24 years were current smokers (with 13% smoking daily), while 76% had never smoked. Based on successive National Drug Strategy Household Surveys, the prevalence of current smoking among young people fell from 28% in 2001 to 17% in 2007. Most adult smokers begin smoking during adolescence, and in 2007 the average age of starting was 15.8 years.

Alcohol and illicit drug use

Alcohol use at young ages is associated with more frequent use during late adolescence and an increased risk of later dependence (Brown et al. 2009). In 2007, over one-third of young people (38% of males and 37% of females) had consumed alcohol at least once a month at levels considered to be risky or high risk in the short term; that is, on any one day, seven or more standard drinks for males and five or more standard drinks for females (NHMRC 2001). This represents a slight decrease from 39% in 2001. An estimated 14% of young people (13% of males and 16% of females) drank at risky or high-risk levels for long-term harm in 2007, similar to levels in 2001 (15%).

In 2007, 23% of young people (25% of males and 22% of females) had used an illicit drug in the preceding 12 months. The most common types used were marijuana/cannabis (18% of all young people), ecstasy (9%) and amphetamines, including 'ice' (4%). The corresponding figures for 2001 indicate some decrease in illicit drug use for marijuana/cannabis (29% of young people then) and amphetamines (10% then), while ecstasy use has remained much the same.

Misuse of alcohol and other drugs may result in hospitalisations due to acute intoxication and related injuries, dependence, withdrawal symptoms, psychotic disorders and amnesia. In 2007–08, there were 8,005 hospitalisations among young people for mental and behavioural disorders due to drug and alcohol use (almost 1.5% of all hospitalisations of young people, a rate of 314 and 223 per 100,000 males and females respectively). In addition, there were 192 hospitalisations for accidental overdose of narcotics and hallucinogens (such as cannabis and cocaine), and 110 for accidental poisoning by alcohol.

Sexual and reproductive health

Sexual development is a normal part of adolescence, and sexual and reproductive behaviour during adolescence can have far-reaching consequences in later life. According to the 2008 Survey of Secondary Students and Sexual Health, over three-quarters of students had experienced some form of sexual activity, with 27% of Year 10 students and 56% of Year 12 students having had sexual intercourse. Between 2002 and 2008 there was an increase in the proportion of students who had had sexual intercourse (from 35% to 40%). Nearly all students used some form of contraception at their most recent sexual encounter—two-thirds had used a condom and nearly half of the females were on the contraceptive pill (Smith et al. 2009).

Teenage motherhood, particularly at younger ages, can pose significant long-term risks for both mother and child, including poorer health, educational and economic outcomes (Ambert 2006; Sleebos 2003; WHQW 2008). According to the AIHW National Perinatal Data Collection, in 2006 around 11,900 infants were born to teenage mothers—a rate of 17 live births per 1,000 females aged 15–19 years. Teenage births declined in the decade to 2003 (from 22 live births per 1,000 females aged 15–19 years in the mid-1990s to 17 in 2003), but rates appear to have stabilised from 2003 onwards. In 2006, the teenage birth rate among Indigenous females was 5 times as high as that among non-Indigenous females.

6.4 People aged 25–64 years

The 25–64 years age group—often referred to as 'working-age adults'—make up over half of the total Australian population (54%, or 11.5 million people in June 2008). The 40 years of life included in this age group span a wide range of life events, milestones and transitions. Males and females may establish themselves in the workforce, change career paths, form long-term relationships or have children, and many retire during this period. Yet equally important, 25–64 years is a significant life stage in terms of health. While many long-term health conditions can emerge during this time, there are also opportunities to establish health behaviours that reduce the risk of ill health in later life. Therefore, examining the health and lifestyle of those aged 25–64 years is important, not only for the health of the people concerned and their productivity but also for predicting the future needs of the older population.

This section provides an overview of the health and wellbeing of Australians aged 25–64 years. As males and females have quite different health outcomes and needs at each life stage, this section will also focus on differences by sex and age within this broad age group.

Health and disability

Life expectancy

As for all age groups, the life expectancy of Australians aged 25–64 years is higher than at any time in the past. At age 25, Australian males in 2005–2007 could expect to live until 80.0 years and females until 84.4 years (ABS 2008b). At age 64, males could expect to live until 83.3 years and females until 86.5 years. Although females continue to have a longer life expectancy than males at all ages, this disparity narrows with age—from 4.4 years' difference at age 25 to 3.2 years at age 64.

Self-assessed health status

Most Australians aged 25–64 years consider themselves to be in good health, but the proportions decrease with age (Table 6.6). Estimates from the 2007–08 NHS show that almost two-thirds (64%) of 25–34 years olds rated their health as excellent or very good, and this proportion declined to just under half (49%) in the 55–64 years group. At all ages, higher proportions of females than males rated their health as excellent or very good.

Table 6.6: People aged 25–64 years who assessed their health as excellent or very good, 2007–08 (per cent)

	Age group				
Sex	**25–34**	**35–44**	**45–54**	**55–64**	**Total 25–64**
Males	62.9	59.2	50.9	45.8	55.2
Females	65.1	62.0	59.7	52.2	60.1
Total persons	64.0	60.6	55.3	49.0	57.7

Source: AIHW analysis of the 2007–08 NHS CURF version 2.

Long-term health conditions

Most people aged 25–64 years (85% of males and 89% of females) have at least one long-term health condition, and as people age their likelihood of developing more long-term conditions increases.

According to the 2007–08 NHS, the most common long-term health conditions were vision problems (mainly long- and short-sightedness), back pain, and hayfever and allergic rhinitis (Table 6.7). The frequency of reporting certain conditions varies by age. For example, long-sightedness, arthritis and deafness were rarely reported by those aged 25–34 years but were common in those aged 45 years or over.

Table 6.7: Ten most common long-term health conditions, people aged 25–64 years, 2007–08

Age group	Condition	Per cent[(a)]	Age group	Condition	Per cent[(a)]
25–34	Short-sightedness	22.6	**45–54**	Long-sightedness	49.5
	Hayfever & allergic rhinitis	19.2		Short-sightedness	31.8
	Back pain & disc problems	14.1		Back pain & disc problems	20.8
	Mood (affective) problems	9.8		Arthritis (all types)	18.7
	Chronic sinusitis	9.6		Hayfever & allergic rhinitis	17.7
	Asthma	9.5		Chronic sinusitis	12.6
	Long-sightedness	8.1		Deafness	11.3
	Migraine	7.4		High blood pressure	10.3
	Astigmatism	6.9		Mood (affective) problems	9.7
	Other mental & behavioural problems	6.1		Asthma	8.9
35–44	Short-sightedness	22.7	**55–64**	Long-sightedness	59.4
	Hayfever & allergic rhinitis	20.7		Short-sightedness	37.6
	Back pain & disc problems	17.8		Arthritis (all types)	37.1
	Long-sightedness	15.3		High blood pressure	23.6
	Chronic sinusitis	10.9		Back pain & disc problems	22.9
	Asthma	10.2		Deafness	19.1
	Migraine	9.7		High cholesterol	15.0
	Mood (affective) problems	9.6		Hayfever & allergic rhinitis	13.7
	Arthritis (all types)	9.0		Chronic sinusitis	13.2
	Deafness	6.8		Other diseases of circulatory system	12.1

(a) The proportion in each age group who reported that long-term condition.

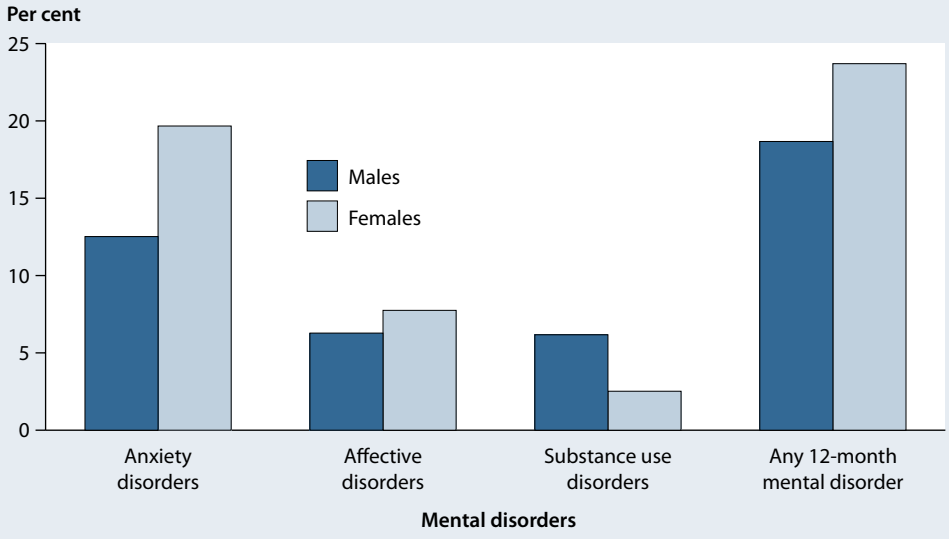
Note: Long-term conditions are self-reported. More than one condition may be reported.

Source: AIHW analysis of the 2007–08 NHS CURF version 2.

Mental health and wellbeing

Mental illness is widely recognised as a health concern for Australians of virtually all ages, certainly from teenage onwards. Based on the 2007 National Mental Health and Wellbeing Survey, 1 in 5 Australians aged 25–64 years in 2007 (21% or 2.3 million) had experienced an anxiety, affective or substance use disorder (see Box 4.7 in Chapter 4) in the 12 months before the survey (ABS 2008c). Anxiety disorders (such as post-traumatic stress disorder) and affective disorders (such as depression and bipolar affective disorder)

were more common among females than males but substance use disorders were more common among males, particularly those aged 25–34 years (Figure 6.8). Males and females in younger age groups generally experienced higher rates of disorder than their older counterparts. Overall, 23% of males and 27% of females aged 25–34 years experienced a mental disorder in the preceding 12 months, compared with 11% of males and 16% of females aged 55–64 years.



Notes

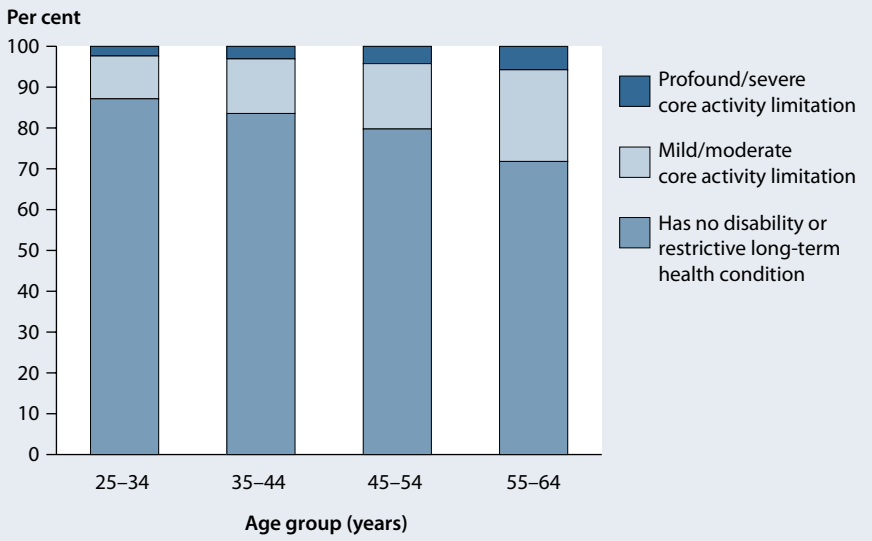
1. Persons who the met criteria for diagnosis of a lifetime mental disorder (with hierarchy) and had symptoms in the 12 months before interview.
2. A person may have had more than one mental disorder, so the components may not add to the total shown at right.

Source: ABS 2008c.

Figure 6.8: Prevalence of 12-month mental disorders by sex, people aged 25–64 years, 2007

Disability

According to the 2007–08 NHS, most males and females aged 25–64 years (81%) do not have a disability or restrictive long-term health condition. However, the proportion of those who do have such restrictions increases with age (Figure 6.9). Around 6% of people aged 55–64 years reported a profound or severe limitation that restricted them in their core activities (that is, self-care, mobility or communication) compared with 2% of 25–34 year olds. A further 22% of 55–64 year olds reported mild or moderate core activity limitation (compared with 10% of 25–34 year olds).



Source: AIHW analysis of the 2007–08 NHS CURF version 2.

Figure 6.9: Activity restrictions by age, people aged 25–64 years, 2007–08

Work-related absenteeism and injury

Around three-quarters (74%) of Australians aged 25–64 years are employed, hence the term 'working-age' (ABS 2007). Having a healthy working population is essential to the Australian economy because illness and injury affect a person's ability to work, leading to productivity losses. Also, the workforce itself can play a role in whether people are healthy or not. According to the 2007–08 NHS, 10% of males and 10% of females aged 25–64 years had a long-term condition as a result of a workplace injury.

According to Safe Work Australia, in 2006–07 over 134,000 workers' compensation claims were accepted for a workplace injury, disease or condition (Safe Work Australia 2009). The great majority of these claims (84%) were for people aged 25–64 years and around two-thirds (67%) were for males in that age group. The most common mechanism for work-related injury and disease among people aged 25–64 years was 'body stressing' through repetitive movement or handling objects (43% of all claims); falls, trips and slips (20%); and being hit by moving objects (13%). Most of these claims were for sprains and strains of joints and adjacent muscles (43%), and the most common bodily locations of injuries or diseases were the back (23%) and hands (11%). The industries with the highest numbers of compensation claims were those of manufacturing, health and community services, and construction.

Use of health services

This section provides an overview of the use of some mainstream health services by people aged 25–64 years—specifically problems managed by GPs and hospitalisations.

Problems managed by general practitioners

For most people, a GP is the first point of contact to discuss a health problem. Estimates from the 2007–08 NHS show that 61% of females and 49% of males aged 25–64 years have check ups with a GP at least once a year. Analysis of the 2008–09 data from the Bettering the Evaluation and Care of Health (BEACH) study of GP activity (see Chapter 7) show that

the problem most commonly managed for males and females aged 25–64 years during GP consultations was hypertension (high blood pressure), followed by lipid (chiefly cholesterol) disorders for males and depression for females (Table 6.8).

Table 6.8: Problems most commonly managed at encounters with GPs, people aged 25–64 years, 2008–09

Males		Females	
Problem	Per 100 encounters	Problem	Per 100 encounters
Hypertension	10.2	Hypertension	7.1
Lipid (cholesterol) disorders	5.6	Depression	6.9
Acute upper respiratory infection	4.9	Female genital check-up	5.7
Diabetes	5.0	Acute upper respiratory infection	5.1
Depression	4.8	Lipid (cholesterol) disorders	3.6

Source: AIHW analysis of BEACH data.

Hospitalisations

Within the population aged 25–64 years, rates of hospitalisation vary by sex and age group as different health needs and conditions emerge (Table 6.9). With the exception of the 55–64 year age group, rates of hospitalisation are higher for females than males across the age groups. In the younger age groups this is largely due to pregnancy and childbirth, which feature strongly as causes of hospitalisation for females aged 25–34 years. Whereas hospitalisation rates increase with age for males, they are elevated for females aged 25–34 years and only exceed this level at 55–64 years.

With the exception of 'care involving dialysis', which was the most common cause of hospitalisation for people aged 25–64 years overall, the most common specific causes of hospitalisation varied by sex and age. As Table 6.10 shows, females aged 25–34 years were most commonly hospitalised for obstetric-related reasons (for example, abortion or delivery), while for females aged 55–64 years, the most common causes were rehabilitation procedures and throat and chest pain. Embedded and impacted teeth, and internal derangement of the knee were the most common causes of hospitalisation for males aged 25–34 years, while rehabilitation procedures and throat and chest pain were again some of the most common causes for males aged 55–64 years.

Table 6.9: Hospitalisations[(a)] by age group and sex, people aged 25–64 years, 2007–08

	Age group			
Sex/measure	25–34	35–44	45–54	55–64
Males				
Total hospitalisations	230,600	341,400	474,100	669,000
Number per 1,000 population	156	222	326	565
Females				
Total hospitalisations	557,700	529,500	516,400	597,000
Number per 1,000 population	379	339	349	502

(a) All hospital separations, including same-day separations.

Source: AIHW 2009c.

Table 6.10: Three most common causes of hospitalisations[a] for people aged 25–64 years, 2007–08 (per cent of age group)

	Males			Females		
Age group	Cause[b] of hospitalisation	Number	Per cent[c]	Cause[b] of hospitalisation	Number	Per cent[c]
25–34	Embedded and impacted teeth	6,200	2.7	Perineal laceration during delivery	32,000	5.7
	Internal derangement of knee	5,600	2.4	Medical abortion	20,200	3.6
	Abdominal and pelvic pain	4,100	1.8	Single spontaneous delivery	18,200	3.3
35–44	Pain in throat and chest	9,100	2.7	Procreative management	29,400	5.6
	Internal derangement of knee	7,200	2.1	Abdominal and pelvic pain	12,100	2.3
	Mental and behavioural disorders due to use of alcohol	6,000	1.7	Maternal care for abnormality of pelvic organs	11,700	2.2
45–54	Pain in throat and chest	13,300	2.8	Abdominal and pelvic pain	12,000	2.3
	Internal derangement of knee	7,900	1.7	Excessive, frequent and irregular menstruation	11,800	2.3
	Care involving use of rehabilitation procedures	7,300	1.5	Pain in throat and chest	11,400	2.2
55–64	Care involving use of rehabilitation procedures	14,600	2.2	Care involving use of rehabilitation procedures	17,100	2.9
	Pain in throat and chest	13,700	2.0	Pain in throat and chest	12,800	2.1
	Angina pectoris	11,900	1.8	Adjustment and management of implanted device	10,600	1.8

(a) Most common causes of hospitalisations exclude 'care involving dialysis', 'other medical care' and 'other'. Hospital separations include same-day separations.

(b) Principal diagnosis based on 3-character ICD-10-AM grouping.

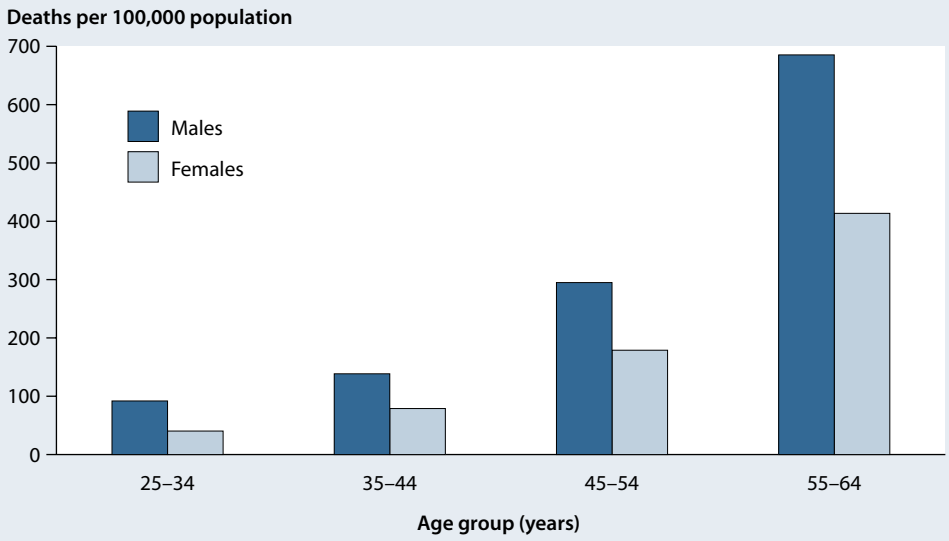
(c) Per cent of all hospital separations (including 'care involving dialysis') for sex and age group.

Source: AIHW 2009c.

Mortality

With life expectancy at age 25 standing at 80.0 years for males and 84.4 years for females in 2007 (ABS 2008b), deaths in the 25–64 year age group are considered premature. Overall, 18% of all deaths that occurred in 2007 were among those aged 25–64 years (around 25,000 deaths).

As with all ages, there are substantially more male than female deaths among 25–64 year olds (Figure 6.10). Male deaths were more than twice as common as female deaths in the younger age group (25–34 years), with 228 male deaths for every 100 female deaths. Although the disparity between males and females decreases with age, at ages 55–64 there were still 166 male deaths for every 100 female deaths.



Source: ABS 2009a.

Figure 6.10: Mortality rates by sex and age group, people aged 25–64 years, 2007

Overall, the leading specific cause of death for males aged 25–64 years in 2007 was coronary heart disease (14% of all deaths). For females of the same age it was breast cancer (12% of all deaths). However, the most common causes of death differ when looking at the specific age groups within this broad age range (Table 6.11). Causes such as intentional self-harm (suicide), land transport accidents and accidental poisonings feature prominently for the younger age groups. As age increases, causes of death are more likely to relate to chronic conditions such as heart disease and cancers of the breast, lung and colon.

Although most 25–64 year olds are employed, they suffer relatively few work-related deaths each year compared with deaths from other causes among this age group. Across all age groups, there were 260 compensated fatality claims related to work in 2006–07, with most claims (71%) being for males aged 25–64 years. The industries with the highest numbers of compensated fatalities were those of transport and storage, construction and manufacturing.

Table 6.11: Leading causes[(a)(b)] of death by sex and age group, 2007

	Males			Females		
Age group (years)	Cause of death	Deaths	% of deaths	Cause of death	Deaths	% of deaths
25–34	Suicide	300	22.3	Suicide	73	12.5
	Land transport accidents	206	15.3	Land transport accidents	45	7.7
	Accidental poisoning	128	9.5	Accidental poisoning	27	4.6
35–44	Suicide	319	15.0	Breast cancer	167	13.6
	Coronary heart disease	204	9.6	Suicide	85	6.9
	Land transport accidents	148	7.0	Lung cancer	47	3.8
45–54	Coronary heart disease	644	15.1	Breast cancer	376	14.3
	Lung cancer	271	6.4	Lung cancer	222	8.5
	Suicide	270	6.3	Coronary heart disease	123	4.7
				Colorectal cancer	123	4.7
55–64	Coronary heart disease	1,296	16.2	Breast cancer	581	12.0
	Lung cancer	858	10.7	Lung cancer	538	11.1
	Colorectal cancer	388	4.9	Coronary heart disease	308	6.4
Total 25–64	Coronary heart disease	2,182	13.9	Breast cancer	1,144	12.4
	Lung cancer	1,187	7.6	Lung cancer	815	8.8
	Suicide	1,069	6.8	Coronary heart disease	480	5.2

(a) Based on commonly accepted ICD-10 groupings.

(b) The category 'Event of undetermined intent' ranks in the leading causes of death for males and females 25–34 and 35–44 years. However, these deaths were excluded from the tabulation as they are subject to a revision process by the ABS upon further information from the coroner.

Source: AIHW National Mortality Database.

Burden of disease

The combined extent of disability and premature death, known as the 'burden of disease', can be estimated using a measure called the disability-adjusted life year or DALY (for more information see Chapter 2). The causes and extent of the burden in Australia for various age groups have been investigated in detail, although the latest analysis applies to 2003.

The conditions which cause the most burden to people aged 25–64 years differ by age and sex (Begg et al. 2007). In 2003, anxiety and depression were the major contributors to disease burden for both males and females aged 25–34 years (12% and 27% of all DALYs for males and females respectively). Suicide and self-inflicted injuries (11%), substance use disorders (11%) and road traffic accidents (7%) also featured prominently for 25–34 year old males, while migraine (6%), schizophrenia (4%) and infertility (4%) were included in the top five for 25–34 year old females.

In contrast, 55–64 year olds faced a greater burden from chronic diseases and cancer. Coronary heart disease was the largest single contributor for males in this age group (14% of DALYs), while breast cancer (11%) caused the greatest burden for females. Vision changes and hearing loss, Type 2 diabetes and lung cancer were also included in the top five conditions causing disease burden for both sexes aged 55–64 years.

Health determinants

For 25–64 year olds, the main risk and protective factors for health are mostly the same as for other age groups examined in this chapter—for example, see Section 6.3.

When risk factors such as smoking, risky alcohol consumption, inadequate physical activity and others were analysed using the 2007–08 NHS, most people aged 25–64 years (an estimated 99% of males and 97% of females) had at least one risk factor, with a large proportion having at least three (59% of males and 41% of females).

As shown in Table 6.12, males aged 25–64 years were more likely than females to report a number of key risk behaviours, including smoking and consuming alcohol at a risky or high-risk level. Self-reported high cholesterol was also higher among males although the proportion of males and females reporting high blood pressure was generally similar.

Diet and exercise remain important determinants of health in later life. The vast majority of males (94%) and females (90%) in the survey who were aged 25–64 years did not consume the recommended daily intake of vegetables. While fruit consumption was more adequate, 57% of males and 44% of females did not consume the recommended two serves per day. Two-thirds (66%) of both males and females participated in some form of exercise in the 2-week period before the survey interview, although around one-third (34%) were still considered sedentary. Estimates from the 2007–08 NHS based on measured body weight and height show that 71% of 25–64 year old males and 56% of females were overweight or obese.

Table 6.12: Selected health risk factors, people aged 25–64 years, 2007–08 (per cent)

Risk factors	Males	Females	Total
Daily smokers	23.8	19.3	21.6
Risky or high-risk alcohol consumption[(a)]	16.3	11.5	13.9
Sedentary exercise level[(b)]	34.4	34.4	34.4
Overweight or obese[(c)]	70.8	56.1	63.6
Insufficient fruit intake[(d)]	56.8	44.4	50.5
Insufficient vegetable intake[(e)]	93.5	89.7	91.6
High blood pressure	9.3	9.0	9.2
High blood cholesterol	7.3	5.5	6.4

(a) In a 1-week period.

(b) People undertaking no exercise or a very low level of exercise in the 2 weeks prior to the survey.

(c) Body mass index greater than or equal to 25, calculated from measured height and weight.

(d) An insufficient fruit intake is considered to be one or less serves of fruit per day.

(e) An insufficient vegetable intake is considered to be four or less serves of vegetables per day.

Source: AIHW analysis of the 2007–08 NHS CURF version 2.

6.5 Older people

Good health not only helps older Australians to enjoy a good quality of life and to participate fully in the community, but also helps to reduce their demands for health and aged care services. This is important as Australia's population ages over coming decades. For this reason, improving older people's health is a national research priority in Australia (DIISR 2009). One area of special interest is the adoption of a healthy lifestyle at older ages

because its benefits include preventing disease and functional decline, and promoting a longer life and a better quality of life (WHO 2002).

Current data show that older Australians today have a longer life expectancy and are generally healthier than previous generations in a range of aspects. This section provides information about older Australians for the following areas: their life expectancy, self-assessed health status, common health conditions and diseases, health risks and leading causes of death. 'Older Australians' here refers to those aged 65 years and over—about 2.8 million people, 13% of the Australian population in 2008 (AIHW 2009b: Table 3.1).

Health status

Life expectancy still improving

Life expectancy in Australia has been increasing almost continually throughout the last century and into this century, including for those who have already achieved a good age (AIHW 2008). At age 65 years in 2005–2007, Australian males could expect to live another 18.5 years to 83.5 years, and females another 21.6 years to 86.6 years. Even at age 85, males and females could expect to live a further 6.0 and 7.1 years respectively (ABS 2008b).

Although this is a welcome trend from several viewpoints, the continuing growth of the older population does have important implications for the patterns of health, disease and disability in the community, as well as for various health and aged care services.

Self-assessed health status still high for older Australians

Most older people in private households consider themselves to be in excellent, very good or good health (68% in 2007–08, according to the NHS), although the proportion of older females reporting only fair or poor health increases with age. For example, in the 2007–08 NHS, around one-quarter of females (24%) aged 65–74 years rated their health as only fair or poor, but by age 85 years and over this had increased to over one-third (38%). For older males, those aged 75–84 years were the most likely to rate their health as fair or poor (43%). Older females (37%) were more likely than older males (34%) to rate their health as excellent or very good (AIHW analysis of the 2007–08 NHS).

However, self-reported health assessment data are not available for people in residential aged care and this excludes a significant proportion of people who are more likely to have poor health. For example, at 30 June 2009 three-quarters of the 157,494 people who had had an appraisal of their care needs in permanent residential aged care were classed as high care, indicating that they have generally poorer levels of health (unpublished data from the DoHA Aged and Community Care Management Information System (ACCMIS) database).

Health and disability

As would be expected, although older Australians are living longer than ever before and increasingly rating their health favourably, many of them encounter health problems that affect how they feel and function. Moreover, a proportion will have several health problems at once along with some depression, frailty, difficulty in understanding things and related social issues. This can present great challenges to their health care. The following sections examine the health conditions and diseases that have the greatest effects on older Australians.

Disability and health conditions more common at older ages

Although disability is not an inevitable part of the experience of ageing, it does become more common at older ages. As the population grows and life expectancy increases, there will be more people in Australia at older ages and therefore more older people with disability. Based on data from the 2003 Survey of Disability, Ageing and Carers (SDAC), it is estimated that over half of all people aged 65 years and over in that year experienced some type of disability that restricted everyday activities. 'Physical or multiple and diverse disability' was the most common type of main disabling condition at older ages, affecting 45% of older people (AIHW 2007a). This type of disability stems from impairments that may have diverse effects within and among individuals, including effects on physical activity such as mobility.

Almost a quarter of older people (23%) had a severe or profound disability in 2003, meaning that they sometimes or always needed help with self-care, mobility or communication. This included over half (58%) of people aged 85 years and over—females in this 85-plus age group reported much higher rates than males in the group (65% compared with 44%) (ABS 2004).

From the 2003 SDAC, dementia, although not the most common health condition among older people, was the condition most associated with high levels of disability (98% of those with dementia had a severe or profound disability). Next was paralysis (89%), speech-related conditions (87%), Parkinson disease (79%) and schizophrenia (76%). Conversely, for older people with a profound or severe disability the most common conditions were arthritis (50%), hearing disorders (43%) and hypertension (38%) (AIHW 2006).

In 2003, the average number of health conditions for people aged 65 years and over was 2.84, but those with a profound disability had an average of 4.85. This shows that the greater the number of health conditions a person has, the greater the risk of severe disability. Older people with depression reported the highest average number of health conditions (5.5 conditions) (AIHW 2007b).

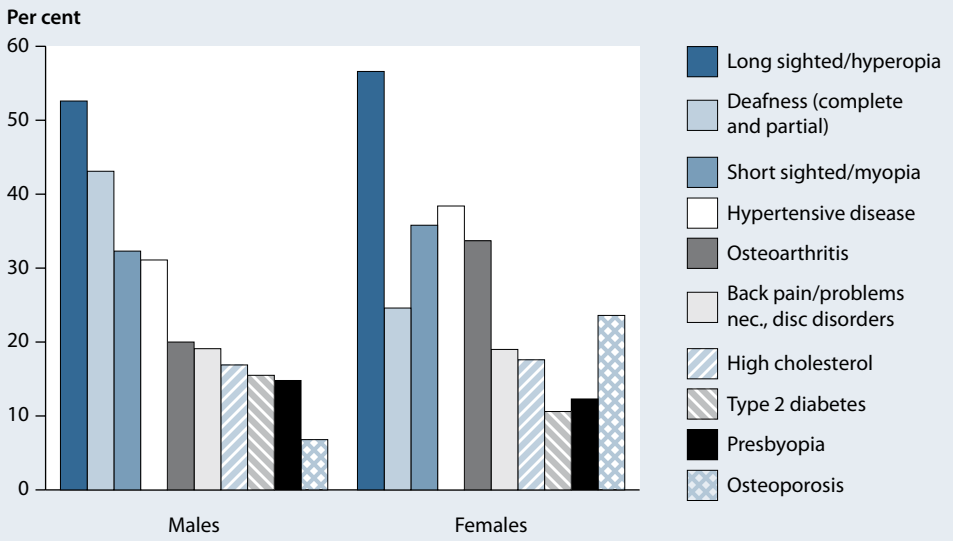
Related information is available in *Australia's welfare* (AIHW 2007a) and *Older Australia at a glance* (AIHW 2007b).

Long-term health conditions

The health conditions most likely to occur in older people are some degree of sight or hearing loss, arthritis or other musculoskeletal problems, and elevated blood pressure or cholesterol levels (Figure 6.11).

Long-term conditions among older people in the community

According to the 2007–08 NHS, the long-term health condition most commonly affecting people aged 65 and over was long-sightedness (53% of males and 57% of females), followed by deafness for older males (43%) and hypertensive disease (high blood pressure or related conditions) for older females (38%). Around a third of older males and females in the NHS reported they were short-sighted (32% and 36% respectively), the third most common condition for both (Figure 6.11). For people aged 85 years and over, deafness was the most common long-term health condition reported (57% of males and 52% of females) (AIHW analysis of the 2007–08 NHS).



nec. Not elsewhere classified.

(a) People may have reported more than one health condition.

Source: AIHW analysis of the 2007–08 NHS CURF version 2.

Figure 6.11: Most commonly reported individual long-term health conditions, people living in the community aged 65 years and over, 2007–08

Long-term conditions among older people in residential aged care

As at 30 June 2009, circulatory disease, such as heart disease and hypertension, was the most common condition (excluding dementias and other mental illness) among older permanent residents living in aged care facilities, regardless of age or sex. Circulatory disease was reported in over a quarter (27%) of them (DoHA ACCMIS database) (Table 6.13).

Musculoskeletal conditions, such as arthritis, was the next most common condition reported for both sexes (18%), more commonly for older female residents (20%) than for males (11%). Endocrine diseases such as diabetes and thyroid problems was the third most commonly reported condition for both female and male older residents (8% and 9% respectively) (unpublished data from the DoHA ACCMIS database).

Information on dementia and other mental illnesses among permanent aged care residents is available in Chapter 4.

Table 6.13: Main health conditions[a] for permanent aged-care residents aged 65 years and over[b] (excluding dementias and other mental illness), 30 June 2009, per cent

Disease category	Age group (years)			Total 65 and over
	65–74	75–84	85 and over	
Circulatory system	23.9	27.0	27.6	27.1
Musculoskeletal & connective tissue	10.6	15.8	19.5	17.5
Endocrine, nutritional and metabolic disorders	12.2	10.3	6.8	8.4
Nervous system[c]	11.0	6.7	3.8	5.4
Eye and adnexa	2.8	4.1	6.8	5.6
Genitourinary system	4.7	5.0	5.0	5.0
Respiratory system	5.2	4.6	3.4	3.9
Digestive system	4.1	3.6	3.5	3.6
Injury/poisoning/external	3.2	2.5	3.0	2.9
Neoplasms(tumours/cancers)	3.1	3.0	2.9	3.0
Other	19.2	17.4	17.7	17.8
Total persons (per cent)	**100.0**	**100.0**	**100.0**	**100.0**
Total persons (number)	**13,801**	**49,893**	**87,348**	**151,042**

(a) Up to three health conditions may be recorded. The main health condition is the first recorded health condition.

(b) With an Aged Care Funding Instrument Classification (ACFI) at 30 June 2009.

(c) Includes Parkinson disease.

Note: The ACFI health condition codes, which are the same as the Aged Care Assessment Program (ACAP) codes, map to equivalent codes in the International Classification of Diseases and Related Health Problems, Tenth Revision, Australian Modification (1998) (ICD–10–AM).

Source: Unpublished data from the DoHA ACCMIS database.

Mental health

Mental health became one of Australia's national priority areas for health because of its effect on the Australian population and the possible reduction in disease burden that could occur through prevention and treatment. Based on self-reports in the 2007–08 NHS, mental and behavioural problems were the ninth most common group of long-term health conditions for older people, affecting an estimated 249,000 people aged 65 years and over. Mood (affective) disorders, such as depression, were the most common type of mental health condition reported by older people. In addition, about 8% of the males and 11% of the females reported high or very high levels of psychological distress. An estimated 4% of males and females aged 65 years and over in the survey took at least one medication for a mental health condition in the preceding 2 weeks, with about 3% using antidepressants and 1% using sleeping tablets or capsules (Table 6.14).

Table 6.14: Psychological distress levels and selected actions taken for mental and behavioural problems, people aged 65 years and over, 2007-08

	Males	Females	Males	Females
	Number ('000)		Per cent	
Current psychological distress level				
Low	951.4	975.6	78.7	70.1
Moderate	161.0	250.4	13.3	18.0
High/very high	97.0	158.7	8.0	11.4
Taken medication used for mental wellbeing more than once a week	42.2	57.5	3.5	4.1
Used medication for mental health in the last 2 weeks[(a)]	47.3	59.7	3.9	4.3
Used antidepressants	29.9	45.3	2.5	3.3
Used sleeping tablets or capsules	7.7	16.1	0.6	1.2
Total aged 65 years and over	**1,209.4**	**1,391.8**	**100.0**	**100.0**

(a) Persons may have reported more than one type of medication.

Source: AIHW analysis of the 2007–08 NHS CURF version 2.

Risk of hospitalisation due to falls increases at older ages

Falls commonly happen to older people and they often result in fractures or other serious injuries, with considerable cost to the individual and the health system. For 2003–04, the total cost of fall-related acute episodes of hospital care for older people was estimated at $566.0 million (Bradley & Harrison 2007).

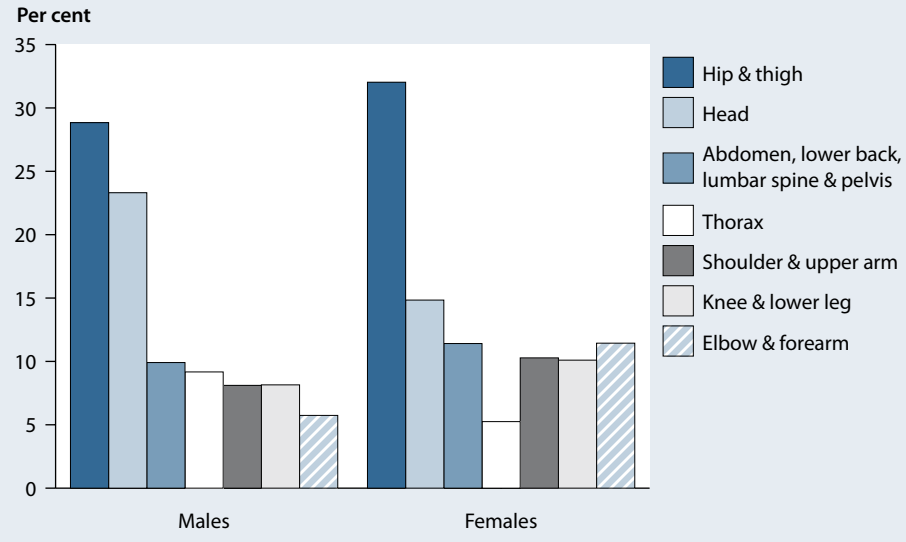
During 2005–06, there were an estimated 66,784 hospitalised injury cases for older Australians due to falls. According to Bradley and Pointer (2008), this represented a rise of 10% since 2003–04 (a 16% increase for older males and an 8% increase for older females). Among older people, over two-thirds (71%) of the hospitalised fall injury cases in 2005–06 were for females. Part of this sex imbalance is because females live longer than males, so older females strongly outnumber older males. Another reason is that older females are more likely to be hospitalised for fall-related injuries than males of the same age. It should also be noted that osteoporosis is a major risk factor for fractures resulting from falls: its prevalence increases with age, and at any age it is considerably more common among females than males.

Besides being more common for females, fall injury rates increase significantly with age. In 2005–06, there were 4.1 fall injury cases per 1,000 persons aged 75 years and over, almost double the rate of 2.4 per 1,000 population for the 65-and-over population. By age 95 years and over the rate had increased to 12.5 per 1,000 persons in this age group (Bradley & Pointer 2008).

Half of all fall injury cases for people aged 65 years and older occurred in the home, most commonly from slipping, tripping or stumbling on the same level, and another fifth (22%) occurred in residential aged care facilities. Older people who lived in aged care facilities were found to have a rate of falls 5 times as high as that for people of the same age who lived in the community and fell in their home (Bradley & Pointer 2008).

The most common fall injuries for both older males and females were injuries to the hip and thigh—almost a third of all fall cases (31%)—and injuries to the head (17%).

However, higher proportions of older males experienced injuries to the head (23%) and to the thorax (9%) than females (15% and 5% respectively), whereas older females had higher proportions of injuries to the elbow and forearm (11%) than older males (6%) (Figure 6.12).



Source: Bradley & Pointer 2008.

Figure 6.12: Top seven injury types for fall injury cases, persons aged 65 years and over, 2005–06

Mortality

Leading causes of death

Among older Australians in 2007, the top 10 leading causes of death were responsible for almost 65,000 deaths, or around 59% of all deaths for older males and females (Table 6.15).

Coronary heart disease and cerebrovascular diseases (notably stroke) were the leading two causes of death among both older males and females. These diseases accounted for 26% of all deaths among older males and 29% among older females in 2007. Heart failure also featured prominently (the fifth leading cause of death for older females and the tenth for older males).

'Dementia and Alzheimer disease' was the third most common cause of death for older females (8.5%) and the sixth for older males (4.5%). These diseases are strongly age-related, and because there are greater numbers of females at the oldest ages, females are more likely than males to develop and subsequently die from them.

Lung cancer was the third most common cause of death for older males and the fourth for older females. Colorectal cancer was also prominent for both sexes, and prostate cancer and breast cancer were two prominent sex-specific causes of death.

Chronic obstructive pulmonary disease, which includes emphysema, was also a significant cause of death for older males and females in 2007, as was diabetes.

The top eight causes of death show important differences for each of the age groups 65–74 years, 75–84 years, and 85 years and over. For example, the most common causes of death for 65–74 year olds were coronary heart disease and cancer of the lung. At 75–84 years, deaths from cerebrovascular disease become relatively more prominent, and cancer of the male genital organs (virtually all being prostate cancer) appears in the top eight causes of death for the first time. For those aged 85 years and over, influenza and pneumonia become more important, and kidney failure appears among the top eight causes (AIHW National Mortality Database).

Table 6.15: Leading causes of death in Australians aged 65 years and over, 2007

Males	Deaths	Per cent of total	Females	Deaths	Per cent of total
Coronary heart disease	9,931	18.7	Coronary heart disease	10,129	17.8
Cerebrovascular disease	4,059	7.7	Cerebrovascular disease	6,625	11.6
Lung cancer	3,525	6.7	Dementia and Alzheimer disease	4,862	8.5
Chronic obstructive pulmonary disease	2,721	5.1	Lung cancer	2,095	3.7
Prostate cancer	2,713	5.1	Heart failure[(a)]	2,006	3.5
Dementia and Alzheimer disease	2,380	4.5	Chronic obstructive pulmonary disease	1,953	3.4
Colorectal cancer	1,635	3.1	Diabetes	1,702	3.0
Diabetes	1,597	3.0	Breast cancer	1,536	2.7
Unknown primary site cancers	1,419	2.7	Colorectal cancer	1,448	2.5
Heart failure[(a)]	1,214	2.3	Influenza and pneumonia	1,380	2.4
Other causes	21,778	41.1	Other causes	23,152	40.7
Total (10 leading causes)	**31,194**	**58.9**	**Total (10 leading causes)**	**33,736**	**59.3**
All causes	**52,972**	**100.0**	**All causes**	**56,888**	**100.0**

(a) Includes heart complications and ill-defined heart diseases.

Source: AIHW National Mortality Database.

Health determinants

Good health is clearly important for people of all ages but it can be especially important for older people if they are to remain independent and play a part in family and community life. As for the other age groups examined in this chapter, healthy diets, regular and adequate physical activity and not smoking are important factors in promoting and maintaining good health for older Australians.

According to the 2007–08 NHS, around a third of males (37%) and females (33%) aged 65 years and over had inadequate fruit consumption, and over two-thirds ate less than the recommended daily vegetable intake (72% and 70% respectively) (Table 6.16). Inadequate vegetable consumption was higher among people aged 85 years and over (78%) than those aged 65–74 years (71%).

The proportion of older people who were sedentary increased with age from 4 in 10 people aged 65–74 years to almost 7 in 10 for those aged 85 years and over (Table 6.16). At each age,

older females were more likely to be sedentary than older males. This pattern was reversed for overweight and obesity, with older males being more likely to be overweight or obese than older females. The prevalence of overweight and obesity among older Australians declined with age, from three-quarters of 65–74 year olds to just under half of people aged 85 years and over, and this pattern was observed for both males and females. These results are based on actual measurements of height and weight and, although higher, are not directly comparable to those of the 2004–05 NHS, which relied on self-reports (ABS 2006).

The likelihood of being a smoker at older ages dropped from 1 in 10 for those aged 65 to 74 years to 1 in 100 for those aged 85 years or more (Table 6.16). The proportion of older people with risky or high-risk alcohol consumption also declined with age, from 12% of 65–74 year olds to 3% of those aged 85 years and over.

Table 6.16: Selected risk factors for persons aged 65 years and over, 2007–08 (per cent)

Selected risk factors	Age group (years)			Total 65 and over
	65–74	75–84	85 and over	
Males				
Inadequate daily fruit intake[(a)]	37.5	37.4	30.9	37.0
Inadequate daily vegetable intake[(b)]	73.1	68.4	81.8	72.0
Sedentary[(c)]	37.5	51.7	66.8	44.4
Overweight or obese[(d)(e)]	78.9	76.7	58.9	77.0
Current smokers[(f)]	10.5	6.0	0.9	8.3
Risky or high-risk alcohol consumption[(g)]	11.5	5.6	3.5	8.9
Females				
Inadequate daily fruit intake[(a)]	32.5	32.5	35.4	32.8
Inadequate daily vegetable intake[(b)]	68.7	70.2	75.7	70.0
Sedentary[(c)]	41.4	57.3	67.8	50.0
Overweight or obese[(d)(e)]	71.2	60.1	42.2	64.7
Current smokers[(f)]	9.1	5.7	1.5	7.0
Risky or high-risk alcohol consumption[(g)]	11.9	6.8	2.7	9.1
Persons				
Inadequate daily fruit intake[(a)]	34.9	34.8	33.9	34.8
Inadequate daily vegetable intake[(b)]	70.9	69.4	77.8	70.9
Sedentary[(c)]	39.5	54.7	67.5	47.4
Overweight or obese[(d)(e)]	75.0	67.9	48.4	70.5
Current smokers[(f)]	9.8	5.8	1.3	7.6
Risky or high-risk alcohol consumption[(g)]	11.7	6.2	2.9	9.0

(a) One or no serves per day. Dietary guidelines recommend at least two serves of fruit per day.

(b) Three or fewer serves per day. Dietary guidelines recommend at least five serves of vegetable per day.

(c) Physical activity for sport, recreation or exercise only; does not include those who exercised for transport or work.

(d) Measured body mass index greater than or equal to 25.

(e) Estimated as a proportion of those for whom height and weight were measured.

(f) Daily, weekly or less than weekly current smoker.

(g) In a 1-week period according to NHMRC Guidelines 2001.

Source: AIHW analysis of the 2007–08 NHS CURF version 2.

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