

# Children who are overweight or obese

Obesity is a major contributor to the global burden of chronic disease and disability. Around the world, levels of childhood obesity have been rising for a number of reasons including the fact that children are eating more foods that are high in fat and sugars and spending less time on physical activity.<sup>1</sup>

Overweight and obesity in children is a major health concern. Studies have shown that once children become obese they are more likely to stay obese into adulthood and have an increased risk of developing both short and long-term health conditions, such as Type 2 diabetes and cardiovascular disease.<sup>2</sup>

Obesity not only has significant health and social impacts, but also considerable economic impacts. In 2008, the total annual cost of obesity for both children and adults in Australia, including health system costs, productivity and carers costs, was estimated to be around \$58 billion.<sup>3</sup>

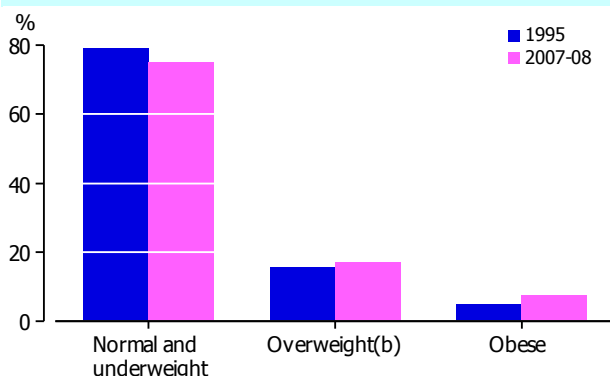
## Changes over time

In 2007–08, one-quarter of all Australian children, or around 600,000 children aged 5–17 years, were overweight or obese, up four percentage points from 1995 (21%).

The obesity rate for children increased from 5% in 1995 to 8% in 2007–08 with the proportion overweight remaining around 17% over this time period. This shows a shift towards the higher and heavier end of the body mass index.

The rates were much higher for adults, with 61% of Australian adults overweight or obese in 2007–08.

Children's Body Mass Index – 1995, 2007-08(a)



(a) Based on measured height and weight of children aged 5-17 years.  
(b) Differences between the numbers in 1995 and 2007-08 are not statistically significant.

Source: [National Health Survey: Summary of Results, 2007-2008](#) (ABS cat. no. 4364.0)

## Data sources and definitions

The information in this article comes from the 2007–08 National Health Survey (NHS) and 2006 Children's Participation in Cultural and Leisure Activities Survey.

This article looks at children aged 5–17 years unless stated otherwise.

*Body Mass Index (BMI)* was calculated from measured height and weight information (using the formula weight (kg) divided by the square of height (m)). Height and weight were measured for children aged 5–17 years in the 2007–08 NHS.

*Overweight and obesity* are defined according to the BMI scores. There are BMI cutoffs for children which are based on the definitions of adult overweight and obesity adjusted to specific age and sex categories for children. For a detailed list of these cutoffs, please see the [National Health Survey Users' Guide](#) (ABS cat. no. 4363.0.55.001).

Physical activity results from the 2006 Children's Participation in Cultural and Leisure Activities Survey may not represent total physical activity, since the survey only covers sport organised by a school, club or association which has been played outside school hours.

The 2007–08 National Health Survey collected information on the physical activity of children aged 15–17 only.

## ...age and sex

Between 1995 and 2007–08 there was no change in the proportion of boys who were overweight (16%). However, there was a significant increase in the proportion of boys who were obese. Over this time, the rate of obesity for boys aged 5–17 years doubled from 5% in 1995 to 10% in 2007–08. Increases in obesity occurred for both younger and older boys. For boys aged 5–12 years, 8% were obese (up from 4% in 1995) while 13% of older boys (aged 13–17 years) were obese, up from 6% in 1995.

The story for girls was different to that of boys. While for boys there were significant increases in obesity, there were no such increases for girls. The obesity rate for girls aged 5–17 remained unchanged at 6%.

While the obesity rate for girls did not change from 1995 to 2007–08, the proportion of girls who were overweight increased. The increase, however, occurred for older girls only (aged 13–17 years), up from 12% in 1995 to 20% in 2007–08. In contrast, there was no change for younger girls (aged 5–12 years) with the overweight rate remaining constant at 17% in both time periods.

In 2007–08, a higher proportion of older children were overweight or obese (19% and 9% respectively) than younger children (16% and 7%).

### ...socioeconomic factors

The Socio-Economic Indexes for Areas (SEIFA) Index of Disadvantage summarises various attributes (such as income, unemployment and educational attainment) of an area in which people live. Aside from socioeconomic differences between areas in terms of education, income and employment, some areas may also offer greater opportunities for physical activity and greater access to healthy food options.<sup>4</sup>

Children living in the areas of greatest relative disadvantage had higher rates of being overweight (20%) compared with children living in lower relative disadvantage areas (14%) and had more than double the rate of obesity (12%) compared with children living in areas with the lowest disadvantage (5%).

### Overweight and obesity into early adulthood

Children who are overweight or obese are at increased risk of developing certain health conditions, such as cardiovascular conditions and Type 2 diabetes, compared with children of normal weight. They also have a higher risk of psychological and social problems, such as discrimination, victimisation and bullying. Obesity, in particular, may continue into adulthood and affect long-term health.<sup>5</sup>

Although the National Health Surveys collect data at one point in time, it is possible to observe changes over time in the overweight and obesity rates for a cohort of people born in the same period.

In this approach, survey respondents aged 5–17 years in 1995 and those aged 18–30 years in 2007–08, while not the same respondents, are used to represent the same group of people as they age 13 years.

About 16% of children (aged 5–17) were overweight in 1995 compared with 28% of 18–30 year olds in 2007–08. The rate of obesity also increased. About 5% of the children's cohort were obese in 1995, compared with 15% of 18–30 year olds in 2007–08.

The greatest increase in overweight and obesity occurred for older children (aged 13–17 years). In 1995, 16% were overweight and 5% were obese, whereas the figures for 26–30 year olds in 2007–08 were 35% and 17% respectively.

### Physical activity

Physical activity can include any activity which requires a child to expend energy, including

sports or simply playing. Regular physical activity helps children to expend the calories they consume in their diet, while building and maintaining healthy bodies, and so reduces the risk of becoming obese.<sup>6</sup>

The [2004 Australia's Physical Activity Recommendations for Children](#) suggest that children aged 5–18 years need a minimum of 60 minutes of moderate to vigorous physical activity every day.<sup>7</sup>

The following section looks at physical activity using results from two ABS surveys.

### ...children aged 5-14 years

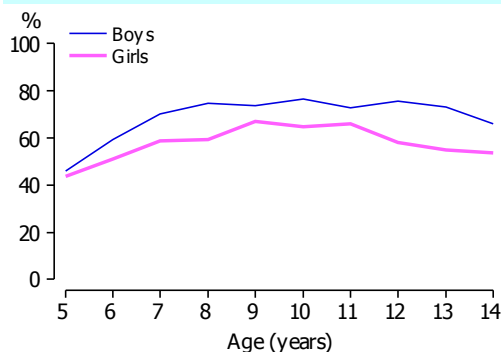
The 2006 Children's Participation in Culture and Leisure Activities Survey collected information on the participation of children aged 5–14 years in organised sports and informal sports during the 12 months prior to interview. It provides insight into some of the physical activities children aged 5–14 are participating in.

In 2006, 63% of children had played sport which had been organised by a school, club or association (outside of school hours), an increase from 59% in 2000. Over the six year period, girls' participation in organised sport rose by six percentage points from 52% to 58% compared with three percentage points for boys (from 66% to 69%).

While the participation rates were similar for children aged five years (boys 46% and girls 44%), by 13 years of age the participation rate for boys was 73%, while for girls it was 55%. The rate of participation for boys peaked around 8–13 years, while for girls it was around 9–11 years.

Children who did participate were spending, on average, six hours per fortnight on organised sport participation. Swimming and outdoor soccer were the most popular sports

#### Children's participation in organised sport(a) – 2006



(a) In the 12 months prior to interview.

Source: [Children's Participation in Cultural and Leisure Activities, Australia, April 2006](#) (ABS cat. no. 4901.0)

(17% and 13% respectively).

The survey also collected information on informal sports, such as bike riding, rollerblading and skateboarding, to get some indication of children's involvement in informal physical activity.

The survey found that 68% of children had been bike riding and 24% had been skateboarding or rollerblading in the previous two weeks. The amount of time spent on these informal activities was the same as organised sport participation, with an average of six hours per fortnight.

### ...non-participation in organised sport

An estimated 37%, or almost 974,000 children, did not take part in an organised sport in 2006. The rate of non-participation was greater for girls (42%) than boys (31%). Children aged 5–8 years were least likely (42%) to take part in organised sport, while 30% of children aged 9–11 and 36% of 12–14 year olds did not participate in organised sport.

### ...children aged 15-17 years

In 2007–08 over three-quarters (77%) of children aged 15–17 took part in sport or recreational exercise in the two-weeks prior to the National Health Survey. Almost 13% of children took part in high level exercise over a two-week period, while around 65% took part in moderate to low level exercise. However, just under one-quarter (23%) said that they either did no exercise, or very low amounts, during the two-week period.

## Sedentary lifestyles

Children who spend significant amounts of time in sedentary states, such as watching TV or playing computer games, increase their likelihood of poor fitness, raised cholesterol and being overweight in adulthood.<sup>7</sup> Related research has also shown that the incidence of obesity is highest among children who watch TV for long periods each day, compared with children who watch TV for a smaller amount of time each day.<sup>8</sup>

Australian recommendations say that children should not spend more than two hours a day watching TV, playing computer games or using other electronic media for entertainment.<sup>7</sup>

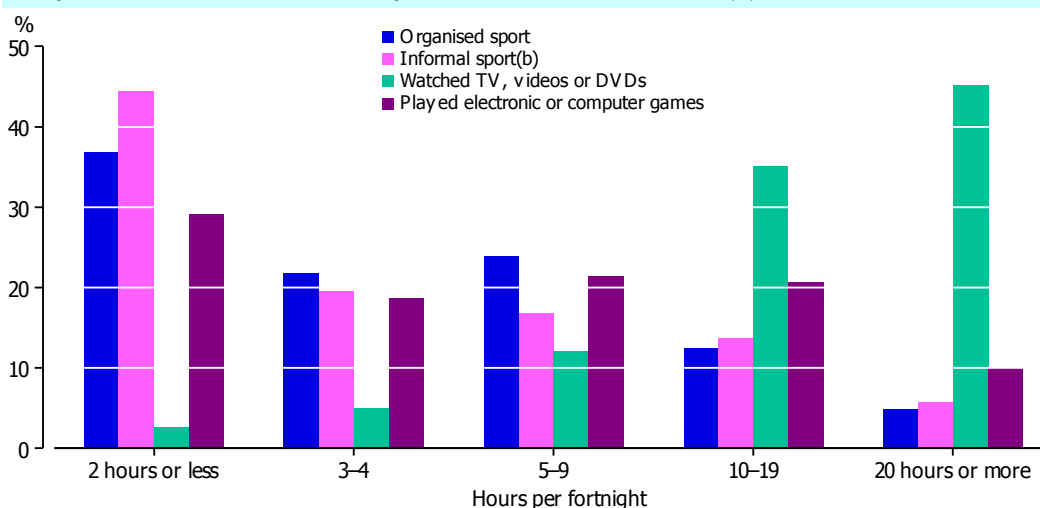
In 2006, most children (97%) aged 5–14 had watched television, videos or DVDs during the two-week period of the survey, and almost two-thirds had played electronic or computer games (64%). Around 45% of children who watched television, videos or DVDs, and 10% of children who played electronic or computer games, did so for 20 hours or more over the two-week period.

Overall, the average amount of time spent on these two activities by children (averaged across a two-week period) was two hours per day, the maximum amount of time recommended under Australian guidelines. The time spent on these activities was similar to that spent in 2000 and 2003.

## Looking ahead

Overweight and obesity, in both children and adults, is a major health concern. In 2007, the Australian Government announced the

**Proportion of children's time spent on selected activities(a) – 2006**



(a) Children aged 5-14 years who were involved in these activities outside of school hours, during the two school weeks prior to interview.

(b) Average time spent on informal activities including bike riding and skateboarding/rollerblading.

Source: [Children's Participation in Cultural and Leisure Activities, Australia, April 2006](#) (ABS cat. no. 4901.0)

development and promotion of healthy eating and physical activity guidelines for children. These measures will form part of the Government's *Plan for Early Childhood* and *Plan for Tackling Obesity*.<sup>6</sup> One of the main aims of the National Preventative Health Taskforce is to develop a National Obesity Strategy.<sup>9</sup>

## Endnotes

- 1 World Health Organisation, *Global Strategy on Diet, Physical Activity and Health, Overweight and Obesity*, viewed 6 July 2009, <<http://www.who.int/dietphysicalactivity/childhood/en/>>.
- 2 Australian Institute of Health and Welfare, *Risk Factor Monitoring, A Rising Epidemic: Obesity in Australian Children and Adolescents*, Canberra, 2004.
- 3 Access Economics, *The Cost of Obesity*, Canberra, 2008.
- 4 King T, Kavanagh A M, Jolley D, Turrell D and Crawford D, 2005, 'Weight and Place; a Multilevel Cross Sectional Survey of Area-Level Disadvantage and Overweight and Obesity in Australia', *International Journal of Obesity*, pp 1-7.
- 5 Australian Institute of Health and Welfare, *Making Progress*, Canberra, 2008.
- 6 Department of Health and Ageing, *Early Childhood Nutrition*, viewed 15 June 2009, <[www.health.gov.au](http://www.health.gov.au)>.
- 7 Department of Health and Ageing, *Australia's Physical Activity Recommendations for Children*, viewed 21 May 2009, <[www.health.gov.au](http://www.health.gov.au)>.
- 8 National Health and Medical Research Council, *Clinical Practice Guidelines for the Management of Overweight and Obesity in Children and Adolescents* 2003, viewed 6 May 2009, <[www.health.gov.au](http://www.health.gov.au)>.
- 9 Australian Health Ministers Communique, *Delivering Results*, 18 April 2008.