



Overweight and Obesity

Useful statistics and references—July 2007

Overweight and obesity are increasing in both adults and children around the world and are associated with significant health, social and economic consequences. The Heart Foundation is very concerned about the increasing prevalence of overweight and obesity in Australia, and is undertaking a range of activities to address this major public health issue.

The Heart Foundation has compiled the following information from a range of sources, to provide easy access to up-to-date statistics on overweight and obesity.

The relevant sources are listed in each section and should be cited when referring to the data reported here. Where available, links to reports available on the Internet are also provided.

Defining overweight and obesity

Overweight and obesity are most commonly defined using body mass index (BMI). BMI is a simple index of weight-for-height that is calculated by dividing weight in kilograms by height in metres squared (kg/m^2). A person with a BMI equal to or greater than 25 and up to 29.9 is classified as overweight, while someone with a BMI equal to or greater than 30 is considered to be obese. These categories are recommended by the World Health Organization (WHO) and the Australian *National Health Data Dictionary* (NHDD) and are based mainly on the relationship between BMI and mortality.^{1,2}

It is important to note that these BMI values apply only to adults aged 18 years and over and are based on studies of Caucasian populations. The BMI measure does not differentiate between weight associated with muscle and weight associated with fat, and thus a given BMI value may not represent the same degree of fatness when comparing different populations. The standard categories of BMI-defined overweight and obesity are therefore not applicable to children and adolescents and may not be appropriate for people of different cultural backgrounds, where equivalent levels of health risk are observed at a lower BMI (such as people from China or Japan) or at a higher BMI (such as people from Polynesia). A healthy BMI for Indigenous Australians, for example, seems to be within a range of 17 to 22, metabolic complications developing at BMI values greater than 22.¹

Another measure used to assess overweight is waist circumference. This is a useful addition to BMI as abdominal fat mass can vary greatly within a narrow range of total body fat or BMI. Categories of abdominal overweight and obesity have been defined in the NHDD based on the risk of metabolic complications related to excess abdominal adiposity in adults³.

Increased risk is indicated with waist measurements of 94 cm or more in men and 80 cm or more in women. Measurements of 102 cm or more in males and 88 cm or more in females indicate **substantially increased** risk.²

As with BMI, waist measurement classification applies only to adults aged 18 years and over, and may not be appropriate to use among all ethnic groups.²

Both measures of BMI and of waist circumference are useful in monitoring overweight and obesity. BMI provides a useful measure of obesity prevalence of a population¹ and is the most commonly used², especially when data is being collected in surveys where participants report their own measurements, rather than data being measured by someone else, as people are more likely to know their height and weight than their waist circumference.⁴ However, BMI does not take into account the variation between different people and different populations in the nature of obesity, such as differences in body proportions and degrees of fatness; for example, people with very similar BMI measures or similar amounts of total body fat may have drastically different levels of abdominal fat and therefore wide variations in waist circumference.¹ For this reason, waist circumference is a useful addition to BMI in measuring overweight. Waist size is not related to height, it is correlated closely with BMI, provides an estimation of intra-abdominal fat mass and total body fat, and variations in waist circumference can reflect varying risk factors for cardiovascular and other chronic disease.¹ On a population basis there is a strong association between abdominal obesity and health risk.³

It is also important to note that the relationship between weight and cardiovascular risk is continuous. Therefore, definitions of abnormality, whether based on BMI or waist circumference values, are to an extent arbitrary.²

References

1. World Health Organization (WHO). Obesity: preventing and managing the global epidemic: report of a joint WHO/FAO expert consultation. WHO technical report series;894. Geneva: WHO, 2000.
2. Australian Institute of Health and Welfare (AIHW). Heart, stroke and vascular diseases – Australian facts 2004. AIHW Cat. No. CVD 27. Canberra: AIHW and National Heart Foundation of Australia (Cardiovascular Disease Series No.22), 2004.
3. National Health Data Committee (NHDC). National Health Data Dictionary. Version 12 (volume 2). AIHW Cat. No. HWI 43. Canberra: AIHW, 2003. Available at: <http://www.aihw.gov.au/publications/index.cfm/title/8964>, accessed July 9 2007.
4. Australian Institute of Health and Welfare (AIHW). Australia's health 2006. AIHW Cat. No. AUS 73. Canberra: AIHW, 2006.

Statistics related to overweight and obesity

Reported here are some key statistics on the prevalence of overweight and obesity in adults and children, with the data source and method of data collection included where relevant. A range of data exists, and the actual figures and data accuracy can differ depending on the source of the data and the collection method. For example, height and weight can be measured or self-reported. Measured height and weight is likely to be more accurate, while self-report data will likely underestimate true BMI. This is an important consideration—rates based on self-reported data are not directly comparable with those based on measured data. However, self-reported data still provide a reasonable indication of trends over time.

Reference

Australian Institute of Health and Welfare (AIHW). Indicators of health risk factors: the AIHW view. AIHW Cat. No. PHE 47. Canberra: AIHW, 2003. Available at: <http://www.aihw.gov.au/publications/phe/ihrftav/ihrftav.pdf>, accessed July 9 2007.

Current prevalence in adults

The most recent measured national prevalence estimates for adults are from a survey conducted in 1999-2000 among Australians aged 25 years and over:^{1,2}

- Overall, almost 60% of the participants were overweight or obese (59.6%). Males were more likely than females to be overweight or obese, with over two-thirds of males (67.4%) and just over half of females (52.0%) having a BMI of 25.0 or over.²
- The prevalence of being overweight but not obese (BMI = 25.0–29.9 kg/m²) was 39.1%: 48.2% for males and 30.2% in females.¹
- The prevalence of obesity (BMI ≥ 30.0 kg/m²) was 20.5%: 19.1% for males and 21.8% for females.¹
- The lowest prevalence of obesity was measured among 25–34 year-olds (15%) and those aged 75 years or older (14%). The highest obesity rate of 29% was among 55-64 year-olds.²
- Based on waist circumference, around half of those aged 25–69 years were classified as overweight or obese: just over one fifth (21%) of men and 28% of women were abdominally obese, while a further 28% of men and 21% of women were abdominally overweight but not obese.³

References

- AusDiab report. Diabesity and associated disorders in Australia 2000: the accelerating epidemic. The Australian Diabetes, Obesity and Lifestyle Study (AusDiab). Melbourne: International Diabetes Institute, 2001.
- Australian Institute of Health and Welfare (AIHW). Australia's health 2006. AIHW Cat. No. AUS 73. Canberra: AIHW, 2006.
- Australian Institute of Health and Welfare (AIHW). Dixon T, Waters A-M. A growing problem. Trends and patterns in overweight and obesity among adults in Australia, 1980 to 2001. Bulletin No. 8. AIHW Cat. No. AUS 36. Canberra: AIHW, 2003.

State and Territory data for adults

Figures from the 2004–2005 National Health Survey indicate a similar prevalence of overweight and obesity for each state and territory. The following table contains data on prevalence of overweight and obesity as measured by BMI for Australians aged 18 years and over, based on self-reported height and weight. Data are derived from state- and territory-level telephone surveys and have been analysed to provide comparable estimates.

Measure	NSW	VIC	QLD	WA	SA	TAS	ACT	NT	AUS
Males									
Overweight, not obese*	41.0	42.9	40.5	46.0	44.1	43.0	39.5	42.6	42.1
Obese**	16.3	14.7	20.0	14.1	18.5	15.1	14.8	18.3	16.5
Overweight or obese [#]	57.3	57.6	60.5	60.1	62.6	58.1	54.2	60.9	58.6
Females									
Overweight, not obese*	26.0	25.3	26.5	27.2	28.9	25.8	26.2	24.0	26.3
Obese**	15.4	16.0	16.5	17.0	19.4	17.5	15.9	15.9	16.3
Overweight or obese [#]	41.4	41.3	43.1	44.2	48.3	43.3	42.1	39.9	42.5
Persons									
Overweight, not obese*	33.7	34.1	33.6	36.3	36.4	34.2	32.9	34.3	34.2
Obese**	15.8	15.3	18.3	15.5	18.9	16.3	15.3	17.2	16.4
Overweight or obese [#]	49.5	49.4	51.8	51.8	55.3	50.6	48.2	51.5	50.6

* BMI greater than or equal to 25 and less than 30

** BMI greater than or equal to 30

[#] BMI greater than or equal to 25

Reference

Modified from Table 3.17 'Prevalence of self-reported overweight and obesity, person aged 18 years or over (per cent)' p185, in Australian Institute of Health and Welfare (AIHW). Australia's health 2006. AIHW Cat. No. AUS 73. Canberra: AIHW, 2006.

Self-assessment of overweight

In 2004–05, participants in the National Health Survey were asked whether they considered themselves to be overweight, of acceptable weight or underweight.

- The majority of adults considered themselves to be of acceptable weight (63% of males, 59% of females). Around one-third considered themselves to be overweight (32% of males and 37% of females).
- In the same survey, 62% of male and 45% of female participants were classified as overweight or obese based on BMI calculated from self-reported height and weight.
- Only half of males who classified themselves as acceptable weight fell within the normal BMI category, compared with just over three-quarters of females (76%).

Reference

Australian Bureau of Statistics (ABS). 2004–05 National Health Survey: Summary of Results, Australia (no. 4364.0). Canberra: ABS, 2006.

Prevalence of overweight and obesity among older Australians (people aged 55 years and over)

- Older Australians are now significantly heavier than older Australians a generation ago.
- The number of obese older Australians is now approaching one million, which represents more than one in five (around 25 to 30%) senior Australians.
- This number has trebled over the past 20 years, due to the combined effect of an ageing population and the obesity epidemic.
- On average, these older Australians are about 6 to 7kg heavier than their counterparts 20 years ago.
- Typically, men over 50 years old and women over 60 years old have lost weight as they have become older. However, Australians in their 50s and 60s now appear to be gaining weight as they gain years, at least into their mid-70s. Weight gain in older people has recently increased to such a level that men and women aged 70–74 years now weigh more than they did when they were 20 years younger.
- The prevalence of abdominal obesity increased significantly during the 1990s for all Australians, and is highest among older age groups (those aged more than 50 years). Based on waist size, more than 30% of older men and 44% of older women are at significantly increased risk of disease due to abdominal obesity.
- Australia has an ageing population and life expectancy is increasing. The number of Australians aged 55 years and older is rising. By 2021, this group is expected to make up almost one-third of the population (31%), an increase from just over one-fifth (22%) in 2001. Combined with rising overweight and obesity levels, this trend is likely to result in an increase in the number of older obese Australians.

Note: The above estimates are derived from data from several different surveys, and are derived from both self-reported and measured height and weight.

Reference

Australian Institute of Health and Welfare (AIHW). Bennett SA, Magnus P, Gibson D. Obesity trends in older Australians. Bulletin No 12. AIHW Cat. No. AUS 42. Canberra: AIHW, 2004.

Adult trends over time

- Weight increased significantly for both men and women between 1983 and 1995. Mean weight increased by 5.2kg for men, and by 6.9kg for women. These increases occurred in the absence of a significant increase in mean height for men and only a small increase for women (0.8cm).¹
- Body mass index increased significantly between 1983 and 1995 for both men and women. For men the increase was 1.7 units and for women 2.5 units, with the result that both mean and median BMI were above 25 (in the overweight category) for men and women in 1995.¹

Data based on measured height and weight for Australians living in capital cities and urban areas show:

- Between 1980 and 1999–2000 the proportion of men aged 25–64 years who were obese rose from 9% to 17%. In the same period, the obesity rate among women of this age group more than doubled, from 8% to 20%.²
- Between 1989 and 1999–2000 the prevalence of abdominal obesity increased among 25–69 year-olds from 14% to 21% in men and from 16% to 28% in women.²

References

1. Australian Food and Nutrition Monitoring Unit. Comparable data on food and nutrient intake and physical measurements from the 1983, 1985 and 1995 national nutrition surveys. Canberra: Commonwealth of Australia, 2001.
2. Australian Institute of Health and Welfare (AIHW). Dixon T, Waters A-M. A growing problem. Trends and patterns in overweight and obesity among adults in Australia, 1980 to 2001. Bulletin No. 8. AIHW Cat. No. AUS 36. Canberra: AIHW, 2003.

Changes in national adult overweight and obesity based on measured data

In 2004–05, a five-year follow-up survey was conducted among participants in the 1999–2000 survey that provided the most recent measured national prevalence data on obesity and overweight in adult Australians. The following are comparisons between the original and follow-up survey results of weight, waist size and BMI measured in 59% of the original participants in 2004–2005:

- Average weight, BMI and waist circumference increased for both males and females during the follow-up period of five years: average weight increase for people aged less than 65 years at baseline was 1.8 kg, while mean waist circumference increased by 2.1 cm.
- Increases in weight, BMI and waist circumference were highest among the youngest age group (those aged 25–34 years at baseline). The increases became lower with increasing age, and were lowest among those aged 55–64 years at baseline.
- Among the oldest participants (aged 65+ years at baseline), weight decreased on average by 0.8kg over the five years.
- Weight change patterns were very similar for males and females. However, average weight changes were slightly greater for females than for males in each age group. Women in the under 65 year-old group put on slightly more weight than men, while women aged 65+ years lost slightly more weight than men.
- There was a strong gender difference in waist circumference measurements: the increase for females was around 50% more than the increase in males.
- People in all BMI classifications (normal, overweight or obese) at baseline gained weight and increased waist size during the five-year follow-up period.

- People with a normal BMI (less than 25.0) at baseline showed the largest mean weight gain and increase in waist circumference over five years.
- For study participants overall, and for female participants, those classed as overweight and those classed as obese at baseline showed progressively smaller increases in weight gain and waist size. For weight gain over the five-year period, male participants also showed this pattern. However, there was no difference in average waist size increase between men classed as normal, overweight or obese based on baseline BMI.
- People classified as overweight at baseline were approximately twice as likely to put on weight and move into the obese category than to lose weight and move into the normal category at follow-up.
- Among those classed as overweight at baseline, women were more likely than men to have moved into the obese category by the follow-up survey.
- One-fifth (20%) of people classified using BMI and almost one-third (32%) classified using waist circumference as normal or overweight at baseline moved into a higher weight category during the follow-up period.
- Fewer than one-tenth (9%) of those classified as obese at baseline using BMI and only 13% classified as obese using waist circumference were within a lower weight category at follow-up.

Reference

Barr ELM, Zimmet PZ, Polkinghorne KR, Atkins RC, Dunstan DW, Murray SG, Shaw JE. AusDiab 2005. The Australian Diabetes, Obesity and Lifestyle Study. Tracking the Accelerating Epidemic: Its Causes and Outcomes. Melbourne: International Diabetes Institute, 2006.

Differentials in overweight and obesity among adults

In 2001, for adults aged 20 years and over, based on self-reported weight and height:

- Men were more likely than women to be overweight (including obese) (58.9% versus 43.2%).
- Women were just as likely as men to be obese (17.4% for women and 16.0% for men).
- The prevalence of obesity was highest among 45–64 year olds (20.8%) and lowest among 20-24 year olds (9.5%).
- Despite having the lowest rates of overweight and obesity, the greatest relative increase over time was seen in 20-24 year-olds, the youngest age group.
- The most striking differences between the most and least disadvantaged socioeconomic groups were observed in the prevalence of obesity:
 - Women in the most disadvantaged socioeconomic group had nearly double the rate of obesity (22.6%) of those in the most advantaged group (12.1%).
 - Men in the most disadvantaged group were also significantly more likely to be obese than those in the most advantaged group (19.5% compared with 12.7%).
- Indigenous Australians living in non-remote areas showed almost double the rate of obesity of other Australians living in similar locations. This disparity has increased significantly since 1995 data were collected.

Note: These results are based on self-reported height and weight data and are therefore likely to be underestimates of the true prevalence of overweight and obesity.

Reference

Australian Institute of Health and Welfare (AIHW). O'Brien K, Webbie K. Are all Australians gaining weight? Differentials in overweight and obesity among adults, 1989-1990 to 2001. Bulletin No 11. AIHW Cat. No. AUS 39. Canberra: AIHW, 2003.

Children and adolescents

The WHO classification of BMI for adults is not suitable for children and adolescents. An international standard age and sex-specific BMI classification has been developed for children and adolescents aged 2 to 17 years.

Reference

Australian Institute of Health and Welfare (AIHW). Australia's health 2006. AIHW Cat. No. AUS 73. Canberra: AIHW, 2006.

Most recent prevalence estimates for children and adolescents

- In 1995 in Australia, 19.5% of boys and 21.1% of girls aged 2–18 years were overweight or obese.
- Depending on age, levels of overweight and obesity combined ranged from 13% to 26% among boys and 19% to 23% among girls.
- Prevalence of overweight and obesity combined was highest among 12–15 year-old boys (26.1%) and 7–11 year-old girls (23.5%).
- Depending on age, the prevalence of obesity alone ranged from 2.4 to 6.8% in boys and 4.2 to 6.3% in girls, while the prevalence of being overweight but not obese ranged from 10.4 to 20.0% in boys, and 15.3 to 17.2% in girls.

Reference

Magarey AM, Daniels LA, Boulton JC. Prevalence of overweight and obesity in Australian children and adolescents: reassessment of 1985 and 1995 data against new standard international definitions. *MJA* 2001;174:561-564.

Trends over time in weight and energy intake among children and adolescents

Data are available to compare rates between 1985 and 1995 for young Australians.

- The prevalence of obesity in 7 to 15 year-olds more than tripled during these ten years for all age groups and both sexes. Rates rose from 1.4% of boys and 1.2% of girls to 4.7% of boys and 5.5% of girls.¹
- The prevalence of overweight or obesity in 7 to 15 year-olds nearly doubled over the ten year period, rising from 10.7% of boys and 11.8% of girls in 1985 to 20.0% of boys and 21.5% of girls in 1995.¹
- While the total weight of food consumed daily by children did not change between 1985 and 1995, the energy density, and thus the total daily energy intake, increased by around 13%.²
- Mean daily energy intake increased in the period between 1985 and 1995 by 0.5-2.0 MJ for 10–15 year-olds, and by 0.5–1.5 MJ for young children aged 4–8 years old.¹

References

1. Magarey AM, Daniels LA, Boulton JC. Prevalence of overweight and obesity in Australian children and adolescents: reassessment of 1985 and 1995 data against new standard international definitions. *MJA* 2001;174:561-564..
2. Department of Human Services (DHS) Victoria. The state of Victoria's children report 2006. Every child every chance. Melbourne: DHS, 2006.

Health consequences of overweight and obesity in childhood and adolescence

- The most significant outcome of childhood obesity in the long term is continuation of obesity into adulthood.¹
- Overweight and obesity in childhood and adolescence increases the risk of overweight and obesity in adulthood.² The tracking of childhood obesity into adult obesity is stronger for older children compared with younger ones³, and when the obesity is severe¹.
- Overweight in adolescence has been shown to be significantly associated with long-term mortality and morbidity.⁴
- Both physical and psycho-social consequences have been linked with childhood obesity.⁷ Obesity-related symptoms in children and adolescents include poor psychosocial functioning, increased cardiovascular disease risk factors, and abnormal glucose metabolism.⁴
- Over 60% of overweight children have at least one other risk factor for cardiovascular disease, such as high blood pressure, hyperlipidaemia, or hyperinsulinaemia. More than one-fifth of children (over 20%) have two or more such risk factors.^{5,6}
- As childhood obesity worldwide has increased, there has been an associated rise in obesity-related conditions during childhood and at an earlier age, as well as the appearance of new or newly identified conditions.⁷ Physical conditions include: pulmonary (such as asthma); orthopaedic (such as heightened risk of fractures); neurological; gastroenterological (such as fatty liver); endocrine (such as Type 2 diabetes); and cardiovascular (such as hypertension).⁷
- Psychological and social effects observed from studies among Western children include stigma and negative stereotyping experienced from peers, which increases with age.⁷

References

1. Australian Institute of Health and Welfare (AIHW). Heart, stroke and vascular diseases – Australian facts 2004. AIHW Cat. No. CVD 27. Canberra: AIHW and National Heart Foundation of Australia (Cardiovascular Disease Series No.22), 2004.
2. Magarey AM, Daniels LA, Boulton JC. Prevalence of overweight and obesity in Australian children and adolescents: reassessment of 1985 and 1995 data against new standard international definitions. *MJA* 2001;174:561-564.
3. National Health and Medical Research Council (NHMRC). Clinical Practice Guidelines for the Management of Overweight and Obesity in Children and Adolescents. Canberra: Commonwealth of Australia, 2003.
4. World Health Organization (WHO). Obesity: preventing and managing the global epidemic: report of a joint WHO/FAO expert consultation. WHO technical report series;894. Geneva: WHO, 2000.
5. Dietz WH. The obesity epidemic in young children. *BMJ* 2001;322:313-314.
6. World Health Organization. Diet, nutrition and the prevention of chronic diseases: report of a joint WHO/FAO expert consultation. WHO technical report series;916. Geneva: WHO, 2003. URL: http://whqlibdoc.who.int/trs/WHO_TRS_916.pdf. Accessed January 22 2007.
7. Lobstein T, Baur L, Uauy R. Obesity in children and young people: a crisis in public health. *Obes Rev* 2004;5(s1):4-85.

State and Territory data for child prevalence

The most recent national figures on the prevalence of overweight and obesity among Australian children are based on data collected in 1995. Results from more recent surveys conducted at the state/territory and regional level suggest that rates of overweight and obesity among Australian children have been increasing significantly in recent decades.¹

Western Australia

Measured height, weight and waist size of a representative sample of 2880 WA children and adolescents aged 7 to 16 years (Years 3, 5, 7, 8, 10 and 11) surveyed in 2003 were compared with data from the 1985 Australian Health and Fitness Survey.¹

- The proportion of children who were overweight or obese increased markedly among 7–15 year-olds, from 9.3% of males and 10.6% of females in 1985 to 21.7% of boys and 27.8% of girls in 2003.²
- Between 1985 and 2003, the mean weight increase for both boys and girls was 5.1kg.²
- Male mean weight increased by as much as 12kg, while female mean weight increased by up to 6.6kg.¹
- Waist size increased among all age groups, with boys' waist measurements increasing by up to 10.3cm (mean increase 5.6cm) and girls' waist sizes increasing by up to 12.1cm (mean increase 7.4cm).¹
- Apart from age, lower levels of physical activity, regularly skipping breakfast, and eating fast food more than once a week were all main predictors of BMI.¹
- Higher mean BMIs were recorded among students from metropolitan areas compared with those from non-metropolitan areas.¹
- Girls had slightly higher mean BMIs than boys.¹

New South Wales

In 2004, measured data on height weight and waist girth were collected among a representative sample of around 5400 NSW schoolchildren from kindergarten to Years 2, 4, 6, 8 and 10 (ages 5–16 years).³

- Overall, almost one-quarter of 5–16 year-old students were overweight or obese in 2004, 25% of boys and 23.3% of girls.³
- The overall prevalence of obesity was 7.7% among boys and 6.1% among girls.²
- Among boys, the prevalence of overweight and obesity combined increased from 15% in kindergarten to 32% in Year 6, decreasing to 27% in secondary students.³
- Rates of obesity alone among boys rose from 6.6% in kindergarten to 9.4% in Year 6, then gradually decreased among the older age groups.³
- Among girls, overweight and obesity rates combined were 20 to 25%, with the highest prevalence observed in Year 4 students (30%).³
- The prevalence of obesity alone among girls increased from 4.6% in kindergarten to the highest level of 7.7% observed in Years 4 and 6, subsequently falling to 4.2% in Year 10.³

Comparisons between data for 7–16 year-olds from the 2004 survey, the 1997 NSW Schools Physical Activity and Fitness Survey and the 1985 Australian Health and Fitness Survey revealed:

- During the last two decades there has been a significant increase in the proportion of schoolchildren who are overweight or obese; many more school students were overweight or obese in 2004 compared with 1985 and 1997.³
- Overall, the prevalence of overweight and obesity combined among 7–16 year-old students rose from 11% in 1985 to 20% in 1997 and 25% in 2004.³
- Among boys, the rate of increase has gone up between the two most recent surveys (1997 and 2004).³
- Among girls, the rate of increase generally appeared to be slower between 1997 and 2004 than it was from 1985 to 1997. Among the youngest age groups, however, the rate of increase has remained around the same for girls in Grade 2, while it has risen for girls in Grade 4.³

Queensland⁴

Measured height, weight and waist circumference of 3691 Queensland schoolchildren aged 5 to 17 years (Years 1, 5, and 10) were collected in 2006. Results indicated:

- Overweight and obesity prevalence has increased since national data from 1985 and 1995: on average, prevalence has doubled for most age groups in Queensland schoolchildren since 1985, while the rate of increase seems to have slowed since 1995.
- Overall, 21% of 5–17 year-olds were overweight or obese in 2006.
- 19.5% of boys and 22.7% of girls aged 5–17 years were overweight or obese.
- Rates of obesity were similar among boys and girls at each year level. Rates of overweight were higher among girls in Years 1 and 5, and higher among boys in Year 10.
- The prevalence of overweight and obesity tended to increase with age, although prevalence was highest in Year 5 girls.
- Among boys, rates of overweight but not obesity increased from 12.2% in Year 1 to 19.4% in Year 10. Among girls, rates increased from 15.3% in Year 1 to 19.9% in Year 5, and then decreased to 16.8% in Year 10.
- For obesity alone, prevalence rose from Year 1 to Year 5, followed by a slight decrease to Year 10. Among boys, rates increased from 4.5% to 6.2%, and declined to 3.2%. Among girls, rates rose from 4.4% to 6.5%, and then decreased to 3.7%.
- Compared with 1985 national data, waist circumference increased in 9-10 and 14-15 year-olds. The greatest increases occurred among students with larger waist measurements.
- With increasing age group, there was an increase in the proportion of children who are obese (the BMI distribution stretches at the upper limit).
- There were no consistent differences in overweight or obesity rates between children living in urban or rural areas.

References

1. Premier's Physical Activity Taskforce. A preliminary report: child and adolescent physical activity and nutrition survey 2003 (CAPANS). WA: Department of Health, 2004.
2. Australian Institute of Health and Welfare (AIHW). Australia's health 2006. AIHW Cat.No. AUS 73 Canberra: AIHW, 2006.
3. Booth M, Okely AD, Denney-Wilson E, Hardy L, Yang B, Dobbins T. NSW Schools Physical Activity and Nutrition Survey (SPANS) 2004: Summary Report. Sydney: NSW Department of Health, 2006.
4. Abbott RA, Macdonald D, Mackinnon L, Stubbs CO, Lee AJ, Harper C and Davies PSW. Healthy Kids Queensland Survey 2006 - Summary Report. Brisbane: Queensland Health, 2007.

Parental perceptions of child overweight and obesity

- Data from a national survey of 4–5 year-olds using measured height and weight indicated that in 2004 17.3% of preschoolers were overweight and 5.7% obese.¹
- In contrast, only 5% of Australian parents reported that their 4-5 year-old child was overweight.²
- The vast majority of parents (86%) whose children were overweight or obese said they were not concerned by their children's weight.²

- More than half (52%) of the parents of 4–5 year old children who were obese reported their children to be either of normal weight or underweight, and half (50%) of parents with children classified as obese were unconcerned by their child's weight.²

References

- Department of Human Services (DHS) Victoria. The state of Victoria's children report 2006. Every child every chance. Melbourne: DHS, 2006.
- Australian Institute of Family Studies (AIFS). Growing Up in Australia: the Longitudinal Study of Australian Children: 2004 Annual Report. Melbourne: AIFS-Commonwealth of Australia, 2005.

Physical activity

Prevalence of physical activity among adults

- Physical inactivity was estimated to account for 10.2% of total deaths and 6.6% of the total burden of disease and injury in the Australian population in 2003*, representing the fourth greatest cause of burden of disease among Australians.^{1,2*}
- Based on the most recent population-level data (2004-05), more than two-thirds (70%) of Australians aged over 15 years were classified as sedentary or having very low levels of physical activity**.³ Among this group, 48% reported no or very little physical activity in the previous two weeks, while the remainder (52%) reported very low levels of activity.³
- Over half of 18–75 year-old Australians in 2000 (54%) did not undertake sufficient physical activity for health benefits** (7.27 million Australians).⁵ Around 15% were sedentary and around 39% reported some activity, but not enough to be categorised as 'sufficient'.⁵
- The proportion of Australians classified as sedentary or having very low levels of physical activity has not changed significantly over the last decade (69% in 1995 and 2001; 70% in 2004-05).³
- Comparing across age groups in 2004–05, older people aged 75 years or more were most likely to report sedentary or low levels of physically active behaviour (83%), while people in the youngest age group (15–24 year-olds) were least likely to report this (62%).³
- In 2004–05, females were more likely than males to report being sedentary or having very low levels of physical activity: among those aged 15 years or over, almost three-quarters of women (73%) compared with two-thirds (66%) of men.³
- Among people aged 15 years and over in 2004-05, the proportion of people classified as obese was higher among those who reported being sedentary or having very low levels of physical activity (20%) compared with those who reported moderate to high levels of physical activity (13%).³
- Among Australians aged 15 years and over, those born in Australia were less likely to report being sedentary or having low levels of physical activity (69%) than those born in Eastern and Southern Europe (79%) or Central and Southern Asia (81%). This is especially true for women born in these regions, with 88% of women from southern and central Asia and 86% from Southern and Eastern Europe reporting sedentary or low physical activity levels.³
- In 2000, 18–75 year-olds with fewer than 12 years of education were more likely to be insufficiently active (61%) than those who had completed secondary school (52%) or those who had a TAFE or tertiary qualification (51%).⁵
- In 2000, the proportion of 18–75 year-olds reporting no physical activity in the previous week increased with age: from around 11% of males and 9% of females aged 18–29 years to 20% of males and 17% of females aged 45 years and over.⁴

- More recent data available from state and territory telephone surveys in 2004 suggest that around 50% of adults are not undertaking sufficient physical activity.⁴ In all states and territories, females reported higher levels of inactivity than males.⁴ However, in 2000, fewer women (13%) reported being sedentary in their leisure time than men (18%),⁵ which may be associated with domestic activity which is not usually assessed in population surveys.^{#, 4}
- In 2004–05, three-quarters of Indigenous Australians (75%) aged 15 years or more living in non-remote areas reported being sedentary or having low levels of physical activity.³

*Refer to reference 1 for explanation of estimate derivations, based on data from the 2001 National Health Survey. Questions related to physical activity undertaken for recreation, sport, health or fitness purposes, excluding physical activity for work or transport, which may underestimate the amount of physical activity undertaken. The burden of disease attributable to physical inactivity may therefore be an overestimate.

**In this section, sedentary or low exercise levels are defined as self-reported activity for sport, recreation or fitness falling below the activity levels recommended in the National Physical Activity Guidelines for Australians: undertaking less than 150 minutes of moderate physical activity per week, usually 30 minutes on at least five days of the week, with each session lasting at least 10 minutes. Sufficient physical activity to derive health benefits is defined as at least this amount of activity occurring in at least five separate sessions of 10 minutes or more. The category 'sedentary' alone refers to no physical activity during the previous week.

#The National Physical Activity Surveys (1997, 1999 and 2000) examined self-reported participation in walking, including walking for transport, and other moderate and vigorous activity during leisure time in the previous week. The National Health Survey in 2004–05 asked participants about all activity undertaken for sport, recreation or fitness during the prior two weeks, including walking, moderate or vigorous activity, but did not include walking for transport. These surveys do not include non-leisure time activity such as work or domestic activity (ie gardening or household duties); while these may also contribute to overall physical activity, due to measurement difficulties they are not usually included in population surveys.^{3,4}

References

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4. Australian Institute of Health and Welfare (AIHW). Australia's health 2006. AIHW Cat. No. AUS 73. Canberra: AIHW, 2006.
5. Australian Institute of Health and Welfare (AIHW). Heart, stroke and vascular diseases – Australian facts 2004. AIHW Cat. No. CVD 27. Canberra: AIHW and National Heart Foundation of Australia (Cardiovascular Disease Series No.22), 2004.

Trends in adult physical activity

- Between 1997 and 2000, the proportion of people who were not sufficiently active for health benefits increased from 49% to 54%. This occurred among all groups except 60–75 year-olds, whose physical activity levels stayed relatively stable.¹
- The proportion of males reporting no physical activity increased from 14% to 18% over this time period.²

References

1. Australian Institute of Health and Welfare (AIHW). Heart, stroke and vascular diseases – Australian facts 2004. AIHW Cat. No. CVD 27. Canberra: AIHW and National Heart Foundation of Australia (Cardiovascular Disease Series No.22), 2004.
2. Australian Institute of Health and Welfare (AIHW). Australia's health 2006. AIHW Cat. No. AUS 73. Canberra: AIHW, 2006.

Physical activity among older Australians

- The level of physical activity among older Australians is remaining stable. Among 60–74 year-olds, around 21% of males and 14% of females in 2000 reported sedentary levels of activity, while 33% of males and 44% of females reported some level of activity which was not considered sufficient for health.

Reference

Australian Institute of Health and Welfare (AIHW). Australia's health 2006. AIHW Cat. No. AUS 73. Canberra: AIHW, 2006.

Physical activity among children and adolescents

Recent information at a national level on the physical activity of Australian children and adolescents is lacking.¹ Some data were collected by the Australian Bureau of Statistics in the 2006 Survey of Children's Participation in Cultural and Leisure Activities, conducted nationally as part of the ABS Monthly Population Survey. Previously this survey was conducted in 2000 and 2003. This survey found:²

- There was an increase of 2% between 2003 and 2006 (from 62% to 64%) in the proportion of 5–14 year-olds who in the preceding year participated in school or club sport organised outside school.²
- On average, these children spent six hours in organised sport per school fortnight.²

In addition, some state-level data are available:

New South Wales

- In NSW, a survey in 2004 among 11–16 year-olds in years 6, 8 and 10 found that 75% of girls and boys reported levels of physical activity meeting the recommended level of moderate to vigorous physical activity every day (at least one hour).³
- Boys were more active than girls, while participation decreased among both sexes with increasing age.³
- Comparisons with the 1985 Australian Health and Fitness Survey results suggest that the prevalence of moderate to vigorous physical activity rose by 15 to 25% between 1985 and 2004. However, in 2004 school students were less likely to walk or cycle to school compared with earlier years.³

Western Australia

- A survey among 2880 children and adolescents from Years 3, 5, 7, 8, 10 and 11 found that one-quarter of boys (25%) and almost one-third of girls (32%) at high school reported doing no vigorous sport, exercise or dance in a usual week, as did around 12% of primary school children.⁴
- Around 50% of the students surveyed reported participating in no active transport activities such as walking or cycling to or from school.⁴
- Of all activities reported, school-based physical education and sport was the most frequent kind of activity for males and females at both primary and secondary school.⁴

Victoria

- Recent data from Victoria (2006) indicate that almost three-quarters (71%) of Victorian 5–12 year-olds meet the recommended minimum daily activity levels of one hour of physical activity; however, activity levels are lower among older children and girls.⁵
- Over three-quarters of Victorian children living within two kilometres of school are driven to school some (39%) or most (37%) of the time.⁵

Queensland

- A 2006 Queensland survey among 3691 schoolchildren aged 5 to 17 years (Years 1, 5, and 10) found the proportion of students meeting daily physical activity recommendations (at least one hour of moderate physical activity) decreased with age and was lower among girls. One in six Year 1 and one in eight Year 10 boys met the daily recommendations. Among girls, only one in 15 Year 1 girls and one in 20 Year 10 girls met the recommendations.
- As age increased, so did the time spent using screen-based electronic media for entertainment: among Year 10 students, one quarter of girls and over 2 in 5 boys exceeded current daily recommendations.
- Older children were more likely to participate in active transport: among Year 10 students, 10% walked or cycled to school daily, and over one-third used active transport at least once a week.
- In all age groups, boys took a greater average number of steps per day than girls, with the largest difference in Year 10.
- The youngest age group was more active on the weekends, while students in Years 5 and 10 were more active on weekdays.
- There were no consistent differences in physical activity behaviours of children living in urban or rural areas.

References

1. Australian Institute of Health and Welfare (AIHW). Australia's health 2006. AIHW Cat. No. AUS 73. Canberra: AIHW, 2006.
2. Australian Bureau of Statistics (ABS). 4835.0.55.001 Physical Activity in Australia: A Snapshot, 2004-05. Canberra: Commonwealth of Australia, 2007. Available from URL: <http://abs.gov.au/AUSSTATS/abs@.nsf/Lookup/4835.0.55.001Main+Features12004-05?OpenDocument>. Accessed March 16 2007.
3. NSW Centre for Overweight and Obesity (COO). NSW Schools Physical Activity and Nutrition Survey (SPANS) 2004 Summary Report. Sydney: NSW Department of Health, 2006.
4. Premier's Physical Activity Taskforce. A preliminary report: child and adolescent physical activity and nutrition survey 2003 (CAPANS). Perth: Department of Health, Government of Western Australia, 2004.
5. Department of Human Services (DHS) Victoria. The state of Victoria's children report 2006. Every child every chance. Melbourne: DHS, 2006.
6. Abbott RA, Macdonald D, Mackinnon L, Stubbs CO, Lee AJ, Harper C and Davies PSW. Healthy Kids Queensland Survey 2006 - Summary Report. Brisbane: Queensland Health, 2007.

The benefits of physical activity

- Numerous studies in recent decades have shown that people who are moderately physically active have between a one-and-a-half and two-fold reduced risk of cardiovascular events and cardiovascular death.¹
- Brisk walking for three or more hours per week could reduce the risk of coronary events in women by 30 to 40%.²
- Regular walking is associated with a lower overall mortality rate in older, physically capable men.³
- The benefits from walking include improved fitness and/or increased physiological activity and energy turnover. Walking is associated with increased bone strength among all age groups.⁴

References

1. Baumann A, Bellew B, Vita P, Brown W, Owen N. Getting Australia Active: towards better practice for the promotion of physical activity. Melbourne: National Public Health Partnership, 2002.

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3. Hakim AA, Petrovitch H, et al. Effect of walking on mortality among non-smoking retired men. *NEJM* 1998;338 (2):94-99.
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Nutrition

Detailed information about food and nutrient intakes was last collected nationally in Australia in 1995.¹ A comparison between data from the *National Dietary Survey of Adults 1983* and the *National Nutrition Survey 1995* indicates the following:

- Overall, between 1983 and 1995, there was a significant reduction in mean fat intake as a percentage of energy intake, from 37% to 32%.²
- Mean intake of fat fell significantly between 1983 and 1995 for both men and women. The decrease was 6g per day for men and 3g per day for women and equivalent to between 100 and 200kJ per day.³
- Overall, there was a statistically significant increase in mean daily energy intake of around 350kJ between 1983 and 1995.³
- In 2004–05, 85.7% of Australians aged 18 years and over reported that they did not usually consume five serves of vegetables daily, while 46.0% reported inadequate fruit consumption (fewer than two serves of fruit daily).¹

Data is available on self-reported fruit and vegetable consumption (whether adequate or not) by gender and state, in the AIHW report *Australia's health 2006* (p.172).³ Data are derived from state/territory level CATI surveys and from the National Health Survey.

Low fruit and vegetable consumption accounted for 2.1% of the total burden of disease and 3.5% of total deaths in Australia in 2003.^{4,5*}

*Refer to reference 4 for explanation of estimate derivations.

References

1. Australian Food and Nutrition Monitoring Unit. Key food and nutrition data for Australia 1990 – 1999, Canberra: Commonwealth of Australia, 2001.
2. Australian Food and Nutrition Monitoring Unit. Comparable data on food and nutrient intake and physical measurements from the 1983, 1985 and 1995 national nutrition surveys. Canberra: Commonwealth of Australia, 2001.
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5. Vos T, Begg S. The burden of cardiovascular disease in Australia for the year 2003. Consultancy report for the National Heart Foundation. Brisbane: Centre for Burden of Disease and Cost-Effectiveness, University of Queensland, 2007.

The relationship between CVD and overweight/obesity

Overweight or obese people have a higher risk of experiencing chronic and potentially life-threatening health problems such as cardiovascular problems, including hypertension, stroke and coronary heart disease; conditions such as Type 2 diabetes; certain cancers; and gallbladder disease. Overweight and obesity is also associated with raised blood cholesterol, physical inactivity and sedentary behaviour, sleep apnoea, osteoarthritis, psychological disorders and social problems.¹

There is good evidence for the association between excess body weight and major biomedical risk factors for CVD for the following: atherosclerosis; high blood pressure (including in

children and adolescents); high total cholesterol, as well as high LDL- and low HDL- cholesterol; and Type 2 diabetes among adults with high levels of central adipose tissue and in Aboriginal and Torres Strait Islander peoples.²

Excess weight has been clearly linked with increased risk of death and ill health from heart and vascular diseases. With increasing level of weight, the risk of both high blood pressure and high blood cholesterol and triglycerides is increased. Blood pressure control and blood lipid levels are both improved with weight loss.¹

In children and adolescents, excess weight may affect both short- and long-term health. In the short term, this includes increased cardiovascular disease risk factors. Excess weight in adolescence has also been shown to be significantly associated with both mortality and morbidity later in life.¹

The most recent estimates indicate that high body mass* accounted for 7.5% of the total burden of disease and injury and 7.2% of the total deaths in Australia in 2003.³ This represented up to 9,525 deaths in Australia in 2003.³ The diseases associated with high body mass are ischaemic heart disease, Type 2 diabetes, stroke, colorectal, breast and corpus uteri cancer, hypertensive heart disease, and osteoarthritis.³

Almost three-quarters (74%) of the total burden of disease and injury⁴ and two-thirds of deaths (66%, up to 6296 deaths)³ attributable to high body mass in Australia in 2003 were due to Type 2 diabetes and ischaemic heart disease. The majority of deaths attributed to high body mass were due to conditions within the CVD cluster, with up to 6905 deaths (72%) attributed to ischaemic heart disease, stroke and hypertensive heart disease.³

* Note the health effects of 'high body mass' in these analyses were estimated using new methods in which BMI is measured on a continuous scale and risk is assessed against a minimum counterfactual distribution with a mean of 21 and a SD of 1. Risk associated with high body mass is therefore attributed to all people in the population with a BMI of greater than 21, with the degree of risk increasing exponentially above this value. Consequently, some of the attributable risk from high body mass comes from the large proportion of the population that is not overweight or obese in the conventional sense, but whose risk of disease is elevated, at least to some degree. Please refer to references 3 and 4 for details of the estimate derivations.

References

1. World Health Organization (WHO). Obesity: preventing and managing the global epidemic: report of a joint WHO/FAO expert consultation. WHO technical report series;894. Geneva: WHO, 2000.
2. Australian Institute of Health and Welfare (AIHW) and National Heart Foundation of Australia (NHFA). The relationship between overweight, obesity and cardiovascular disease. AIHW Cat. No. CVD 29. Canberra: AIHW (Cardiovascular Disease Series No. 23), 2004.
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Obesity and life expectancy

Obesity is associated with a substantial reduction in life expectancy. Data from the United States have indicated that a severe level of obesity (BMI>45) among young adults (aged 20–30 years) could reduce male life expectancy by up to 3 years and female life expectancy by up to 8 years.¹ The risk of premature death is higher the longer that an individual has been obese.² People aged 25–35 years who are severely obese are 12 times more likely to die than those who are lean.² Compared with people in the normal weight range, obese women are 115% more likely to die before age 70 years and obese men are 81% more likely to die before age 70 years.³ A large study from the United States found that among 40 year-old non-smokers, life expectancy was reduced by 3.1 years for men and 3.3 years for women who were overweight (BMI 24.0–29.9).⁴ Being obese (BMI>30) was associated with a reduction in

life expectancy of 5.8 and 7.1 years for male and female non-smokers respectively, and a reduction of 13.7 and 13.3 years for smokers.⁴

References

1. Australian Institute of Health and Welfare (AIHW) and National Heart Foundation of Australia (NHFA). The relationship between overweight, obesity and cardiovascular disease. AIHW Cat. No. CVD 29. Canberra: AIHW (Cardiovascular Disease Series No. 23), 2004.
2. World Health Organization (WHO). Obesity: preventing and managing the global epidemic: report of a joint WHO/FAO expert consultation. WHO technical report series;894. Geneva: WHO, 2000.
3. Peeters A, Barendregt JJ, Willekens F, Mackenbach JP, Al Mamun A, Bonneux L. Obesity in adulthood and its consequences for life expectancy: a life table analysis. *Ann Intern Med* 2003;138(1):24-32.
4. National Health and Medical Research Council (NHMRC). Clinical Practice Guidelines for the Management of Overweight and Obesity in Adults. Canberra: Commonwealth of Australia, 2003.

Tracking health and life expectancy into adulthood

- Among adults who are obese, those who were overweight during adolescence have poorer health due to weight-related conditions and are more likely to die early compared with those who were not overweight as adolescents.

Reference

Healthy Weight 2008. Australia's Future. The National Action Agenda for Children and Young People and their Families. Commonwealth of Australia: Canberra, 2003.

Tracking cardiovascular risk factors into adulthood

- Obesity in childhood is related to greater adult cardiovascular mortality and morbidity—this is regardless of the adult weight. Weight in puberty at the highest and lowest categories has been linked to increased adult mortality and chronic disease, while overweight in adolescence has been associated with increased risk of all cause and coronary heart disease mortality.

Reference

National Health and Medical Research Council (NHMRC). Clinical Practice Guidelines for the Management of Overweight and Obesity in Children and Adolescents. Canberra: Commonwealth of Australia, 2003.

Tracking childhood overweight and obesity into adulthood

- Less than one-third of adults who are obese were obese in childhood.
- Five large, longitudinal studies following children from childhood through to at least adolescence and using measured calculations of BMI indicate that a child who is obese is highly likely to be obese as an adult. The results of these studies suggest:
 - The risk of being overweight in adulthood is related to the degree of overweight in childhood.
 - The predictive power of the relationship between child and adult weight is greater with increasing age – an adult is more likely to be overweight the later into adolescence that overweight continues, and the higher the degree of overweight.
 - A child's BMI is highly related to BMI measured later in childhood; the strength of this relationship increases with age, and a child in the lowest or highest BMI category is more likely to remain within that same category over time.
 - It is highly unlikely that a child or adolescent who is categorised as overweight or obese will spontaneously move into a lower category of BMI. In one large study, only 1% of significantly obese children moved into a lower BMI category over the study period of around 10 years.
 - Obesity in adolescence persists into adulthood in up to half of all obese adolescents.

- Obesity in young adulthood (26 years) appears to be a better predictor of adult obesity than obesity in childhood (11 years).
- Measures of childhood waist size track well into adulthood.

Reference

National Health and Medical Research Council (NHMRC). Clinical Practice Guidelines for the Management of Overweight and Obesity in Children and Adolescents. Canberra: Commonwealth of Australia, 2003.

Costs of obesity

In 2005, the total financial cost in Australia of obesity alone, not including overweight, was estimated at \$3.767 billion.¹

This estimate includes:¹

- productivity costs of \$1.7 billion (45%); health system costs of \$873 million (23%), and carer costs of \$804 million (21%).
- Deadweight loss from taxation revenue foregone, welfare and other government payments of \$358 million (10%) and other indirect costs of \$40 million (1%).

The net cost of lost wellbeing (an estimate of the financial cost of the burden of disease, netting out financial costs to individuals) was estimated to be \$17.2 billion.¹

The total cost of obesity in Australia in 2005 was estimated to be **\$21.0 billion**.¹

In addition to this, in 1997 the NHMRC estimated that consumers spent \$500 million on weight control programs.²

As obesity is more closely associated with morbidity and disability than mortality, a person will experience ill health for a significantly greater number of years, which may add much more to indirect and direct costs.³

It has been estimated that health care costs of an obesity-related disease such as diabetes may almost double during the normal progression of the disorder. The significant economic burden is therefore likely to worsen even if obesity prevalence does not rise.³

References

1. Access Economics. The economic costs of obesity. Report by Access Economics to Diabetes Australia. Diabetes Australia, 2006. Available from URL: <http://www.accesseconomics.com.au/publicationsreports/showreport.php?id=102>. Accessed July 23 2007.
2. Australian Institute of Health and Welfare (AIHW). Chronic disease and associated risk factors in Australia, 2001. Canberra: AIHW, 2002.
3. National Health and Medical Research Council (NHMRC). Clinical Practice Guidelines for the Management of Overweight and Obesity in Adults. Canberra: Commonwealth of Australia, 2003.

Predictions of future prevalence of overweight and obesity in Australia

While measured data availability is limited, prevalence rates for obesity and overweight appear to be rising among both Australian adults and children. It has been predicted that by 2025, a total of 4.2 million Australians (just under 17% of the population) will be obese. This estimate is based only on demographic ageing, and does not take into account any further increases in age-gender prevalence rates. Estimates based on historical rate increases suggest there may be 7.2 million obese Australians by 2025 (just under 30% of the population).

Reference

Access Economics. The economic costs of obesity. Report by Access Economics to Diabetes Australia. Diabetes Australia, 2006. Available from URL: <http://www.accesseconomics.com.au/publicationsreports/showreport.php?id=102>. Accessed July 23 2007.

Health benefits of weight loss

Weight loss in people who are overweight and obese improves physical, metabolic, endocrinological and psychological complications: the effects can be dramatic. Obesity-related mortality may be reduced through intentional weight loss.¹

Even a modest loss of 5 to 10% of body weight can lead to significant health benefits. These include decreases in blood pressure and improvements in blood lipids. Greater weight loss, such as 15 to 20% during the year following diagnosis, can reduce sleep apnoea and other risk factors, and reverse the heightened mortality risk of Type 2 diabetes. Modest, intentional weight loss has also been associated with increased survival and reductions in total mortality of 25 to 50%, especially among overweight people with diabetes.²

Estimates have been made of the benefits that may be derived from weight loss of 10 kilograms; these include:¹

Mortality: More than 20% decrease in total mortality; more than 30% decrease in diabetes-related deaths; and more than 40% decrease in obesity-related cancer deaths;

Blood pressure: A reduction of 10 mmHg systolic and 20 mmHg diastolic in hypertensive individuals;

Diabetes: A decrease of 50% in fasting glucose levels among people newly diagnosed;

Lipids: A reduction of 10% total cholesterol, 15% low density lipoprotein and 30% triglycerides, and an increase of 8% of high density lipoprotein;

Other benefits: Improved lung function, decreased back and joint pain, breathlessness and sleep apnoea frequency.

References

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2. National Health and Medical Research Council (NHMRC). Clinical Practice Guidelines for the Management of Overweight and Obesity in Adults. Canberra: Commonwealth of Australia, 2003.

Further information

The following documents and websites are useful sources of statistics and information related to overweight and obesity. Please note this is not an exhaustive list and there may be some relevant reports which are not included.

- Abbott RA, Macdonald D, Mackinnon L, Stubbs CO, Lee AJ, Harper C and Davies PSW. Healthy Kids Queensland Survey 2006 - Summary Report. Brisbane: Queensland Health, 2007.
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- Australian Food and Nutrition Monitoring Unit. Key food and nutrition data for Australia 1990 – 1999, Canberra: Commonwealth of Australia, 2001.
- Australian Government website for Building a Healthy, Active Australia: <http://www.healthyactive.gov.au/>
- Australian Government website – provides links to other relevant Australian government sites: <http://www.aodgp.gov.au/internet/wcms/publishing.nsf/Content/Healthy+Weight-1>
- Australian Government website – key information on overweight and obesity: <http://www.aodgp.gov.au/internet/wcms/publishing.nsf/content/health-publth-strateg-hlthwt-obesity.htm>
- Australian Government website – information on promoting healthy weight: <http://www.aodgp.gov.au/internet/wcms/publishing.nsf/Content/health-publth-strateg-hlthwt-index.htm>
- Australian Government website – a list of some studies, surveys, publications and reports providing further information on overweight and obesity: <http://www.aodgp.gov.au/internet/wcms/publishing.nsf/Content/health-publth-strateg-hlthwt-evidence.htm>.
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