

Obesity in Australia: financial impacts and cost benefits of intervention

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- The direct and indirect costs of obesity and obesity-related illnesses in 2008/09 were estimated to be \$37.7 billion.
- Loss in productivity due to obesity through absenteeism, presenteeism and premature death is estimated to be \$6.4 billion a year.
- It is estimated that 7,200 Australians die each year due to obesity and obesity related illness.
- Research shows that obesity intervention policies aimed at reducing the prevalence of obesity in Australia will yield strong benefits for the economy.



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What is obesity?

Obesity is a condition where excess body weight accumulates to the extent it may have an adverse effect on health, leading to a reduced life expectancy. This occurs when an individual's energy intake exceeds their energy expenditure - the larger the imbalance the more rapid the weight gain. Obesity is a health risk and can lead to a range of medical conditions and complications.

The prevalence of obesity is rising dramatically and so too are the significant health, economic and social costs associated with obesity. 24.8 percent of people aged 18 years and over were obese in 2007/08. This is an increase of 8.4 percent on the 2004/05 figures.

There are several health effects associated with obesity. An obese person has a higher risk of mortality from cardiovascular disease, type 2 diabetes, osteoarthritis, and some specific forms of cancer. As a person's weight increases, their risk of developing more than one of these medical conditions also increases.

The medical conditions that stem from obesity are costly to treat, and each of these conditions, as well as obesity itself, are National Health Priority Areas (NHPAs).

There are a range of intervention programs that aim to address obesity. Broadly, these include lifestyle interventions such as diet, exercise, and specific programs like those offered by Medibank – *better*health Coaching, *better*health Online and Beat Diabetes. In addition, pharmacological interventions and bariatric surgery have also been shown to be effective.

What causes obesity?

The regulation of body weight and the causes of obesity are complex and multifactorial and beyond the scope of this booklet. Briefly, the human body has physiological mechanisms which balance the drive to eat (hunger) with the drive not to eat (anorexia). Excess body weight

accumulates when a person's energy intake from food consumption is in excess of the energy used in physical activity.

Healthy eating and regular physical activity are therefore pivotal in preventing and managing obesity.

About the study and key findings

With the worldwide epidemic of obesity becoming a growing concern, Medibank commissioned KPMG Econtech to estimate the economy-wide impacts associated with obesity in Australia and, perhaps more importantly, the likely financial benefits of obesity intervention programs.

Utilising KPMG Econtech's MM2 model, this study captures both the direct and indirect costs associated with obesity and obesity-related illnesses, as well as the benefits of obesity intervention programs.

Direct costs are associated with four main medical conditions – cardiovascular disease, type 2 diabetes, osteoarthritis, and some specific forms of cancer. In 2008/09, the direct health costs associated with obesity-related medical conditions were determined to be \$1.3 billion.

Indirect costs are associated with the productivity losses that occur due to obesity. This is measured in terms of the impact of being absent from work (absenteeism), being less productive at work than a healthy person

(presenteeism), and loss of productivity due to premature mortality caused by obesity.

The indirect costs associated with productivity losses (both absenteeism and presenteeism) and premature mortality are estimated to be \$6.4 billion in 2008/09.

In addition to the costs of obesity related to healthcare, productivity and premature death, the burden of disease costs associated with obesity were estimated to be approximately \$30 billion in 2008/09. Notably, this is significantly larger than the other costs presented above and are important to consider, as this estimate captures not only the financial but also the social costs of obesity.

The cost estimate of obesity represents the potential savings that would occur if the prevalence of obesity in Australians was reduced.

To assess the impact of obesity intervention programs, the expected benefits in the form of cost savings from reduced prevalence of obesity were estimated. These benefits were then compared to the cost of each intervention program.

Total cost of obesity to the Australian economy

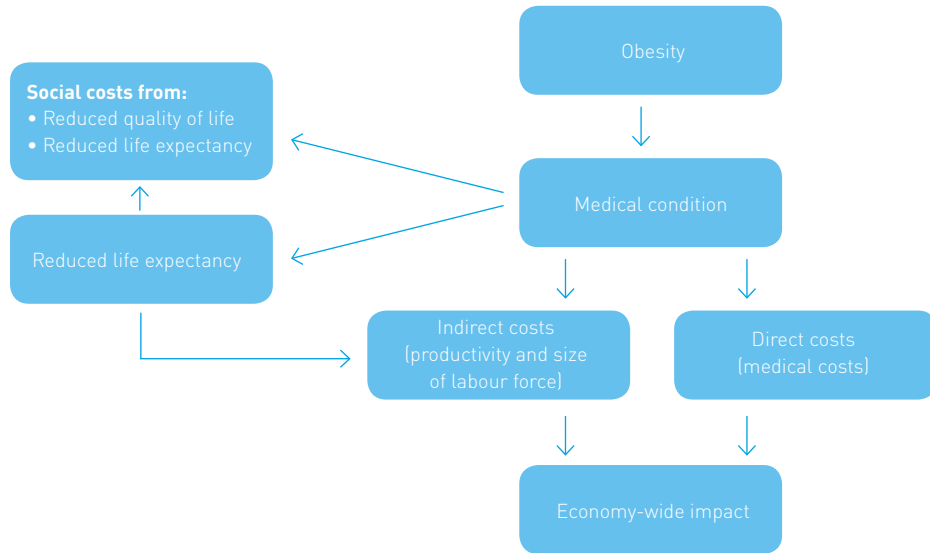
Direct costs	\$1.3 billion
Indirect costs	\$6.4 billion
Burden of disease costs	\$30 billion
Total	\$37.7 billion

NB: These costs do not include government subsidies and welfare payments.

The direct cost of obesity (outlined above) is perhaps a conservative estimate due to the selected methodology of this research. A recent Australian study that carried out long-term observation of an overweight and obese population (Colagiuri et al. 2010) showed considerably higher health care costs for obese individuals.

Key findings *continued*

The impact of obesity on the Australian economy



The direct costs of obesity are identified above as medical costs. The direct costs of treating obesity-related conditions are borne by governments, private health insurers and individuals.

The indirect costs associated with obesity include the impact of being absent from work (absenteeism) and being less productive at work than a healthy person (presenteeism). Absenteeism was found to be 14 percent

higher in obese employees compared with normal-weight employees in the working population. These costs have an economic impact on the Australian economy, through productivity losses resulting in lower output.

Medical conditions associated with obesity lead to social costs for individuals and families in the economy. This is created through reduced quality of life and shorter life expectancy.

What are the benefits of obesity interventions?

In addition to personal health benefits, the results of this research demonstrate that strategies aimed at reducing obesity in Australia could bring significant benefits to the Australian economy and community. This is in line with other recent Australian studies which show significantly reduced health care costs for obese individuals who lost weight through shorter hospital stays and fewer medical complications*. The estimated cost of obesity provided in this report represents the potential cost savings that would occur if the prevalence of obese Australians was reduced.

Obesity can be treated using a range of methods. This report identifies three broad level interventions.

- **Lifestyle interventions** consist of various combinations of dieting, physical activity and counselling. Weight loss is achieved when energy use is above energy intake.
- **Pharmacological interventions** consist of weight loss drugs, which are typically used in conjunction with lifestyle interventions. The variety of weight reduction drugs is growing as obesity

and being overweight become more prevalent.

- **Bariatric surgery** is surgery for the treatment of obesity. The two most common types of bariatric surgery are the Roux-en-Y gastric bypass operation (RYGB) and the Laparoscopic Adjustable Gastric Banding operation (LAGB). The RYGB operation closes the regular exit from the stomach to the duodenum, and a loop of the lower small intestine is attached to the side of the stomach. As a result, food bypasses much of the small bowel, which is where most of nutrient absorption occurs. LAGB surgery places a band around the upper section of the stomach. The band reduces usable stomach size, and the patient feels full with a smaller intake of food.

The success of each type of intervention is important when estimating the benefits. As noted below, lifestyle, surgical, and pharmacological programs have all been demonstrated to be effective in a number of clinical trials.

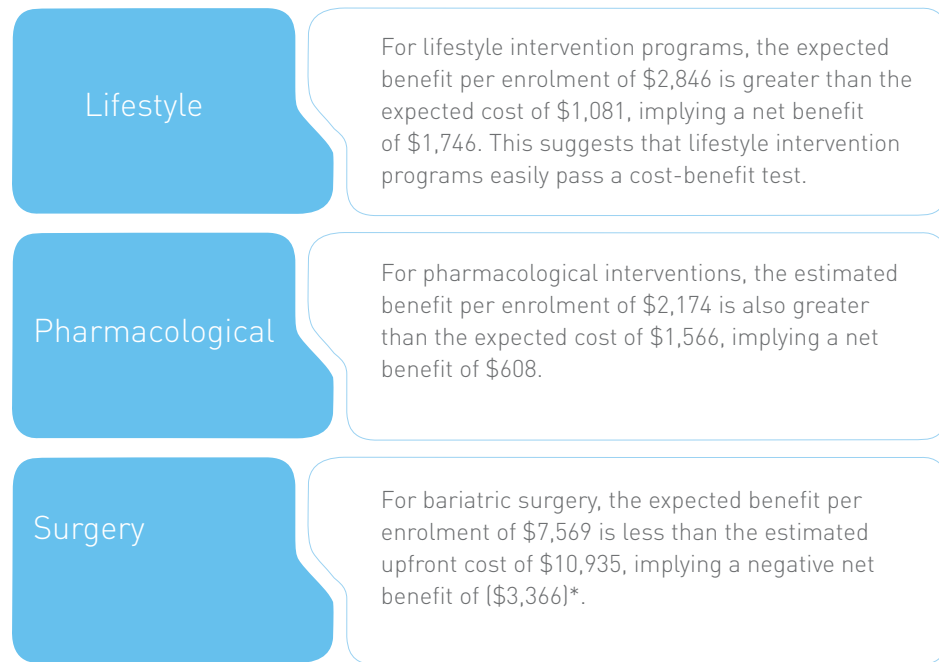
*Colagiuri et al. (2010), Hauck et al. (2010)

Success rates for obesity intervention programs

Lifestyle	11%
Pharmacological	8%
Surgery	28%

The success rates refer to the likelihood that individuals who commence a program will achieve lasting control of obesity.

Based on the estimated success rates and the present value of each lasting control of obesity, the expected financial benefits were estimated for each intervention program. These expected benefits were compared against the costs of the interventions.



* Of the three interventions considered in this analysis, bariatric surgery has the highest estimated success rate but the lowest cost/benefit outcome. In addition, the expected benefit (\$7,569) associated with this intervention is significantly higher than that of the other interventions considered (by up to a multiple of four). Given the relatively high cost of bariatric surgery, the simple analysis used in this study suggests that bariatric surgery may not be cost effective. However, it does not take into account characteristics of individuals who have the surgery. Given the elevated health risks and costs associated with moderate and severe obesity, some studies have shown that downstream savings offset the initial costs of bariatric surgery.

Conclusions

There are many ways to examine the impact and financial burden of obesity and obesity-related illness, and there are many elements to consider in any such analysis.

Overall, this research has demonstrated that obesity has a significant impact on the Australian economy and that the estimated cost represents significant potential savings that would occur if obesity amongst Australians was eliminated.

In addition, the obesity intervention analysis suggests that policies aimed at reducing the prevalence of obesity in Australia will yield strong benefits for the economy.

The cost savings from reducing obesity would be spread amongst various parties in the economy.

- Individuals would benefit through reduced health costs, improved quality of life and longer life expectancy.
- The government would benefit through reduced public health care costs.
- Employers would benefit through improved productivity.
- The economy more broadly would benefit through greater productivity and output.

It is important to note that the research does not examine or consider the mental and emotional impact of obesity or conversely, the benefits of each type of intervention on emotional wellbeing.

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Other Medibank research

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