

Subject:	Reducing the burden of obesity	Ref. No.	REL-GOV-035
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INTRODUCTION

The Royal Australasian College of Surgeons (RACS) has developed this position paper and accompanying recommendations to address the growing prevalence of obesity and its associated risks to service delivery, surgical outcomes and public health in Australia and New Zealand.

In contrast to other major global health issues such as tobacco and childhood malnutrition, obesity is rapidly increasing worldwide. Obesity is already a major public health challenge in many middle-income countries, which places a greater urgency on data collection and dissemination of information outlining the risks associated with obesity.¹

The growing incidence of obesity is one of the most challenging contemporary threats to global public health. The World Health Organisation (WHO) estimates that more than half the world's adult population is either overweight (39%) or obese (13%).² Since 1980, the worldwide prevalence of obesity has more than doubled and statistics also show a significant increase in incidences of childhood obesity. In 1990, 4.2% of the world's children were overweight or obese, and by 2010, this percentage had risen to 6.7%. This trend is expected to reach 9.1%, or 60 million, by 2020.³

Obesity is a major contributor to Type 2 diabetes, with estimates showing that eliminating obesity from the population can potentially reduce the incidence of Type 2 diabetes by over 40%.⁴ Diabetes is the fastest-growing chronic condition in Australia, with approximately 280 people developing it every day,⁵ while in New Zealand, 243,125 people have been diagnosed.⁶ As there is currently no cure, the condition requires lifelong management.

CONTEXT

The Australian Institute of Health and Welfare (AIHW) lists categories of body mass index (BMI) as:

Underweight <18.50	Overweight >25.00	Obese Class 1 30.00 – 34.99
Normal range 18.50 – 24.99	Pre-obese 25.00-29.99	Obese Class 2 35.00 – 39.99
		Obese Class 3 > 40.00

Dietary risks and high BMI are the two leading risk factors in Australia's burden of disease.⁷ One in every six days spent in Australian hospitals is related to overweight and obese patients above the age of 45.⁸ The estimated annual cost of obesity in Australia (which has doubled since 2005) is \$58.2 billion.⁹ The financial costs account for \$8.283 billion (\$3.6 billion productivity costs; \$2 billion health system costs; and \$1.9 billion carer costs), while the net cost of lost wellbeing is a further \$49.9 billion.

In New Zealand, health care costs attributable to obesity were estimated to be NZ\$686m (4.5% of New Zealand's total health care expenditure in 2006) or \$911m when lost productivity was included.¹⁰

The following statistics further support the growing concerns over the increased rates of obesity and burden of disease that this represents:

Australia

- In 2012 more than three in five Australian adults (63%) were overweight or obese (70% of men and 56% of women).¹¹
- Twenty-five per cent of Australian children aged 2–17 were overweight or obese (18% and 7% respectively).
- People living in regional areas or from a lower socioeconomic background were more likely to be obese.¹²
- Approximately 7.5% of Australia's total disease burden can be attributed to obesity, second only to high blood pressure and tobacco.

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- Among 45-79 year olds, obesity is a factor in one in eight hospital admissions (13% of admissions); one in every six days spent in hospital (18% of hospital days); and one in every six dollars spent on hospitalisation (17% of hospital costs).¹³
- Between 2005 and 2008, obesity was a causal factor in significantly increased incidences of several types of diseases in Australians: Type 2 diabetes (137%); cardiovascular disease (70%); osteoarthritis (88%); and colorectal, breast, uterine or kidney cancer (47%).¹⁴
- The yearly cost of managing each patient with diabetes averages \$10,900 (ranging from \$9,095 to \$15,850, depending on the presence of complications).¹⁵
- A Medical Services Advisory Committee report in 2003 priced gastric bypass at just over \$8,000.¹⁶

New Zealand

- New Zealand has the fourth highest rate of obesity of any country in the OECD, with nearly two thirds of adults either overweight (34%) or obese (31%).¹⁷
- Nearly half (46%) of Maori adults, and more than two thirds (67%) of Pacific adults are obese.
- Obesity in males has almost doubled from 17% in 1997 to 30% in 2012/13, while among females there has been an increase from 21% to 32%.
- Approximately one in three New Zealand children aged 2–14 are overweight or obese.
- Nearly half (44%) of adults living in the most socioeconomically disadvantaged areas were obese, compared to one fifth (21%) in the least disadvantaged areas, and this figure may be higher among children.¹⁸

HEALTH AND WELLBEING IMPACTS

The effects of being obese are significant public health problems that are associated with a broad range of chronic clinical conditions and premature mortality.¹⁹ People who are obese are far more likely to develop problems with their blood pressure, cholesterol, triglycerides and insulin resistance. Risks of coronary heart disease, ischemic stroke, Type 2 diabetes and a range of cardiovascular disease subtypes also increase steadily with increasing BMI.²⁰ Raised BMI increases the risk of cancer of the breast, colon, prostate, endometrium, kidney and gall bladder. Mental health and eating disorders are also associated with being overweight or obese.²¹

Anesthesia of patients who are obese can be problematic because of the increased risk of high blood pressure, heart disease, decreased oxygen delivery, hiatus hernia, and a higher risk of regurgitation and aspiration. Obtaining intravenous access and performing regional anesthesia may also be difficult. For these and other reasons, it is advisable that in the first instance, patients who are obese try to lose weight prior to elective surgery.²²

An increasing number of research studies have demonstrated the link between obesity and poorer outcomes following surgery.^{23 24 25} Patients with a BMI over 40 suffer disproportionately greater complications and morbidity than those who are less obese or in the recommended weight range. Compared with patients in the recommended weight range, those with the modified metabolic syndrome (obesity, hypertension, treated diabetes) had two to three times higher risk of cardiac complications, 1.5 to 2.5 times higher risk of pulmonary complications, two times higher risk of coma and stroke, and a three to seven times higher risk of acute kidney injury.²⁶

WHAT CAN BE DONE?

RACS believes a combination of preventative measures and an increase in the availability of treatment options for those who are already obese is the most effective way to address obesity. Evidence suggests that taking steps to maintain a healthy weight and lifestyle throughout life is one of the most important ways to protect against many types of cancer²⁷ and a range of other diseases.

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The 2010 ACE-Prevention study funded by the National Health and Medical Research Council is described as, “the largest and most rigorous evaluation of preventative strategies undertaken anywhere in the world.” It found that a 10% tax on unhealthy non-core foods would lead to substantial health gain and considerable future cost savings by averting treatment of obesity-related diseases.²⁸ The WHO also recognises the influence of price on food choices and supports a fiscal approach.

Examples of other preventative measures include better labelling on food packaging and public education programs. There is evidence to suggest that education programs can have a positive impact on physical activity levels.^{29 30}

Surgery for weight loss

All individuals seeking weight loss should begin with non-surgical therapy and consider bariatric surgery only if they are unable to achieve sufficient long-term weight loss and co-morbidity improvement.³¹ Clinical decisions should be based on a comprehensive evaluation of the patient’s health and prediction of future morbidity and mortality.

Surgical options to address obesity include gastric bypass surgery, laparoscopic adjustable gastric band surgery or sleeve gastrectomy. RACS does not endorse any particular procedure.

There is strong evidence to suggest that surgery is an effective intervention for weight loss in the morbidly obese (BMI > 40) where non-surgical interventions have been ineffective, and that this may reduce the long-term costs and health impacts of obesity.³² Randomized controlled trials have shown that surgical treatment was statistically significantly more effective than nonsurgical therapy in reducing weight over 24 months,³³ and that this weight loss remained present after 10 years.³⁴ For obese patients with Type 2 diabetes, surgery can rapidly improve control of blood sugar and cardiovascular risk factors.^{35 36}

There are similar benefits for patients with a BMI > 35. Generally non-operative treatment is advised for class I obesity (BMI 30–35), however where there are comorbidities there may still be a role for bariatric surgery.³⁷

RECOMMENDATIONS

RACS supports the development of national plans in Australia and New Zealand to coordinate efforts to reduce obesity.

In 2009 the Australian Government’s Preventative Health Taskforce released a technical report on obesity, calling for urgent action.³⁸ Funding for the Preventative Partnership and its formal evaluation process was ceased in 2014. The same year, the New Zealand Medical Association (NZMA) issued the policy briefing ‘Tackling Obesity’, which recommended measures to address New Zealand’s obesity epidemic.³⁹

RACS supports the Australian and New Zealand governments’ role and the measures outlined in these reports. The obesity epidemic will not be reversed without government leadership, regulation, and investment in programs, monitoring, and research.^{40 41 42}

RACS recommends equity of access to weight loss surgery by publicly funding bariatric surgery, including support from a team of expert clinicians for patients that meet appropriate clinical guidelines.

In Australia, public patients do not have the same access to bariatric surgery as private patients.⁴³ In 2007–08, over 90% of separations for weight loss surgery in Australia were in private hospitals, with private health insurance funding 82% of separations.⁴⁴

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Medicare pays for privately insured patients to undergo surgery aimed at reducing obesity, while uninsured patients face restricted access to surgery in public hospitals. Edey & Talbot (2014) argue that bariatric surgery for obesity complicated by severe comorbid conditions should be accessible to all Australians.

While the mix between public and private weight loss surgeries is more even in New Zealand, a NZ Ministry of Health report recommended that bariatric surgery should be a more widely provided treatment option for appropriate candidates with severe obesity (BMI of 35 or more), as it has been shown to be a cost effective approach in this group.⁴⁵ This is supported by the ACE-Prevention study and studies by the Centre for Obesity Research and Education.⁴⁶

Providing surgery as an alternative option for weight loss will improve quality and length of life, and reduce the cost of managing comorbid conditions, medication and food.

RACS recommends the use of national bariatric surgery registries in Australia and New Zealand.

Audit to progressively enhance standards of clinical care is a key result area for RACS. A registry which captures data on the number of patients, the success of surgery and any possible complications will allow the Australian and New Zealand governments and health professionals to effectively monitor and evaluate the role of bariatric surgery in addressing obesity. The bariatric registry run by the Obesity Surgery Society of Australia and New Zealand is one such example.

RACS recommends that health services should be adequately equipped to deal with the growing number of obese patients.

Normal equipment such as beds, mattresses, shower chairs, commodes and wheelchairs should be in place to accommodate heavier patients and guidelines/measures should be in place for healthcare professionals to safely manage obese patients. Refer also to the College's Position Paper: Implications of Obesity for Outcomes on Non-bariatric Surgery.

Approver: Director, Relationships & Advocacy
Authoriser: Governance & Advocacy Committee

¹ Ng, Marie et al. Global, regional, and national prevalence of overweight and obesity in children and adults during 1980–2013: a systematic analysis for the Global Burden of Disease Study 2013, The Lancet, Volume 384, Issue 9945, 766 – 781.

² World Health Organization. Obesity and Overweight. Fact Sheet No. 311. From: <http://www.who.int/mediacentre/factsheets/fs311/en/>. Body mass index (BMI) is used to classify overweight and obesity - WHO defines overweight as having a BMI equal to or greater than 25, and obese as having a BMI equal to or greater than 30.

³ De Onis, M., Blossner, M., Borghi, E. Global prevalence and trends of overweight and obesity among pre-school children. Am J Clin Nutr 2010;92:1257–64.

⁴ Baker IDI Heart & Diabetes Institute, Diabetes Australia, JDRF. Diabetes: the silent pandemic and its impact on Australia. 2012. Baulkham Hills. From: <https://www.diabetesaustralia.com.au/Documents/DA/What%27s%20New/12.03.14%20Diabetes%20management%20booklet%20FINAL.pdf>

⁵ Diabetes Australia. Understanding Diabetes, Diabetes in Australia. From: <http://www.diabetesaustralia.com.au/Understanding-Diabetes/Diabetes-in-Australia/>. Accessed 10 February 2015.

⁶ Diabetes New Zealand. New Zealand Diabetes Statistics. 2013. From: http://www.diabetes.org.nz/resources_and_publications/new_zealand_diabetes_statistics. Accessed 9 February 2015.

⁷ Australian Institute of Health and Welfare. Australia's health 2014. Australia's health series no. 14. Cat. no. AUS 178. Canberra: AIHW.

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⁸ Sax Institute. Obesity is sending over-45s to hospital – at a cost of \$4 billion per year. References a publication currently in press. From: <https://www.saxinstitute.org.au/media/obesity-sending-over-45s-to-hospital-at-a-cost-of-4billion-per-year/>. Accessed 9 February 2014.

⁹ Access Economics. The growing cost of obesity in 2008: three years on. Report for Diabetes Australia. Canberra, 2008. From: <http://www.diabetesaustralia.com.au/PageFiles/7830/FULLREPORTGrowingCostOfObesity2008.pdf>

¹⁰ Lal, A., Moodie, M., Ashton, T., Siahpush, M., Swinburn, B. Health care and lost productivity costs of overweight and obesity in New Zealand. *Australian and New Zealand journal of public health*, vol. 36, no. 6, pp. 550-556, 2012.

¹¹ Australian Institute of Health and Welfare. Australia's health 2014. Australia's health series no. 14. Cat. no. AUS 178. Canberra: AIHW.

¹² Australian Institute of Health and Welfare. Weight loss surgery in Australia. Cat. no. HSE 91. Canberra, 2010.

¹³ Sax Institute. Obesity is sending over-45s to hospital – at a cost of \$4 billion per year. References a publication currently in press. From: <https://www.saxinstitute.org.au/media/obesity-sending-over-45s-to-hospital-at-a-cost-of-4billion-per-year/>. Accessed 9 February 2014.

¹⁴ Access Economics. The growing cost of obesity in 2008: three years on. Report for Diabetes Australia. Canberra, 2008. From: <http://www.diabetesaustralia.com.au/PageFiles/7830/FULLREPORTGrowingCostOfObesity2008.pdf>

¹⁵ Colagiuri S, Colagiuri R, Conway B, et al. (2003) DiabCo\$t Australia: assessing the burden of type 2 diabetes in Australia. Canberra: Diabetes Australia.

¹⁶ Medical Services Advisory Committee, Australian Department of Health and Ageing (2003) Laparoscopic adjustable gastric banding for morbid obesity. MSAC reference 14. Assessment Report. From: www.msac.gov.au.

¹⁷ NZ Medical Association. NZMA Policy Briefing: Tackling Obesity (2014). From: https://www.nzma.org.nz/_data/assets/pdf_file/0015/32082/NZMA-Policy-Briefing-2014_Tackling-Obesity.pdf. Accessed 10 February 2015.

¹⁸ Ministry of Health. 2014. Annual Update of Key Results 2013/14: New Zealand Health Survey. Wellington: Ministry of Health.

¹⁹ National Health and Medical Research Council. Clinical Practice Guidelines for the Management of Overweight and Obesity in Adults, Adolescents and Children in Australia - Systematic Review. Canberra, 2013.

²⁰ Joshy G, Korda RJ, Attia J, Liu B, Bauman AE, Banks E. Body mass index and incident hospitalisation for cardiovascular disease in 158 546 participants from the 45 and Up Study. *International Journal of Obesity*. 2013;38(6):848–56.

²¹ National Health and Medical Research Council. Summary Guide for the Management of Overweight and Obesity in Primary Care. Canberra, 2013.

²² Australian and New Zealand College of Anaesthetists. What effect does obesity have on anesthesia? From: <http://www.anzca.edu.au/patients/frequently-asked-questions/obesity.html#what-effect-does-obesity>. Accessed 9 February 2015.

²³ Dindo D, Muller MK, Weber M, Clavien PA: Obesity in general elective surgery. *Lancet* 2003;361:2032–5.

²⁴ Klasen J, Junger A, Hartmann B, Jost A, Benson M, Virabjan T, Hempelmann G: Increased body mass index and peri-operative risk in patients undergoing non-cardiac surgery. *Obes Surg* 2004; 14:275–81.

²⁵ Harvey R, Haluska B, Mundy J, Wood A, Griffin R, Shah P. Association between body mass index and outcome of coronary artery bypass. *Asian Cardiovasc Thorac Ann*. 2011 Oct;19(5):333.

²⁶ Gance L, Wissler R, Mukamel D, Li Y, Diachu, C, Salloum R, Fleming F, Dick A. Perioperative outcomes among patients with the modified metabolic syndrome who are undergoing non- cardiac surgery. *Anesthesiology*: 113 (4) 859-872.

²⁷ World Cancer Research Fund/American Institute for Cancer Research. Food, Nutrition, Physical Activity, and the Prevention of Cancer: a Global Perspective. Washington DC: AICR, 2007. From: http://www.dietandcancerreport.org/cancer_resource_center/downloads/Second_Expert_Report_full.pdf

²⁸ Vos, T. et al. Assessing Cost-Effectiveness in Prevention (ACE–Prevention): Final Report. University of Queensland, Brisbane and Deakin University, Melbourne, 2010.

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²⁹ Woolcott Research. Research Report: Evaluation of the National 'Get Moving' Campaign. Prepared for the Department of Health and Ageing, January 2007.

³⁰ McLeod, M. (2014) An evaluation of a facilitator-led 'Run & Walk' health promotion initiative targeting inactive adult males. Supported by Men's Health Trust New Zealand & Unitec Institute of Technology. From: <http://unitec.researchbank.ac.nz/handle/10652/2536>. Accessed 10 February 2015.

³¹ Committee ACI. Bariatric surgery in class I obesity (body mass index 30–35 kg/m²). Surgery for Obesity and Related Diseases. 2013;9(1).

³² Picot J, Jones J, Colquitt JL, Gospodarevskaya E, Loveman E, Baxter L, et al. The clinical effectiveness and cost-effectiveness of bariatric (weight loss) surgery for obesity: a systematic review and economic evaluation. Health Technol Assess 2009;13(41).

³³ O'Brien PE. Treatment of Mild to Moderate Obesity with Laparoscopic Adjustable Gastric Banding or an Intensive Medical Program. Annals of Internal Medicine. 2006;144(9).

³⁴ O'Brien PE, Brennan L, Laurie C, Brown W. Intensive Medical Weight Loss or Laparoscopic Adjustable Gastric Banding in the Treatment of Mild to Moderate Obesity: Long-Term Follow-up of a Prospective Randomised Trial. Obes.Surg (2013) 23:1345-1353.

³⁵ Buchwald H, Estok R, Fahrbach K, et al. Weight and type 2 diabetes after bariatric surgery: systematic review and metaanalysis. Am J Med 2009;122(3):248.e5-256.e5.

³⁶ Dixon JB, O'Brien PE, Playfair J, Chapman L, Schachter LM, Skinner S, et al. Adjustable Gastric Banding and Conventional Therapy for Type 2 Diabetes. JAMA. 2008;299.

³⁷ Busetto L, Dixon J, Luca M, Shikora S, Pories W, Angrisani L. Bariatric Surgery in Class I Obesity. Obesity Surgery. Springer; 2014 Apr 1;24(4):487–519.

³⁸ Obesity working group, National Preventative Health Taskforce. Australia: the healthiest country by 2020. Technical Report No 1. Obesity in Australia: a need for urgent action. Canberra, 2009.

³⁹ NZ Medical Association. NZMA Policy Briefing: Tackling Obesity (2014). From: https://www.nzma.org.nz/_data/assets/pdf_file/0015/32082/NZMA-Policy-Briefing-2014_Tackling-Obesity.pdf. Accessed 10 February 2015.

⁴⁰ Swinburn, Boyd A et al. The global obesity pandemic: shaped by global drivers and local environments. The Lancet , Volume 378 , Issue 9793 , 804 – 814, 2011.

⁴¹ Commonwealth of Australia. Weighing it up: Obesity in Australia. Canberra: House of Representatives Standing Committee on Health and Ageing, 2009, p57.

⁴² Meyer,S., Booth, S., Gray, J., Hakendorf, P., McNaughton, D., Mwanri, L.,Thompson, C., Ward, P. Quantitative analysis of bariatric procedure trends 2001–13 in South Australia: implications for equity in access and public healthcare expenditure. Aust. Health Review **39**, 63–69 2015.

⁴³ Edey, M., Talbot, M. Inequalities of access to bariatric surgery in Australia. MJA 201 (9) 3 November 2014.

⁴⁴ Australian Institute of Health and Welfare. Weight loss surgery in Australia. Cat. no. HSE 91. Canberra, 2010.

⁴⁵ NZ Ministry of Health. Assessment of the Business Case for the Management of Adult Morbid Obesity in New Zealand. Wellington: Ministry of Health. 2008.

⁴⁶ Keating, C, et al. Cost-efficacy of surgically induced weight loss for the management of type 2 diabetes: randomised controlled trial. Diabetes Care, 2009; 32(4), 580-584.