

30 August 2023

The House of Representatives
Standing Committee on Health, Aged Care and Sport inquiry into diabetes
PO Box 6021
Parliament House
Canberra ACT 2600

Statement in response to Inquiry into Diabetes

The focus of this response is on the Terms of Reference points 4 and 5:

4. Any interrelated health issues between diabetes and obesity in Australia, including the relationship between type 2 and gestational diabetes and obesity, the causes of obesity and the evidence-base in the prevention, diagnosis, and management of obesity; and
5. The effectiveness of current Australian Government policies and programs to prevent, diagnose and manage diabetes.

Diabetes and Obesity in Australia

More than 1 in 20 Australians are now living with diabetes¹ This rate has increased 220% over the past 20 years (diab aust future). If this growth continues it is predicted that more than 8.3% of the projected population will be living with diabetes by 2050, costing an estimated \$45billion per annum¹.

Obesity contributes significantly to the burden of diabetes in Australia. Fifty-five percent of the total burden (in DALYs) of Type 2 Diabetes Mellitus (T2DM) is attributed to overweight and obesity⁶, Obesity rates in Australia are predicted to increase to 35% by 2025^{6,7}. Effective treatment and management of obesity is critical in addressing the increasing burden of diabetes in Australia.

How does obesity contribute to diabetes burden?

Epidemiologically, there is an undeniable correlation between the increasing Body Mass Index (BMI) of Australians and the incidence of Type 2 Diabetes Mellitus (T2DM)¹, the incidence and burden of Gestational Diabetes Mellitus (GDM)^{10,12} and burden of diabetes in Australians living with Type 1 Diabetes Mellitus (T1DM)¹⁴

Obesity facilitates the pathogenesis of T2DM through inducing insulin resistance¹⁵ and the gradual destruction of insulin secreting pancreatic B cells⁸. Insulin resistance results from pathophysiological processes catalysed by increased adipose tissue¹⁰ particularly when stored in the intra-abdominal region⁵. In a state of obesity, abdominal adipose tissue secretes pro-inflammatory factors, which along with surplus lipid deposition in the liver, heart, and skeletal muscle, disrupts insulin signalling, alters glucose uptake and impairs energy production of

these tissues, manifesting as insulin resistance¹⁵. Reduction of abdominal adipose tissue can reverse this process⁸.

In people living with T1DM (which represents 5% of all people with diabetes, in Australia¹ the impact of obesity induced insulin resistance is significant¹⁴. It is estimated that up to 37% of people with T1DM also live with obesity¹⁴. The presence of insulin resistance in this group results in the need for higher insulin requirements, greater cardiometabolic risks and a greater risk of developing complications (microvascular and macrovascular) compared to people with T1DM not living with obesity¹⁴.

Obesity increases the risk of developing GDM in pregnancy three-fold compared to women of normal BMI, mediated through insulin resistance⁸. Additionally, obesity during pregnancy and excessive gestational weight gain increase the offspring's future risk of obesity and insulin resistance^{10,13} leading to a cycle of intergenerational disordered metabolic health.

Impact of obesity treatment on diabetes incidence, remission, and improved control.

Obesity treatment imparts additional cardiometabolic benefits over and above improved glycaemic control in people with diabetes, making it an important, powerful, and cost-effective therapy for this condition⁸. Improved metabolic impact of obesity treatment on diabetes increases with greater percentage total body weight loss (%TBWL) and early intervention, whilst insulin secreting capacity of the pancreas remains intact. Remission of diabetes, defined as maintaining a glycosylated haemoglobin (HbA1c) <6.5% without using anti-diabetes medication, is more likely achieved with >15% TBWL, whilst prevention of onset can be achieved in a prediabetes population with TBWLs <10%^{8,9}. Improved glycaemic control in established diabetes (improved HbA1C) also observed at these lower rates of %TBWL, which result in reduced use of diabetes medications and lower macro and microvascular complication rates^{8,9}.

Intensive lifestyle programs produce TBWLs on average around 8% with significant diabetes remission rates of up to 50% at 12months⁴. Weight loss medications such as weekly injected Semaglutide (Ozempic) at 2.4mg facilitate average TBWL of 12% on clinical trial⁹ with more significant weight losses being seen in newer generations of GLP-1 receptor agonists⁵. Bariatric surgery (also known as metabolic surgery for its effect on directly impacting blood glucose regulation) offers the most powerful effects on diabetes management⁸ with the Australian and New Zealand Bariatric Surgery registry recording an average 33% TBWL at 12 months post-surgery and 68% of patients reporting diabetes remission³. This is consistent with outcomes from large clinical trials such as the Swedish Obesity Subjects (SOS) Study where 23%TBWL was achieved 2 years post metabolic surgery and diabetes remission occurred in 72% of patients⁸. Intensive lifestyle, medical weight loss and bariatric surgery are important therapies in the prevention and treatment of diabetes. The long-term success of all of these interventions depends on the ability to provide ongoing support by a skilled Multi-disciplinary team (MDT)^{8,11} over the course of a lifetime.

What is the problem?

Treating obesity effectively in Australia would reduce the incidence of this disease in our communities and improve the health (and health resource utilization) of those living with

established diabetes. The economic and health burden associated with diabetes in this country could be greatly eased with a well-planned obesity treatment strategy.

Unfortunately, effective obesity treatment, remains inaccessible to most Australians². Less than 2% of people who would benefit from bariatric surgery are able to access this treatment². Wait lists for public bariatric surgery in the few tertiary hospitals that provide this service across the country have many years waiting lists². Effective weight loss medications are not subsidized by the PBS for most people living with obesity². Skilled MDTs to support the necessary lifestyle therapies that are essential for long term success and safety is unavailable to most Australians including those who are fortunate enough to access medical and surgical weight loss treatments^{2,11}

What needs to be done:

Australia needs a new and innovative model of obesity care that provides equitable access to efficacious and cost- effective treatment. A comprehensive obesity-specific program under Medicare for the provision of sufficient lifestyle therapy to run concurrently with adequate public Bariatric Surgery and PBS subsidized weight loss medication for not just those with established diabetes, but those at risk, would significantly impact the current and future burden of diabetes in Australia.

What can the federal government do?

Support the implementation of the National Obesity Strategy 2022-23 (<https://www.health.gov.au/resources/publications/national-obesity-strategy-2022-2032?language=en>). Identify and invest in those who are progressing actions that have arisen or align with this strategy.

Prioritise Ambition 3 of the National Obesity Strategy ‘All Australians have access to early intervention and supportive healthcare’ by funding activities required to identify, test and implement an efficacious and cost-effective obesity specific MBS program, which would support effective and safe obesity treatment to those who would benefit from it, regardless of their socio-economic, cultural or geographical situations. This could be achieved as described in the table below:

Goals	
Provide an Obesity Specific Program under MBS for effective MDT obesity management	
Short term	Expand the current MBS Chronic Disease Management program for all people living with BMI>27kg/m2 with a diagnosis of diabetes OR is at risk of developing diabetes (pre-diabetes) to include at least 17 MDT sessions over 12 months, which is consistent with number of counselling sessions from the DIRECT-Aus trial for effective impact. https://www.diabetesaustralia.com.au/direct-aus/

<p>Medium term</p>	<p>Adequately fund research and evaluation activities to identify an efficacious and cost-effective MBS program for all MDT obesity treatment pathways including bariatric surgery, medical weight loss as well as intensive lifestyle therapy in the real world. Seek expert clinical and lived experience advice from:</p> <p>ANZMOSS (Australia and New Zealand Metabolic and Obesity Surgery Society) https://anzmoss.com.au/public-bariatrics/ and NACOS (National Association of Clinical Obesity Services) https://www.nacos.org.au/resources/ WIN (Weight Issues Network) https://weightissuesnetwork.org</p> <p>Adequately research, develop and evaluate telehealth and video-conferencing delivery of MDT care and the impact of using digital health solutions to expediate care and increase scalability. Consider collaborating with Impact Obesity https://www.impactobesity.org about our work in this space (development of digital health products to augment and enhance existing publicly funded obesity treatment and management services).</p>
<p>Long term</p>	<p>Implement an obesity specific program under the Medical Benefits Scheme (MBS) designed to ensure safe and effective obesity treatment for bariatric surgery, medical weight loss and intensive lifestyle treatment across the lifespan using the power of digital and telehealth to optimize efficacy and scalability.</p>

Yours faithfully

Andrea Jasper
Director

References:

1. AIHW 2023. <https://www.aihw.gov.au/reports/diabetes>
2. Atlantis, E., Kormas, N., Samaras, K., Fahey, P., Sumithran, P., Glastras, S., Wittert, G., Fusco, K., Bishay, R., Markovic, T. and Ding, L., 2018. Clinical obesity services in public hospitals in Australia: a position statement based on expert consensus. *Clinical obesity*, 8(3), National Association of Clinical Obesity Services.
3. Bariatric Surgery Registry 2022. Bariatric Surgery Registry 2022 Annual Report.
4. Delahanty, L.M., 2017. Weight loss in the prevention and treatment of diabetes. *Preventive medicine*, 104, pp.120-123.
5. Garvey T, Frias J, Jastreboff A, le Roux C, Sattar N, Aizenberg D, Mao H, Zhang S, Ahmad N, Bunck M, Bennabad I and Zhang X 2023. Tirzepatide once weekly for the treatment of obesity in people with Type 2 Diabetes (SURMOUNT-2): a double-blind, randomised, multi-centre, placebo-controlled, phase-3 trial. *The Lancet* 2023, Volume 402, issue 10402.W
6. Global Burden of Disease Diabetes Collaborators 2021. Global, regional, and national burden of diabetes from 1990 to 2021, with projections of prevalence to 2050: a systematic analysis for the Global Burden of Disease Study 2021 *Lancet* 2023; 402: 203–34
7. Hayes A, Lung T, Bauman A and Howard K 2017. *Modelling obesity trends in Australia: unravelling the past and predicting the future. International Journal of Obesity* 2017, 41, 178-185.
8. Ko Jung Hae and Kim Tae Nyun 2022. Type 2 Diabetes Remission with Significant Weight Loss: Definition and Evidence-Based Interventions. *J Obesity Metabolic Syndrome* 2022. 30(2):123-133
9. Iqbal J, Wu H, Hu H, Zhou Y, Xiao F, Way T, Jiay H, Xu S, Huang B and Zhou H 2022. Effect of GLP-1 receptor agonists on body weight in adults with obesity without diabetes – a systematic review and meta-analysis. *Obesity Reviews* 2022.
10. Marchi J, Berg M, Dencker A, Olander EK, Begley C. Risks associated with obesity in pregnancy, for the mother and baby: a systematic review of reviews. *Obes Rev.* 2015;16:621–38.
11. Monkes, L., Ghoch, M., Brodus, L., Calugi, S., Marchesini, G. and Dalle-Grave, R., 2016. Long term weight loss maintenance for obesity, a multidisciplinary approach. *Diabetes, Metabolic Syndrome and Obesity: targets and therapy*.
12. Ryan, D. and Yockey, S., 2017. Weight Loss and Improvements in Comorbidities: difference at 5%, 10%, 15% and over. *Curr Obes Rep*, 6(2):187-197
13. Torloni MR, Betrán AP, Horta BL, Nakamura MU, Atallah AN, Moron AF, et al. Prepregnancy BMI and the risk of gestational diabetes: a systematic review of the literature with meta-analysis: diagnostic in obesity and complications. *Obes Rev.* 2009;10:194–203.
14. Vilarrasa N, San Jose P, Rubio M and Lecube A 2021. Patients with type 1 diabetes: Links, Risks and Management challenges. *Diabetes Metabolic Syndrome, Obesity* 2021, 14; 2807-2827
15. Wondmkun Y 2020. Obesity, Insulin Resistance, and Type 2 Diabetes: Associations and Therapeutic Implications. *Diabetes, Metabolic and Obesity: Targets and Therapy* 2020: 13