

with type 1 diabetes, and lower engagement and follow-up than older adults with type 2 diabetes.²⁹ Clinical care needs to be individualised to address these challenges and facilitate access, engagement and improved outcomes.³⁰ Summary recommendations regarding psychological care for young adults with type 2 diabetes are provided in [Box 5](#).

Glucose management and pharmacotherapy

The pathophysiological mechanisms underpinning type 2 diabetes in young adults are thought to be similar to those of later onset type 2 diabetes. However, type 2 diabetes in young adults is believed to be a more aggressive phenotype than later onset type 2 diabetes. The faster decline in β -cell function (up to 20–35% per year³¹) may result in an early failure of metformin monotherapy and a more rapid requirement for additional therapy.^{31,32}

There have been too few young participants in the large cardio-renal outcome trials to draw conclusions regarding the non-glycaemia-mediated cardiac and renoprotective effects of pharmacotherapy using glucagon-like peptide 1 receptor agonists and sodium–glucose cotransporter 2 inhibitors in the young adult age group.⁸ Nevertheless, given the high cardio-renal risk in young adults with type 2 diabetes and the need to avoid iatrogenic weight gain and hypoglycaemia, glucagon-like peptide-1 receptor agonists and sodium–glucose cotransporter 2 inhibitors are the likely best second line agents (<https://diabetessociety.com.au/living-guidelines.asp>). See [Box 6](#) for further recommendations. The need for effective contraception is a requirement in women, given the unknown teratogenic effects of these newer agents.

Obesity management for the treatment of young adults with type 2 diabetes

Obesity is an important, modifiable risk factor for young adults with type 2 diabetes. Early intervention is warranted; weight loss can improve glucose control and obesity-related conditions, although the evidence for diabetes remission in young adults with type 2 diabetes is still limited.³³ See [Box 7](#) for additional recommendations.

Diabetes complications and comorbidities

Clinicians need to be aware that some diabetes complications are more prevalent in young adults with type 2 diabetes than

6 Recommendations regarding glucose management and pharmacotherapy in young adults with type 2 diabetes

- Given the high risk of complications, the glycated haemoglobin target should be $\leq 6.5\%$ (≤ 48 mmol/mol) if it can be achieved without undue hypoglycaemia risk and self-management burden.
- Insulin may be beneficial at the time of diagnosis to achieve rapid metabolic improvements in the context of symptomatic hyperglycaemia, with a proportion likely to be able to subsequently cease insulin.
- Metformin remains first line therapy, but durability of achieving glucose targets may be less than for older adults.
- There is limited but emerging evidence for the use of newer agents (GLP1 receptor agonists, SGLT2 inhibitors and dipeptidyl peptidase 4 inhibitors) in young adults with type 2 diabetes. Given low hypoglycaemic risk and neutral or beneficial effects on weight, these should be considered early in the treatment algorithm. Consideration of effective contraception in women is essential as there is limited safety evidence for the use of these newer agents in pregnancy.
- Cardio-renal benefits are not yet proven for type 2 diabetes in young adults; however, GLP1 receptor agonists or SGLT2 inhibitors could be considered preferentially in the context of persistent albuminuria or chronic kidney disease, or known cardiovascular disease ([Box 8](#)).
- Caution is recommended when using SGLT2 inhibitors in young adults with type 2 diabetes who have ever presented with ketoacidosis (ketosis-prone type 2 diabetes).
- Regular 3-monthly glycated haemoglobin monitoring is warranted given risk of therapy failure and progressive β -cell decline.

GLP1 = glucagon-like peptide 1; SGLT2 = sodium–glucose cotransporter 2. ♦

in those with type 1 diabetes, with evidence for more rapid progression and a higher mortality.^{34–38} Further, compared with later onset type 2 diabetes, complications occur at a much earlier age, with a higher impact on mortality.^{39–41} Some evidence

7 Recommendations for obesity management for the treatment of type 2 diabetes in young adults

- As for all people with diabetes, it is recommended to use non-judgmental people-first language (ie, “person with obesity” rather than “obese person”), to avoid defining people by their condition.
- People with obesity or overweight face weight-based stigma and prejudice (weight bias) in many aspects of their lives, which may affect the quality of health care received. Clinicians are encouraged to examine their own potential for weight bias and to refrain from narratives that support negative weight-based stereotypes.
- As weight gain is common in this age range, annual weight/body mass index assessment is recommended, or more frequently (if required), to assess weight trajectory. The need for privacy while weighing and any reluctance to be weighed should be respected and accommodated.
- Relevant weight loss targets, dietary and physical activity recommendations, and the potential for the co-occurrence of depression and presence of disordered eating are outlined in [Box 4](#) and [Box 5](#).
- Interventions for reducing energy intake include the use of very low calorie diets and meal replacements under medical supervision.
- Pharmacotherapies for obesity, beyond those recommended for glycaemic management, are available in Australia. These currently include phentermine, liraglutide, orlistat and naltrexone–bupropion (precaution/warning in individuals younger than 25 years of age with depression). Please refer to expert guidance for further information on their use.*
- Bariatric or metabolic surgery is effective for obesity and improving metabolic indices, although long term data in adolescents and young adults with type 2 diabetes are lacking. In experienced units, metabolic surgery may be considered as an option for young adults with obesity and persistent hyperglycaemia despite non-surgical therapy. Please refer to expert guidance for further information.*
- Assessment for obesity-related complications including those that would benefit from weight loss is recommended (eg, non-alcoholic steatohepatitis, obstructive sleep apnoea, polycystic ovary syndrome, fertility implications and hypertension) ([Box 8](#)).

*Australian Obesity Management Algorithm (<https://diabetessociety.com.au/documents/ObesityManagementAlgorithm18.10.2016FINAL.pdf>). ♦

5 Recommendations regarding psychosocial care in young adults with type 2 diabetes

- Emotional health problems (eg, diabetes distress, depression, disordered eating and psychiatric symptoms) are relatively common among young adults with type 2 diabetes. In addition, clinicians need to be mindful that young adults may be susceptible to, and internalise, the social stigma surrounding type 2 diabetes.
- Clinicians need to be aware of, and ask about, depressive symptoms and diabetes distress to enable appropriate intervention where needed.
- Screening tools such as the Patient Health Questionnaire-9 (<https://www.racgp.org.au/FSDEDEV/media/documents/Clinical%20Resources/Guidelines/Mental%20Health/Work-related-mental-health-conditions-in-general-practice.pdf>) and Problem Areas in Diabetes questionnaire (<https://www.racgp.org.au/FSDEDEV/media/documents/Clinical%20Resources/Guidelines/Diabetes/Appendix-C.pdf>) can be used to identify those who may need additional support and intervention.
- Individualised strategies to assist engagement and follow-up are necessary for this group. These may include flexible appointment times, and strong continuity of care with a single point of contact.
- Clinicians need to be vigilant for alcohol and substance misuse.
- Early referral to social work and mental health professionals with expertise in dealing with young adults is recommended.