

Type 2 Diabetes Remission Fact Sheet for Health Professionals

Term	Definition
Type 2 diabetes (T2D)	A condition where the body becomes resistant to the effects of insulin and the pancreas also loses the ability to produce enough insulin.
Insulin	Hormone that converts glucose into energy for the body
Glucose intolerance ('prediabetes'*)	The inability to process glucose, starts before T2D develops. People with prediabetes are at high risk of developing T2D. Affects approximately 2 million Australians.
T2D remission	Reduction of HbA1C to less than 6.5% without the use of glucose-lowering medications.
Risk factors for prediabetes* and T2D	Both are influenced by genetics, age, lifestyle factors such as nutrition and physical activity, weight, use of some medicines and other medical conditions. There is strong evidence that the risk of developing T2D can be reduced by up to 58% in people with prediabetes through changes in nutrition and physical activity that result in sustained weight reduction.

T2D Remission Information

Studies have shown the possibility for some people with T2D to reduce their HbA1c to less than 6.5% (48mmol/mol) and sustain this level for a period of at least three months, without the use of glucose-lowering medication. This sustained metabolic improvement is defined as T2D '**remission**'.

Remission can be achieved through the reduction of weight by:

- Intensive dietary change, for example a very low energy diet (VLED), ketogenic diet, and other healthy behaviour modification, with close consultation with a diabetes healthcare team and dietitian.
- Bariatric surgery, for those with a BMI of at least 30 where dietary, physical activity and medical interventions for obesity/diabetes have not worked. Remission from bariatric surgery is most successful in young people and those recently diagnosed with T2D.

While any weight loss for those with T2D and overweight or obesity is beneficial, T2D remission is more likely to be achieved if 10%-15% of body weight is lost. Remission is most likely to be successful when dietary changes are implemented within **TWO** years of T2D diagnosis, however can be successful for those who have lived with T2D for up to **FIVE** years. It is also important to consider less intensive lifestyle changes that focus on creating an energy deficit through addressing all three lifestyle areas related to overweight and obesity (nutrition, physical activity and psychological approaches to behaviour change) as the first line of intervention for weight loss.

It is important to ensure a diabetes healthcare team is actively involved as intensive dietary and weight changes require careful management, monitoring and support, as rapid weight loss could lead to other health issues. Even if remission is achieved, those with T2D in remission still require ongoing diabetes education and management, Annual Cycle of Care checks and monitoring for complications, such as heart attacks, stroke, eye damage and kidney failure.

Note that the term **pre-diabetes is not recommended for use in children or adolescents. As per the NT Health Screening and Management Pathways for type 2 diabetes in Aboriginal young people in the NT, if a young person has a borderline HbA1c (i.e. 5.7-6.4%) that is below the threshold for a diabetes diagnosis, OGTT is recommended. This helps to determine if glucose intolerance is occurring, assisting in determining prognosis and timing of the metabolic trajectory. This can be helpful in then targeting interventions and discussing further with families.*

Suitability

T2D remission is **more likely to be achieved** among people who:

- Were diagnosed with T2D within the last **FIVE** years
- Have a lower HbA1c when commencing treatment
- Do not require insulin therapy when commencing treatment.

T2D remission is **less likely to be achieved** among people who:

- Have been living with diabetes for more than **FIVE** years prior to wanting to undertake remission
- Are not overweight or obese, and rapid weight loss is not recommended.

Even for those where remission may not be possible, for most people with overweight or obesity and T2D, reducing weight is beneficial. It is associated with improved HbA1c, reduced risk of complications from diabetes, and may lead to reducing or stopping glucose lowering medications. Support to reduce weight and HbA1c through healthy behaviour change should be encouraged. Note that a reduction of HbA1c from 10% (86mmol/mol) to 8% (64mmol/mol), for example, through healthy behaviour change may be of greater benefit than achieving 'remission' in someone with a mildly elevated HbA1c at baseline.

Considerations

T2D remission may not result in a permanent reversal of the underlying cause/pathology. Evidence shows the underlying glucose intolerance may continue and glucose levels may return to those indicating T2D over time, including in those who have undergone bariatric surgery. People who achieve remission should remain registered with the National Diabetes Services Scheme (NDSS) to ensure they can access the same support and resources as those who are not in remission.

The impact of T2D remission on diabetes complications requires further investigation, therefore anyone who is in remission should continue regular monitoring and Annual Cycle of Care checks, and should continue to receive support for self-management.

It is very difficult to lose and maintain significant weight loss through dietary change and in the context of other social determinants of health. Remission is not achievable in all and studies show that less than half of remission attempts will be successful in twelve months of commencement, and only one third of those who achieve remission will sustain it over two years.

After bariatric surgery, studies show a significant proportion of people achieve long-term T2D remission (median duration approximately eight years). Currently there is no access to bariatric surgery through the public health system in the NT. As well as the cost and surgical risk, other barriers to bariatric surgery include the commitment to behaviour change and long term follow up.

While there have been studies demonstrating the possibility for remission of T2D in adolescents via weight loss, it is important to note that children and young people with T2D often have quite a different phenotype to older adults with T2D. In-utero exposure to hyperglycaemia and intergenerational transmission of risk via epigenetic mechanisms may lead to young people having T2D without necessarily being overweight. It may also mean that weight loss is not an appropriate goal, or effective in achieving remission of T2D. Careful consideration as to the phenotype and diagnosis is therefore very important.

References

[Type 2 diabetes remission Position Statement, October 2021. Diabetes Australia](#)
[Remission in Adults with Type 2 Diabetes Position Statement, August 2021. Diabetes UK](#)
[National Health and Medical Research Council \(2013\) Clinical practice guidelines for the management of overweight and obesity in adults, adolescents and children in Australia. Melbourne: NHMRC.](#)