

Lifestyle interventions for management of type 2 diabetes

Once diagnosed, in some patients, type 2 diabetes can be managed with diet and physical activity alone.^{1,2} In more advanced stages of type 2 diabetes, lifestyle interventions continue to play an important role in managing glycaemia and cardiovascular disease (CVD) risk, and may be supported by allied health and specialist support services.

Recommendations

Recommendation	Reference	Grade*
Physical activity		
Children and adolescents with type 1 or type 2 diabetes or at high risk of type 2 diabetes should engage in 60 min/day or more of moderate- or vigorous-intensity aerobic activity, with vigorous muscle-strengthening and bone-strengthening activities at least three days/week	3 American Diabetes Association, 2019	C
Most adults with type 2 diabetes should engage in 150 minutes or more of moderate-to-vigorous intensity aerobic activity per week, spread over at least three days/week, with no more than two consecutive days without activity	3 American Diabetes Association, 2019	B
Additionally, adults with type 2 diabetes should engage in resistance exercise: <ul style="list-style-type: none"> • 2–3 sessions/week on non-consecutive days • for a total of at least 60 minutes per week 	3 American Diabetes Association, 2019 4 Exercise & Sports Science Australia, 2012	B Consensus
All adults, particularly those with type 2 diabetes, should decrease the amount of time spent in daily sedentary behaviour	3 American Diabetes Association, 2019	B
Prolonged sitting should be interrupted every 30 minutes for blood glucose benefits, particularly in adults with type 2 diabetes	3 American Diabetes Association, 2019	C
Flexibility training and balance training are recommended 2–3 times/week for older adults with diabetes; yoga and tai chi may be included based on individual preferences to increase flexibility, muscular strength and balance	3 American Diabetes Association, 2019	C
Diet		
Consumption of cereal foods (especially three serves/day of wholegrains) is associated with reduced risk of type 2 diabetes	5 NHMRC, 2013	B
Consumption of at least 1.5 serves/day of dairy foods (eg milk, yoghurt, cheese) is associated with reduced risk of type 2 diabetes	5 NHMRC, 2013	C

Recommendation	Reference	Grade*
Weight		
In people with overweight or obesity with diabetes, a nutritionally balanced, calorie-reduced diet should be followed to achieve and maintain a lower, healthier body weight	6 Diabetes Canada, 2018	A, level 1A
An intensive healthy behaviour intervention program, combining dietary modification and increased physical activity, may be used to achieve weight loss, improve glycaemic control and reduce CVD risk	6 Diabetes Canada, 2018	A, level 1A
Weight management medication may be considered in people with diabetes and overweight or obesity to promote weight loss and improved glycaemic control	6 Diabetes Canada, 2018	A, level 1A
Metabolic surgery should be recommended to manage type 2 diabetes: <ul style="list-style-type: none"> in people with a body mass index (BMI) ≥ 40 kg/m² in people with a BMI 35.0–39.9 kg/m² when hyperglycaemia is inadequately controlled by lifestyle and optimal medical therapy 	7 Diabetes Surgery Summit, 2016	Consensus
Metabolic surgery should also be considered for patients with type 2 diabetes and BMI 30.0–34.9 kg/m ² if hyperglycaemia is inadequately controlled despite optimal treatment with either oral or injectable medications	7 Diabetes Surgery Summit, 2016	Consensus
Smoking cessation		
All people who smoke should be offered brief advice to quit smoking	8 RACGP, 2020	Strong recommendation; high certainty
Alcohol consumption		
People with diabetes can take alcohol in moderation as part of a healthy lifestyle, but should aim to keep within the target consumption recommended for people without diabetes	9 Scottish Intercollegiate Guidelines Network, 2017	B
*Refer to 'Explanation and source of recommendations' for explanations of the levels and grades of evidence.		

Physical activity

Clinical context

Physical activity is one of the cornerstones of diabetes management. Regular physical activity of any kind can have a favourable impact on glycaemic control, CVD risk and overall mortality.⁶ However, more structured, specialised and individualised exercise prescription can achieve superior benefits.¹⁰

The goal is for patients with diabetes, impaired fasting glucose (IFG) or impaired glucose tolerance (IGT) to accumulate a minimum of 210 minutes per week of moderate-intensity exercise (or 125 minutes per week of vigorous-intensity exercise), with no more than two consecutive days without training. This weekly total should include at least two moderate-to-vigorous resistance training sessions for a total of at least 60 minutes. These exercise amounts will establish and maintain muscular fitness and aerobic capacity.⁴

It is recommended to refer patients with type 2 diabetes to an accredited exercise physiologist for the prescription of a safe and effective exercise intervention.

Aerobic exercise

In people with type 2 diabetes, aerobic exercise (eg walking, cycling, swimming) reduces HbA1c, triglycerides, blood pressure and insulin resistance.¹⁰

Aerobic exercise intensity can be set as a percentage of estimated maximal heart rate (HR_{max}) using the equation $208 - 0.7 \times \text{age} [\text{years}]$.^{11,12} For moderate intensity, 55–69% of HR_{max} and for vigorous intensity 70–89% of HR_{max} can be used.⁴

Alternatively, 'moderate'-intensity aerobic exercise is defined on rate of perceived exertion (RPE) scales as 'somewhat hard', and 'vigorous' as 'hard'. Using the talk/sing test, a person is doing moderate-intensity exercise when they can comfortably talk but can't sing, and vigorous is when they are unable to talk comfortably.

Resistance exercise

Resistance, or strength, training involves activity such as using free weights, resistance machines or body weight. 'Moderate-to-vigorous' resistance training can be defined as 2–4 sets of 8–10 repetitions of 8–10 exercises, with rest intervals of 1–2 minutes.⁴

Resistance training reduces HbA1c, although to a lesser degree than aerobic exercise.¹³ However, combining aerobic and resistance training appears to be superior compared with either alone.¹⁴ Both types reduce CVD markers similarly,¹³ and a single bout of either may have a similar acute effect.¹⁵

In practice

When advising patients about physical activity, general practitioners (GPs) should:

- emphasise that some physical activity is better than none¹⁰
- discuss the importance of reducing sedentary behaviour – advise patients to interrupt prolonged sitting every 30 minutes for blood glucose benefits
- explore the risks and benefits of different forms of physical activity for the individual, taking into account whether the patient is already physically active
- explain the importance of varying intensity of exercise levels
- explain the importance of following the chest pain/discomfort and/or diabetes symptom management plan.¹⁶

Pre-exercise health assessment

Asymptomatic sedentary people with diabetes who wish to undertake low-to-moderate activity should have CVD assessment as part of usual diabetes care; however, those identified as having CVD risk on screening tools, or who have existing atherosclerotic or functional cardiovascular disease, may require more specific physical assessment prior to engaging in moderate- to high-intensity exercise. Existence of diabetes complications may require specific advice – refer below.

When prescribing a physical activity program, the GP should take a careful history and be aware of the following:

- Special attention needs to be paid to exertion-induced symptoms, chest or abdominal discomfort, claudication or syncope.
- People with type 2 diabetes frequently have silent macrovascular disease.
- For patients with hypertrophic obstructive cardiomyopathy, heavy weightlifting and high-intensity aerobic exercise are not recommended.¹⁷
- For patients with long QT syndrome, exercise may trigger a cardiac arrhythmic event.¹⁷

- Vigorous exercise is contraindicated for those with proliferative retinopathy, and for three months after laser retinal treatment.¹⁷
- Exercise may be relatively contraindicated in patients with peripheral neuropathy, a history of recurrent falls or uncontrolled hypertension.¹⁷
- A foot assessment should be carried out and patients advised about the importance of appropriate footwear during exercise.
- Referral to an accredited exercise physiologist is recommended.

Any symptoms suggestive of CVD need to be actively investigated.

Safety advice during and after exercising

People with diabetes should be advised to moderate or cease their activity if they develop cardiovascular symptoms or feel unwell.

Patients with claudication need to be encouraged to continue physical activity under appropriate clinical supervision.

Managing blood glucose levels

People using insulin or sulfonylureas (or combinations including these) need to be aware of potential delayed effects of physical activity on blood glucose levels (BGLs) – in particular delayed hypoglycaemia. Post-exercise hypoglycaemia can occur 12–15 hours after exercise, but is still a risk up to 48 hours after cessation of activity.¹⁰

Advise patients on how to recognise, prevent or manage hypoglycaemic events, including potential post-exercise hypoglycaemia (Box 1). Clinical advice should be given to all patients to stop physical activity if they experience symptoms of hypoglycaemia and to discontinue further physical activity until reviewed by their GP or other health professional.

Box 1. Advice for patients to recognise, prevent or manage glycaemic events when exercising

- Do not begin exercising if you have experienced a hypoglycaemic event within the previous 24 hours that required assistance from another person to treat (**severe hypoglycaemia**) or if you are feeling unwell.
- Check BGLs before and during exercise, especially if using insulin or sulfonylureas; check every 30–45 minutes during exercise, and adjust medication and carbohydrate intake as appropriate.¹⁸
- The ideal pre-exercise range for blood glucose is 5.0–13.9 mmol/L.¹⁰
- If pre-exercise BGL is <5 mmol/L, and you are taking insulin or a sulfonylurea, you are at risk of a hypoglycaemic episode during or after exercise. Ensure you have access to additional carbohydrates as per the advice of an endocrinologist, credentialled diabetes educator or accredited practising dietitian.
- Be aware that delayed hypoglycaemia can occur up to 48 hours post-exercise.
- Carry a rapid-acting glucose source at all times (eg glucose jelly beans, or glucose gel/drink).

Other exercise safety advice

- Advise patients to wear correct supportive footwear – especially if there is neuropathy, vascular disease, abnormal foot structure or previous foot ulcer/s, in which case the advice of a podiatrist with an interest in high-risk feet should be sought. This advice would also include the appropriateness of ‘jolting’ exercises such as running, skipping and jumping.
- Advise patients with neuropathy or peripheral arterial disease to check their feet daily and after physical activity for blisters, warm areas or redness.

Aboriginal and Torres Strait Islander point

Many Aboriginal and Torres Strait Islander people are involved in physically demanding sporting and cultural activities, and this should be encouraged for all people with diabetes.

For Aboriginal and Torres Strait Islander patients, GPs should be aware of activities or programs that are affordable, appropriate and accessible. These might be run by local community groups.

A careful history in the context of a trusting doctor–patient relationship may bring about better understanding and opportunity.

For more information, refer to the Australian Institute of Health and Welfare report on [Healthy lifestyle programs for physical activity and nutrition](#).

Diet**Clinical context**

Most of the burden of disease due to poor nutrition in Australia is associated with eating too much energy-dense and relatively nutrient-poor foods, and eating too few micronutrient-dense foods, including vegetables, fruit and wholegrain cereals.

Key dietary themes for people with type 2 diabetes are eating for cardiovascular protection, and glycaemic management and meal planning.

All patients should be offered and encouraged to seek advice on medical nutrition therapy by referral to an accredited practising dietitian (APD). An APD can help people address core issues around nutrition, such as achieving sustainable healthy eating patterns and, where appropriate, healthy body weight (loss) by reducing energy intake (portion control and type of food). They can also assist with recipe modification, changing cooking techniques, label reading, eating out and understanding of fad diets.

Glycaemic management and meal planning

To influence the glycaemic response after eating, meal plans need to consider both the amount and quality of carbohydrates eaten. The total amount of carbohydrate consumed (compared with other macronutrients or the glycaemic index of the meal) may be the major dietary factor that contributes to high postprandial BGLs.¹⁹ Eating low-glycaemic-load foods instead of higher glycaemic-load foods may modestly improve glycaemic control.²⁰

Low glycaemic index (GI) foods include dense wholegrain breads, steel-cut oats, lower fat milk and yoghurt, minimally processed (eg wholegrain, low GI) breakfast cereals, pasta, Doongara rice, legumes and most fruits. Intake of high-carbohydrate, low-nutrient-dense foods such as soft drinks, cakes and lollies should be confined to infrequent, small amounts to reduce the risk of weight gain and a worsening cardiometabolic profile.²⁰

There is evidence that nutrition education may be particularly important for the prevention of hypoglycaemia in people with type 2 diabetes on insulin or sulfonylureas. Consistent carbohydrate intake, and spaced, regular meal consumption, may help some patients manage BGLs and weight. Inclusion of snacks as part of a person's meal plan should be individualised and should be balanced against the potential risk of weight gain and/or hypoglycaemia.⁶

In practice

Evaluation of current dietary intake and the eating patterns of an individual is an initial critical step to support the management of type 2 diabetes.

Dietary habit changes are often slow and incremental. There is no need for a 'special' diet for diabetes, just the requirement to follow a sensible, balanced eating plan. Keep advice simple and educate patients about healthy food choices.

Identifying psychosocial issues around eating (eg binge-eating, eating when stressed or bored) is also very important. Often people with diabetes have experienced many years of 'yo-yo' dieting and a cycle of weight loss and gain.

The [Eat for Health](#) website, which includes the *Australian dietary guidelines*, is easy to access and its recommendations easy to implement. The guidelines provide advice about healthy eating patterns, including a daily food selection guide.

Not all dietary sugars need to be eliminated. Small amounts of added simple carbohydrate as part of a high-fibre, modified-fat meal plan increases the choice of food available and may aid adherence. Foods naturally high in sugars, such as fruit and dairy, do not need to be avoided.

Referral to an APD or a credentialed diabetes educator will support implementation and reinforcement of these recommendations. A list of APDs in your area can be found on the [Dietitians Association of Australia](#) website.

Further information about diet for people with diabetes, including a position statement about low-carbohydrate diets for diabetes, can be found on the [Diabetes Australia](#) website.

Aboriginal and Torres Strait Islander point

There is evidence that Aboriginal and Torres Strait Islander communities in urban and remote regions face significant access barriers to nutritious and affordable food. Nutritious food tends to cost more and require refrigeration and preparation. Food choices can be significantly altered when people have access to appropriate foods and education about nutrition.

GPs should make themselves aware of local community initiatives for the supply of fresh fruit and vegetables at affordable prices. In some areas, these include arrangements with farmers' markets or local community gardens. For more information specific to nutrition for Aboriginal and Torres Strait Islander peoples, refer to:

- results from the Australian Bureau of Statistics' [Australian Aboriginal and Torres Strait Islander Health Survey](#)
- the Australian Institute of Health and Welfare paper [Healthy lifestyle programs for physical activity and nutrition](#)
- the Department of Health's [evidence for effective nutrition interventions](#).

Weight

Clinical context

For people with type 2 diabetes who are overweight or obese, even modest weight loss (5–10%) may provide clinical benefits, including improved glycaemic control, blood pressure and lipid profiles, especially early in the disease process.^{20–22} Lifestyle-induced sustained weight loss contributes to the prevention, or delays progression, of diabetes.^{23–25}

The relationship between weight loss and clinical benefits is complex, however. The multi-centre, randomised clinical trial Action for Health in Diabetes (Look AHEAD) provided evidence that intensive lifestyle intervention focusing on weight loss did not result in a significant reduction in cardiovascular events in overweight or obese adults with established type 2 diabetes.²⁶ This was despite greater reductions in HbA1c and greater initial improvement in fitness and all CVD risk factors, except for low-density lipoprotein cholesterol levels. Increasing physical activity, regardless of weight loss, may reduce CVD risk factors,²⁷ and reduce HbA1c by ~0.6% in adults with type 2 diabetes.²⁸

The causes of overweight and obesity are likewise complex. Diet and physical activity are central to the energy balance equation, but are directly and indirectly influenced by a wide range of social, environmental, behavioural, genetic and physiological factors, the relationships between which are not yet fully understood. Older people with diabetes may also be at risk of malnutrition.

When managing patients, be mindful that some medications are associated with weight gain, including²⁹ insulin, sulfonylureas, thiazolidinediones, second-generation antipsychotics (especially olanzapine and clozapine), beta-adrenergic blockers (especially propranolol), tricyclic antidepressants, lithium, pizotifen, sodium valproate and glucocorticosteroids.

Practice Point: The concept of diabetes remission

Diabetes ‘remission’ or even ‘reversal’ is often stated as one of the measured outcomes of clinical trials of weight loss interventions, usually defined as reduction or cessation of the use of glucose-lowering agents by participants.

However, the period that normalisation of glycaemia is sustained for varies in the long term, according to study length, intervention methods and time to follow-up. Thus, there is not high-quality evidence to support the concept of ‘reversal’ of diabetes from current interventions.

In practice

It is important to encourage a degree of healthy weight loss in anyone with type 2 diabetes who is overweight, except where there are other associated risks (eg in the frail and elderly, or those with eating disorders). Because a healthy body weight is sometimes not achievable, setting this as a goal might discourage patients from attempting any dietary change.

The [Australian Obesity Management Algorithm](#) is a practical clinical tool to guide the implementation of existing guidelines for the treatment of obesity in the primary care setting in Australia.

Weight assessment

Assessing weight is typically done using BMI, which can be a difficult parameter to standardise between different population groups.

For those of European descent, a healthy BMI is 18.5–24.9 kg/m², overweight is 25–29.9 kg/m² and obese is ≥ 30 kg/m².⁶ Different classification criteria may apply to other population groups. Some groups may have equivalent levels of risk of health problems at a lower BMI (eg these BMI thresholds should be reduced by 2.5 kg/m² for patients of Asian ethnicity⁷) or higher BMI (eg Torres Strait Islander and Maori peoples).³⁰

It is advisable to also assess waist circumference (in centimetres), as this is a good indicator of total body fat and a useful predictor of visceral fat. Waist circumference of ≥ 94 cm in men and ≥ 80 cm in women conveys increased risk of obesity-related complications; ≥ 102 cm in men and ≥ 88 cm in women convey high risk.³¹ As with BMI, these values may differ for other population groups.⁶

Measuring waist circumference in patients with a BMI >35 kg/m² may not add any further to predictive disease risk classification.³²

Lifestyle interventions for weight management

In overweight or obese people with diabetes, a nutritionally balanced, energy-reduced diet should be recommended if a lower, healthier body weight is to be achieved and maintained as part of a multi-component lifestyle intervention (including healthy eating, physical activity and support for behavioural change).

Very low energy diets (VLEDs) can be considered as an initial weight loss strategy, when supervised lifestyle interventions have been unsuccessful in reducing weight, or when rapid weight loss is required (eg prior to bariatric or general surgery that is conditional on weight loss).³³ These diets may be considered in adults with diabetes with BMI >27 kg/m², taking into account each individual situation.³⁴ A primary care-based weight loss study, the Diabetes Remission Clinical Trial (DiRECT), showed that VLED with associated weight loss led to 46% of participants reducing or ceasing diabetes medications after 12 months of intervention.³⁵

VLEDs require regular appointments with appropriate health professionals to support the progress of the individual. Caution should be exercised if hypoglycaemia is a risk (people taking sulfonylureas and insulin). Use of sodium glucose co-transporter 2 (SGLT2) inhibitors in people on VLEDs or any high-protein, low-carbohydrate diet is not recommended (due to raised risk of ketoacidosis, which might be euglycaemic).

Pharmacotherapy

Pharmacotherapy is licensed by the Therapeutic Goods Administration (TGA) for weight management, including for patients with diabetes, but is not currently reimbursed by the Pharmaceutical Benefits Scheme (PBS). There are now four drugs that can be used as adjuncts to dietary changes and physical activity improvement: phentermine (a sympathomimetic amine), orlistat (an inhibitor of intestinal lipase), liraglutide (a glucagon-like peptide-1 receptor agonist [GLP-1 RA]) and combined naltrexone and bupropion.

These drugs may be considered in adults with diabetes with BMI ≥ 27 kg/m², taking into account each individual situation.³³

Each drug has the potential for significant clinical side effects and contraindications associated with its use. They require careful clinical risk–benefit assessment when applied in practice. Refer to the [TGA](#) website for more information.

Surgical interventions

Surgery for weight loss, also called metabolic or bariatric surgery, may induce weight loss in people who have failed by other means. The following procedures are used in Australia.^{7,34}

- **Sleeve gastrectomy** involves removing the greater portion of the fundus and body of the stomach, reducing its volume from up to 2.5 L to about 200 mL. This procedure provides fixed restriction and does not require adjustment like laparoscopic adjustable gastric banding (LAGB).
- **Roux-en-Y gastric bypass** is a combination procedure in which a small stomach pouch is created to restrict food intake and the lower stomach, duodenum and first portion of the jejunum are bypassed to produce modest malabsorption of nutrients and thereby reduce kilojoule intake.
- **Biliopancreatic diversion** is also a combination procedure that involves removing the lower part of the stomach and bypassing the duodenum and jejunum to produce significant malabsorption. This procedure tends to be performed in subspecialty centres.

Used in the past, **LAGB** is less used now in Australia and North America due to less sustained weight loss, fewer metabolic benefits and high surgical complication rates. This procedure involves placing a band around the stomach near its upper end to create a small pouch.⁶

Sleeve gastrectomy, Roux-en-Y gastric bypass and biliopancreatic diversion lead to sustained weight loss and normalisation (refer to 'Practice Point' above) of type 2 diabetes metabolic markers, although techniques vary in efficacy.⁶

The improvement in diabetes metabolic markers for Roux-en-Y gastric bypass surgery at two-year follow-up was 52.7% in one meta-analysis, compared with 0.7% for medical management.³⁶ For individuals who achieve improvement in diabetes metabolic markers with Roux-en-Y gastric bypass, the median period of sustained improvement is 8.3 years.⁷

Metabolic surgery in patients with type 2 diabetes is associated in non-randomised studies with reduction in microvascular and macrovascular complications as well as reduced mortality.⁷ Moreover, studies have also shown that metabolic surgery can prevent or delay the onset of type 2 diabetes in people with obesity.⁷

Taking into account each individual situation, metabolic surgery may be considered for people with a BMI >30 kg/m² who have suboptimal BGLs, are at increased CVD risk and are not achieving recommended targets with medical therapy.⁷

GPs should assess the appropriateness of metabolic surgery for each individual patient and provide information on the risks, benefits and appropriateness of the type of procedure. Metabolic surgery performed in a high-volume specialist centre with an experienced surgical team may offer the lowest risks, and GPs should liaise with a specialised surgical team if there are concerns.^{33,34}

Metabolic surgery, when indicated, should be included as part of an overall clinical pathway for adult weight management that is delivered by a multidisciplinary team (including surgeons, APDs, nurses, psychologists and physicians), and includes planning for surgery and continuing follow-up.³³

Adverse events of metabolic surgery, particularly in the long term, need more research;³⁷ however, suggested follow-up care includes monitoring for nutritional deficiencies and acid reflux disorders.³⁸

Women of reproductive age who have had metabolic surgery need particular advice on contraceptive choices; those who plan to have a pregnancy need assessment, before and throughout pregnancy, regarding nutritional status, need for higher multivitamin dosages and close obstetric monitoring. Referral prior to pregnancy to appropriate specialty services is strongly advised, even if the diabetes appears well managed.

Smoking cessation

Clinical context

Smoking is associated with an increased risk of type 2 diabetes in men and women,³⁹ and smoking negatively affects glycaemic control (eg smokers with type 2 diabetes need larger doses of insulin to achieve control similar to that of those who do not smoke).⁴⁰

People with diabetes who smoke also further increase their risk of CVD, peripheral vascular disease and neuropathy (and progression of neuropathy). Smoking also increases the risks associated with surgery.⁸

In practice

The importance of smoking cessation in those with, or at risk of, type 2 diabetes cannot be overstated.

In the absence of contraindications, smokers who have evidence of nicotine dependence should be offered pharmacotherapy, along with behavioural support, if they are motivated to stop smoking. The choice of pharmacotherapy is based on efficacy, clinical suitability and patient choice.⁸

Guidelines for smoking cessation and a pharmacotherapy treatment algorithm are available in the RACGP's [Supporting smoking cessation: A guide for health professionals](#).

Aboriginal and Torres Strait Islander point

The following organisations provide resources and strategies for smoking cessation for Aboriginal and Torres Strait Islander people:

- [Center for Excellence in Indigenous Tobacco Control \(CEITC\)](#)
- [Tackling Indigenous Smoking](#)
- [Australian Indigenous HealthInfoNET](#).

Specific support for Aboriginal and Torres Strait Islander people is also provided by Quitline.

Alcohol consumption

Clinical context

Alcohol affects the management of type 2 diabetes through its effects on diet and control of BGLs:

- Alcohol interferes with the action of insulin, insulin secretagogues and glucagon, thereby increasing the risk of hypoglycaemia in people with type 2 diabetes who take these medications.⁵
- Alcohol can lower BGLs and reduce awareness of hypoglycaemia.

Alcohol and hypoglycaemia have independent but additive adverse effects on cognitive function.⁹

Reduction in energy intake, which should involve assessing alcohol intake, may be important for managing people who are overweight or obese as part of diabetes management.

In practice

Patients should be educated about safe levels of alcohol intake, according to Australian guidelines, and should be told that there is increased risk of hypoglycaemia if alcohol is consumed while using medications such as sulfonylureas.⁴¹

Current Australian guidelines to reduce health risks from drinking alcohol recommend no more than 10 standard drinks (a standard drink contains 10 g of alcohol) per week, and no more than four standard drinks on any one day.⁴² Low-alcohol beers are an alternative to ordinary or diet beers. The carbohydrate content of low-carbohydrate beer is not significantly less than full-carbohydrate beers, and the alcohol content is often full strength.

It is recommended that people with diabetes abstain from alcohol if they plan to drive.⁴³

Australian alcohol guidelines can be found on the [National Health and Medical Research Council \(NHMRC\)](#) website.

Resources

The **Australian Diabetes Society** has produced the [Australian Obesity Management Algorithm](#).

Diabetes Australia has [information about diet and diabetes](#).

Diabetes Australia also has a [position statement](#) about low-carbohydrate diets for diabetes.

The **National Health and Medical Research Council (NHMRC)** has produced the [Australian dietary guidelines](#).

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