



Type 2 Diabetes

Things You Should Know

If you have type 2 diabetes, the information in this booklet will help you to better understand diabetes and to live a long and healthy life.

You will find information about:

- How to live well with your diabetes
- How to avoid or delay complications
- Your diabetes medication
- Blood glucose testing
- Important lifestyle changes

This booklet does not replace visits with your doctor and the rest of your healthcare team. Your healthcare team will work with you to develop a treatment plan that meets your needs.

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Know who to turn to

The good news

You can live a long and healthy life by keeping your blood glucose (the amount of sugar in your blood) levels in your target range. You can do this by:

- Eating healthy meals
- Being physically active regularly
- Taking diabetes medication, if prescribed

Type 2 diabetes is a progressive condition, and over time it may be more difficult to keep your blood glucose levels in a target range. Your healthcare team can suggest alternatives.



What is type 2 diabetes?

Type 2 diabetes happens when your body either cannot produce enough insulin or does not use the insulin it makes properly – insulin is a hormone produced by the pancreas.

Many of the foods we eat – such as bread, potatoes, rice, pasta, milk and fruit – are converted into sugar and give us the energy we need to maintain life. Insulin gets the sugar into the cells, but if you have type 2 diabetes, your body can't do that without help.

How did I get diabetes?

There is no single cause of type 2 diabetes, but some factors put people at a greater risk, including:

- Being age 40 or over
- Being overweight
- Having a family member who has diabetes
- Having had gestational diabetes (diabetes during pregnancy)

Should my family be tested for diabetes?

People should ask their doctor to be tested for diabetes if they:

- Are age 40 or over
- Are overweight
- Have a family history of diabetes
- Have given birth to a baby that weighed more than 9 lb
- Are of Aboriginal, Hispanic, Asian, South Asian, or African descent

Complications of diabetes

Diabetes is a life-long condition. High blood glucose levels over a long period of time can cause blindness, heart disease, kidney problems, amputations, nerve damage and erectile dysfunction. Good diabetes care and management can prevent or delay the onset of these complications.

When you have your regular check-up, ask your doctor to check for complications. Make sure that you are referred to the appropriate specialist, if required.

How do I manage my diabetes?

Taking responsibility for managing your diabetes and looking after yourself will help you to delay or even prevent the onset of diabetes-related complications.

To manage your diabetes well, it is very important that you:

- Don't smoke
- Live a healthy lifestyle
- Keep your blood glucose levels (the amount of sugar in your blood) in your target range
- Keep your cholesterol and other blood fats in your target range
- Keep your weight in a healthy range
- Keep your blood pressure close to target level
- Take your medication as prescribed

Living a healthy lifestyle includes:

- Managing your stress effectively
- Following a balanced meal plan
- Being physically active
- Taking care of your feet
- Regular visits to your
 - dentist
 - eye specialist (every one to two years)
 - doctor for diabetes management and testing for complications

Your diabetes healthcare team can help

Ask your doctor about diabetes education. Your healthcare team can answer all your questions and tell you more about diabetes. For example:

- The nurse can explain diabetes and show you how to manage your diabetes
- The dietitian can help you with a meal plan

Your team may also include a:

- Pharmacist
- Social worker
- Psychologist
- Foot care specialist
- Endocrinologist
- Eye care specialist



Get the support you need

It is not unusual to feel scared, shocked, overwhelmed, or even angry when you first hear that you have diabetes.

A positive and realistic attitude towards your diabetes can help you to maintain good blood glucose levels.

Blood glucose levels in your target range can help delay or even prevent diabetes complications.

Talk to others who have diabetes – ask your local Canadian Diabetes Association branch about joining a peer-support group or visiting an information session.

Tips for healthy eating:

Eat three regular meals a day no more than six hours apart.

Here's Why:

Eating at regular times helps your body control blood glucose levels.

Limit sugars and sweets like sugar, regular pop, desserts, candy, jam and honey.

Here's Why:

The more sugar you eat the higher your blood glucose will be.

Limit the amount of high fat food you eat like fried foods, chips and pastries.

Here's Why:

High fat foods may cause weight gain. A healthy weight helps control blood glucose levels.

Healthy eating

Healthy eating will help you to:

- Feel better
- Stay healthy longer
- Achieve the best possible management of your blood glucose, blood fats, and blood pressure
- Reduce the risk of complications
- Achieve and maintain a healthy weight

Visit your dietitian

Dietitians are a very important part of your healthcare team. Your dietitian understands that your meal plan needs to be flexible and will help you to develop a personalized meal plan. The dietitian will:

- Determine how much and how often you should eat, and plan for delayed meals
- Fit your lifestyle changes into your meal plan
- Adapt your meal plan to fit in foods from your culture
- Adjust your meal plan so that you can still eat your favourite foods

Having diabetes doesn't mean that food has to be a source of fear and guilt – you can still enjoy the foods that you and your family usually eat!

Choose foods that provide energy

Many of the foods we eat turn into sugar and give us the energy we need to live. Your body uses the sugar for energy. Ask your dietitian to help you plan your meals to suit your lifestyle.

Here are examples of foods that provide energy from sugar:

- Starchy foods (e.g. bread, rice, pasta, potato)
- All fruits
- Some vegetables (e.g. carrots, peas, squash)
- Milk and milk products (e.g. milk, yogourt)

Foods that are high in sugar like cakes, pies, syrups, jam and candy are high in calories and low in nutrients – discuss these with your dietitian.

A sign of high blood glucose is thirst. If you are thirsty, drink water. Drink 8-10 8-ounce glasses of water a day. Regular soft drinks and juice have sugars that raise your blood glucose level – drink these in limited quantities.

Note: the sugar in juice is very concentrated and will raise your blood glucose more quickly than eating fruit, so choose whole fruit more often.

Eating to avoid complications

Fibre, vitamins – getting your fibre, vitamins and minerals is important to a healthy meal plan. Make sure your meals have variety and include vegetables and fruit, proteins and alternatives and whole grain breads and cereals.

Fat – Eating less fat is important for people with diabetes because they are at a greater risk for developing high levels of fats in their heart and blood vessels. Many people already have high levels of fat before they are diagnosed with diabetes. Eating less fat is one way to help your heart stay as healthy as possible.

Salt – High blood pressure is also a potential complication of diabetes. Limiting how much salt you eat can help manage your blood pressure.



Drinking alcohol

Drinking moderate amounts of alcohol may be acceptable for people with diabetes. Discuss drinking alcohol with your healthcare team.

A moderate amount of alcohol is one to two drinks a day. Drinking alcohol is not recommended if you:

- Have high triglycerides (blood fats)
- Have high blood pressure
- Have liver problems
- Are pregnant or breastfeeding

If you choose to drink alcohol, remember:

- To drink with your meal or snack and not on an empty stomach
- To sip your drink slowly or dilute it with diet gingerale, club soda or water
- Liqueurs, sweet wine and dessert wines have a lot of sugar

Caution: When you drink alcohol it is a good idea to wear your MedicAlert® identification. Alcohol can cause hypoglycemia (low blood glucose). Talk to your doctor about the effect of alcohol on your medication. Your dietitian can tell you on how much alcohol you can safely include in your meal plan.

Tips for healthy eating:

Eat more high fibre foods.

Here's Why:

High fibre foods may help you feel full and may lower blood glucose and cholesterol levels.

Drink water if you are thirsty.

Here's Why:

Drinking regular pop and fruit juice will raise your blood glucose.

Add physical activity to your life.

Here's Why:

Regular physical activity will improve your blood glucose management.

Small everyday changes can make a difference.

- Consider walking instead of driving
- Get off the bus a stop early
- Take the stairs
- Play with your kids or grandchildren
- Take up gardening

Before you start a new activity remember to:

- Discuss it with your doctor
- Take some glucose tablets or candy containing sugar with you in case your blood glucose drops too low
- Make sure you are wearing comfortable and well-fitting shoes

Choosing artificial sweeteners

Artificial sweeteners or sugar substitutes do not provide calories and do not affect or raise blood glucose levels.

All sweeteners available in Canada go through rigorous testing. Once they have been approved they are suitable for use by all Canadians, including those with diabetes. Artificial sweeteners approved for use in Canada include Sweet n' Low®, Equal®, SugarTwin®, Splenda® and Nutrasweet®.

Caution: If you are pregnant, or planning a pregnancy, discuss the use of artificial sweeteners with your dietitian.

Benefits of keeping active

Being active is one of the best things you can do to improve your overall health. For a person with diabetes it can:

- Lower your blood glucose
- Lower your blood pressure
- Help you lose or maintain weight
- Help you feel better
- Reduce the amount of medication you need
- Relieve tension or stress
- Improve your heart and lung function
- Improve your muscle tone

People with type 2 diabetes should accumulate at least 150 minutes of moderate-intensity aerobic activity – such as brisk walking, cycling or dancing – each week, spread over at least 3 separate days. Ideally, you should aim for four hours or more. The positive effects of this activity will be enhanced if you also perform resistance exercises three times per week. Your healthcare team can help you decide what activities will work best for you.

Looking after your feet

When you have diabetes it is important to take good care of your feet. High blood glucose levels may eventually lead to poor blood flow and loss of feeling in your feet which can lead to foot problems.



You can prevent problems with your feet by:

- Keeping your blood glucose levels in your target range
- Washing daily with warm (not hot!) water and pat dry
- Checking your feet every day for sores, injuries, red and warm areas on the skin, change in colour, strange odour and other problems. Don't forget to look at the bottom of your feet for sores or blisters
- Wearing shoes with good support and socks that fit well and that do not hurt your feet
- Not walking barefoot
- Asking your diabetes educator how to cut your toenails properly
- Using lotion on the soles to keep the skin soft and prevent dry, cracked skin
- Avoiding crossing your legs, squatting or kneeling for long periods of time
- Avoiding using heating pads, hot water bottles or campfires to warm your feet

Talk to your healthcare team if you:

- Soak your feet
- Use corn removal products
- Have concerns about your feet
- Notice that cuts and sores are not healing well

Taking your medication

Healthy eating and regular physical activity are sometimes not enough to keep your blood glucose at your target level. When this happens, your doctor may prescribe medication that will help you manage your blood glucose levels. Every person is different and may require different types of medication.

Ask your doctor, pharmacist or diabetes educator how and when to take your medication. Any changes to your eating habits and medication should be adjusted to suit your lifestyle. For some people, pills do not work, so they take insulin injections in addition or instead.

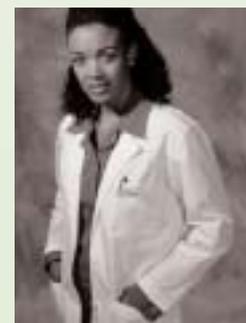
Remember that insulin is a hormone produced by your body, and your body may not have enough. If you need to take insulin, you will find that it makes you feel better and gives you the energy you need. Don't be afraid of insulin injections – thousands of Canadians take one or more a day, and most say that it is much easier than they expected.

*For more information about insulin, ask your healthcare team, read the Canadian Diabetes Association's brochure, *Insulin, Things You Should Know* or visit our website at www.diabetes.ca.*

Talk to your pharmacist

In order to work well, medicines have to be taken properly. You can help determine the success of your therapy by taking charge of your medication compliance. Compliance means taking the correct amount of the right medication at the appropriate time and following the instructions precisely.

Talk with your pharmacist to make sure you understand the directions for each new prescription you get.



What is blood glucose?

Blood glucose (sugar) is the amount of glucose in your blood at a given time.



What should I know about blood glucose?

Why should I check my blood glucose levels?

Checking your blood glucose levels will:

- Give you a quick measurement of your blood glucose level at 'that' time.
- Tell you if you have a high or low blood glucose level at 'that' time.
- Show you how your lifestyle and medication are affecting your blood glucose levels.
- Help you and your diabetes healthcare team to make changes to your lifestyle and medication that will improve your blood glucose levels.

How do I test my blood glucose levels?

A blood glucose meter is used to test your blood glucose at home. Meters can be purchased at most pharmacies. Talk with your diabetes educator or pharmacist about which model is right for you. When you decide, make sure you receive the proper training before you go home.

Ask your diabetes educator about:

- The size of the drop of blood needed
- The type of blood glucose strips to use
- How to clean the meter
- How to check if the meter is accurate
- How to code your meter

Note: Your province or territory may subsidize the cost of blood glucose monitoring supplies. Contact your local Canadian Diabetes Association branch to find out if this applies to you.

How do I keep my blood glucose levels in my target range?

If you have diabetes, you should try to keep your blood glucose as close to target range as possible. This will help to delay or prevent complications. Maintaining healthy eating habits, an active lifestyle and taking medication if necessary, will help you stay in your target range.

Everyone's target range is different. It depends on a person's age, medical condition and other risk factors. Ask your doctor what your levels should be and write them down on the chart below.

The Canadian Diabetes Association 2003 Clinical Practice Guidelines for the Prevention and Management of Diabetes in Canada provides people with diabetes goals for blood glucose levels.

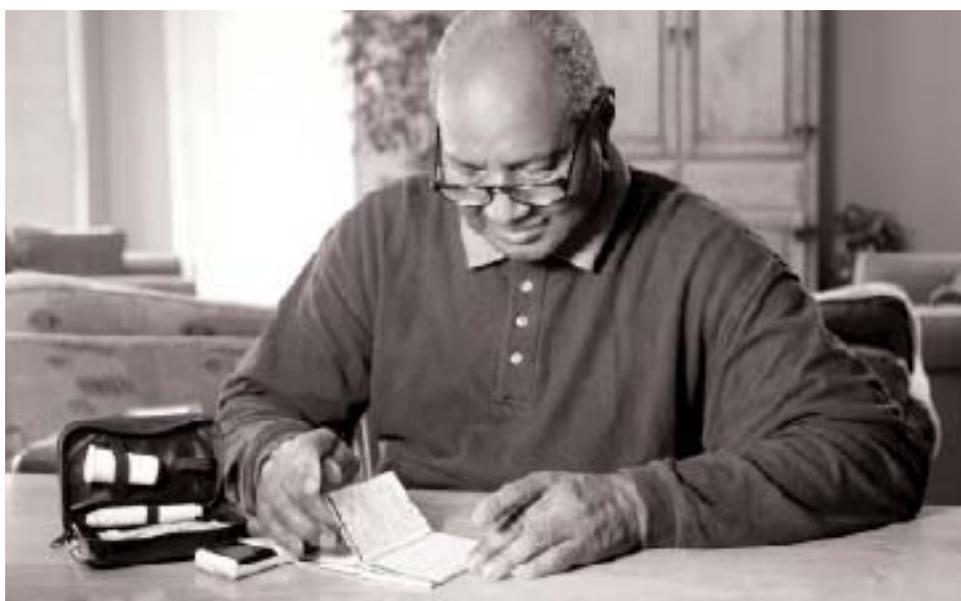
Recommended Blood Glucose Targets for People With Diabetes*

	A1C	Fasting blood glucose/ blood glucose before meals (mmol/L)	Blood glucose two hours after eating (mmol/L)
Target for most patients with diabetes	≤7.0%	4.0 to 7.0	5.0 to 10.0
Normal range	≤6.0%	4.0 to 6.0	5.0 to 8.0

**This information is only a guide. Talk to your doctor about YOUR blood glucose target ranges.*

A1C

Another way to monitor your blood glucose management is with a blood test that your doctor can request called A1C. The results of this test are an average of your overall blood glucose levels over the past 120 days.



What is low blood glucose?

When the amount of blood glucose (sugar in your blood) has dropped below your target range (less than 4 mmol/L) it is called low blood glucose or hypoglycemia.

What are the signs of a low blood glucose level?

You may feel:

- Shaky, light-headed
- Nervous, irritable
- Confused
- Hungry
- Your heart rate is faster
- Sweaty, headachy
- Weak
- A numbness or tingling in your tongue or lips

Low blood glucose

What causes a low blood glucose level (hypoglycemia)?

Low blood glucose may be caused by:

- More physical activity than usual
- Not eating on time
- Eating less than you should have
- Taking too much medication
- The effects of drinking alcohol

Low blood glucose can happen quickly, so it is important to take care of it right away.

If your blood glucose drops *very* low you may:

- Become confused and disoriented
- Lose consciousness
- Have a seizure

You will need assistance from another person. Make sure you always wear your MedicAlert® identification, and talk to your doctor or diabetes educator about prevention and emergency treatment for severe low blood glucose.

How do I treat a low blood glucose?

If you are experiencing the signs of a low blood glucose level, check your blood glucose immediately. If you don't have your meter with you, treat the symptoms anyway. It is better to be safe.

Eat or drink a fast-acting carbohydrate (15 grams):

- 15 g of glucose in the form of glucose tablets
- 15 mL (3 teaspoons) or 3 packets of table sugar dissolved in water
- 175 mL (3/4 cup) of juice or regular soft drink
- 6 Life Savers® (1=2.5 g of carbohydrate)
- 15 mL (1 tablespoon) of honey

Wait 10 to 15 minutes, then check your blood glucose again. If it is still low:

- Treat again
- If your next meal is more than one hour away, or you are going to be active, eat a snack, such as a half-sandwich or cheese and crackers (something with 15 grams of carbohydrate and a protein source.)



High blood glucose

What causes high blood glucose (hyperglycemia)?

High blood glucose can result when food, activity and medications are not balanced. High blood glucose may happen when you are sick or under stress.

What do I do if I have high blood glucose?

Call or see your doctor, you may need to:

- Adjust your medication and/or insulin
- Adjust your meal plan
- Increase your physical activity

Managing your blood glucose when you're sick

What do I do when I'm sick?

When you are sick you should test your blood glucose levels every two to four hours. It is very important that you continue to take your diabetes medication.

High blood glucose levels often happen during flu season. Many cold remedies and cough syrups contain sugar – try to pick sugar free products. The pharmacist can help you make a good choice.

When you are sick it is VERY IMPORTANT that you:

- Drink plenty of extra sugar-free fluids or water.
- Replace solid food with fluids that have glucose if you can't eat as usual. You should try to consume 10 grams of carbohydrate every hour.
- Call your doctor or go to an emergency room if you vomit more than twice in 12 hours.
- Continue to take your insulin, if you take insulin. You might need to take more than usual depending on your blood glucose levels.



What is high blood glucose?

When the amount of blood glucose (sugar in your blood) is higher than your target range it is called high blood glucose or hyperglycemia.

What are the signs of high blood glucose?

When your blood glucose rises above 11 mmol/L, you may:

- Be thirsty
- Urinate more often
- Be tired

Know who to turn to

The Canadian Diabetes Association promotes the health of Canadians through diabetes research, education, service and advocacy.

Canadians can turn to the Canadian Diabetes Association for answers and help in accessing diabetes resources across the country.

With a presence in over 150 communities, the Canadian Diabetes Association's strong network of assistance includes volunteers, employees, health-care professionals and partners.

Don't forget

Be prepared

If you experience severe low blood glucose, you will need help. Talk to your doctor or diabetes educator about prevention and emergency treatment, and tell your family, friends and co-workers how they can help.

Always wear your MedicAlert® identification.

Report your diabetes to the motor vehicle licensing office

In most provinces and territories a licensed driver who has diabetes must report their condition immediately to the motor vehicle licensing office.

Be aware of the changes to your insurance

People with diabetes, may find it more difficult to obtain or renew insurance of all types: vehicle, mortgage, life and travel.

The Canadian Diabetes Association offers its members the opportunity to purchase both travel insurance, which covers all diabetes-related emergency expenses, and credit life insurance.

Be aware of your workplace rights

There is no evidence that people who have diabetes are a greater safety risk at work than people who do not have diabetes. You should not need more time away from work due to illness than other employees. If you think that you are not being treated fairly in your workplace, contact your local Canadian Diabetes Association branch.

Talk to us about:

- Becoming a member, volunteering or making a donation
- Access to travel and Credit Life Insurance for people with diabetes
- Joining a local peer-support group
- Obtaining the most up-to-date information on diabetes

Canadian Diabetes Association

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