

A Practical Guide to Diabetes Management

Have you been diagnosed
with type 2 diabetes?
Here are the answers
to your questions.

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Diabetes Québec's team of health professionals

Layout and graphics:
Maison 1608 by Solisco
maison1608.com

Diabetes Québec
514-259-3422 | 1-800-361-3504
diabete.qc.ca

Did you know...

In Quebec, more than 880,000 people have diabetes and 250,000 of them are not even aware of it. This number is rising daily at an alarming rate, and we believe it is essential to diagnose people with diabetes as soon as possible to avoid serious health consequences.

In recent years, various health professionals have expressed concern about the lack of information for people who have just been diagnosed with type 2 diabetes. When individuals get this diagnosis, it is not uncommon for them to feel knocked off balance and unsure of what to do or where to turn for help.

Diabetes Québec's health professionals have created this practical guide to help people with type 2 diabetes, especially when they have just been diagnosed. This guide contains some basic information about diabetes that we hope will help you talk in an informed way with the team of health professionals who will be involved in your care.

The Guide is available at Diabetes Québec and Universi-D (Diabetes Québec's diabetes school), as well as in diabetes educational centres, family medicine groups (FMGs), CLSCs, hospitals and the large pharmacy chains.

We hope that our Practical Guide will help as many people who have to live with diabetes as possible.



Sylvie Lauzon, CEO, Diabetes Québec

Diabetes Québec would like to thank its partners who have made the production of this guide possible:

- Abbott
- Ascensia Diabetes Care
- AstraZeneca
- Bayer
- Dexcom
- Eli Lilly
- Janssen
- LifeScan
- Merck
- Novo Nordisk
- Roche Diabetes Care

This guide does not replace in any way the advice of a health professional.

It is intended to complement the care provided by your team of professionals, such as a nurse and a dietitian working at a diabetes educational centre.

These centres are located in specific family medicine groups (FMGs), CLSCs and hospitals.

Contents



31



51



17



13

Section 1
Type 2 Diabetes

7

Section 2
Complications

13

Section 3
Blood Sugar
Self-Monitoring

17

Section 4
High and Low
Blood Sugar

21

Section 5
Treatment

27

Section 6
Diet

31

Section 7
Exercise

41

Section 8 45
Medication

Section 9 51
Stress Management

Section 10 55
Your Personal Goals

Section 11 59
Follow-Up Tests

After the diagnosis

You may feel many conflicting emotions after being diagnosed with type 2 diabetes: shock, fear, denial, confusion, indifference, etc. **All these emotions are perfectly normal.** They generally progress in various predictable and organized stages before you are able to adjust to this new reality.

Diabetes will force you to grieve—for the loss of your self-image, your body image and the way you think about your health. You will also need to make definitive changes to certain behaviours and learn to live with all the components of managing this disease.

These changes may seem like a daunting challenge. But **as someone living with diabetes, you have a great deal of power to alter the progression of your disease.**

You may also feel completely overwhelmed by all the information coming at you. This may make you feel helpless, incompetent, out of control and unable to take in and retain all this information. This can cause stress and anxiety.

Give yourself time. Your family or significant other can be of great help by lending an ear and offering support. Don't hesitate to talk to a health professional, who can refer you to the support resources you need.

One day at a time. One goal at time.



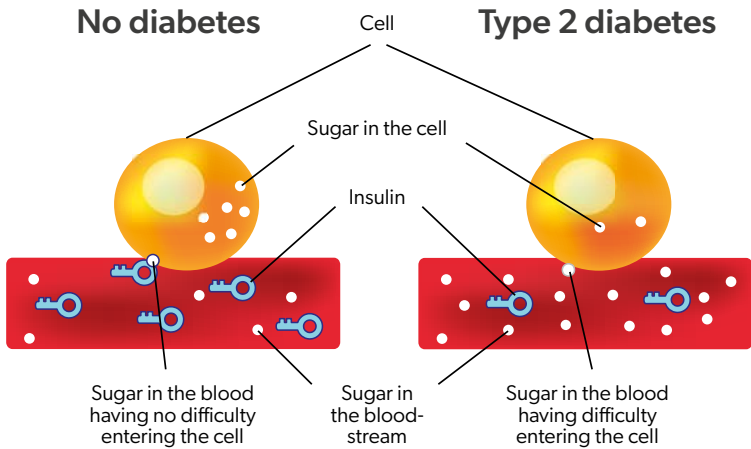
Section 1

Type 2 Diabetes

Type 2 Diabetes

Diabetes is a **chronic disease that cannot be cured but can be controlled**. It is characterized by **higher than normal levels of sugar in the bloodstream**.

Usually, blood sugar is maintained at normal values due primarily to the action of insulin. Insulin is a hormone produced by the pancreas. It acts like a key, allowing the sugar in the blood to enter the body's cells to be used as a source of energy.



In type 2 diabetes, two phenomena are generally at work:

1. **the body's resistance to the action of insulin;**
2. **a reduction in the production of insulin.**

Consequently, sugar accumulates in the bloodstream, which raises blood sugar above normal values.

Diabetes prevents the body from properly using sugar as a source of energy.

What is the difference between type 1 and type 2 diabetes?

| | Type 1 diabetes | Type 2 diabetes |
|-----------------------------------|---|---|
| Percentages of diabetes diagnoses | 10% | 90% |
| When diagnosed | Usually in childhood, adolescence or early adulthood | Usually after 40 years of age |
| Phenomena | Destruction by the body's immune system of the cells of the pancreas that produce insulin | Resistance of the body to the action of insulin and reduction in insulin production |
| Treatments | Insulin injections several times a day or insulin pump | Healthy lifestyle habits, oral or injectable medications, or insulin injections |
| Cause | Unknown | Multiple (e.g., genes, lifestyle) |
| Prevention possible in some cases | No | Yes |

What increases the risk of developing type 2 diabetes?

- Being a male
- Being 40+ years of age
- Having a parent, brother, sister or child with type 2 diabetes
- Belonging to an ethnic group at high risk of developing diabetes (African, East, South or West Asian, Arab, Latin-American, Afro-Caribbean, Indigenous)
- Having had abnormally high blood sugar levels in the past (e.g., gestational diabetes when pregnant)
- Having given birth to a baby weighing more than 4.1 kg (9 lb.)
- Having high blood pressure
- Being overweight, especially with belly fat
- Doing less than 30 minutes of physical activity a day
- Not eating vegetables and fruit every day

How is type 2 diabetes diagnosed?

Type 2 diabetes is diagnosed using a laboratory blood test. Three different tests can be used:

1. **Fasting blood glucose (FPG):** This measures the blood sugar level after fasting for at least 8 hours. The data is expressed in mmol/L.
2. **Glycated hemoglobin (HbA1c or A1C):** This reflects the average blood sugar levels in the previous three months. This data is expressed as a percentage (e.g., 7%) or in decimals (e.g., 0,07).
3. **Oral glucose tolerance test (OGTT):** This measures the fasting blood sugar level, then measures it again two hours after a sugary liquid has been drunk.

If you have been diagnosed with type 2 diabetes, it is because one or more of these tests has returned higher than normal values.





Section 2

Complications

Complications

Habitually high blood sugar levels can cause **serious and irreversible complications**, primarily:

- **For the eyes** (retinopathy)

Retinopathy can lead to loss of eyesight. Diabetes also increases the risk of developing cataracts and glaucoma.



Normal sight



Retinopathy



Cataracts



Glaucoma

- **For the kidneys** (nephropathy)

Nephropathy can lead to dialysis, a treatment that replaces kidney function, or to a kidney transplant.

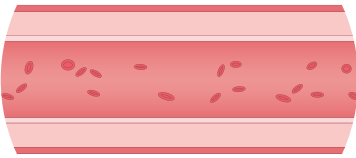
- **For the nerves** (neuropathy)

Neuropathy can cause numbness, pain or loss of sensation, especially in the legs and feet. One of the dangers is that you can injure yourself without being aware of it. The wound can then become infected, leading to gangrene and amputation. Neuropathy can also affect other organs and lead to sexual dysfunction and gastrointestinal problems, among others.

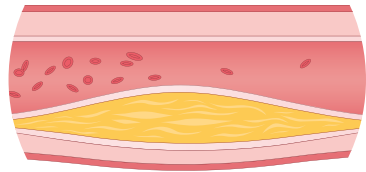
- **For the blood vessels** (calf pain when walking, gangrene, stroke, etc.)
- **For the heart** (angina, heart attack, etc.)

Diabetes causes the heart and blood vessels to age faster. It also contributes to the development of atherosclerosis, the accumulation of fat in the form of plaque in the arteries causing them to harden and narrow. Blood flow through damaged arteries is slowed down and may even be blocked. A clot can also detach from the plaque and block other blood vessels.

Blood vessel
without atherosclerosis

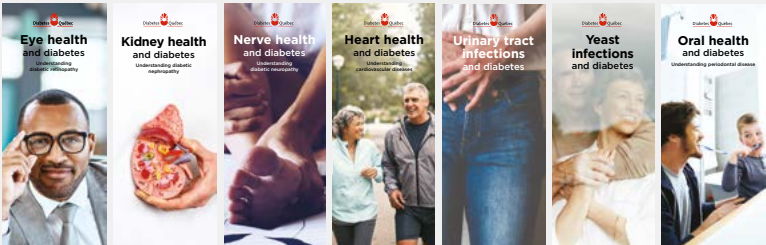


Blood vessel
with atherosclerosis



Having habitually high blood sugar levels is also associated with other health problems, such as **periodontitis**, **capsulitis** and **sleep apnea**, in addition to increasing the **risk of infections**.

For more information about the complications associated with diabetes, consult our various brochures:



It is possible to reduce the risk of developing diabetes-associated complications or delay their onset by managing your diabetes properly and by adopting healthy lifestyle habits.



Section 3

Blood Sugar Self-Monitoring

Blood Sugar Self-Monitoring

Following a diagnosis of type 2 diabetes, your doctor will prescribe a **blood sugar meter**, commonly known as a glucometer¹. This is a small device that lets you measure your blood sugar levels yourself, at home.

There are different blood sugar meters on the market. Check with your team of health professionals or consult Diabetes Québec's *Répertoire des produits pour la gestion du diabète* (in French only) to select the one that best meets your needs.

Why does blood sugar need to be measured?

By measuring your blood sugar, you can make sure you are managing your diabetes properly. The readings will help you understand the impact of your lifestyle on your blood sugar, as well as check the effect of your treatment and adjust it as necessary on the advice of your team of health professionals.

When does blood sugar need to be measured?

The timing and frequency of blood sugar measurements vary from person to person since this is determined by the type of diabetes, the prescribed treatment and the risk of a drop in blood sugar below target values. Your team of health professionals will advise you when to measure your blood sugar.



1. There are other devices to measure blood sugar, including the flash glucose monitoring system and continuous glucose monitors. Ask your team of health professionals to learn more about them.

How to use a blood sugar meter?

- 1 Wash your hands with soap and water.
- 2 Insert a test strip into the opening of your blood sugar meter and close the test-strip container.
- 3 Insert a lancet into the lancing device.
- 4 Prick the side of the end of your finger with the lancing device.
- 5 Place the test strip in contact with the drop of blood that has formed.
- 6 Read the result. If required, write it down in a logbook and include any observations that help you better understand the result.
- 7 Discard the used test strip and lancet in a secure receptacle.

What are the target values for blood sugar?

Fasting (on awakening or more than 4 hours after a meal)

Between 4.0 and 7.0 mmol/L

2 hours after the start of a meal

Between 5.0 and 10.0 mmol/L

Your doctor may give you different target values.



Section 4

High and Low Blood Sugar

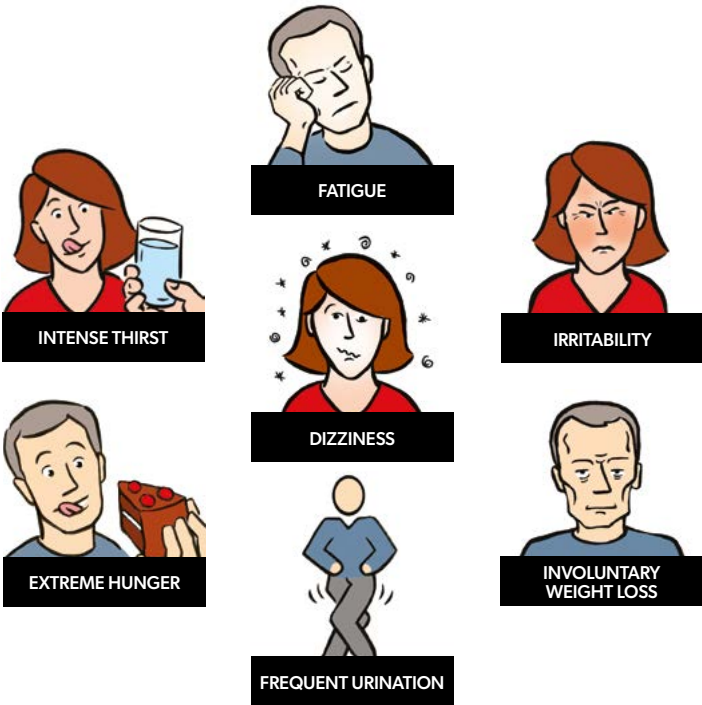
High and Low Blood Sugar

High Blood Sugar

High blood sugar, also known as hyperglycemia, is characterized by a blood sugar level:

- Above 7.0 mmol/L, when fasting or more than four hours after a meal
- Above 10.0 mmol/L, two hours after the start of a meal

The symptoms most commonly associated with high blood sugar are the following:



Some of these symptoms may have been present when you were diagnosed. They should disappear with the proper management of your blood sugar levels.

Blood sugar levels that are often high increase the long-term risk of developing diabetes-associated complications (see the section on complications on page 13).

What can raise your blood sugar:

- You have eaten a meal or snack that is higher in carbohydrates (sugars) than usual.
- You are less active than usual.
- You are experiencing physical stress (e.g., illness, surgery) or psychological stress (e.g., bereavement, new job).
- You are taking certain medications that can raise your blood sugar (e.g., cortisone).
- You have forgotten to take your medication or didn't take the prescribed dose.
- Your treatment needs adjusting.



What should you do if you have high blood sugar?

- Drink water regularly to avoid becoming dehydrated.
- If possible, do a light physical activity, such as walking.
- Identify the cause and take appropriate action.

See a doctor immediately if one or more of these situations arise:

- Your blood sugar is above 25.0 mmol/L and you feel extremely drowsy.
- You are confused, agitated, hallucinating or behaving in uncharacteristic ways.
- You are not able to keep down any liquids or solid food.
- You are showing signs of dehydration, such as dry mouth, hollow eyes, loss of skin elasticity, etc.
- Your body temperature has stayed above 38.5°C for more than 48 hours.

Low Blood Sugar

Low blood sugar, also known as hypoglycemia, is characterized by a blood sugar level below 4.0 mmol/L.

The symptoms most commonly associated with low blood sugar are the following:



SUDDEN MOOD SWINGS



WEAKNESS



HEADACHE



DIZZINESS



BLURRED VISION



CRAVINGS



SWEATING



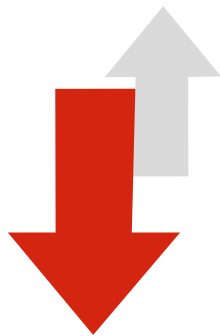
SHAKING

Not everyone with diabetes is at risk of low blood sugar. You are at risk, if you are being treated with insulin or with drugs that increase the production of insulin by the pancreas¹.

1. Gliclazide (Diamicon® and Diamicon® MR), Glimepiride (Amaryl®), Glyburide (DiaBeta®), Repaglinide (GlucoNorm®)

What can make your blood sugar drop?

- You have skipped or delayed a meal.
- You have eaten fewer carbohydrates (sugars) than usual.
- You have exercised intensely or for a prolonged period of time.
- You have been drinking alcohol on an empty stomach.
- You have taken a higher than prescribed dose of your medication.



What should you do if you have low blood sugar?

1 Take 15 g of rapidly absorbed carbohydrates (one of the following choices):

- 4 tablets of Dex4®;
- 15 ml (1 tablespoon) of corn syrup, honey or maple syrup;
- 15 ml (1 tablespoon or 4 packets) of sugar dissolved in water;
- 150 ml ($\frac{2}{3}$ cup) of a regular soft drink, fruit beverage or fruit juice;
- 18 to 20 g of hard candy (e.g., 6 Life Savers®).

2 Rest for 15 minutes.

3 Measure your blood sugar again.

- If the reading is below 4 mmol/L: treat again by following steps 1 to 3.
- If the reading is 4 mmol/L or higher: if no meal or snack is planned within the next hour, eat a snack with 15 g of carbohydrates and a source of protein (e.g., 1 slice of bread with 1 oz. of cheese).



Section 5

Treatment

Treatment

It is important to remember that **diabetes cannot be cured**. Rather, the goal of treatment is to **maintain blood sugar levels within target values** to reduce the risk of developing complications, while minimizing the potential risk of low blood sugar.

The four pillars of type 2 diabetes treatment:



1 Diet



2 Exercise



3 Medication



4 Stress management

Healthy lifestyle habits are the basis for the treatment of type 2 diabetes. The recommendations are essentially the same as for the general population and will also help you improve your overall health.

Remember: type 2 diabetes is a disease that progresses over time. Therefore, it is possible that your treatment will need to be adjusted. This does not mean that you have failed in any way.



Section 6
Diet

Diet

Do people living with diabetes need to cut sugar from their diet?

No. People with diabetes should instead eat a healthy and balanced diet while **monitoring the amount and quality of carbohydrates consumed and ensuring that they are properly distributed throughout the day.**



Foods contain different types of carbohydrates:

- **SUGARS:** They give food a sweet taste. They can be found naturally, as in fruit and milk, or added, as in desserts, sugary drinks and certain processed foods. **Sugars make your blood sugar rise.**
- **STARCH:** It does not give foods a sweet taste. Starch is found in grain products (e.g., bread, pasta, rice, cereal), legumes (e.g., lentils, chickpeas, beans) and starchy vegetables (e.g., green peas, potatoes). **Starch makes your blood sugar rise.**
- **FIBRE:** It is found in whole grain products, fruit and vegetables, legumes, nuts and seeds. Fibre is not digested and therefore does not increase blood sugar. In fact, **fibre helps limit the increase in blood sugar after a meal.** You should choose foods that are high in fibre.

Here are some tips for healthy eating:

- Cook as often as possible with fresh and unprocessed ingredients.
- Eat a wide variety of foods.
- Take the time to savour what you are eating.
- Pay attention to your body's signals so you know when you are truly hungry and when you are full.
- Choose water when you are thirsty.
- Eat three meals a day at regular mealtimes.
- If needed, have a nutritious snack to satisfy your hunger between meals or to prevent a drop in blood sugar, if applicable.
- The amount of carbohydrates that you need to eat each day depends on various factors. On average, most people with diabetes need:
 - 45 to 75 g of carbohydrates per meal;
 - 15 to 30 g of carbohydrates per snack, if required.
- Choose foods that are high in fibre: whole grain products, legumes, whole fruits and vegetables with their peel, nuts and seeds.
- Choose heart-healthy monounsaturated and polyunsaturated fats, such as olive oil, canola oil, nuts and seeds, fatty fish and avocados.



A dietitian can provide you with personalized advice and offer support as you begin to make changes to your dietary habits.

Let the balanced plate be your guide when you prepare your meals!

Half of your plate should be composed of vegetables.

Eat plenty of vegetables. Also, be sure to choose colourful vegetables and vary them. Don't hesitate to choose frozen vegetables; they are just as nutritious as fresh vegetables.

A quarter of your plate should be composed of starches.

Starches include starchy vegetables (e.g., potatoes, green peas) and grain products (e.g., bread, pasta, rice, quinoa, barley). Among cereal products, choose whole grain ones.

A quarter of your plate should be composed of protein foods.

Make room for protein foods derived from plants (e.g., tofu, legumes) and fish. Choose milk and yogurt with 2% milk fat or less, and cheese with 20% milk fat or less. When eating meat, choose lean cuts and remove visible fat. Also remove the skin from poultry.

Fruits can be eaten as a dessert or as a snack.

Eat fruit whole with the peel on to maximize your fibre intake. Don't hesitate to choose frozen fruits; they are just as nutritious as fresh fruit.



What does the diet of a person with diabetes look like?

Example of a daily meal plan providing 60 g of carbohydrates per meal



Breakfast

TOAST AND YOGURT

2 pieces
whole wheat toast
30 g OF CARBOHYDRATES

30 ml
(2 tablespoons)
plain peanut butter

$\frac{1}{2}$ **banana**
15 g OF CARBOHYDRATES

125 ml ($\frac{1}{2}$ cup)
of **flavoured**
Greek yogurt
15 g OF CARBOHYDRATES

TOTAL CARBOHYDRATES:
60 g



Lunch

MEAL-SIZED SALAD

160 ml ($\frac{2}{3}$ cup)
whole wheat
couscous
30 g OF CARBOHYDRATES

125 ml ($\frac{1}{2}$ cup)
chickpeas
15 g OF CARBOHYDRATES

60 ml ($\frac{1}{4}$ cup)
slivered almonds
Various vegetables

Homemade salad
dressing (olive oil
and lemon juice)

1 small **pear**
15 g OF CARBOHYDRATES

TOTAL CARBOHYDRATES:
60 g



Supper

PASTA WITH MEAT SAUCE AND SALAD

160 ml ($\frac{2}{3}$ cup)
whole wheat
spaghetti
30 g OF CARBOHYDRATES

125 ml ($\frac{1}{2}$ cup)
meat sauce

Garden salad

Homemade salad
dressing (olive oil
and balsamic
vinegar)

250 ml (1 cup) **milk**
15 g OF CARBOHYDRATES

250 ml (1 cup)
melon cubes
15 g OF CARBOHYDRATES

TOTAL CARBOHYDRATES:
60 g

Snack if needed

1 small **homemade bran muffin**
30 g OF CARBOHYDRATES

250 ml (1 cup) enriched
unsweetened soy beverage

500 ml (2 cups) **strawberries**
15 g OF CARBOHYDRATES

125 ml ($\frac{1}{2}$ cup)
cottage cheese

Example of a daily meal plan providing 45 g of carbohydrates per meal



Breakfast

GARNISHED OATMEAL

125 ml (½ cup)
rolled oats
30 g OF CARBOHYDRATES

250 ml (1 cup)
enriched
unsweetened
soy beverage

1 **orange**
15 g OF CARBOHYDRATES

30 ml
(2 tablespoons)
roasted pumpkin
seeds

TOTAL CARBOHYDRATES:
45 g



Lunch

CHICKEN SANDWICH WITH CRUDITÉS

2 slices whole-
wheat bread
30 g OF CARBOHYDRATES

Lettuce and
tomato slices

60 g (2 oz.)
grilled chicken

Mayonnaise

Crudité
(vegetable sticks)

Yogurt dip

15 **red grapes**
15 g OF CARBOHYDRATES
TOTAL CARBOHYDRATES:
45 g



Supper

SALMON, BROCCOLI AND QUINOA

90 g (3 oz.) grilled
salmon with mango

125 ml (½ cup)
quinoa
15 g OF CARBOHYDRATES

Broccoli

125 ml (½ cup)
flavoured yogurt
15 g OF CARBOHYDRATES

250 ml (1 cup)
blackberries
15 g OF CARBOHYDRATES

TOTAL CARBOHYDRATES:
45 g

Snack if needed

1 **apple**
15 g OF CARBOHYDRATES
30 g (1 oz.) cheese

Carrots and cucumbers
75 mL (⅓ cup) **hummus**
15 g OF CARBOHYDRATES

How to read the Nutrition Facts table

Reference serving size

This is not necessarily the recommended serving size for you. It is simply the serving size used to calculate the table's values. Ask yourself if you eat the same amount. If not, do you eat more or less?

Carbohydrates

This amount includes all types of carbohydrates: starch, sugars and fibre.

| Valeur nutritive | |
|---|---|
| Nutrition Facts | |
| pour 1 tasse (250 mL) Per 1 cup (250 mL) | |
| Calories 110 | % valeur quotidienne* % Daily Value* |
| Lipides / Fat 0 g | 0 % |
| saturés / Saturated 0 g | 0 % |
| + trans / Trans 0 g | |
| Glucides / Carbohydrate 26 g | |
| Fibres / Fibre 0 g | 0 % |
| Sucres / Sugars 22 g | 22 % |
| Protéines / Protein 2 g | |
| Cholestérol / Cholesterol 0 mg | |
| Sodium 0 mg | 0 % |
| Potassium 450 mg | 10 % |
| Calcium 30 mg | 2 % |
| Fer / Iron 0 mg | 0 % |

* 5% ou moins c'est **peu**, 15% ou plus c'est **beaucoup**
* 5% or less is a **little**, 15% or more is a **lot**

Fibre

To find out the amount of carbohydrates that will impact your blood sugar, subtract the fibre. E.g., 18 g carbohydrates – 2 g fibre = 16 g of carbohydrates having an effect on blood sugar

Sugars

The amount of sugars includes both added sugar and the sugars naturally present in the food, such as those in milk and fruit. To find the source of these sugars, you need to read the list of ingredients.

What do the percentages mean?

Percentages indicate the percentage of your daily needs that you get from the reference serving size. The percentages let you quickly see if a food contains a low or high amount of a nutrient. **Five percent (5%) or less is considered a little; 15% or more is considered a lot.**

Don't forget to read the list of ingredients!

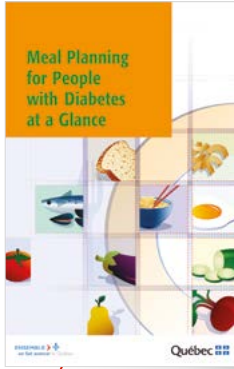
This list tells you precisely what a food contains. The ingredients are listed in descending order by weight. Thus, the first ingredient on the list is found in the greatest quantity. For example, when salt and sugar are the first two ingredients, this tells you that this product contains a large amount of both.



Opt for products with a short list of ingredients that you are familiar with.

Brochure

Meal Planning for People with Diabetes at a Glance,
MSSS



Recipe book

12 repas – 5 services
pour personnes diabétiques
et autres gourmets,
Éditions Glénat
(in French only)



Read these publications to help you adopt a healthy diet



Brochure

Snacks and diabetes,
Diabetes Québec



Brochure

Your Pocket Guide to Dining Out,
Diabetes Québec



Recipe book

Diabète – 125 recettes simples
et savoureuses pour toujours
bien manger, Pratico Édition
(in French only)



Section 7

Exercise

Exercise

Being physically active has many health benefits:

- Better blood sugar management
- Better weight management
- Reduced risk of osteoporosis, arthritis, cardiovascular diseases and neuropathy
- Reduced stress
- Increased self-esteem, a sensation of well-being and better quality of life
- Improved sleep quality
- More energy and better fitness



**Check with your doctor
before starting an exercise program.**

It is recommended that you do **two and a half hours of aerobic exercise per week**, spread over at least three days, without being inactive for more than two days in a row.

It is also recommended that you add **minimum two strength exercise sessions per week**.

Following these recommendations

These recommendations may seem ambitious. **Start slowly and gradually increase, going at your own pace.** For example, you could start with 10 minutes of physical activity a day, five days a week, then increase by 5 minutes every week until you reach 30 minutes.

Look for every opportunity to get moving. **Remember: every effort counts! Here are some examples:**

- Walk or bike to work or when running errands.
- Take the stairs instead of the elevator.
- Get off the bus or metro one or two stops before your destination.
- Park your car a few streets away from your workplace and walk the rest of the way.
- Do strength exercises while watching your favourite TV programs.
- Dance to upbeat music while doing your daily chores.
- Play with your children or grandchildren in the park.

For simple muscular strength exercise routines you can do at home, consult our brochures *Get Fit at Home 1* and 2.



A kinesiologist can give you personalized advice and support you in your journey to increase your level of physical activity.



Section 8

Medication

Medication

Diabetes medication may be prescribed if adopting healthy lifestyle habits fails to maintain your blood sugar within the target values. You may also be prescribed medication right away if your blood sugar is very high at the time of diagnosis. It is important to note that **medication is not a substitute for a healthy lifestyle, but a complement to it.**

What are the different types of medication?

Diabetes medications are known as antidiabetic drugs and are intended to lower blood sugar levels. There are different classes of antidiabetic drugs, each with its own method of acting. Some drugs combine several classes. They can be oral (i.e., taken by mouth in tablet form) or injectable.



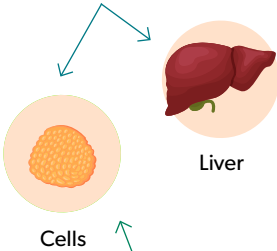
Your doctor will assess the state of your health and prescribe the appropriate medication.

Method of acting for all classes of antihyperglycemic drugs

Biguanides

Metformin (Glucophage[®], Glumetza[®])

- Reduce the amount of sugar produced by the liver
- Increase the sensitivity of the body's cells to insulin



TZD

Pioglitazone (Actos[®])
Rosiglitazone (Avandia[®])

- Make the cells of the body more sensitive to insulin



Kidneys

SGLT2 inhibitors

Canagliflozin (Invokana[®])
Empagliflozin (Jardiance[®])
Ertugliflozin (Steglatro[®])
Dapagliflozin (Forxiga[®])

- Help eliminate sugar in the urine

DPP-4 inhibitors

Linagliptin (Trajenta[®]), Saxagliptin (Onglyza[®]), Sitagliptin (Januvia[®]), Alogliptin (Nesina[®])

- Increase the effect of certain intestinal hormones (incretins), which act when blood sugar raises after a meal: stimulate insulin secretion and reduce glucagon production by the pancreas

Alpha-glucosidase inhibitors

Acarbose (Glucobay[®])

- Slow the absorption of certain carbohydrates (sugars) in the intestines

Insulin secretagogues

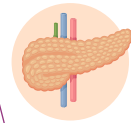
Drugs that increase the risk of hypoglycemia.

Gliclazide (Diamicon[®])
Gliclazide (Diamicon[®] MR)
Glimperide (Amaryl[®])
Glyburide (DiaBeta[®])
Repaglinide (GlucosNorm[®])

- Stimulate the production of insulin by the pancreas



Intestines



Pancreas

GLP-1 agonists

Injectable drugs

Liraglutide (Victoza[®])
Lixisenatide (Adlyxine[®])
Exenatide (Byetta[®])
Exenatide extended release (Bydureon[®])
Dulaglutide (Trulicity[®])
Semaglutide (Ozempic[®])

- Slow digestion in the stomach
- Reduce appetite
- Imitate certain intestinal hormones (incretins) that act when blood sugar is high: stimulate insulin secretion and reduce glucagon production by the pancreas

What you should know if you are taking a diabetes medication:

- It may take **some time for the medication to take full effect**. It may also take some time to find the right dose or combination of drugs that will help you reach and maintain your blood sugar targets.
- It may be necessary to **test your blood sugar more often** after starting a new medication to determine its impact on the management of your blood sugar.
- Often, by the time your diabetes is diagnosed, it has been present for several years. As a result, your body may have become used to high blood sugar levels and **symptoms may appear when blood sugar levels return to normal**. This is known as “false hypoglycemia.” This phenomenon is not dangerous. You need to let your body get used to these new blood sugar levels.
- All diabetes medications are approved by Health Canada. However, some might **cause side effects**. Often, these side effects go away over time. If they persist or affect your quality of life, discuss them with your doctor or pharmacist.

It is essential to take your medication as prescribed and discuss any adjustments in advance with your doctor or pharmacist.

- **Not all drugs cause a risk of low blood sugar.** If you are at risk, you need to be proactive! Be sure to:
 - always have on hand nutritious snacks and quickly absorbed sources of sugar;
 - quickly treat low blood sugar;
 - identify the cause of any drops in blood sugar;
 - take the necessary measures to avoid a repeat occurrence (see the section on low blood sugar on page 25).
- Your doctor may also prescribe **medication to prevent other health problems** (e.g., high blood pressure, high cholesterol).

I am afraid to take insulin!

Insulin injections can seem intimidating. You should know that insulin is rarely prescribed when type 2 diabetes is first diagnosed. Adopting a healthy lifestyle, with or without antidiabetic drugs, is the usual treatment plan. However, since diabetes is a disease that progresses, you may be prescribed insulin later. This does not mean that your diabetes is more “serious” or that you have failed. Insulin is just another treatment option to help keep your blood sugar within target values.





Section 9

Stress Management

Stress Management

Stress can affect you both physically and psychologically.

Here are some examples of situations that cause physical stress:

- Surgery or hospitalization
- An infection (e.g., a cold, gastrointestinal infection)
- Chronic or episodic pain

Here are some examples of situations that cause psychological stress (they can be positive or negative):

- Bereavement
- Losing a job or starting a new job
- Marriage

When you experience stress, you might feel these effects:

- Your heart beats faster
- You sleep poorly
- You are more irritable
- You smoke or drink more than usual, if applicable



Can stress impact blood sugar?

Yes. Anything that upsets your normal balance is considered a threat by your body. It will react by producing stress hormones (adrenalin, cortisol). These hormones cause an increase in blood sugar levels by prompting the liver to produce sugar in order to provide energy to the cells.

How to manage stress?

- Take a few deep breaths.
- Talk to a close friend or loved one about what you are experiencing and feeling.
- Relax by doing something you enjoy: reading a book, watching a movie, listening to music, etc.
- Do some form of exercise.
- Write down what causes you stress, as well as the advice you would give to someone experiencing the same thing as you.



**Consult a professional (psychologist, social worker)
if the stress persists and negatively affects
your quality of life.**



Section 10

Your Personal Goals

Your Personal Goals

The four pillars of diabetes treatment (diet, exercise, medication and stress management) require making changes to your lifestyle. However, it is impossible to change everything at once. Set yourself one goal at a time. To ensure success, this goal must be **realistic, precise, measurable and time-limited**. Start with the easiest goal to achieve. You can also ask your team of healthcare professionals for advice.



Ask yourself the following questions:

1. What are my reasons for wanting to achieve this goal?
2. What actions do I need to take to achieve my goal?
3. What difficulties could become an obstacle to achieving my goal and how can I overcome them?

Here are two examples of personal goals:

1 Starting next Monday, I am going to walk for 15 minutes after lunch at least 3 times a week.

1. I want to achieve this goal because I understand that exercise will help me better manage my blood sugar levels and promote feelings of well-being.
2. I am going to ask my neighbour to join me, and we will plan our walking days at the beginning of each week.
3. On bad-weather days or when my neighbour is not available, I will do an exercise routine for 15 minutes at home on my own.

2 Starting today, I will take my medication every day as prescribed by my doctor.

1. I want to achieve this goal because I understand that taking medication is essential for my health.
2. Every Sunday evening, I will prepare my pillbox for the week.
3. So that I don't forget to take my medication, I will leave my pillbox in full view on the kitchen counter.

My goal:

1. The reasons why I want to achieve this goal:

2. The actions I am going to take to achieve my goal:

3. The difficulties that could become an obstacle to achieving my goal and how I can overcome them:



Section 11

Follow-Up Tests

Follow-Up Tests

In order to assess the management of your diabetes and to decide if any adjustments to your treatment are necessary, you will need to have regular blood tests. Your **fasting blood glucose**, which is your blood sugar level after an 8-hour fast, or your **glycated hemoglobin** (HbA1c or A1C) or both will be measured. Glycated hemoglobin reflects your average blood sugar levels over the preceding two or three months.

| Measurement | Target values |
|-----------------------|----------------------------|
| Fasting blood glucose | Between 4.0 and 7.0 mmol/L |
| Glycated hemoglobin | 7% or less |

Your doctor will also assess your cardiovascular health. To do this, a blood test will measure the **LDL cholesterol** ("bad" cholesterol) level in your blood, and your **blood pressure** will be taken during medical appointments.

| Measurement | Target values |
|-----------------|-----------------------|
| LDL cholesterol | 2.0 mmol/L or less |
| Blood pressure | 130/80 mm Hg or lower |



Other tests must also be done annually to detect the presence of complications associated with diabetes:

- Damage to the nerves (neuropathy) and feet: monofilament test and a foot exam by a doctor, podiatrist or footcare nurse
- Kidney damage (nephropathy): urinalysis and blood test
- Eye damage (retinopathy): an exam of the back of the eye by an optometrist
- Gum disease (parodontitis): an examination of the mouth and teeth by a dental hygienist or a dentist



Your doctor may give you these tests more frequently or may recommend additional tests as needed.

Resources

For reliable information about diabetes

- Diabetes Québec: diabete.qc.ca/en
514-259-3422 | 1-800-361-3504

For answers to your questions about diabetes

- Diabetes Québec's InfoDiabète Service:
514-259-3422 | 1-800-361-3504 or infodiabete@diabete.qc.ca

For diabetes training in person or online

- Universi-D: universi-d.com
514-259-3422 | 1-800-361-3504

To arrange an appointment with a dietitian

- Public sector referral (free of charge)
Contact your FMG, CLSC or the diabetes educational centre in your region
- Private sector (charges apply)
Ordre professionnel des diététistes du Québec: opdq.org
514-393-3733 | 1-888-393-8528

To arrange an appointment with a footcare professional (charges apply)

- Ordre des podiatres du Québec: ordredespodiatres.qc.ca
514-288-0019 | 1-888-514-7433
- Association des infirmières et infirmiers en soins podologiques
du Québec (AISPQ): aiispq.org 1-800-771-9664

To arrange an appointment with a psychologist (charges apply)

- Ordre des psychologues: ordrepsy.qc.ca
514-738-1223 | 1-800-561-1223

To arrange an appointment with a kinesiologist (charges may apply)

- Fédération des kinésiologues du Québec: kinesiologue.com/en
514-343-2471

To stop smoking

- *I Quit Now*: tobaccofreequebec.ca/iquitnow
Telephone support: 1-866-527-7383
- *Quit to Win!* Challenge: quitchallenge.ca

Other resources

- Ordre des optométristes du Québec: ooq.org
- Québec Association of Chronic Pain: douleurchronique.org
- Centre for Studies on Human Stress (CSHS): humanstress.ca
- The Kidney Foundation of Canada: kidney.ca
- Heart and Stroke Foundation of Canada: heartandstroke.ca
- Ordre des dentistes du Québec: maboucheensante.com/en

Become a member of Diabetes Québec

Join online today at diabete.qc.ca or fill out this form and mail it to us at:

Diabetes Québec

3750 Crémazie Boulevard East, Suite 500

Montréal, Québec H2A 1B6

Membership Form

Language of correspondence: French English

Salutation: Mrs. Ms. Mr. Prefer not to answer

First name

Last name

Address

Apt./Unit

City

Postal code

Home phone

Mobile

Email

Signature

Date

When you become a member of Diabetes Québec at a cost of \$20 per year, you will receive the quarterly magazine *Plein Soleil* (in French only). Please check your preference below:

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I do not want to receive the magazine

Diabetes Québec reserves the right to make any changes to its membership without notice.

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Date

- Cheque in the amount of \$20 enclosed

Please make the cheque out to **Diabète Québec**.



Diabetes School

Universi-D is a non-profit organization whose mission is to train people living with diabetes. Our goal is to help them self-manage their diabetes on a daily basis.

Our services:

- In-person training
- Web-based training
- Self-study courses
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Our training courses cover topics such as diet, medication, hypoglycemia, long-term complications and more!

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Questions about diabetes?

InfoDiabetes Service

514-259-3422

1-800-361-3504

infodiabete@diabete.qc.ca



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