On the Road to Diabetes Health

An information booklet for people with Type 1 or Type 2 Diabetes

This booklet belongs to: _____

January 2020

Vancouver Coastal Health
Promoting wellness. Ensuring care.

Providence Health Care
How you want to be treated.

Certified diabetes educators in Fraser Health developed this booklet.
Content is based on the Diabetes Canada Clinical Practice Guidelines, 2018.

Copies of this booklet are available from your Diabetes Health Centre and on the Fraser Health website: fraserhealth.ca/health-topics-a-to-z/diabetes

Scan QR Code to Resource

Note: We have included a number of QR codes within this booklet that take you to other resources. A QR code (short for 'quick response' code) is a type of barcode that you scan with your smart device's camera. Once scanned, it takes you to that web page.

What is in this booklet?

Introduction

This booklet was written by our Diabetes Educators. It gives you, your family, and others involved in your care information about both type 1 and type 2 diabetes. We know that taking care of diabetes involves the entire community.

We hope this booklet starts you on the road to diabetes health. While the information applies to most people, make sure you talk with your doctor or diabetes healthcare team about what is right for you.

Note: This booklet is **not** intended for pregnant women with **gestational** diabetes (diabetes during pregnancy). If you have been told that you have gestational diabetes, please talk to your doctor.

Your Diabetes Healthcare Team

You are the most important member of your diabetes healthcare team. Your healthcare team can include your family doctor, diabetes nurse, dietitian and pharmacist. A foot care specialist, exercise specialist, psychologist, social worker, eye specialist, diabetes specialist, and others can also be part of your team.

Your Diabetes Health Centre can provide you with education and current information to help you manage your diabetes and to provide support for you to make lifestyle changes.

HealthLinkBC and Diabetes Canada* are good resources for reliable information about diabetes. (*was Canadian Diabetes Association)

HealthLinkBC 8-1-1 www.healthlinkbc.ca

Call any time you have questions.
Speak to a registered nurse, dietitian, pharmacist, or exercise professional.

Interpreter available in 130 languages 24 hours a day. For an interpreter, say your language in English. Wait until an interpreter comes on the phone.

Diabetes Canada www.diabetes.ca

English/French Information Line 1-800-BANTING (1-800-226-8464)
Mandarin/Cantonese Information Line 1-888-666-8586 or 604-732-8187

Scan QR Code to Resource

Emotions and Feelings

Finding out that you have diabetes can come as a shock. You might feel stressed about how it will impact your life. It is natural to feel angry or frightened.

It is important for you to know that if you take care of your diabetes right from the start, you can have less health problems in the future. When you improve your eating habits and are more physically active, you improve your health, help your diabetes, and prevent health problems that diabetes can cause.

Well-being and stress

Our bodies are in a state of well-being when our basic needs are taken care of and we are emotionally relaxed. When we become overly excited or upset, the result is stress.

The body responds to stress by putting extra energy in the form of sugar (also called glucose) into the blood. This body response can happen with a sudden fright, when angry, and with an ongoing problem that is upsetting or an illness (especially if serious).

It is good to learn ways to manage stress. Talk to your diabetes healthcare team about tools that can help.

Well-being and depression

Three out of 10 people (30%) with diabetes have symptoms of depression. When a person suffers from depression, it is harder to manage their diabetes. The lack of energy can make it harder to eat healthy, exercise, and test their blood. Spotting depression is the first step. Getting help is the second.

What to watch for:

- feeling sad, down, or hopeless
- little or no energy
- change in your sleep pattern
- no interest or pleasure in things you usually like to do
- change in appetite
- trouble concentrating
- nervousness and/or worry

If you have 2 or more of these symptoms or wonder whether you might have depression, talk to your doctor or diabetes healthcare team about how you are feeling. When you get help early, it can help you feel better and make it easier to take care of your health. Resources for sleep, stress, and depression are listed on page 50.

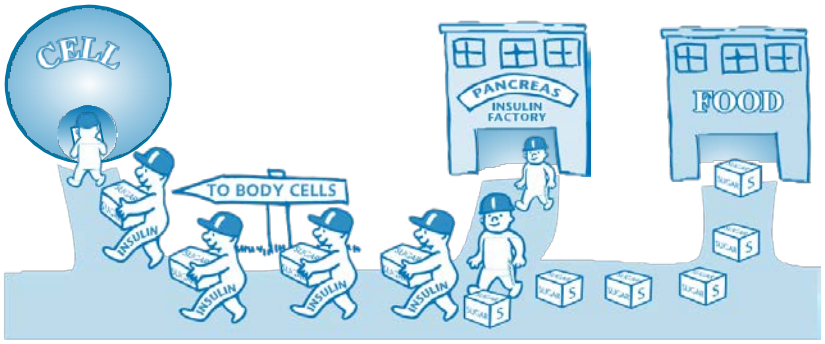
What is Diabetes?

When you have diabetes, your body cannot use food properly. This causes your blood sugar (also called blood glucose) to go too high. Anyone at any age can get diabetes.

Why does blood sugar go too high?

When you eat, your body breaks down many foods into sugar (glucose). The sugar enters your blood and is carried to the millions of cells in your body. The sugar enters the cells with the help of a hormone made in the pancreas. This hormone is called insulin.

Sugar is then used for energy or stored in the cells to use later.



The sugar cannot enter the cells if:

- Your body does not make insulin, or
- Your body does not make enough insulin, or
- Your insulin does not work properly (this is called insulin resistance).

When the sugar cannot enter the cells of the body, it begins to build up in your blood.

Symptoms of diabetes can include:

- feeling tired
- increased thirst
- frequent urination
- blurred vision
- weight loss for no reason
- hunger even though eating well
- nausea or feeling ill
- skin, gum, or urinary tract infections
- slow healing cuts, and sores
- tingling, burning, or pain in feet

If you have these symptoms and have not yet been told you have diabetes, you need to see your doctor to have a blood test done. This blood test will show if you have diabetes.

What Type of Diabetes Do You Have?

The 3 most common are type 1 diabetes, type 2 diabetes, and gestational (during pregnancy) diabetes. We only talk about type 1 and type 2 diabetes here. If you are not sure what type of diabetes you have, ask your diabetes healthcare team.

- **Type 1 Diabetes**
  You had symptoms when you found out you had diabetes. This is when your body stops making insulin. It most often occurs in people younger than 30 years old.

  To manage this type, you will need:
  - injections of insulin
  - a healthy, balanced diet
  - exercise
  - regular blood sugar testing
  - information and support

- **Type 2 Diabetes**
  You might not have any symptoms. This is when your body does not make enough insulin and/or the insulin does not work properly. It most often occurs in people 40 years of age or older. It is more common in people who have a family history.

  To manage this type, you will need:
  - a healthy, balanced diet
  - exercise
  - regular blood sugar testing
  - information and support

  You might also need to:
  - lose weight
  - take diabetes medication (pills or injections)

  You might be able to manage with healthy eating and exercise at first. As you get older though, your pancreas will make less and less insulin. You will likely have to take medication such as pills or insulin later on.

Blood Sugar

Facts about Blood Sugar Levels

Blood sugar levels go up and down throughout the day and night. Long periods of high blood sugar can damage your body. It is important to keep your blood sugar as close to target levels as possible (see page 6).

Things that lower blood sugar:

- regular balanced meals and snacks
- physical activity such as walking
- reducing body fat
- relaxation techniques
- diabetes medications (pills or injections)

Things that raise blood sugar:

- too much food
- not having meals and snacks on time
- not enough physical activity
- weight gain above your healthy weight
- emotional or physical stress and illness
- not taking enough diabetes medication
- some prescription and over the counter medication*
- certain hormones which cause the liver to leak sugar into the blood when it is not needed ('leaky' liver)

*It is best for you to **use the same pharmacy all the time**.

- Tell your pharmacist that you have diabetes when you are filling any prescription or buying any over the counter medications.
- Always talk to your pharmacist before buying cold medicine, vitamins, herbal products, or any product like these. Ask if the product is okay for someone with diabetes.

What do the Numbers Mean?

Blood Test Results	Pre-Diabetes	Diabetes
Fasting Blood Glucose (mmol/L)	6.1 to 6.9	7.0 or more
A1C (%)	6.0 to 6.4	6.5 or more
Blood Glucose After Eating (mmol/L) or 2 hour Oral Glucose Tolerance Test* (mmol/L)	7.8 to 11.0	11.1 or more

*Oral Glucose Tolerance Test (OGTT): A sweet drink containing 75 grams of glucose (equal to 15 teaspoons of sugar). You drink it then your blood glucose is tested 2 hours later.

Target Blood Sugar and A1C Levels

The amount of sugar in blood is measured in 'millimoles per litre.' The abbreviation for this is mmol/L.

When you keep your blood sugar levels within the target range, you will reduce your chances of getting health problems related to diabetes. We describe these 'diabetes complications' on page 37.

The A1C level is measured by a blood test. It shows you how close to target your blood sugar has been over that 3-month period.

When your blood sugar is high there will be more sugar coating your red blood cells and your A1C will go up. People who have an A1C higher than 7% are more likely to develop health problems caused by high blood sugar.

You can keep your A1C level in check by keeping your blood sugar levels in the target range.

Talk to your diabetes healthcare team about the target that is right for you.

These target blood sugar levels are for most adults with type 1 or type 2 diabetes.

Target Blood Sugar for most people		Target A1C
Fasting or Before Meals	2 Hours After Meals	
4.0 - 7.0 mmol/L	5.0 - 10.0 mmol/L	7.0% or less

An A1C of 6.5% or less is recommended if you have type 2 diabetes and have no chance of having a low blood sugar.

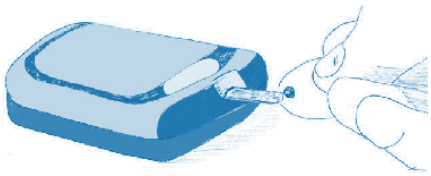
Talk to your diabetes healthcare team. Some people are asked to aim for a blood sugar of less than 8.0 mmol/L at 2 hours after meals. Other people might be asked to have blood sugar levels higher that those listed here.

A1C (%)	Average Blood Sugar (mmol/L)
5	5.4
6	7.0
7	8.6
8	10.2
9	11.8
10	13.4
11	14.9
12	16.5
13	18.1
14	19.7

Your A1C result corresponds to your average blood sugar level before and after meals over the previous 3 months.

Blood Sugar Testing

Checking your blood sugar levels can give you information about how food, exercise, and medication affect your blood sugar. This can help you see where changes are needed to improve your blood sugar.



Talk to your doctor and/or your diabetes healthcare team about:

- if you need to test
- when you need to test
- how often you need to test

Getting started:

- Obtain a blood glucose meter from your pharmacy.
- Ask the pharmacist to show you how to use your meter. (You might need to make an appointment.)
- Buy any supplies you need (test strips, lancets, sharps disposal container).
- Blood sugar testing needs a drop of blood, usually from the side of your finger.
- Ask your diabetes healthcare team about other ways of testing such as flash or continuous glucose monitoring.

How often to check:

People taking insulin need to check their blood sugar every day. Those not taking insulin might check it less often.

It can help to test more often when you are getting started to see why your blood sugar goes up and down. Talk with your diabetes healthcare team about how often to test.

You could be asked to test your blood sugar levels 1 time each day or test it just before and again 2 hours after a meal. This could be for 1, 2, or 3 meals each day. Some people only need to test 1 to 2 times a week.

When testing:

- Look at your results each day.
- Ask yourself: What foods make your sugar level go up or down? What time of day is your sugar level higher or lower?
- Enter the blood sugar test results in the log book provided with your meter.
- Take note of what might have affected your result.
- Bring the log book to your visit with your diabetes healthcare team.

This example shows a log book for someone who tests before and after 1 meal each day. Making notes helps you learn what foods or situations affect your blood sugar level.

Date	Breakfast		Lunch		Supper		Comments
	Before	2 hr after	Before	2 hr after	Before	2 hr after	
May 10	6.9	14.7*					*juice
May 11			3.5*	7.8			*running
May 12					5.4	8.4	

PharmaCare:

Based on your family's annual income, the BC Ministry of Health might help pay for part of the cost of test strips.

Scan QR Code to Resource

To be eligible:

- Register with Fair Pharmacare.
  Call 604 683-7151
  Go online to www2.gov.bc.ca and search 'PharmaCare for B.C. Residents'
- Attend a Diabetes Health Centre to learn about blood sugar testing and be 'certified' for glucose test strip coverage.

Hypoglycemia (Low Blood Sugar)

What is hypoglycemia?

Hypoglycemia is when your blood sugar drops below 4.0 mmol/L.

Who is at risk for hypoglycemia?

People who take insulin or some types of type 2 diabetes medications are more likely to get hypoglycemia (see page 30).

Check with your diabetes healthcare team to see if you need to be concerned about hypoglycemia.

What are the symptoms of hypoglycemia?

Hypoglycemia can happen quickly.
You might notice any of these warning symptoms.

Why does hypoglycemia happen?

It can happen when:

- You do not eat enough food.
- You eat a meal later than your usual time.
- You have unusual increase in exercise.
- You take too much insulin or too many diabetes pills.
- You drink alcohol without eating any food.
- You are sick with diarrhea or vomiting (throwing up).

Let your doctor know if low blood sugar occurs often, such as 3 times or more in a week.

Alcohol can cause hypoglycemia for up to 24 hours after drinking. Because of this, always eat a meal or a snack when drinking alcohol. Talk to your diabetes healthcare team about how alcohol can affect you.

It is very important to treat hypoglycemia quickly!

Carry fast-acting sugar and wear diabetes identification!

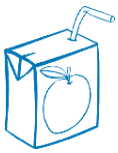
Treating Hypoglycemia

- Use the '**Take 15 - Wait 15**' rule to treat hypoglycemia.
- Call 9-1-1 (or have someone call) if you are confused or cannot follow the instructions listed here.

Steps for treating:

1. Test your blood sugar.
2. If your blood sugar level is less than 4.0 mmol/L **or** you have symptoms of hypoglycemia and cannot test, **take one of these 15 grams of fast-acting sugar (carbohydrate).**

15 g of glucose
3 to 5 tablets
(check label)
Best Choice


⅔ cup
(150 mL) of juice
or
regular soft drink


3 teaspoons
(15 mL)
or
3 packets of sugar


1 tablespoon
(15 mL)
of honey


6 Life Savers®

3. Wait 15 minutes.
4. Test your blood sugar again (using a clean finger).
5. If blood sugar is still less than 4.0 mmol/L, take another 15 grams of fast-acting sugar. Wait 15 minutes and test your blood again.
6. If your blood sugar is still less than 4.0 mmol/L on the 3rd test, call 9-1-1 or have someone take you to the nearest emergency department.

   Do not drive if your blood sugar level is less than 5.0 mmol/L after having a low blood sugar episode!

7. If your blood sugar level goes back up into your target range, eat your meal. If your meal is longer than 1 hour away, eat a snack that contains 15 grams of carbohydrate and a protein food such as one of the following:

¾ cup (175 mL)
yogurt

1 cup (250 mL)
milk


½ peanut butter
sandwich


6 small crackers
and cheese

Severe Hypoglycemia

- This is when your blood sugar is less than **2.8 mmol/L**.
- It can occur in any person taking insulin but more common if you have type 1 diabetes.
- You need **20 grams fast-acting sugar** to treat severe hypoglycemia. (For example, take 5 Dex4® glucose tablets instead of 4.)

If you have type 1 diabetes, talk to your doctor or diabetes healthcare team about:

- your risk for severe hypoglycemia
- how this can affect you
- how to prevent it
- having a glucagon kit available for emergencies

Hyperglycemia (High Blood Sugar)

If your blood sugar level is higher than your target range, this is called hyperglycemia. Hyperglycemia can be caused by illness, infection, eating too much, lack of exercise, stress, or not enough type 2 diabetes medications or insulin.

You might feel:

- hungry
- extreme thirst
- fatigue
- weak

You might have:

- frequent urination (go pee often)
- blurred vision

If you have symptoms:

- Check your blood sugar level.
- Check your blood sugar level before every meal for the next 2 days.

Some people who have hyperglycemia have no symptoms at all. You might only know you have hyperglycemia from your blood sugar testing.

The occasional high reading is not a concern. If your blood sugar is above the target level once then drops to within your target level the next time you check it, don't be concerned.

If your blood sugar is high for longer than 8 hours, follow the instructions for Sick Day Management (see page 32).

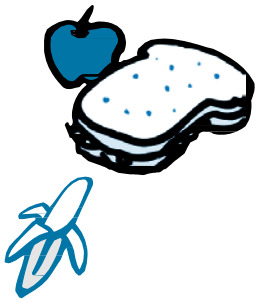
When should you worry about a high blood sugar?	
Type 1	higher than 14 mmol/L
Type 2	higher than 20 mmol/L

When your blood sugar is above your target range for more than a week, even if you are not sick, contact your doctor or diabetes healthcare team to work on ways to lower your blood sugar.

Healthy Eating

Healthy eating helps you keep your blood sugar levels in the target range and reduces your risk of heart disease. With planning and help from the dietitian at your Diabetes Health Centre, you and your family can learn how to enjoy your favourite foods.

Meal Timing



- Always eat 3 meals each day.
- Eat your first meal of the day within 1 to 2 hours of waking up.
- Do not go longer than 4 to 6 hours without eating during the day.
- If your meals are more than 4 to 6 hours apart or you prefer smaller meals, have a healthy snack.
- You might need an evening snack. Check with your diabetes healthcare team.

Balance and Portions

Balancing meals and choosing the right portions can help you control your blood sugar. When you plan meals, you need to know what foods raise blood sugar (see page 15) and why choosing high fibre foods is important.

Fibre

Make high fibre food choices to:

- slow digestion of food so that blood sugar goes up less and more slowly
- help lower blood cholesterol and risk of heart disease
- help control appetite and maintain a healthy weight
- keep bowels regular and prevent constipation

Tips to increase fibre:

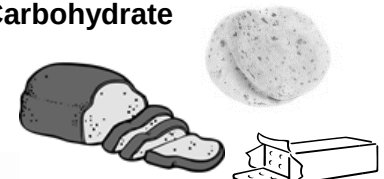
- Eat more vegetables.
- Choose fruit instead of juice.
- Choose whole grains such as whole grain breads, crackers, cereals, pasta, brown rice, barley, quinoa, oatmeal, oat bran, and wheat bran.
- Add beans and lentils to salads, soups, and stews.
- Use whole grain flour, other whole grains, and added seeds when baking.
- Include unsalted nuts and seeds with meals or snacks.

How Food Affects Blood Sugar

Increases blood sugar

Carbohydrate

breads, crackers, roti, tortilla

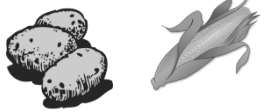


cereals

grains (e.g. rice, barley, quinoa)

pasta, noodles

potatoes, corn, yams, sweet potato



fruits, juices

milk
yogurt

sweet foods, snacks, sweet beverages

Little or no increase in blood sugar

Protein

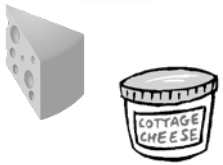
fish

poultry

meat

eggs

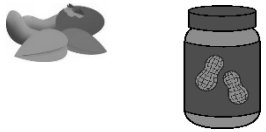
cheese, cottage cheese, plain Greek yogurt



beans*, lentils*

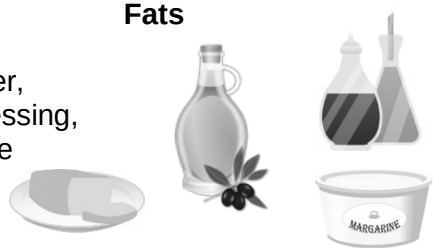
tofu
soy beverage (unsweetened)

nuts, seeds, peanut butter, nut butters

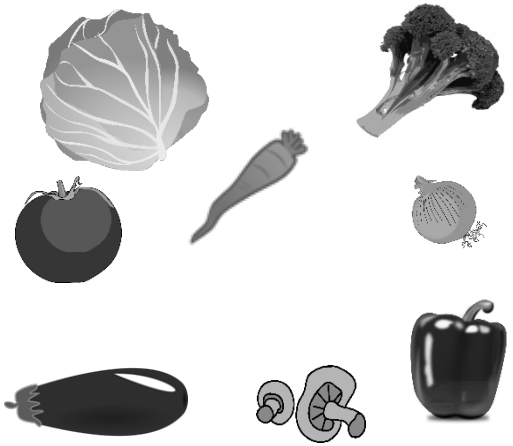


Fats

oils, butter, salad dressing, margarine



Most Vegetables



Extras

water

coffee, tea

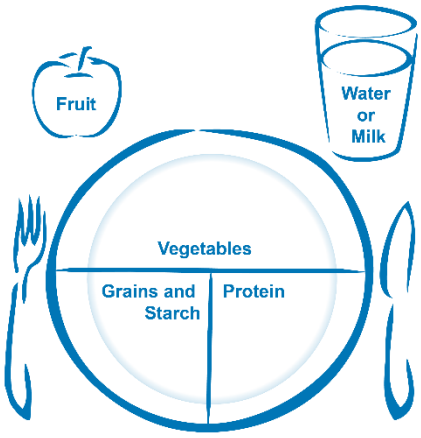
sugar-free pop

*****Beans and lentils contain carbohydrates but raise blood sugar less than most other carbohydrate food

Planning Meals

The 'Plate Method' and the 'Handy Portion Method' are 2 tools that can help you balance your meals and choose the right amount of different foods.

The Plate Method



Example food choices

- **Vegetables** (1/2 of your plate at 2 meals)
  green beans, broccoli, carrots, spinach, zucchini, onions, cabbage, kale, tomatoes, peppers
- **Grains and Starches** (1/4 of your plate)
  whole grain bread, pasta, barley, brown rice, quinoa, oatmeal, roti
  Note: Starchy vegetables like potatoes, yams, sweet potato, and corn count as starch not as vegetables
- **Protein** (1/4 of your plate)
  fish, chicken, lean beef, pork, beans, lentils, eggs, peanut butter, unsalted nuts, cheese, plain Greek yogurt, tofu
- **Fruit** (1 medium)
  apple, pear, orange, or 1 cup of berries
- **Beverages**
  Water: Drink 6 to 8 cups (1½ to 2 litres) or more of fluid every day. Most of this should be water.
  Milk: If you drink milk, choose 1 cup (250 mL) per serving of skim, 1%, or 2% milk.

Note: 2 to 3 servings of foods high in calcium are recommended each day. This includes milk, yogurt, cheese, and fortified soy beverages.

The Handy Portion Method

Use your hands to measure the amount of each type of food for your meal.

Fruit Grains and Starches	Vegetables	Meat and Alternatives	Fat
Choose an amount the size of your fist for both.	Choose as much as you can hold in both hands. Choose brightly coloured vegetables.	Choose an amount up to the size of the palm of your hand and thickness of your little finger.	Limit fat to an amount the size of the tip of your thumb.

Milk and Alternatives: Drink up to 1 cup (250 mL) of low-fat milk with a meal.

Source: Diabetes Canada. Reprinted with permission (www.diabetes.ca)

Eat and drink less:

- **sugar and sweets** including sugar, honey, jam, syrup, regular pop, juice, candy, chocolate, pie, cookies, cakes, muffins, and pastries
  They raise your blood sugar and might cause weight gain.
- **high fat foods** including fried food, butter, margarine, and oils
  They can cause weight gain and increase risk of heart disease.
- **alcohol**
  It can raise your blood pressure, increase your triglyceride levels, and cause you to gain weight.

About alcohol

- **Some people should not drink alcohol** (talk to your doctor).
- You might be at risk for hypoglycemia when you drink alcohol (see page 10).
- Do not to drink alcohol on an empty stomach.
- Limit alcohol to no more than 1 to 2 drinks in a day.
  One drink is equal to: 150 mL (5 oz.) wine, 45 mL (1.5 oz.) hard liquor, or 360 mL (12 oz.) of beer (see Canada's Low-Risk Alcohol Drinking Guidelines to learn more).

Sugar substitutes

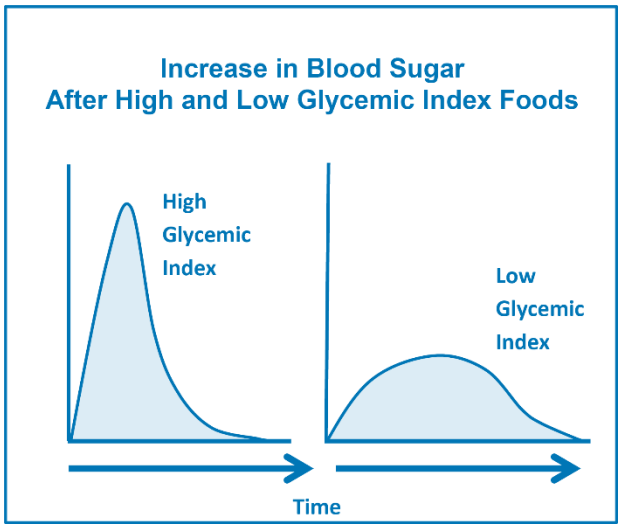
- They can be used in moderation.
- Choose ones that do not raise blood sugar.
  (acesulfame potassium, aspartame, cyclamate, neotame, saccharin, sucralose, stevia, tagatose, thaumatin and sugar alcohols such as erythritol, isomalt, lactitol, maltitol, mannitol, sorbitol, and xylitol)

Glycemic Index

Glycemic index or GI ranks foods containing carbohydrate by how much they raise blood sugar levels. Lower GI foods can help you manage blood sugar, cholesterol, and weight.

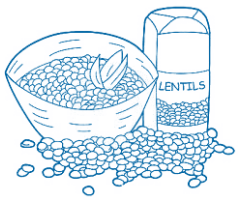
Foods with a **high** GI raise blood sugar **quickly**.

Foods with a **low** GI raise blood sugar **slowly**.



Look for these lower GI carbohydrate foods:

- Breads – sprouted grain, whole grain, pumpernickel/whole meal rye
- Cereals – steel cut oats, large flake oatmeal, oat bran, quick oats, high fibre cold cereals (e.g. All Bran®, Bran Buds with Psyllium®)
- Grains – barley, wild rice, brown/white basmati rice, parboiled rice, bulgur, quinoa, buckwheat, pasta
- Starchy vegetables – sweet potatoes, yams, corn, new potato
- Fruits – apples, grapefruit, oranges, pears, berries, stone fruits (apricots, peaches, plums)
- Other – milk, yogurt, legumes (chickpeas, kidney beans, lentils)



Managing Carbohydrates

Foods containing carbohydrates turn into sugar and raise your blood sugar levels. You do need to eat foods containing carbohydrates to give you energy, but it is important that you eat the right amount at each meal to help keep your blood sugar within your target range.

Carbohydrate counting is a way of keeping track or counting the amount of carbohydrate you are eating to help manage your blood sugar.

Three ways to count carbohydrates

1. **Simple Plate Method or Handy Portion Method** (see page 16 and 17)
   A simple way to track carbohydrates using your plate or hands is to keep your portion of Grains and Starches to 1/4 of your plate or no more than the size of your fist, plus 1 fruit serving the size of your fist.
   If choosing milk, then choose up to 1 cup or 250 mLs.
   If this method is keeping your blood sugar within target levels, you can keep using it. If not, using the Carbohydrate Choices method or counting grams of carbohydrate might work better for you.

2. **Carbohydrate Choices**
   Using 'Carbohydrate Choices' is another way to count carbohydrates. Carbohydrate Choices are portions of food that contain 15 grams of carbohydrate (see page 20).

3. **Grams of Carbohydrate**
   The amount of carbohydrate listed in grams for a food item can also be found on the Nutrition Facts table found on packaged foods, in resource books, restaurant fact sheets, internet sites, and smart phone apps.
   See page 26 for how to count carbohydrates on food labels using the Nutrition Facts table.

Carbohydrate Choices

Food portions equal to 1 Carbohydrate Choice or about 15 Grams of Carbohydrate

Grains and Starches	Fruit
1 slice bread	1 medium apple, orange or pear
3/4 cup (175 mL) cooked cereal	1/2 banana
1/2 to 3/4 cup (125 mL to 175 mL) cold cereal	1 cup (250 mL) melon or fresh fruit
1/2 cup (125 mL) potato, yam, or corn	1 cup (250 mL) blueberries
1/2 cup (125 mL) pasta, barley, couscous, quinoa, or buckwheat (cooked)	2 cups (500 mL) blackberries, raspberries, or strawberries
1/3 cup (75 mL) rice or millet (cooked)	15 small cherries or grapes
1/2 English muffin	1/2 cup (125 mL) cooked or canned fruit
1/4 bagel	1/2 medium mango or pomegranate
1/2 hamburger bun	3 small guava or 2 small kiwi fruit
1/2 medium pita or tortilla	3 prunes or apricots
1 small roti (6 in/15 cm)	2 tablespoons (30 mL) raisins or dried cranberries
3 cups (750 mL) popcorn (popped)	
Milk & Alternatives (lower fat choices recommended)	**Sweet Foods** (limit sugar and sweets)
1 cup (250 mL) milk	1/2 cup (125 mL) unsweetened fruit juice
1 cup (250 mL) yogurt, no sugar added	1/2 small muffin or 2 plain cookies
1 cup sweetened, fortified soy beverage (carbohydrate varies, check label)	1/2 cup (125 mL) ice cream, frozen or sweetened yogurt, or chocolate milk
1 cup (250 mL) raita or unsweetened lassi	1/2 cup (125 mL) pop
Note: unsweetened soy beverage, cottage cheese, and plain Greek yogurt are low in carbohydrate	3 teaspoons (15 mL) sugar, honey, jam, molasses, or syrup

Most people need:

- 2 to 4 Carbohydrate Choices or 30 to 60 grams of carbohydrates **each meal**
- 1 Carbohydrate Choice or 15 grams of carbohydrates in **each snack** (Remember - snacks are not necessary for everyone)

Legumes (dried beans, lentils and peas) are a good source of protein and have less effect on blood sugar than other foods containing carbohydrate.
Legumes can be counted as: **1/2 cup (125 mL) cooked = 15 grams of carbohydrate**

Most vegetables are low in carbohydrate. If eating 1 cup (250 mL) of beets, parsnips, peas, or winter squash, count as: **1 cup (250 mL) = 15 grams carbohydrate**

Sample Menu

30 to 45 grams carbohydrate each meal

Breakfast
1 orange 1 to 2 slices whole grain toast **or** ¾ to 1 ½ cups (175 to 325 mL) cooked oatmeal 1 to 2 tablespoons (15 to 30 mL) peanut butter, nuts, seeds, **or** 1 to 2 eggs, or ½ to ¾ cup (125 to 200 mL) Greek yogurt
Lunch
1 to 2 slices whole grain bread 2 slices (60 g/2 ounces) meat, chicken, or fish 1 to 2 teaspoons (5 to 10 mL) soft margarine or mayonnaise Tomato and lettuce Salad with dressing 1 medium apple or other fruit
Supper
3 to 5 ounces (90 to 150 g) chicken or fish ½ to 1 cup (125 to 250 mL) potato, yam, or pasta 1 to 2 teaspoons (5 to 10 mL) soft margarine or oil Carrots and broccoli 1 cup (250 mL) mixed fresh fruit

Notes

- You can drink coffee, tea, water, or other sugar-free beverages throughout the day.
- You can substitute vegetarian choices (such as beans, lentils, soy products, or paneer) for meat, chicken, and fish.
- To meet your calcium needs, have at least 2 to 3 servings a day of dairy or other high calcium foods.

Healthy Snack Ideas

If you need to snack, we often recommend 15 grams of carbohydrate.

Here are some snack ideas that contain about 15 grams of carbohydrate.

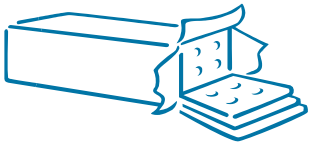
- 1 fist-sized fresh fruit or 1 cup (250 mL) of cut-up fruit or berries
- ½ cup (125 mL) unsweetened or canned fruit in juice
- whole grain crackers (7 small, 4 medium, or 2 large) with lower fat cheese (20% milk fat or less), peanut butter, or hummus
- 1 small whole grain pita bread with hummus or tzatziki
- 1 cup (250 mL) lower fat milk or yogurt (no sugar added)
- ½ cup (125 mL) high fibre cereal with ½ cup (125 mL) skim or 1% milk
- 1 small homemade muffin (made with whole grains, less sugar and a healthy oil)
- 3 cups (750 mL) of hot air popped popcorn or light microwave popcorn
- ½ sandwich or 1 slice of whole grain bread or toast with nut butter
- ½ cup (125 mL) cottage cheese or plain Greek yogurt and ½ cup (125 mL) fruit

Add protein to snacks to help you feel fuller. Protein ideas include:

- chicken, fish, meat, or eggs in a sandwich
- lower fat cheese, cottage cheese, or plain Greek yogurt
- unsalted nuts and seeds
  Keep in mind they are high in calories.
  Limit your serving to a handful if trying to lose weight.
- edamame, hummus, bean dip, peanut butter, and nut butter

Feel free to add foods that contain low amounts of carbohydrate and calories to your snacks. These include:

- raw vegetables
- water, clear broth, coffee, tea, and beverages with less than 5 grams of carbohydrate



Heart Healthy Eating

When you have diabetes you are at higher risk of heart disease and stroke.

Heart Healthy Eating Guidelines

The best way to lower your risk of heart disease and stroke, and improve your blood pressure and LDL cholesterol levels is to follow these guidelines.

Follow a healthy meal pattern

- Eat regular meals throughout the day.
- Cook at home more often.
- Drink water.
- Avoid highly processed foods.

Eat more vegetables and fruits

- At lunch and dinner, fill ½ your plate with vegetables.
- Choose a variety of coloured vegetables – fresh, frozen, raw, or cooked.
- Choose fruit instead of juice.

Choose whole grains

- Choose whole grain and sprouted grain breads, whole grain pastas and cereals, oatmeal, barley, quinoa, and brown or wild rice.
- Limit foods made with white flour or added sugar.

Eat plant-based protein each day

- Add legumes such as split peas, lentil, chickpeas, black beans, and kidney beans to soups, salads, casseroles, and baked goods. Use them as a dip or sandwich spread.
- Add unsalted nuts and seeds to breakfast cereals and salads or have them as a snack.
- Try tofu instead of meat.

Eat healthy fats

- Eat avocado, unsalted nuts and seeds, and nut butters.
- Choose a variety of oils such as olive, avocado, canola, grape seed, corn, and others.
- Include 2 to 3 tablespoons (30 to 45 mL) of healthy oil each day.
- Choose omega-3 fats such as salmon, sardines, mackerel, and trout at least 2 times a week.
- Limit saturated fats found in fatty meat, butter, high fat dairy products, and tropical oils (coconut and palm oil).
- Avoid processed foods made with palm oil or shortening. Stay away from deep-fried foods, pre-packaged snack foods, and commercial baked goods.

Choose lower fat dairy products and milk alternatives

- Choose milk and yogurt with 2% milk fat (M.F.) or less.
- Choose lower fat cheese when possible or enjoy smaller portions of regular cheese.
- Choose unsweetened milk alternatives fortified with calcium and vitamin D.

Choose lean meats

- Choose lean meats. Avoid processed meats like bacon, sausages, and deli meats.
- Trim any visible fat, and remove skin from chicken, turkey, and other poultry.
- Meat should be no more than ¼ of your meal.

Limit salt (sodium)

- Limit take-out and restaurant foods.
- Avoid high sodium packaged and canned foods.
- Cook with less salt and remove the salt shaker from the table.
- Try salt-free seasonings (herbs, spices, lemon juice, garlic, or vinegars).
- 'Salt,' 'sea salt', 'sodium' and 'sodium chloride' are all the same thing.
- 1 teaspoon of salt = 2,300 milligrams (mg) sodium.
- Reduce sodium – aim for 2,000 mg or less per day.

Limit sugar and alcohol

- Too much can cause high blood triglycerides and might lead to a fatty liver (See page 17).

This section adapted from Fraser Health Heart Healthy Eating Guidelines, 2019

Cholesterol in food

Keeping your LDL-cholesterol at a low level can reduce your risk of heart disease. When you follow the Heart Healthy Eating Guidelines (which includes more plant-based foods and healthy fats), it will help lower the LDL-cholesterol in your blood.

Most cholesterol is made in the liver. Cholesterol is also found in all foods that come from animals and can raise LDL-cholesterol in some people if eaten in large amounts.

Talk to your dietitian about whether you need to lower your intake of cholesterol from foods.

About Blood Pressure

Keeping your blood pressure in a healthy range is also important. People with diabetes often have high blood pressure.

Lifestyle changes that can help keep your blood pressure down in the healthy range include:

- daily physical activity
- reducing body fat
- reducing sodium intake
- limiting alcohol
- quitting smoking
- managing stress
- following the Heart Healthy Eating Guidelines

Reading Food Labels

Food labels, including the **Ingredients list** and **Nutrition Facts** table found on packaged foods, can help you keep track of the amount of carbohydrate you are eating and make heart healthy choices. We list some key points here.

Ingredients list

Found on most food packages. Ingredients are listed in order from highest amount to least amount. For example, if the Ingredients list reads, 'Sugar, flour, spices,' this means there is more sugar than flour and more flour than spices. The source of sugar will be listed in brackets after 'Sugars' as food labels get updated (years 2017 to 2022).

The Ingredients list can help you make heart healthy choices. Look for foods that contain whole grains and healthy fats.

Nutrition Facts table

Found on most foods. The table lists the amount of carbohydrate, fat and sodium, among other things, found in a specific amount of the food. This amount is called the 'Serving Size.' When you are planning food choices based on the Nutrition Facts table, be sure to make note of the serving size you plan to eat.

Nutrition Facts	
Per ½ cup (50 g)	
Calories 140	**% Daily Value***
Fats 0.5 g	1%
Saturated 0.2 g + Trans 0 g	1%
Carbohydrate 28 g	
Fibre 5 g	18 %
Sugars 9 g	9 %
Protein 7 g	
Cholesterol 0 mg	
Sodium 390 mg	16%
Potassium 450 mg	10%
Calcium 104	8%
Iron 3 mg	15%
*5% or less is **a little**, 15% or more is **a lot**	

Carbohydrates

The table lists 'Total Carbohydrates' first, then Fibre, and Sugars.

While fibre is a carbohydrate, eating fibre does not raise blood sugar, so you do not have to count it. Since fibre is already included in the Total Carbohydrate number, you can subtract the amount of fibre from the total carbohydrate number. The result is the number you would count for 1 serving size.

Example: This Nutrition Facts table shows that there are 28 grams of Total Carbohydrate and 5 grams of Fibre for ½ cup: 28 - 5 = 23.
Count 23 grams of carbohydrate for this food (23 grams includes the sugar you see on the label plus the starch that is not listed).

Fats

Look for foods with smaller amounts of saturated fat and 0 grams of trans fat. You can see how much total fat is in your serving and how much of that is saturated and trans fat.

Tips to Reach Your Best Weight

Maintaining a healthy weight can be hard for many reasons. It is more than just what we eat and how much we move. 'Quick-fix' solutions might sound like a good idea, but the weight often comes back. For many people, stopping weight gain can be the first step to better health.

Looking at changes in what we eat, physical activity, sleep, and stress levels can have a big impact on our health and well-being whether we lose weight or not. Our 'best weight' is the one we can maintain while living the healthiest lifestyle that we can enjoy.

Here are some suggestions that can help you get started on the path to your best weight.

- What is your vision of a healthy life for you? Examples: having more energy, improving self-esteem, or improving health
  Use your vision to help guide and motivate you.
- Remember that many causes of weight gain may not have been within your control. Influence what you can.
- Aim to eat regular meals similar to suggestions starting on page 14.
- When making change, start with a small plan. Success with a small plan can encourage you to keep going (see page 43).
- Practice mindful eating. Do you take time to stop, taste, and enjoy the foods you are eating? Do you listen to your body, eat when you are hungry, and know when you are full?
- Are you using food as a way to cope with problems and stressful times? Do you eat when you are upset, bored, or tired? When you do decide to treat yourself with food, do to you enjoy it or feel guilty and then overeat? Paying more attention to why you eat can help you make changes.
- Keep track of the foods you eat. Use a notebook or app to keep track of everything you eat and drink, time, reason for eating, and how you are feeling. Bring this information with you to discuss with your diabetes healthcare team.
- Learn how stress affects your eating habits and explore ways you can manage it.
- Sleep is important. Talk to your doctor if you are having trouble sleeping.
- Include activities that you want to do.
- Look for a weight management program that includes behaviour change support, healthy eating, and encourages enjoyable activities.
- Talk to a dietitian at your Diabetes Health Centre or call HealthLinkBC at 8-1-1 (Monday to Friday days) for more resources.

Your doctor might suggest a diabetes medication that can also help maintain weight.

Physical Activity

The information in this booklet provides general suggestions about physical activity. It is very important for you to talk to your doctor or diabetes healthcare team to create an activity plan that is safe for you. For most people, simply going for a walk is a good way to safely increase physical activity.

Keep these important notes in mind:

- Talk to your doctor if you have not been active or you plan to increase the intensity of your exercise program.
- Some medications (see page 30) and insulin might increase your risk of hypoglycemia. Carry a fast-acting sugar (carbohydrate) such as glucose tablets with you in case you develop signs of hypoglycemia.
- Carry diabetes identification (see page 36).

Stop exercising right away if you:

- have chest pain, shortness of breath, or rapid heartbeat
- feel faint, dizzy, nauseated, or sick to your stomach
- have any signs of hypoglycemia (see page 10)
- have any unusual pain

Physical activity is an important part of staying healthy with diabetes!

Regular physical activity provides many benefits for people with diabetes. When you are more physically active you can:

- lower blood sugar
- improve insulin sensitivity (might need less medication)
- improve circulation
- increase physical strength
- strengthen your immune system
- reduce risk of falls and injuries
- reduce risk of heart disease
- lower blood pressure
- lower cholesterol
- improve sleep
- improve mood and brain function
- reduce tension and stress
- lose weight

Activity ideas to talk with your doctor or diabetes healthcare team about:

- walking, mall walking, running
- swimming
- aqua size
- cycling
- joining a fitness centre
- dancing
- chair exercises

Getting Started

- Talk to an exercise specialist who can also advise you about how to get started and maintain an exercise program. See page 50 for physical activity resources.
- Test your blood sugar before and after to see what effect exercise has.
- Avoid vigorous exercise within 1 hour of a large meal.
- Aim for 30 to 60 minutes of activity at a regular pace (when just starting your exercise plan, start with 5 to 10 minutes twice a day working up to 30 or more minutes).
- Stick to activities that you have been told are safe and suit your abilities.
- Set aside a specific time each day for physical activity. Mark it in your calendar like you do for other plans and appointments.

Planning Tips For Exercise

An exercise session includes warm-up, aerobic training, cool-down, and stretching. Aerobic activities are brisk walking, biking, continuous swimming, dancing, and exercise classes.

1. **Warm-up:** 5 to 10 minutes of light to moderate intensity aerobic activity
2. **Aerobic:** Minimum of 150 minutes of aerobic exercise at moderate intensity each week, spread over at least 3 days of the week, with no more than 2 days without exercise
3. **Cool-down:** 5 to 10 minutes of light to moderate intensity aerobic activity
4. **Stretching:** 10 minutes or more of stretching exercises after warm-up or cool-down

Include **resistance training** using weights, resistance bands, or exercise machines. We recommend you see an exercise specialist or diabetes care provider before starting resistance training.

Tips for resistance training:

- Perform exercises for both the upper and lower body.
- Include 8 to 12 different exercises.
- Start with 2 sets of 8 repetitions for each exercise.
- Increase to 3 sets 2 to 3 times a week.
- Gradually increase resistance or repetitions.

To learn more about physical activity, go online to Diabetes.ca. On the Menu, under Managing My Diabetes, look at Physical Activity under Tools & Resources.
Or scan this QR code to the resources

Diabetes Medications

Type 2 Diabetes Medications

Healthy eating, exercise, and weight loss (if needed) might be all you need to control your blood sugar in the early stages of type 2 diabetes.

If you are doing all that you can and your blood sugar remains above your target, you might also need to take type 2 medications.

There are many kinds of type 2 medications. You might take more than one kind. Your healthcare team works with you to choose the right medications for you. Some medications might help you lose or maintain your weight.

Glucophage®, Glumetza® (**metformin**)	• Take with food to decrease the risk of an upset stomach or diarrhea. • Decreases the amount of sugar made by your liver. Helps insulin work better. Decreases absorption of sugar in intestines.
Diabeta® (**glyburide**) Diamicron® (**gliclazide**) Gluconorm® (**repaglinide**) Amaryl® (**glimepiride**)	• Take with meals. • Helps you make insulin. **Caution: these pills increase your risk of hypoglycemia (low blood sugar).** • When you take these pills, carry a fast-acting carbohydrate in case you need to treat hypoglycemia suddenly.
Januvia® (**sitagliptin**) Onglyza® (**saxagliptin**) Trajenta® (**linagliptin**)	• Helps your pancreas make more insulin when you eat. Slows digestion in the stomach. Slows down the increases in blood sugar after eating. Decreases the amount of sugar made by your liver.
Invokana® (**canagliflozin**) Forxiga® (**dapagliflozin**) Jardiance® (**empagliflozin**)	• Helps to increase the amount of sugar that gets passed out of the body in urine. This might increase the chances of bladder infections and yeast infections.
Victoza® (**liraglutide**) Byetta® (**exenatide**) Trulicity® (**dulaglutide**) Bydueon® (**exenatide**) Ozempic® (**semaglutide**) Adlyxin® (**lixisenatide**)	• Taken by injection. • Helps your pancreas make more insulin when you eat. Slows digestion in the stomach. Slows down the increases in blood sugar after eating. Decreases the amount of sugar made by your liver. Reduces appetite. • These medications might help you lose some weight.
Glucobay® (**acarbose**)	• Helps slow down the digestion of starches and some sugars so that sugar enters your blood more slowly.
Avandia® (**rosiglitazone**) Actos® (**pioglitazone**)	• Improves the way sugar moves into your cells. • These medications should not be used with insulin.

Points to remember

- Carry a list of all medications you are taking with you at all times. Include the name of the medication, how often you take it, and the amount you take.
- Take your medication as ordered by your doctor. Do not miss or delay meals, even if you are busy.
- **Tell your doctor if you:**
  - start having hypoglycemia (low blood sugar)
  - get an upset stomach or diarrhea
  - get a skin rash
  - are planning a pregnancy
  - want to drink alcohol (alcohol increases the risk of low blood sugar)

  Your dose of type 2 medication might need to be changed depending on your blood sugar levels.
- See your doctor regularly. You need to see your doctor more often if you are having difficulty keeping your blood sugar in the target range.

Insulin

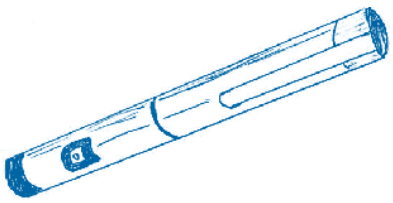
If you have type 1 diabetes, you must take insulin every day.

If you have type 2 diabetes, you might need to take insulin to help you keep your blood sugar at target. You might need insulin:

- as well as your type 2 medications
- instead of type 2 medications
- temporarily while you are sick, stressed, pregnant or having medical problems or surgery

There are many types of insulin. Insulin is given by injection (syringe, pen or pump). Your diabetes healthcare team will:

- help determine the type(s) best for you
- spend time teaching you how to use insulin



Sick Day Management

A bad cold, the flu, having surgery, or a serious injury can change your blood sugar levels. During an illness, blood sugar can increase and people who don't usually take insulin might need to take insulin when they are sick. On the other hand, when a person is taking diabetes medication (pills and/or injections) and cannot eat their usual foods, blood sugar might go too low.

Follow these guidelines to help you stay out of hospital. Talk to your healthcare team about a plan for managing sick days before you are sick.

Type 1 Diabetes
Sick Day Management

Be prepared before you get sick

- Ask your doctor for sick day insulin guidelines or have your diabetes educator review the handout *Type 1 Diabetes: Sick Day Management and Insulin Guidelines.*
- Ask your pharmacist how you can test for 'ketones' if you do become sick.
- Make a plan with your doctor if you are taking these medicines (you might need to stop taking them):
  - blood pressure pills
  - water pills [diuretics, hydrochlorothiazide, furosemide (Lasix)]
  - non-steroidal anti-inflammatory drugs such as ibuprofen, naproxen, diclofenac, and some cold medicines

When you get sick

- Continue to take your regular (basal) insulin even if you are not eating your normal meals. Your need for rapid-acting insulin might change when you are sick. Talk to your doctor or refer to the handout *Type 1 Diabetes: Sick Day Management and Insulin Guidelines.* Your doctor might need to adjust your plan for rapid-acting insulin.
- Drink at least 8 to 10 cups (2 litres) of fluids in 24 hours. Choose sugar-free fluids such as water, weak or caffeine-free tea, and pop.
- If you cannot drink enough fluid to keep hydrated or you have a lot of vomiting or diarrhea, **stop** taking the medicines your doctor told you to.
- Continue to follow your meal plan. If you are unable to eat your usual foods, try to follow the **Foods for Sick Days** ideas in the next section, page 35.
- Test your blood sugar and ketones every 4 hours. (See the handout *Type 1 Diabetes: Sick Day Management and Insulin Guidelines*).

When to get help

See your doctor today or go to Emergency for help if any of the following occurs:

- Your blood sugar is greater than 14.0 mmol/L before meals or bedtime on 2 tests in a row and your urine ketones are moderate to large or blood ketones are 1.5 mmol/L or higher.
- You are unable to eat or drink due to vomiting for longer than 24 hours.
- You have diarrhea lasting longer than 24 hours.
- You can't keep your blood sugar above 4.0 mmol/L.
- You have symptoms of diabetic ketoacidosis (DKA) – see below.

What can happen when your blood sugar is high?

High blood sugar on 2 tests (4 hours apart) can quickly become a life-threatening condition called **diabetic ketoacidosis** (DKA).

If you do not have enough insulin, your body cannot use sugar for energy and your body burns fat instead. Burning fat makes ketones. Ketones are toxic to your body.

DKA must be treated immediately!
Failure to do so could lead to shock, coma, and death.

What to watch for

Signs of Diabetic Ketoacidosis (DKA)

- Increased thirst
- Urinate (go pee) often or much less than usual
- Weakness
- Feel like throwing up (nausea)
- Throwing up (vomiting)
- Stomach (abdominal) pain
- Trouble breathing (air hunger)
- Confusion

Type 2 Diabetes
Sick Day Management

Be prepared before you get sick

- Make a plan with your healthcare team so you know what medications you should stop taking if you cannot eat, are to have surgery, or have a lot of vomiting or diarrhea.
- If you cannot drink enough fluid to keep hydrated or you have a lot of vomiting or diarrhea, you should **stop** taking certain medicines.
  Check with your doctor if you are taking:
  - blood pressure pills
  - water pills [diuretics, hydrochlorothiazide, furosemide (Lasix)]
  - some diabetes medications such as metformin, glyburide, gliclazide, canagliflozin, dapagliflozin, and empagliflozin
  - non-steroidal anti-inflammatory drugs such as ibuprofen, naproxen, diclofenac, and some cold medicines

When you get sick

- If you are taking insulin, your needs for insulin might change when very ill. Sometimes you need more and sometimes you need less, depending on what you are able to eat.

  Continue to take your regular (basal) insulin.

  Contact your doctor if:
  - your blood sugar levels are too high or too low, and/or
  - you are taking rapid-acting insulin
- Drink at least 8 to 10 cups (2 litres) of fluids in 24 hours. Choose sugar-free fluids such as water, weak or caffeine-free tea, and pop.
- Continue to follow your meal plan. If you are unable to eat your usual foods, try to follow the **Foods for Sick Days** ideas in the next section, page 35.
- If you test your blood sugar, test 4 times each day (before meals and before bed).

When to get help

See your doctor today or go to Emergency for help if one of the following occurs:

- You are cannot eat or drink because you have been vomiting for more than 24 hours.
- You have diarrhea lasting longer than 24 hours.
- Your blood sugar is greater than 20.0 mmol/L for more than 8 hours.
- You can't keep your blood sugar above 4.0 mmol/L.

What might happen when your blood sugar is high?

You might become dehydrated.

When you are ill, particularly if you become dehydrated (for example, with vomiting or diarrhea), some medicines could cause your kidney function to worsen or result in side effects such as low blood sugar levels.

Dehydration can cause your blood sugar to increase, and might lead to shock and coma.

Foods for Sick Days

- Drink plenty of fluids such as water, soup broth, sugar-free and caffeine-free tea, sugar-free and caffeine-free pop, or Crystal light®.
- Try to drink 8 to 10 cups of fluid a day.
- Continue to eat your usual foods as much as possible.
  If you are not able to eat your usual foods, have one of the following every 1 to 2 hours, even if your blood sugar is high.
  - ½ cup (125 mL) fruit juice
  - 1 cup (250 mL) Gatorade®
  - 1 twin popsicle
  - 1 cup (250 mL) cream soup
  - 6 soda crackers
  - ½ cup (125 mL) applesauce
  - 1 cup (250 mL) milk or yogurt
  - ½ cup (125 mL) regular pop (not sugar-free)
  - ½ cup (125 mL) regular Jell-O®
  - ½ cup (125 mL) ice cream, custard or pudding
  - 1 slice toast with margarine/butter/jam
  - ½ cup (125 mL) milk shake or liquid meal replacement

Each of these servings contains about 15 grams of carbohydrate.

Diabetes Identification

Healthcare providers need to know immediately if you have diabetes. It is important that you wear a medical ID such as a bracelet or a necklace at all times in case you are unable to speak or get confused in an emergency situation.

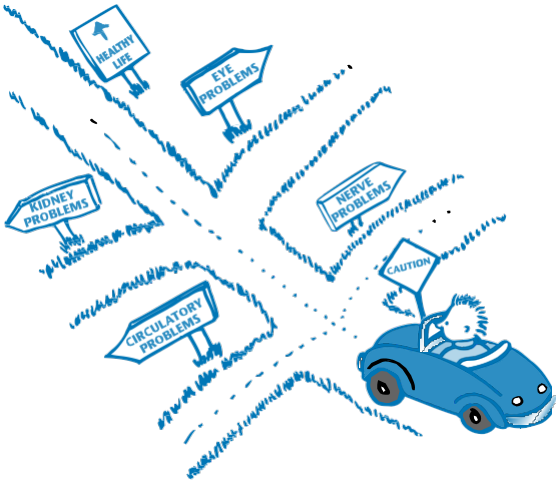
MedicAlert® is one of the best known emergency health information providers. When you register with MedicAlert®, they send you an ID bracelet or necklace that tells others that you have diabetes. Your health information is also available by phone to emergency healthcare providers 24 hours a day from anywhere in the world.

Call: 1-800-668-1507 (toll free) or register online at www.medicalert.ca

Scan QR Code to Resource

Complications

Having diabetes increases the chances of you having long-term complications involving your blood vessels and nerves. This includes heart attack, stroke, and amputation.



Risk factors often seen in people with diabetes are high blood pressure, high blood sugar, and abnormal blood fats. These cause damage to your blood vessels and nerves over time. Regular exercise, heart healthy eating (page 23), not smoking, and taking your medications help you avoid these complications.

High Blood Sugar (Hyperglycemia)

In this booklet, we have reviewed many ways to get your blood sugar levels to target.

Talk with your diabetes healthcare team about how you want to get started and how they can help you make an action plan.

High Blood Pressure (Hypertension)

High blood pressure can damage your blood vessel which leads to eye, kidney, and circulation problems.

Get your blood pressure checked regularly. Try to keep your blood pressure below 130/80 or the target suggested by your doctor. See page 25 for lifestyle changes to help blood pressure. Many people also need to take medications to lower blood pressure.

Blood Fats (Lipids)

Blood fats should be checked every year because they can increase the chances of blocked blood vessels. This might include checking your total cholesterol, LDL-cholesterol (bad), HDL-cholesterol (good), non-HDL cholesterol, apo-B, and triglycerides. High levels of LDL-cholesterol and triglycerides, and low levels of HDL-cholesterol are common in people with diabetes.

If you cannot achieve your blood fat targets with physical activity and heart healthy eating, talk to your doctor about medication.

Smoking

Quitting smoking is one of the best ways to lower your risk of complications. It is also very hard to do. There are many resources that can help.

Talk to your diabetes healthcare team about what help is out there for you.

One great resource is the QuitNow program. This free program is available by phone or online. You can talk with others who are also quitting, create your own plan, track how you are doing and get expert help. Visit www.quitnow.ca or call HealthLinkBC at 8-1-1.

Remember
The things that help to delay or prevent diabetes complications are the same things that promote a long, active, and enjoyable life!

Heart Disease and Stroke

People with diabetes are at very high risk of heart disease and stroke. If a blood vessel becomes blocked in the heart, it might cause a heart attack. If a vessel is blocked in the brain, it might cause a stroke. If this happens in the heart, it is called cardiovascular disease (CVD) and if it happens in the brain it is called a cerebrovascular accident (CVA). Being overweight (especially around the stomach) and low levels of exercise are also risk factors. People who smoke or have a family history of heart disease or stroke are at even higher risk.

Eye Problems (Retinopathy)

The tissue that lines the inside of your eye is called the retina. Over time, high blood sugar can damage the tiny blood vessels in the retina. If this is left untreated, it might cause vision loss. People with diabetes are more likely to develop cataracts at a younger age or to develop glaucoma.

It is important to have your eyes checked by an eye doctor (ophthalmologist or optometrist) every 1 to 2 years.

Kidney Problems (Nephropathy)

High blood pressure and high sugar levels can cause damage to the kidneys. Your kidneys contain over a million tiny filters called nephrons. These nephrons filter your blood, keeping the useable products in (protein) and removing the waste products (creatinine). If these filters are damaged, they do not filter properly. Kidney damage is detected by finding protein in the urine and measuring creatinine in the blood. In the early stages of kidney disease, most people will not have any symptoms.

You need to have a urine test for protein (uACR) and blood test for creatinine levels (eGFR) at least once each year to check your kidney function.

Nerve Damage (Neuropathy)

Over time, high blood sugar levels can damage the nerves in your hands and feet, as well as nerves that affect your blood pressure and digestion. Signs of neuropathy are often first detected in the feet. The first signs might be numbness, tingling, or a burning sensation. If you are unable to feel light touch, pain or heat, then damage or injury might not be noticed. Severe burns or ulcers can occur without any pain and infection can quickly follow.

See your doctor if you have numbness, tingling or burning in your feet. You should have your feet checked for sensation at least once a year.

Sexual Problems

Diabetes might affect sexual health in both men and women because of physical and emotional concerns.

Men might experience erectile dysfunction (ED) where they are unable to maintain an erection. ED affects approximately 34 to 45% of men with diabetes. Erectile dysfunction can also be a side effect of some medications.

Women with diabetes experience a higher rate of sexual problems than women without diabetes because the tissue and nerve supply of a woman's sexual organs might be affected by high blood sugar levels in much the same way a man's sexual organs are affected.

Sexual problems such as these are real medical problems and should be discussed with your doctor or diabetes healthcare team. There are a number of treatments available and changes can be made to your medications.

Caring For Your Feet

Foot care is an important part of diabetes management. High blood sugar can damage the nerves and blood vessels in your feet.

Symptoms of nerve damage

- loss of feeling
- numbness
- burning, or pain in feet or legs
- tingling
- trouble with balance

Symptoms of blood flow problems

- cold feet
- leg and calf pain when walking, at night or at rest
- changes in skin color
- sores that don't heal
- dry cracked skin

You can prevent serious foot problems by taking care of your feet.

DO...

- ✓ Check your feet every day for cuts, cracks, bruises, blisters, sores, infections, or unusual markings. Use a mirror (if you need to) to look at the bottom of your feet.
- ✓ See your doctor or go to emergency that day if you have signs of infection such as pain, redness, swelling, or oozing pus.
- ✓ See your doctor within a few days at the first sign of any other problems.
- ✓ Wash your feet with soap and water daily, especially between toes and dry them well.
- ✓ Put cream or lotion on your heels and soles every day, but never between your toes.
- ✓ Change your socks every day and wear a good supportive shoe.
- ✓ Trim your nails straight across.
- ✓ See a foot care specialist if you need advice or treatment including orthotics.
- ✓ Clean cuts or scratches with mild soap and water, cover with a bandage for sensitive skin.

- ✓ Buy shoes in the afternoon (feet swell slightly by then). Choose heels under 2 inches.
- ✓ Keep your feet warm. Avoid extreme cold and heat. Keep your feet out of direct sunlight.
- ✓ Follow your physical activity plan to improve the blood flow to your feet and legs.
- ✓ Keep your blood sugar in target levels.

DON'T...

- × **Don't** smoke.
- × **Don't** cut your own corns or calluses or use products to treat corns or warts. They are dangerous for people with diabetes.
- × **Don't** treat your own in-grown toenails with a razor or scissors.
- × **Don't** apply heat to your feet with a hot water bottle or electric blanket. These products can burn your feet without you realizing it.
- × **Don't** put cream or lotion between your toes.
- × **Don't** take very hot baths or soak your feet in hot water.
- × **Don't** walk barefoot inside or outside.
- × **Don't** wear tight socks, garters or elastics, or knee highs.
- × **Don't** wear tight shoes. You should be able to wiggle your toes in proper fitting shoes.
- × **Don't** wear high heels that squish your toes.
- × **Don't** sit for long periods. Get up and walk at least once every hour during the day.

Remember to inspect your feet each day.

See your doctor within 2 days if you notice anything of concern.

Diabetes and Driving

Diabetes can affect a person's ability to drive safely. Insulin and some types of medication used to treat diabetes can cause low blood sugar, which might result in a sudden loss of consciousness (fainting) or changes in consciousness.

You must monitor your own fitness to drive and take action if needed.

If you are at risk of low blood sugar, always carry sugar (glucose) tablets with you and know how to treat hypoglycemia (see page 10). Insulin and pills such as glyburide and gliclazide put you at risk of low blood sugar.

- Each time you are planning to drive, check your blood sugar level first.
- If your blood sugar is less than 4.0 mmol/L or if you have any signs of low blood sugar (hypoglycemia), **do not drive!**
  Treat your low blood sugar first. You must wait at least 45 minutes after you treat hypoglycemia before you drive.
- If your blood sugar is 4.0 to 5.0 mmol/L, eat a snack containing carbohydrate before you start to drive.

Be 5 to Drive

Do not drive if your blood sugar level is less than 5.0 mmol/L after having a low blood sugar episode!

- Your blood sugar needs to be 6.0 mmol/L or higher if you:
  - are a professional driver
  - have had low blood sugar with no symptoms
  - have had severe hypoglycemia in the past

Scan QR Code to Resource

For more information, check RoadSafetyBC www.gov.bc.ca/roadsafetybc
1-855-387-7747 or email RoadSafetyBC@gov.bc.ca

Note: When you renew your driver's license, you must disclose on the form that you have diabetes.
If you go on medication that can cause low blood sugar (such as insulin, glyburide, or gliclazide), you must report this right away.
Don't wait until renewal.

Making Lifestyle Changes

Changing behaviour is difficult for most people.

If you are ready to make a change, it is important to decide on a realistic goal that is important to you, and then make plans that break down what you need to do into small steps.

If you have committed to a long-term goal such as lowering your blood sugar in the next 6 months, the next step is to make an action plan. This might be to start walking for 15 minutes Monday, Wednesday, and Friday after dinner or it might mean eating breakfast every day. You will be more successful achieving your long-term goal if you commit to small steps that you keep track of daily and review weekly.

Example of a Goal and Action Plan

My Goal: Lower my blood sugar to 10 mmol/L after dinner within 3 months.

My Action Plan:

- **What?** Walk
- **When?** After dinner, Monday, Wednesday, Friday
- **Where?** At the nearby park
- **How long?** 15 minutes

Rate my confidence: On a scale of 0 to 10, rate how sure you are that you will have success with your action plan. If your confidence is less than 7 out of 10, you need to change your action plan to increase your chance of success.

My Barriers: List the things that might get in the way of your action plan; for example, you might be too busy or it might be too dark after dinner in the winter.

My Solution: Write down things you can do to make sure you can achieve your goal in spite of barriers.
For example: *I will not make other plans until after 7 p.m. so I will have time to walk. In the winter months, I will walk during lunch hour.*

To increase your success with your goals and action plans, talk to your diabetes healthcare team to learn more about resources, such as:

Diabetes or Chronic Disease Self-Management Program
(You can also call directly at 1-866-902-3767, or
check their website: www.selfmanagementbc.ca)

Scan QR Code
to Resource

Travel Tips

See your doctor or diabetes educator

- Arrange to see your doctor or diabetes educator 4 to 6 weeks before your trip.
- Get a letter stating your full legal name, that you have diabetes, describing your treatment, and the medications and supplies you need (lancets, syringes, pens, pumps).
- Discuss treating minor illness while away (anti-nausea/anti-diarrhea medications).
- Get your required vaccinations at least 4 weeks before your trip.
- Wear a MedicAlert® bracelet or necklace, especially if you are at risk of hypoglycemia (see page 36).

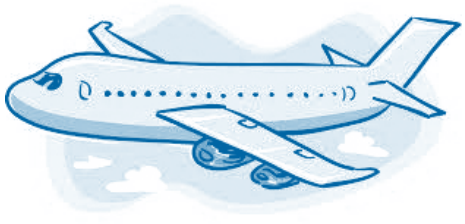
Be prepared for emergencies

- Buy travel insurance and be sure to let them know you have diabetes.
- Carry extra medications and supplies (2 times as much as you think you need) in case of lost baggage or other accident.

Scan QR Code to Resource

- Know where to access resources in your language in case you need medical care or medications.
  You can get a list of English-speaking doctors through the International Association for Medical Assistance to Travelers at www.iamat.org
- Know the generic names of any medications you use.
- Carry a local language phrase book so you can get help such as, 'I need juice', 'I need a doctor'

At the airport



- Before you go through airport screening, let them know you are carrying diabetes supplies.
- Carry all your diabetes supplies in 1 bag for easier inspection.
- Have all medications in their original containers, with labels showing your name as it appears on your passport.

When driving

- Check local laws for blood sugar levels and driving for people with diabetes.
- Check your blood sugar regularly (at the start of the trip and then every 4 hours).
- Make sure you are taking breaks to stretch and eat.
- Treat hypoglycemia at first sign.
  Don't drive until your blood sugar level is at least 5 mmol/L or more (or what the local limit is) and all signs of hypoglycemia are gone. This could take 45 to 60 minutes.

If you use insulin

- Do not put insulin in checked baggage. It can freeze in the cargo hold.
- Keep your insulin in its safe temperature range. You might need cooler bags and ice, or to carry it in an inside jacket pocket.
- Inspect insulin before using. If it looks any different than usual (different colour, anything floating in the vial or cartridge), throw it away.

Adapted from Travelling with Diabetes, Diabetes Canada

Staying Healthy Reminders

Promoting a Healthy Lifestyle	Your Target
Healthy Eating	As recommended
Physical Activity	Moderate intensity exercise at least 150 min per week as recommended (see page 28)
Foot Care	Daily
Stress	Manage appropriately
Smoking	Quit
Taking Medications	Take as prescribed
Monitoring the Effects of Your Lifestyle*	
Blood Pressure	Less than 130/80
Healthy Weight	Body Mass Index (BMI) less than 25
Waist Circumference	Men: less than 40 inches (102 cm) Women: less than 35 inches (88 cm)
Blood Sugar Testing	As recommended (see page 8)
Regular Examinations	
Visits to Doctor	As recommended
Visit to Diabetes Education Centre	As recommended
Dental Examination (Dentist)	Every 6 to 12 months
Foot Examination (Doctor)	At least every year
Dilated Eye Examination (Ophthalmologist/Optometrist)	Every 1 to 2 years
Regular Laboratory Testing*	
A1C	7% or less (or as advised) Check every 3 months
Lipid Targets (Cholesterol)	Check every year
LDL - Cholesterol	Less than 2.0 mmol/L
Other Lipids: Non-HDL - Cholesterol Apo-B Triglycerides	Less than 2.6 mmol/L Less than 0.8 grams/L Less than 1.5 mmol/L (suggested)
Kidney Function eGFR Urine Albumin/Creatinine Ratio (ACR)	Check every year More than 60 mL/min 2.0 mg/mmol or less
Check Meter Accuracy	Fasting blood sugar in laboratory (once a year) Meter to laboratory comparison: within 15%
Electrocardiogram (ECG)	Talk with your doctor
Vaccinations	
Flu shot	Every year
Pneumonia	Talk with your doctor

*Talk to your doctor about your blood pressure, healthy weight, waist circumference, and laboratory tests. Your targets might be different.

Conclusion

This booklet provides an overview of ways for people with type 1 and type 2 diabetes to stay healthy. There's a lot to learn!

No one expects you to learn it all at once, and there are people to help you.

If you have questions talk to your doctor, or other diabetes healthcare team members; or call Diabetes Canada (see page 1).

Involve your family and friends too. The more they learn about diabetes, the more they can help and support you.

Listed on the following pages are books and websites where you can find more information.

Resources

Books

1. Brand-Miller, J et al. **The New Glucose Revolution for Diabetes.** Marlowe & Co., 2007.
2. Graham, Karen. **Canada's Complete Diabetes Guide for Type 2 Diabetes.** Robert Rose, 2013
3. Lorig, Kate. **Living a Healthy Life with Chronic Conditions, Canadian Edition, 4rd Edition.** Bull Publishing, 2013.
4. Rubin, A. & Blumer, I. **Diabetes for Canadians for Dummies.** John Wiley and Sons, 2013.
5. Walsh, John, et al. **Using Insulin: Everything You Need for Success with Insulin.** Torrey Pines Press, 2003.
6. Walsh, John, Roberts, Ruth. **Pumping Insulin.** Torrey Pines Press, 2012.

Cookbooks

1. Burkhand, Johanna & Allan, Barbara. **Diabetes Prevention and Management Cookbook.** Robert Rose, 2013.
2. Finlayson, Judith. **Canadian Diabetes Slow Cooker Recipes.** Robert Rose, 2007.
3. Graham, Karen. **Canada's Diabetes Meals for Good Health.** Robert Rose, 2012.
4. Hollands, Marjorie & Howard, Margaret. **Choice Menus (New Edition): Low Sodium Version.** Harper Collins Canada, 2012.
5. Hollands, Marjorie & Howard, Margaret. **Choice Menus: Cooking for One or Two** (2nd ed.). Harper Collins Canada, 2011.
6. Kalina, Laura & Christian, Cheryl. **Low-Glycemic Meals in Minutes**. True Health Global Publishing, 2011.
7. Lindsay, Anne. **Lighthearted at Home: The Very Best of Anne Lindsay**, John Wiley & Sons, 2012.
8. Podleski, Greta. **Yum & Yummer: Ridiculously Tasty Recipes That'll Blow Your mind, But Not your Diet!** Granet Publishing, 2017.
9. Van Rosendaal, Julie & Duncan, Sue. **Spilling the Beans: Cooking and Baking with Beans Everyday.** Whitecap Books, 2011.
10. Zeiler, Sharon. **Canada's 250 Essential Diabetes Recipes.** Robert Rose, 2011.

Physical Activity Resources

1. Act Now BC. **Move for Life.** DVD
   Easy to do, stay healthy activities for older adults.
   Available from B.C. public libraries or call 8-1-1
   seniorsbc.ca - Select ‘Healthy Aging’, then ‘Physical Activity’

2. Diabetes Canada. **Physical Activity and Diabetes.**
   Includes information on how to get started with physical activity and exercise, both aerobic and resistance exercises.
   diabetes.ca – Select ‘Managing my diabetes’ from the Menu (top left), then ‘Tools & Resources’, check off the ‘Physical Activity’ category.

3. Hayes, Charlotte. **The “I Hate To Exercise” Book for People With Diabetes.**
   McGraw Hill, 2013.

4. Self-Management BC. **Health Coach Program.**
   Coaches use telephone-based coaching program to support people living with chronic conditions. www.selfmanagementbc.ca/healthcoachprogram

5. HealthLinkBC. **Physical Activity Services**
   Free phone and online resource.
   - Call 8-1-1 to speak to a qualified exercise professional, Monday to Friday, 9:00 am to 5:00 pm.
   - healthlinkbc.ca/physical-activity

Stress, Sleep, Mental Health Resources

1. **Canadian Sleep Society:** css-scs.ca
2. **National Sleep Foundation**: sleepfoundation.org
   Search ’How much sleep do we really need?’
3. **Canadian Mental Health Association:** cmha.ca
4. **Bounce Back**: bouncebackbc.ca
   Free skill building program online and/or over the phone to help people manage mood, mild to moderate depression, anxiety, stress, or worry
5. **Heart and Stroke Canada:** heartandstroke.ca
   Select ‘Get Healthy’ then ‘Reduce Stress’

Nutrition Resources, Recipes and Menus

1. **Canada's Food Guide:** food-guide.canada.ca (recipes, cooking and more)
2. **Diabetes Canada:** diabetes.ca/diabetes-and-you/recipes
3. **Canadian Nutrient File:** food-nutrition.canada.ca/cnf-fce
4. **Dietitians of Canada:**
   cookspiration.com (app available)
   unlockfood.ca
5. **FatSecret Canada - Calorie Counter and Diet:** Tracker for Weight Loss
   fatsecret.ca (a good resource for South Asian foods)
6. Health Canada. **Nutrient Value of Common Foods (2008)** (download booklet)
   canada.ca/en/health-canada/services/food-nutrition/healthy-eating/nutrient-data/nutrient-value-some-common-foods-booklet
   Follow this pathway to the resource or scan the QR code:
   Canada.ca > Health > Food and nutrition > Nutrition science and research > Nutrient Data > Nutrient Value of Some Commons Foods (NVCCF) booklet
7. **Calorie King (USA):** calorieking.com

Organizations

1. **Diabetes Canada:** diabetes.ca

   Pacific Area Office, #360-1385 West 8th Ave., Vancouver, B.C. V6H 3V9
   Phone: 604-732-1331 Toll free in BC: 1-800-665-6526

   National E-mail: info@diabetes.ca

   National Information Line: 1-800-BANTING (800-226-8464)

2. **HealthLinkBC**: healthlinkbc.ca

   Phone: 8-1-1 for non-emergency health issues and advice from registered nurses, dietitians, pharmacists and exercise professionals.
   Email available for registered dietitians, exercise professionals

3. **Juvenile Diabetes Research Foundation:** www.jdrf.ca
   Vancouver Chapter, 150-6450 Roberts Street, Burnaby, B.C. V4G 4E1
   Phone: 604-320-1937 (resource for Type 1 diabetes)

4. **American Diabetes Association:** diabetes.org

   Register for email news
   Information Line: 1-800-DIABETES (800-342-2383)

5. **Joslin Diabetes Centre** (U.S.A.)**:** joslin.org

6. **Heart & Stroke Foundation of Canada:** heartandstroke.ca

   BC & Yukon #200 – 885 Dunsmuir Street, Vancouver, B.C. V6C 1N5
   Information Line: 778-372-8052

7. **Quit Now:** quitnow.ca

   Join for Live Chat online
   Quit Coach: 1-877-455-2233

References

American College of Sports Medicine. ACSM's Guidelines for Exercise Testing and Prescription (9th edition). Lippincott Williams & Wilkins, 2013.

Anderson, Todd, et al. 2016 Canadian Cardiovascular Society Guidelines for the Management of Dyslipidemia for the Prevention of Cardiovascular Disease in the Adult. Canadian Journal of Cardiology, 2016. www.onlinecjc.ca/article/S0828-282X(16)30732-2/pdf

Canadian Diabetes Association. Beyond the Basics: Lifestyle Choices for Diabetes Prevention and Management. Travelling with Diabetes – Trains, Planes, Automobiles, Canadian Diabetes Assoc. 2007, 29-32.

The Canadian Centre on Substance Abuse. Canada's Low-Risk Alcohol Drinking Guidelines. www.ccsa.ca/canadas-low-risk-alcohol-drinking-guidelines-brochure

Diabetes Canada. Clinical Decision Support Tools, 2018. guidelines.diabetes.ca/

Diabetes Canada. 2018 Clinical Practice Guidelines for the Prevention and Management of Diabetes in Canada. guidelines.diabetes.ca/cpg

Durstine, J. Larry et al. ACSM's Exercise Management for Persons with Chronic Diseases and Disabilities (3rd edition). Lippincott Williams & Wilkins, 2009.

Houlden, Robyn, et al. Diabetes and Driving. Canadian Journal of Diabetes, 2018. 42, S150-S153. guidelines.diabetes.ca/docs/cpg/Ch21-Diabetes-and-Driving.pdf

Hypertension Canada. 2018 Guidelines for Diagnosis, Risk Assessment, Prevention, and Treatment of Hypertension in Adults and Children. guidelines.hypertension.ca/chep-resources/

Government of B.C. Drivers with Diabetes, January 2016. www2.gov.bc.ca/gov/content/transportation/driving-and-cycling/driver-medical/driver-medical-fitness/drivers-with-epilepsy-or-diabetes

Government of Canada. Canada's Food Guide, 2019. food-guide.canada.ca/en/

Nathan, D. et al, Diabetes Care. Translating the A1C Assay Into Estimated Average Glucose Values. 31: 1473-1478, 2009.

Public Health Agency of Canada. Canada's Physical Activity Guide to Healthy Active Living. 2008. www.phac-aspc.gc.ca/hp-ps/hl-mvs/pa-ap/index-eng.php

Sick Day Management. Reviewed by Dr. Sara Stafford, MDCM, FRCPC, Fraser Health Division of Endocrinology, Fraser Health Authority.

My Notes

My Questions

www.fraserhealth.ca
www.providencehealthcare.org ♦ www.vch.ca

January 2020 FH Stores #392626 To order: patienteduc.fraserhealth.ca
PHC/VCH Catalogue #FL.800.ON1.PHC To order: phc.eduhealth.ca *or* vch.eduhealth.ca