



Diabetes occurs when your body cannot properly use and store food for energy. The fuel that your body needs is called glucose, a form of sugar. Glucose comes from foods that contain carbohydrate, such as fruit, milk, starchy foods, sugar, and some vegetables. In diabetes, the level of glucose in the blood becomes too high.

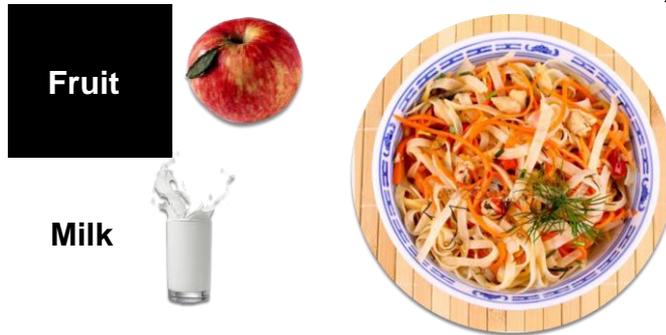
There are different types of diabetes. This chart shows how they are managed to control blood glucose (blood sugar).

| <b>Type of Diabetes</b>   | <b>How this type is managed</b>  |
|---|--|
| <b>Type 1 diabetes</b><br>The pancreas does not make insulin. Glucose builds up in your blood instead of being used for energy. | <ul style="list-style-type: none"><li>• healthy eating</li><li>• insulin</li><li>• physical activity</li></ul>                               |
| <b>Type 2 diabetes</b><br>The pancreas does not make enough insulin, or your body does not properly use the insulin it makes.   | <ul style="list-style-type: none"><li>• healthy eating</li><li>• physical activity</li><li>• pills or insulin (in some cases both)</li></ul> |
| <b>Pre-diabetes</b><br>Blood glucose levels are higher than normal, but are not yet high enough to be diagnosed as type 2.      | <ul style="list-style-type: none"><li>• healthy eating</li><li>• physical activity</li></ul>   |
| <b>Gestational diabetes</b><br>High blood glucose starts during pregnancy or first gets noticed at that point.                  | <ul style="list-style-type: none"><li>• healthy eating</li><li>• physical activity</li><li>• insulin may be used</li></ul>                   |

## Healthy Eating to Manage or Prevent Diabetes

**Vegetables**  
at least 2 kinds

**Grains and starches**  
potato, pasta, rice, corn, roti, chapati



**Meat and alternatives**  
fish, lean meat, chicken, dahl, beans

### Eat Healthy with Canada's Food Guide

Have at least 3 out of the 4 food groups from Canada's Food Guide at each meal:

- vegetables and fruit
- grain products
- milk and alternatives
- meat and alternatives

Choosing foods from all the food groups ensures that your body gets all the nutrients it needs to be healthy.

#### Eat more vegetables

Eat at least two different kinds of vegetables at each meal. They are high in nutrients and low in calories.

#### Include protein in your meals

Protein could include fish, chicken, lean meats, low-fat cheese, eggs, paneer, tofu or legumes such as beans and lentils.

### Eat three regular meals a day

Be sure to eat breakfast for a good start to the day. Eat three meals at regular times, four to six hours apart. Eating the right amount at the right time helps keep your blood glucose in balance.

If you will not be at home when it is time to eat, bring healthy foods with you. This provides you with healthy choices, wherever you go. Pack a sandwich. Carry some vegetables or fruit with you.

### Be careful with alcohol

Alcohol can affect blood glucose levels and cause you to gain weight. Talk to your health care team about whether you can drink alcohol and how much is safe.

### Watch out for sugar

The more sugar you eat or drink, the higher your blood glucose will be. If you are thirsty, drink water. Pop, fruit juice, and sweetened coffee or tea will all raise your blood glucose. Limit sweets such as desserts, candies, jam, and honey. To complete your meal, have milk or yogurt and a piece of fruit.

Artificial sweeteners can be safe in small amounts.

### Limit starches

It is very important to control portion sizes when you eat starchy foods, such as roti, chapti, breads, cereals, rice, noodles, pasta and potatoes. These foods break down into glucose.

### Make lower-fat choices

High-fat foods cause weight gain. A healthy weight is easier on the heart and helps to control blood glucose. Limit fried foods, samosas, pakoras, mithai and cookies.

Instead of frying foods in a lot of oil, it is healthier to bake, braise, steam, poach, or roast them. Another way is to stir-fry or sauté them in small amounts of oil.

- Use skim milk instead of 2% or whole milk.
- Choose lean ground beef.
- Trim off the fat on red meat and chicken.
- Use small amounts of added fat such as canola oil, olive oil, safflower oil and salad dressings.
- Eat cheese with 20% milk fat or less.
- Choose low-fat yogurt (2% milk fat or less).

### Get lots of fibre

High-fibre foods help you feel full. They also lower your blood glucose and cholesterol levels. Foods that are high in fibre include whole grain roti, chapati, breads and cereals, dahl, dried beans, brown basmati rice, brown long grain rice, vegetables, and fruits.

### How much should you eat in one meal?

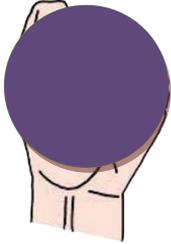
The right amount of food gives your body what it needs to be healthy. If you eat too much, your body will store the extra energy as fat and you will gain weight. Eat slowly. Stop when you feel full and satisfied.

Check the sample meal plans for healthy eating to see the right portion size for you. At home, use measuring cups to keep the amount of food you eat at the right size.

When you are eating away from home and cannot measure your portions, use this Handy Portion Guide. Your hands can be very useful in estimating the right amount of food to eat in one meal.

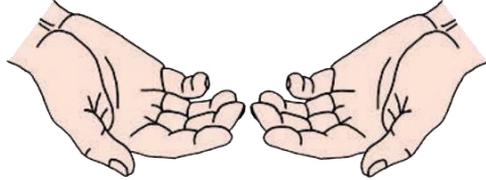


## Handy Portion Guide



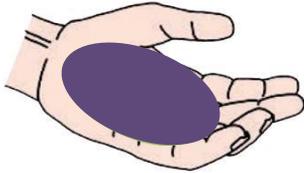
### Grains and starches/fruits

Choose an amount the size of your fist for fruit, grains and starches.



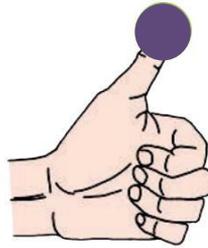
### Vegetables

Choose as much as you can hold in both hands.



### Meat and alternatives

Choose an amount the size of the palm of your hand and the thickness of your little finger.



### Fat

Limit fat to an amount the size of the tip of your thumb.

### Milk and alternatives

Drink 250 mL (8 oz) of low-fat milk or have  $\frac{3}{4}$  cup (175 mL) of yogurt with a meal.

### **Fruits/grains\* & starches\*:**

Choose an amount the size of your fist for each of the Fruits, Grains and Starches.

**Examples:** apple, potato, brown rice, brown basmati rice

### **Vegetables\*:**

Choose as much as you can hold in both hands. Choose brightly coloured vegetables.

**Examples:** spinach, broccoli, peppers

### **Meat & alternatives\*:**

Choose an amount up to the size of the palm of your hand and the thickness of your little finger.

**Examples:** dahl, dried beans, lean beef, poultry, fish

### **Fats\*:**

Limit fat to an amount the size of the tip of your thumb.

**Examples:** non-hydrogenated margarine, canola oil, safflower oil, olive oil

### **Milk & alternatives\*:**

Have 250 mL (8 oz) of low-fat milk or  $\frac{3}{4}$  cup (175 mL) of yogurt with a meal.

**Examples:** Low-fat yogurt, lassi, mattha, milk, and cheese

\* Food group names taken from *Beyond the Basics: Meal Planning for Healthy Eating, Diabetes Prevention and Management* © Canadian Diabetes Association, 2005.

Please refer to this resource for more details on meal planning.



## Sample meal plans

| For the northern culture   | For the southern culture  |
|--|---|
| <p><b>Breakfast:</b></p> <ul style="list-style-type: none"> <li>• 2 slices of whole grain bread</li> <li>• peanut butter (2 tbsp, 30 mL)</li> <li>• low-fat yogurt (<math>\frac{1}{3}</math> cup, 75 mL)</li> <li>• chai tea – no sugar (with low-fat milk <math>\frac{1}{2}</math> cup, 125 mL)</li> </ul>  | <p><b>Breakfast:</b></p> <ul style="list-style-type: none"> <li>• upma (<math>\frac{2}{3}</math> cup, 150 mL)</li> <li>• vegetable chutney (2 tbsp, 30 mL)</li> <li>• low-fat yogurt (<math>\frac{1}{3}</math> cup, 75 mL)</li> <li>• chai tea – no sugar (with low-fat milk <math>\frac{1}{2}</math> cup, 125 mL)</li> </ul>   |
| <p><b>Lunch:</b></p> <ul style="list-style-type: none"> <li>• 2 whole wheat chapati (6 inch, 15 cm each)</li> <li>• low-fat yogurt (<math>\frac{3}{4}</math> cup, 175 mL)</li> <li>• green salad (1 tsp, 5 mL low-calorie dressing)</li> <li>• sabji with low-fat paneer, no potato (<math>\frac{1}{4}</math> cup, 60 mL)</li> <li>• <math>\frac{1}{2}</math> medium mango</li> <li>• black coffee – no sugar</li> </ul> | <p><b>Lunch:</b></p> <ul style="list-style-type: none"> <li>• pongal (<math>\frac{3}{4}</math> cup, 175 mL)</li> <li>• vegetable chutney</li> <li>• lean chicken (2 oz, 60 g)</li> <li>• low-fat yogurt (<math>\frac{3}{4}</math> cup, 175 mL)</li> <li>• green salad</li> <li>• saag</li> <li>• 1 small banana</li> <li>• water</li> </ul>                               |
| <p><b>Dinner:</b></p> <ul style="list-style-type: none"> <li>• rice, basmati/brown (<math>\frac{2}{3}</math> cup, 150 mL)</li> <li>• dahl (<math>\frac{1}{2}</math> cup, 125 mL)</li> <li>• fish (1 oz, 30 g)</li> <li>• green salad</li> <li>• sabji, no potato</li> <li>• 1 medium orange</li> <li>• water</li> </ul>  | <p><b>Dinner:</b></p> <ul style="list-style-type: none"> <li>• 1 large potato or cooked noodles (<math>1\frac{1}{2}</math> cup, 375 mL)</li> <li>• vegetables</li> <li>• green salad with low-fat salad dressing</li> <li>• lean meat, chicken or fish (4 oz, 120 g)</li> <li>• 1 medium pear</li> <li>• low-fat milk (1 cup, 250 mL)</li> <li>• tea or coffee</li> </ul> |
| <p><b>Evening snack:</b></p> <ul style="list-style-type: none"> <li>• low-fat milk (1 cup, 250 mL)</li> </ul>  | <p><b>Evening snack:</b></p> <ul style="list-style-type: none"> <li>• low fat cheese (1 cup, 250 mL)</li> </ul>   |

## Learn more

Visit [diabetesgps.ca](http://diabetesgps.ca) for more recipes and sample menus from different cultures. See a registered dietitian for advice on making healthy food choices.

## Being Physically Active to Live Well with Diabetes

### Why be active?

Regular physical activity will improve your blood glucose control. You will also feel better in body and spirit.

The Canadian Diabetes Association's Clinical Practice Guidelines recommend at least 150 minutes of physical activity each week for adults between the ages of 18 and 64. This is the same recommendation that is made by the Public Health Agency of Canada.

You can break that down into 30 minutes of being active, five times a week. Build time for physical activity into your daily routine. Try to be active most days of the week.



### Try some resistance exercises:

Challenge your muscles three times a week. Examples of resistance exercise are:

- weight lifting
- push-ups
- sit-ups
- exercises using a giant elastic band called a resistance band

### Do some aerobic activity:

The Canadian Diabetes Association's Clinical Practice Guidelines recommend that your 30 minutes a day be moderate to vigorous aerobic activity.

Moderate aerobic activity makes you breathe harder and your heart beat faster. You should be able to talk, but not sing. Examples include walking quickly, skating, and bike riding.

Vigorous aerobic activity makes your heart rate increase quite a bit. You won't be able to say more than a few words without needing to catch your breath. Examples include running, basketball, soccer, and cross-country skiing.

### Get active with your family

Instead of watching TV or going to a movie, take a bike ride around the neighbourhood. Go swimming at the local pool. Challenge yourself by trying something new. For instance, learn to dance or do yoga.

An active lifestyle will help you manage your diabetes!

## Glossary of terms

- **Carbohydrate** is one of the three main nutrients found in the food. Starches, fruit, milk products, and some vegetables have carbohydrates. Your body needs carbohydrates for energy. Your body breaks them down into a sugar called glucose.
- **Cholesterol** is a fat substance that is naturally present in your blood and cells. There are two main types of cholesterol: LDL and HDL.  
  
LDL (low-density lipoprotein) is often called “bad” cholesterol because higher levels of LDL can increase the risk of heart disease.  
  
HDL (high-density lipoprotein) is often called “good” cholesterol because higher levels of HDL can reduce the risk of heart disease.
- **Glucose:** Is a building block of carbohydrate, which is one of the three main nutrients found in food. Through digestion, foods containing carbohydrate are broken down into glucose.
- **Insulin** is a hormone that is made by the pancreas to control the amount of glucose in the blood. In people who have diabetes, the pancreas does not make any or enough insulin, or is unable to effectively use the insulin it makes. As a result, glucose builds up in the bloodstream, potentially leading to health problems such as blindness, heart disease, kidney problems, amputation, nerve damage and erectile dysfunction.
- **The pancreas** is an organ that is part of the digestive system. It makes enzymes to break down foods. It also makes insulin, a hormone that controls the amount of glucose in blood. In people who have diabetes, the pancreas does not make any or enough insulin, or is unable to effectively use the insulin it makes.



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