Nutrition for People with Diabetes

BASIC MEAL PLANNING

Diabetes is a condition in which 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 such as fruit, milk, some vegetables, starchy foods and sugar. To control your blood glucose (sugar), you will need to eat healthy foods, be active and you may need to take pills and/or insulin.

In the following table, you will find some tips to help you until you see a registered dietitian.

Tips for Healthy Eating, Diabetes Prevention and Management	
Tips	**Reasons**
Eat three meals per day at regular times and space meals no more than six hours apart. You may benefit from a healthy snack.	Eating at regular times helps your body control blood glucose (sugar) levels.
Limit sugars and sweets such as sugar, regular pop, desserts, candies, jam and honey.	The more sugar you eat, the higher your blood glucose will be. Artificial sweeteners can be useful.
Limit the amount of high-fat food you eat such as fried foods, chips and pastries.	High-fat foods may cause you to gain weight. A healthy weight helps with blood glucose (sugar) control and is healthier for your heart.
Eat more high-fibre foods such as whole grain breads and cereals, lentils, dried beans and peas, brown rice, vegetables and fruits.	Foods high in fibre may help you feel full and may lower blood glucose (sugar) and cholesterol levels.
If you are thirsty, drink water.	Drinking regular pop and fruit juice will raise your blood glucose (sugar).
Add physical activity to your life.	Regular physical activity will improve your blood glucose (sugar) control.

Plan for healthy eating

Using a standard dinner plate, follow the Plate Method in the image below to control your portion sizes.
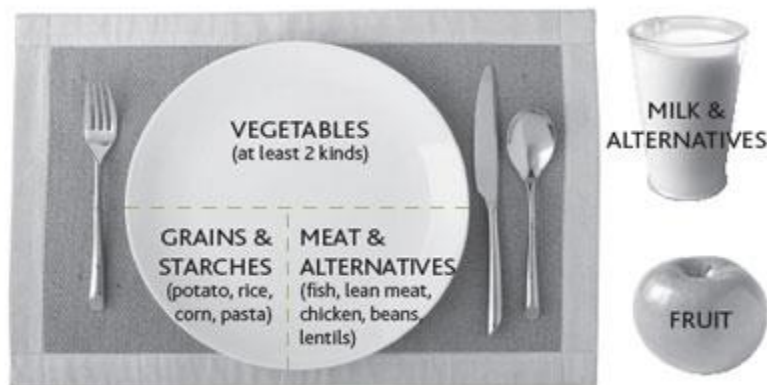
- Have a glass of milk and a piece of fruit to complete your meal.
- Alcohol can affect blood glucose (sugar) levels and cause you to gain weight. Talk to your health-care professional about whether you can include alcohol in your meal plan and how much is safe.
- Eat more vegetables. These are very high in nutrients and low in calories.
- Choose starchy foods such as whole grain breads and cereals, rice, noodles, or potatoes at every meal. Starchy foods are broken down into glucose, which your body needs for energy.
- Include fish, lean meats, low-fat cheeses, eggs, or vegetarian protein choices as part of your meal.
- Your hands can be very useful in estimating appropriate portions. When planning a meal, use the handy Portion Guide.
- The Canadian Diabetes Association recommends that all people with diabetes should receive advice on nutrition from a registered dietitian.
- Good management of diabetes includes healthy eating, staying active and taking required medication.
- Be sure to eat breakfast. It provides a good start to the day.

It's natural to have questions about what food to eat. A registered dietitian can help you include your favourite foods in a personalized meal plan.

Sample meal plans

Sample meal plan for smaller appetites	
Breakfast	Cold cereal (½ cup, 125 mL) Whole grain toast (1 slice) 1 orange Low-fat milk (1 cup, 250 mL) Peanut butter (2 tbsp, 30 mL) Tea or coffee
Lunch	1 sandwich - 2 slices of whole grain bread or 6" pita; meat, chicken or fish (2 oz, 60 g); non-hydrogenated margarine (1 tsp, 5 mL) Carrot sticks Grapes Low-fat plain yogurt (¾ cup, 175 mL) Tea or coffee

Dinner	Potato (1 medium) or rice (2⁄3 cup, 150 mL) Vegetables Non-hydrogenated margarine (1 tsp, 5 mL) Lean meat, chicken, or fish (2 oz, 60 g) Cantaloupe (1 cup, 250 mL) Low-fat milk (1 cup, 250 mL) Tea or coffee
Evening snack	Low-fat cheese (1 oz, 30 g) Whole grain crackers (4)

Sample meal plan for bigger appetites	
Breakfast	Cold cereal (½ cup, 125 mL) Whole grain toast (2 slices) 1 orange Low-fat milk (1 cup, 250 mL) Low-fat cheese (2 oz, 60 g) Tea or coffee
Lunch	Soup (1 cup, 250 mL) Sandwich - 2 slices whole grain bread or 6" pita; lean meat, chicken or fish (3 oz, 90 g); tomato slices; non-hydrogenated margarine (1 tsp, 5 mL) Carrot sticks Grapes Low-fat plain yogurt (¾ cup, 175 mL) Tea or coffee
Afternoon snack	1 medium apple or small banana
Dinner	1 large potato or cooked noodles (1 ½ cup, 375 mL) Vegetables Green salad with low-fat salad dressing Lean meat, chicken or fish (4 oz, 120 g) 1 medium pear Low-fat milk (1 cup, 250 mL) Tea or coffee
Evening snack	Peanut butter (4 tbsp, 60 mL) Whole grain crackers (4) Low-fat milk (1 cup, 250 mL)

Follow a healthy lifestyle

- Have at least three out of the four key food groups at each meal from *Eating Well with Canada's Food Guide*:
    - Vegetables and fruit
    - Grain products
    - Milk and alternatives
    - Meat and alternatives
- Have portion sizes that will help you reach or maintain a healthy body weight.
- Include high-fibre foods such as whole grain breads, cereals, and pastas, fresh fruits, vegetables and legumes.

- Make lower fat choices (e.g. use skim milk and lean ground beef, trim fat on meat, chicken etc., and use small amounts of added fat such as oil and salad dressings).
- Healthy eating habits should be built around a healthy lifestyle – keep active every day.

(Retrieved from the Canadian Diabetes Association, http://www.diabetes.ca/diabetes-and-you/healthy-living-resources/diet-nutrition/basic-meal-planning)

CARBOHYDRATE COUNTING

Carbohydrate counting is a flexible way to plan your meals. It focuses on foods that contain carbohydrate as these raise your blood glucose (sugar) the most.

Follow these steps to count carbohydrates and help manage your blood glucose levels. Your registered dietitian will guide you along the way.

Step 1: Make healthy food choices

- Enjoy a variety of vegetables, fruits, whole grains, low fat milk products, and meat and alternatives at your meals. A variety of foods will help to keep you healthy.
- Use added fats in small amounts. This helps to control your weight and blood cholesterol.
- Choose portion sizes to help you to reach or maintain a healthy weight.

Step 2: Focus on carbohydrate

- Your body breaks down carbohydrate into glucose. This raises your blood glucose (sugar) levels.
- Carbohydrate is found in many foods including grains and starches, fruits, some vegetables, legumes, milk and milk alternatives, sugary foods and many prepared foods.
- Meat and alternatives, most vegetables and fats contain little carbohydrate. Moderate servings will not have a big effect on blood glucose (sugar) levels.

Step 3: Set carbohydrate goals

- Your dietitian will help you set a goal for grams of carbohydrate at each meal and snack. This may be the same from day to day or may be flexible, depending on your needs.
- Aim to meet your target within five grams per meal or snack.

Step 4: Determine carbohydrate content

- Write down what you eat and drink throughout the day.
- Be sure to note the portion sizes. You may need to use measuring cups and food scales to be accurate.
- Record the grams of carbohydrate in these foods and drinks.
- For carbohydrate content of foods, check the nutrition label on food packages, food composition books, restaurant fact sheets and websites.

Step 5: Monitor effect on blood glucose level

- Work with your health-care team to correct blood glucose levels that are too high or too low.

Sample carbohydrate counting

Food	Portion size	Grams of carbohydrate	Carbohydrate choices
Example - sandwich lunch			
Bread, whole wheat*	2 slices	30 g	2
Chicken breast	2 oz/60 g	0	0
Margarine	1 tsp/5 mL	0	0
Carrot sticks	1/2 cup/125 mL	0	0
Green grapes*	1/2 cup/125 mL	15 g	1
Milk*	1 cup/250 mL	15 g	1
Tea/coffee	1 cup/250 mL	0	0
	TOTAL	**60 g**	**4 choices**

(Retrieved from the Canadian Diabetes Association, http://www.diabetes.ca/diabetes-and-you/healthy-living-resources/diet-nutrition/carbohydrate-counting)

THE GLYCEMIC INDEX

The Glycemic Index (GI) is a scale that ranks carbohydrate-rich foods by how much they raise blood glucose (sugar) levels compared to a standard food. The standard food is glucose or white bread.

Why should I eat foods with a low Glycemic Index?

Eating foods with a low Glycemic Index may help you to:

- Control your blood glucose (sugar) level
- Control your cholesterol level
- Control your appetite
- Lower your risk of developing heart disease
- Lower your risk of developing type 2 diabetes

Meal planning ideas

Use these meal planning ideas to include the Glycemic Index as part of healthy eating.

- Enjoy vegetables, most fruits and low-fat milk products with your meals. These are carbohydrate-rich foods that, in general, have low glycemic index.
- Plan your meals with foods in the low and medium Glycemic Index starch choices on the list that follows.

- Try foods such as barley, bulgar, or lentils, which have a low Glycemic Index.
- Consult a registered dietitian for help with choosing low GI foods, adapting recipes, and other ways to incorporate low GI foods in your meal plan.

If I eat foods with a low Glycemic Index can I eat as much as I want?

No. Using the Glycemic Index to choose foods is only one part of healthy eating.

Healthy eating also means:

- Eating at regular times
- Choosing a variety of foods from all food groups
- Limiting sugars and sweets
- Reducing the amount of fat you eat
- Including foods high in fibre
- Limiting salt

Remember that checking your blood glucose (sugar) before and two hours after a meal is the best way to know how your body handles the meal.

A lot of starchy foods have a high Glycemic Index (GI). Choose medium and low GI foods more often.

LOW GI (55 or less)*† Choose most often	MEDIUM GI (56-69)*† Choose more often	HIGH GI (70 or more)*† Choose less often
BREADS		
- **100% stone ground whole** - **wheat** - **Heavy mixed grain** - **Pumpernickel**	- Whole wheat - Rye - Pita	- White bread - Kaiser roll - Bagel, white
CEREAL		
- **All Bran™** - **Bran Buds with Psyllium™** - **Oat Bran™**	- Grapenuts™ - Puffed wheat - Oatmeal - Quick oats	- Bran flakes - Corn flakes - Rice Krispies™
GRAINS		
- **Barley** - **Bulgar** - **Pasta/noodles** - **Parboiled or converted rice**	- Basmati rice - Brown rice - Couscous	- Short-grain rice
OTHER		
- **Sweet potato** - **Yam** - **Legumes (lentils, chickpeas, kidney beans, split peas, soy**	- Potato, new/white - Sweet corn - Popcorn - Stoned Wheat	- Potato, baking (Russet) - French fries - Pretzels

beans, baked beans)	Thins™ • Ryvita™ (rye crisps) • Black bean soup • Green pea soup	• Rice cakes • Soda crackers

(Retrieved from the Canadian Diabetes Association, http://www.diabetes.ca/diabetes-and-you/healthy-living-resources/diet-nutrition/the-glycemic-index)

Canadian Diabetes Association