



Living Well with Prediabetes



Patient Handout Huron Perth Diabetes Program

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What is Prediabetes?

Prediabetes is when your blood sugar (glucose) levels are higher than normal, but not high enough to be called type 2 diabetes.

To understand prediabetes, it helps to know how the body uses glucose.

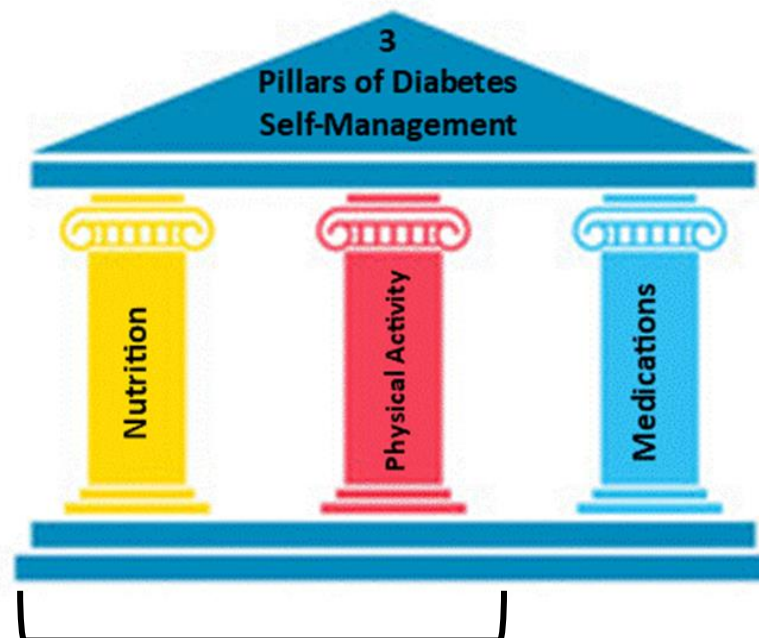
After you eat a meal, food is broken down by the body into glucose which our cells use for energy to fuel our daily activities. **Glucose is a type of sugar that comes from food, particularly carbohydrates.**

As the amount of sugar starts to rise in your blood stream after eating, the pancreas releases a hormone called **insulin** into the blood stream. Insulin carries the glucose from the blood into the cells of the body for use as energy. If there is too much sugar, the body stores the excess in the liver where it is turned into fat or the muscles to fuel our daily activities.

If you have prediabetes:

- Your body may not use insulin the way that it should
- Your body may not be making enough insulin
- Your liver may release glucose back into the blood when not needed

Following a healthy lifestyle can help prevent or delay the development of type 2 diabetes.



Prediabetes treatment focuses on the 2 lifestyle pillars

Get the Support You Need!

Being diagnosed with diabetes may result in feelings of anger, denial, fear, sadness & guilt. This is completely normal & there are many people available to help you. Talk to others who have diabetes or your health care team for support & guidance. Your health care team might include:

- Family physician
- Registered nurse or nurse practitioner
- Registered dietitian
- Pharmacist
- Psychologist or social worker
- Foot care specialist
- Endocrinologist or internist
- Eye doctor or specialist
- Kidney specialist

***Remember YOU are the most valuable part of the team**

What is Normal Blood Sugar Control?

*Not everyone needs to test their blood sugars, but it may be helpful for some people to monitor their blood sugar levels at home.

Tools to monitor sugars: Glucometer or Continuous Glucose Sensor



Checking your blood glucose levels may help you:

- Determine blood glucose level at that particular moment in time
- Show how your lifestyle (diet, exercise, stress, sleep habits) & medication affect your blood glucose levels

Try to aim for the following targets or as recommended by your diabetes team:

Fasting Blood Glucose (before eating) = less than 5.6mmol/L

Blood Glucose 2 hours after the start of a meal = less than 7.8mmol/L

What is Hemoglobin A1C & What Does it Mean?

A1C, also called glycosylated hemoglobin is a blood test which shows the 3-month average of your blood sugar before the test was taken. You do not have to fast before this test.

Your A1C is **not the same** as your blood sugar results.

- For example: An A1C of 7.0% equals an average blood sugar of 9.5mmol/L.

Diabetes Canada describes:

- **Normal blood sugars** as an A1C <5.5%
- **At risk** if your A1C is 5.6-5.9%
- **Prediabetes** as an A1C 6-6.4%.
- If you are **at risk or have prediabetes** for developing diabetes your A1C should be checked every **6-12 months**.

Average Blood Sugar (mmol/L)	Conversion Chart	A1c (%)
19.5		12 %
17.5		11 %
15.5		10 %
13.5		9 %
11.5		8 %
9.5		7 %
7.5		6 %

At risk populations:

- Family history – esp. first-degree relative with type 2 diabetes
- Age ≥ 40 years
- Ethnicity: Asian, African, Arab, Hispanic, Indigenous, South Asian
- History of prediabetes
- History of gestational diabetes or a baby larger than 9 lbs
- Polycystic ovarian syndrome (PCOS)
- Abdominal Obesity/overweight/obstructive sleep apnea
- Metabolic dysfunction-associated steatohepatitis (MASH)
- Mental health diagnosis (bipolar disorder, depression, schizophrenia)
- Acanthosis Nigricans (darkened skin folds)
- Meds: glucocorticoids, atypical antipsychotics, statins, anti-rejection drugs, HIV meds
- Pancreatitis
- Smoking
- High blood pressure
- High cholesterol
- Gout
- Cystic fibrosis
- HIV infection

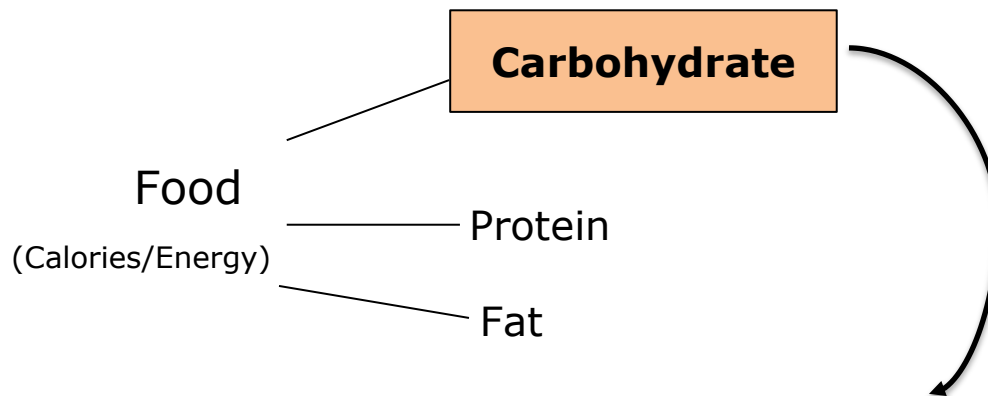
[The Canadian Diabetes Risk Questionnaire](https://www.healthycanadians.gc.ca/en/canrisk)
<https://www.healthycanadians.gc.ca/en/canrisk>

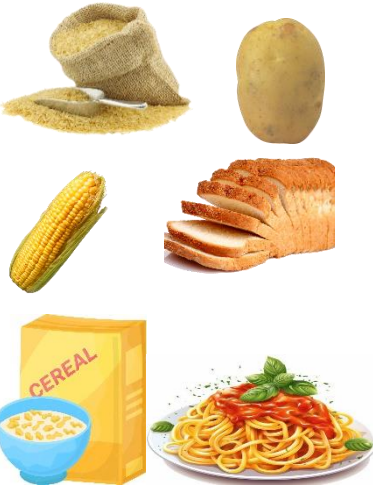
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What Happens When You Eat?

When you eat, food breaks down into carbohydrate, protein & fat.
Carbohydrates affect your blood sugar.



Fruits	Grains/Starches	Milk Products	Others
			

Carbohydrates (also called 'carbs') include:

- sugar
 - starch
 - fibre
- } increase your blood sugar

→ Fibre will **not** raise your blood sugars & actually helps prevent blood sugars from going too high after you've eaten.

Healthy Eating Basics

Healthy eating is an important part of managing prediabetes. Prediabetes is a condition that likes consistency, especially when it comes to meal times & the types of foods eaten. Start with the following tips:

- Try to eat three meals a day at regular times & spaced no more than 4-6 hours apart
- Become more mindful of your eating & try to avoid eating out of boredom, habit or emotional reasons
- Avoid eating when distracted by the TV or other electronics
- Limit sugars & sweets such as regular pop, juice, candies, jam, etc.
- Limit intake of high fat foods such as chips, pastries, fried foods, etc.
- Limit your intake of salt/sodium to 1500-2300mg per day
- Aim to increase your daily fibre intake through whole grains, fruits, vegetables, beans & legumes. High fibre foods have 4g or more fiber per serving
- Drink water instead of juice or sweet drinks such as regular pop, iced teas, milkshakes, speciality coffee, etc. Try to drink at least 6-8 cups of water daily.
- Plan ahead! Make a weekly grocery list & menu; keep pre-cut vegetables & fruit on hand for easy snacking; schedule time for exercise, etc.
- Watch your portion sizes. Check your portions by using measuring cups, & scales & by using the Handy Portion Guide or Balanced Plate

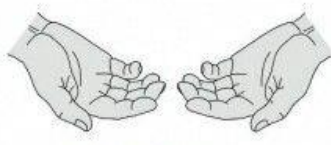
Handy portion guide

Your hands can be very useful in estimating appropriate portions. When planning a meal, use the following portion sizes as a guide:



FRUITS*/GRAINS & STARCHES*:
Choose an amount the size of your fist for each of Grains & Starches, and Fruit.

MILK & ALTERNATIVES*: Drink up to 250 ml (8 oz) of low-fat milk with a meal.



VEGETABLES*:
Choose as much as you can hold in both hands.



MEAT & ALTERNATIVES*:
Choose an amount up to the size of the palm of your hand and the thickness of your little finger.

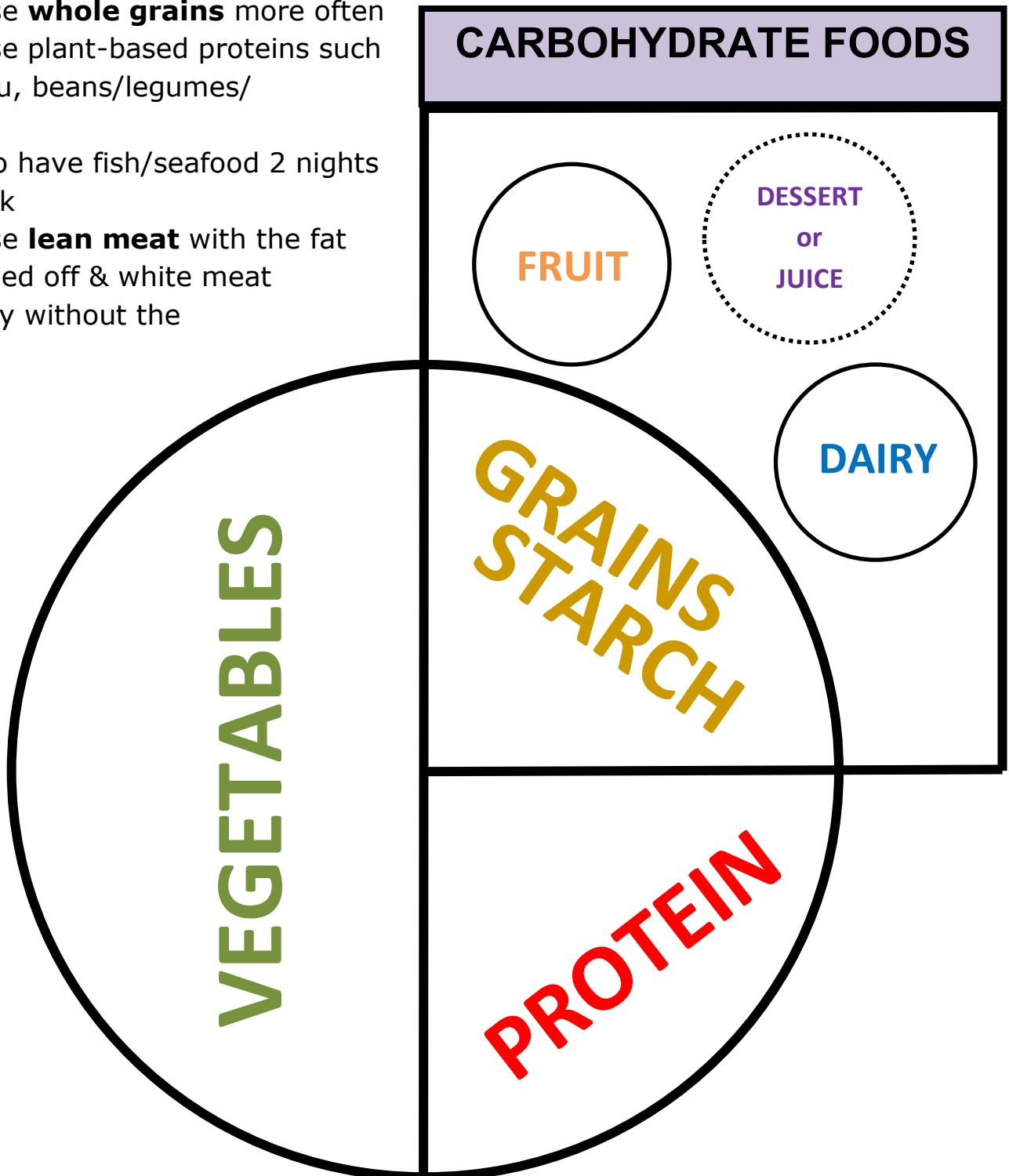


FATS*:
Limit fat to an amount the size of the tip of your thumb.

* 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.

The Balanced Plate

- Aim to fill **½ your plate with vegetables**
- Eat the rainbow!
- Choose **whole grains** more often
- Choose plant-based proteins such as tofu, beans/legumes/lentils
- Aim to have fish/seafood 2 nights a week
- Choose **lean meat** with the fat trimmed off & white meat poultry without the skin



Reading Food Labels

Food labels are a great resource for helpful information & can help you compare similar foods & make healthier choices.

a) **Nutrition Facts Table:**

The Nutrition Facts table on the food label gives you information about the serving size, calories & a variety of other different nutrients. The Nutrition Facts table can be used to compare similar foods. Look for the following items:

Nutrition Facts	
8 servings per container	
Serving size	2/3 cup (55g)
Amount per serving	
Calories	230
% Daily Value*	
Total Fat 8g	10%
Saturated Fat 1g	5%
Trans Fat 0g	
Cholesterol 0mg	0%
Sodium 160mg	7%
Total Carbohydrate 37g	13%
Dietary Fiber 4g	14%
Total Sugars 12g	
Includes 10g Added Sugars	20%
Protein 3g	
Vitamin D 2mcg	10%
Calcium 260mg	20%
Iron 8mg	45%
Potassium 235mg	6%
*The % Daily Value (DV) tells you how much a nutrient in a serving of food contributes to a daily diet. 2,000 calories a day is used for general nutrition advice.	

←..... Start here

←..... Limit these

←..... Get enough of these



The % daily value can tell you if the serving size has a lot or a little of a nutrient:

- 5% daily value or less is a LITTLE
- 15% daily value or more is a LOT

Some nutrients you may want **more** of include:

- Fibre (aim for **at least 2-4g**)
- Vitamins & minerals

Some nutrients you may want **less** of include:

- Sodium
- Saturated & trans fat
- Added sugar (aim for **less than 8g**)

b) Ingredient List:

The ingredient list tells you what is in the food & is listed by weight from **most to least**. This means that a food contains **more** of the ingredients found at the beginning of the list & **less** of the ingredients at the end of the list.

Example: Breakfast Cereal

Ingredients: Whole wheat, wheat bran, sugar/glucose-fructose, salt, malt (corn flour, malted barley), vitamins (thiamine hydrochloride, pyridoxine hydrochloride, folic acid, d-calcium pantothenate), minerals (iron, zinc oxide).

c) Nutrient Content Claims/Health Claims

Nutrient or health content claims are statements on food product packages about a particular nutrient in the food.



Sugar-Free Labeling & Non-Calorie Sweeteners

Sugar-Free & No Sugar Added does not always mean carbohydrate-free. These are common terms that you will see on many labels.

Sugar-Free foods may or may not cause your blood sugar to rise depending on the sweeteners used & other ingredients in the food.

No Sugar Added simply means that no extra sugar is added during processing or packaging. These foods could still contain carbohydrates & therefore, impact your blood sugars. These products often use sweeteners other than sugar for sweetness.

Non-Calorie (Alternative) Sweeteners

Non-Calorie or Alternative Sweeteners are added to foods to reduce sugar & calories. These sweeteners have a minimal effect on sugar levels. Health Canada has approved the following sweeteners:

- Aspartame
- Acesulfame K (Ace-K)
- Sucralose (e.g. Splenda)
- Steviol glycosides (Stevia)
- Saccharin
- Cyclamate
- Sugar alcohols (e.g. mannitol, sorbitol)

These are commonly found in products such as diet drinks, light yogurt and sugar-free gelatin desserts & pudding.

Non-calorie sweeteners can greatly decrease the amount of carbohydrates in foods but not necessarily the calories.

Physical Activity

Regular physical activity is one of the most important things you can do to lower your blood sugar, improve your overall health & have fun! Exercise can improve blood sugars:

- 1. During exercise**
- 2. 1-2 hours after exercise**
- 3. Up to 24 hours after exercise**

*If cleared by your Primary Care Provider:

Strive to accumulate a minimum of **150 minutes** of moderate- to vigorous-intensity physical activity per week

Breakdown:

- 30 minutes on 5 days per week OR
- 20 minutes every day
- In bouts of **10 minutes** or more

Moderate-intensity activities include:

- Brisk walking
- Bike riding
- Skating
- Swimming
- Gardening
- Etc.

Vigorous-intensity activities include:

- Jogging
- Cross country skiing
- Hockey
- Zumba
- Etc.

Muscle/bone strengthening & balance activities should also be included on at least **2 days** per week.

- Lifting weights
- Exercise band exercises
- Yoga
- Etc.



Acknowledgements:

Alberta Health Services

American Diabetes Association

Am I Hungry? Eat Mindfully, Live Vibrantly

Canada's Food Guide

Canada's Low-Risk Alcohol Drinking Guidelines

Canadian Physical Activity Guidelines

Diabetes Canada

Diabetes Canada Clinical Practice Guidelines

Diabetes.co.uk

Dietitians of Canada

Government of Canada

Government of Ontario

Hamilton Health Sciences

St. Joseph's Health Care

Unlock Food

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