

# National Aboriginal Diabetes Association

## Carbohydrates & Diabetes

What you  
need to  
know.

The National Aboriginal Diabetes Association envisions Diabetes-free healthy communities



# Who we are

**NADA** is a not-for-profit members-led organization established in 1995 as a result of the rising rates of diabetes among First Nations, Inuit and Métis Peoples in Canada

The National Aboriginal Diabetes Association envisions Diabetes-free healthy communities



# OVERVIEW

- ✓ What are carbohydrates?
- ✓ Fibre
- ✓ Glycemic index
- ✓ Carbohydrates and foods
- ✓ Carbohydrates and diabetes
- ✓ Recommendations
- ✓ Carbohydrate counting
- ✓ Nutrition label reading
- ✓ Portion sizes
- ✓ Summary

The National Aboriginal Diabetes Association envisions Diabetes-free healthy communities



# WHAT ARE CARBOHYDRATES?

Carbohydrates (carbs) are a major nutrient found in food and drinks. Fat and protein are the other two major nutrients. Carbs are broken down into glucose, or sugar. This is the main source of energy for the body to use. <sup>[1]</sup>

The National Aboriginal Diabetes Association envisions Diabetes-free healthy communities



The World Health Organization (WHO) strongly recommends that less than 10% of your total daily calories come from added sugars.<sup>[2]</sup>

# TYPES OF CARBOHYDRATES

Other names for 'carbohydrates' are: fibre, starch, and sugar.

## Fibre

- This type of carb helps control blood glucose.
- Recommended to get 25-50g/day.
- This can be reached by looking for products with at least 4g of fibre, which means that food or drink is high in fibre.

## Sugar

- Not always bad, but are not always good either.
- Some foods, such as fruits and milk contain natural sugars, but some foods contain added sugar.

## Starch

- Naturally found in many foods such as pasta, rice, beans, potatoes, etc.
- Starches can cause blood sugar levels to rise, but some starches are better than others.
- Low GLYCEMIC INDEX carbs cause the blood glucose levels to rise more slowly. This allows more time for insulin to work.<sup>[1]</sup>

The National Aboriginal Diabetes Association envisions Diabetes-free healthy communities



Foods with **soluble** fibre:

- oat bran, oatmeal, legumes, and some fruits

Foods with **insoluble** fibre:

- wheat bran, whole wheat foods, fruits and vegetables

# MORE ON FIBRE

Overall, fibre is good. Fibre may be called either soluble or insoluble. There is a bit of a difference between the two:

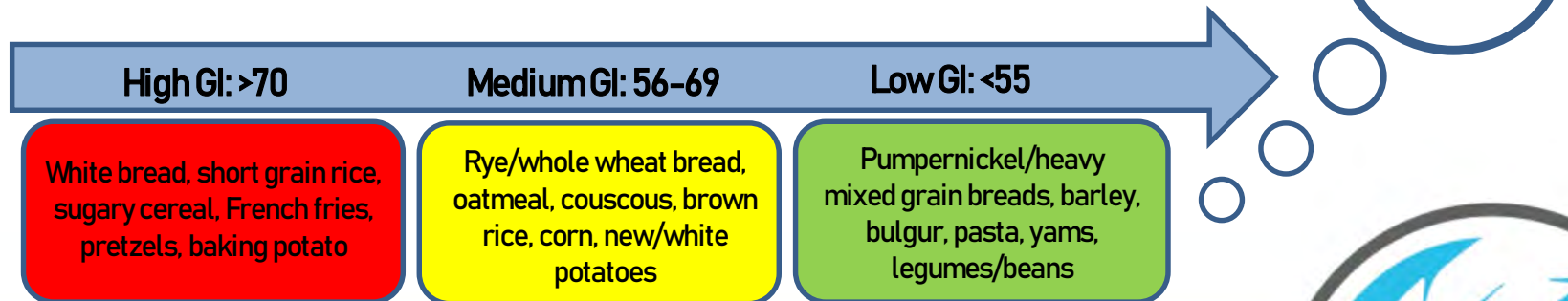
- Soluble fibre is better for helping manage diabetes. This fibre slows the rate at which glucose (from carb breakdown) enters the bloodstream. This allows more time for insulin to remove it from the blood.
- Insoluble fibre is also good because it keeps you 'regular' and aids in digestion.
- Most foods do not just contain one or the other, so by eating foods high in fibre you will most likely get benefits of both soluble and insoluble fibers.<sup>[3]</sup>

The National Aboriginal Diabetes Association envisions Diabetes-free healthy communities



# GLYCEMIC INDEX

- Glycemic index (GI) measures the quality of carbs based on how much they raise blood glucose levels.
- This does not mean “good” or “bad” carbs, but rather it means the carbs that should be chosen “more often” and “less often”.
- High GI foods raise the blood glucose levels more than low GI foods.
- Low GI foods are good because they help control the blood glucose levels and can control appetite as well.<sup>[4,5]</sup>



The National Aboriginal Diabetes Association envisions Diabetes-free healthy communities

# CARBOHYDRATES IN FOODS

Carbs are in many of the foods eaten every day! All food groups contain foods with carbs.

- Grains: pasta, bannock, rice, oats, bread, cereals
- Fruits: cherries, berries, plums, bananas, grapes, apples
- Vegetables: potatoes, yams, artichokes, corn, squash
- Milk and alternatives: milk, yogurt, soy beverages
- Meat and alternatives: beans and legumes
- Other foods: jams, maple syrup, honey, soda

The National Aboriginal Diabetes Association envisions Diabetes-free healthy communities



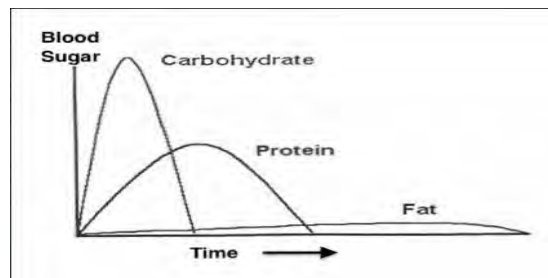


# CARBOHYDRATES AND DIABETES

Carbs break down to glucose (sugar) in the body. Carbs are the main contributor to raising blood glucose levels. This is due to the fact that insulin, which is needed to remove the glucose (sugar) from the blood, is not there in high enough amounts.

Insulin is the main hormone for removing glucose from the blood and to the cells for energy. With diabetes, enough insulin may not be produced or the body may not respond to insulin. This results in high blood glucose (sugar) levels.

High blood glucose levels can cause serious health problems. It is important to keep track of how many carbs are eaten at each meal and in total for each day in order to maintain healthy blood glucose levels.<sup>[1,4]</sup>



The National Aboriginal Diabetes Association envisions Diabetes-free healthy communities



# WHAT IS RIGHT FOR YOU?

It is recommended that 45-65% of the total calorie intake (per day) should be from carbs.

This equals to a minimum of 130g/day to allow enough glucose to provide energy to the brain.<sup>[4]</sup>

Specifically, follow these guidelines to reach the daily carbs goal:

- Women: 45-60g carbs per meal and 15-30g carbs per snack.
- Men: 60-75g carbs per meal and 15-30g per snack.



# COUNTING CARBOHYDRATES

Carb counting is a flexible way to meal plan when managing diabetes.<sup>[6]</sup>

**One serving of carbs is about 15g...** so for each meal about 4 servings of carbs can be chosen.

Here are some examples of foods that are one serving (15g) of carbs:

Food Item	Serving Size
Bannock	1.5 x 2.5 inch piece
Bread	1 slice
Rice (brown and white, long grain, cooked)	1/3 cup (75mL)
Barley, quinoa, couscous, whole grain pasta (cooked)	1/2 cup (125mL)
Saskatoon berry, blueberry, elderberry	1 cup (250mL)
Corn	1/2 cup
Maple syrup	1 Tbsp (15mL)



# COUNTING CARBOHYDRATES (CONT'D)

Along with carb-containing foods, choose foods low in carbs to meet other nutrient needs. Incorporating fats, proteins, and other vegetables are important for maintaining a balanced diet:

Food Item	Serving Size
Carrots, onions, mushrooms	1/2 cup
Salmon, goose, deer, turkey	2.5 oz., 75g
Eggs	1 large
Nuts and seeds	1 Tbsp

The National Aboriginal Diabetes Association envisions Diabetes-free healthy communities



# SAMPLE MEAL

Using the food examples from the past 2 slides, you can choose a variety of foods to meet your carb goal for the meal as well as adding other foods to make it more tasty and nutritious.

Example meal: Dinner

- 2/3 cup brown or wild rice (=30g carbs = 2 servings of carbs)
- 1/2 cup cooked corn (=15g carbs = 1 serving of carbs)
- 2.5 oz. salmon (0 carbs)
- 1/2 cooked carrots (0 carbs)
- 1 cup blueberries (=15g carbs = 1 serving of carbs)

**Total: 4 servings of carbs (60g)**



# NAVIGATING A FOOD LABEL

Nutrition labels can help make informed decisions about the food being eaten. These simple tips can also help control the blood glucose.<sup>[7]</sup>

Example food: Pasta

Nutrition Facts	
Serving Size: 1/4 cup (47g) Dry Wt. About 1 cup cooked	
Amount Per Serving	
Calories 170 Calories from Fat 10	
	% Daily Value*
Total Fat 1g	1%
Saturated Fat 0g	0%
Trans Fat 0g	
Cholesterol 0mg	0%
Sodium 0mg	0%
Potassium 105mg	3%
Total Carbohydrate 37mg	12%
Dietary Fibre 2g	8%
Sugars 0g	
Protein 4mg	
Iron 4%	Thiamine 10%
Niacin 15%	Folate 6%

Look for products with little saturated fat and NO trans fat

Serving size matters! This is double the serving for pasta, so this will count for 2 servings of carbs.

This pasta has about two servings of carbs. The grams of fibre do not count towards your carbs because fibre is good for blood glucose.

A product with 15% or higher % Daily Value for fibre is a high fibre choice.

The National Aboriginal Diabetes Association envisions Diabetes-free healthy communities

# PORTION SIZES

Simple tricks to estimate a proper Canada's Food Guide serving of your favorite foods.<sup>[8]</sup>



1 fist = 1 cup (250 mL)

Ex: leafy vegetables, whole fruit, cereal, milk, yogurt (3/4 cup), legumes (3/4 cup)



½ fist = ½ cup (125 mL)

Ex: fresh, frozen, or canned fruits and vegetables, juice, rice, pasta,



Full hand = slice of toast or ½ bagel

Palm of hand = 2.5 oz. of fish, meat, and poultry



2 thumbs = 2 tbsp (30 mL)

Ex: peanut butter, cheese

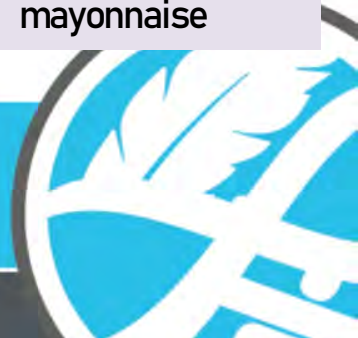


1 thumb = 1 tbsp (15 mL)

Tip of thumb = 1 teaspoon (5 mL)

Ex: oil, butter, mayonnaise

The National Aboriginal Diabetes Association envisions Diabetes-free healthy communities



# THINGS TO REMEMBER

- ✓ Many foods contain carbs. Carbs are the main contributor to raising blood glucose.
- ✓ Soluble fibre helps control blood glucose. Look for foods with at least 4g of fibre.
- ✓ Choose low glycemic index foods more often.
- ✓ Carb counting is an option to help manage diabetes.
- ✓ Remember to mix in a variety of foods every day to get the nutrients the body needs.
- ✓ There are simple tips and tricks to help with reading a food label and measuring proper serving sizes of foods.
- ✓ Talk to a health care provider to determine what is right for you.

The National Aboriginal Diabetes Association envisions Diabetes-free healthy communities





# REFERENCES

- [1] EatRight Ontario (2016). Diabetes and Carbohydrates. Retrieved from <https://www.eatrightontario.ca/en/Articles/Carbohydrate/Diabetes-and-Carbohydrates.aspx>
- [2] World Health Organization (2015). Guidelines: Sugars intake for adults and children. Retrieved from: [http://apps.who.int/iris/bitstream/10665/149782/1/9789241549028\\_eng.pdf?ua=1](http://apps.who.int/iris/bitstream/10665/149782/1/9789241549028_eng.pdf?ua=1)
- [3] Diabetes Canada (2017). Fibre. Retrieved from <http://diabetes.ca/diabetes-and-you/healthy-living-resources/diet-nutrition/fibre>
- [4] Dworatzek, P.D., Arcudi, K., Gougeon, R., Husein, N., Sievenpiper, J.L., and Williams, S.L. (2013). Clinical Practice Guidelines: Nutrition Therapy. *Canadian Journal of Diabetes*, 37: S45-S55. Retrieved from <http://guidelines.diabetes.ca/browse/chapter11#bib32>
- [5] Diabetes Canada (2017). The Glycemic Index. Retrieved from <https://www.diabetes.ca/diabetes-and-you/healthy-living-resources/diet-nutrition/the-glycemic-index>
- [6] Diabetes Canada (2017). Diet and Nutrition: Beyond the Basics. Retrieved from <http://www.diabetes.ca/clinical-practice-education/professional-resources/diet-nutrition-beyond-the-basics>
- [7] EatRight Ontario (2016). Decoding the Nutrition Label: Tips for people with diabetes. Retrieved from <https://www.eatrightontario.ca/en/Articles/Diabetes-Prevention/Decoding-the-Nutrition-Label-Tips-for-people-with.aspx>
- [8] EatRight Ontario (n/a). Handy Guide to Serving Sizes. Retrieved from <https://www.eatrightontario.ca/getmedia/255dbbe6-23cd-4adf-9aba-f18310f09e3d/Handy-Servings-Guide-English-for-web-FINAL-October-2015.aspx>

The National Aboriginal Diabetes Association envisions Diabetes-free healthy communities



# Thank You!



National  
Aboriginal  
Diabetes  
Association

103 - 90 Garry Street  
Winnipeg MB R3C4H1  
nada.ca

The National Aboriginal Diabetes Association envisions Diabetes-free healthy communities

