

# Diabetes Management: Nutrition 101

Session Four  
Diabetes 101 Education Series

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and Certified Diabetes Educator**



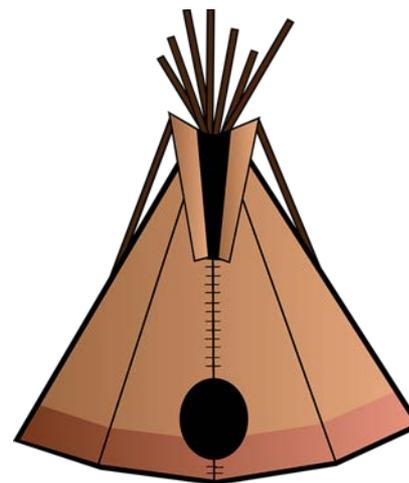
# Outline

- What is diabetes prevention and management?
- What is nutrition?
- Why do people eat the way they do?
- What you eat?
- When you eat?
- How much you eat?
- How can YOU support someone living with diabetes?
- Questions
- Evaluation

# Are Prevention and Management Different?

- In diabetes, the steps you take to prevent diabetes are the same steps you take to manage diabetes.
- This idea is helpful when you plan programs and/or talk to clients.
- The basics of diabetes prevention and management are: Nutrition, Active Living and Medications.
- Culture is at the core of prevention and management.

Medications



Nutrition

Active Living

# How Effective is Diabetes Management?

Nutrition



**A1C by 1 – 2%**

Active Living



**A1C by 0.4 – 0.9%**

Medications



**A1C by 0.5 – 1.5%**

# What is Nutrition?

Nutrition is the study of food and how it works in your body.

But really Nutrition = Healthy Eating.

Healthy Eating is about:

1. What we eat to keep our bodies growing and in good repair AND
2. Having healthy food behaviours like being mindful, cooking, eating with people and enjoying your food.

Canada's food guide sums it up: **Eat well. Live well.**

This is important for everyone - not just people living with diabetes.



# Why people eat the way they do?



## Colonization of Western Canada

- Treaty 6: signed in 1876 with a “Famine and Pestilence Clause”
- Treaty 7: signed in 1877 with promise that bison would last for 10 years
  - Bison disappeared within 18 months after Treaty 6 signed; widespread famine across the plains in 1878-79
  - Some groups in Treaty 6 received food in exchange for taking treaty
  - Ration house in every reserve and NWMP post; inadequate in quantity and quality
  - Introduction and spread of Tuberculosis
- Treaty 8: signed in 1899 with protection of hunting, trapping and fishing rights
  - Changed relationship with Hudson’s Bay Company after 1870 led to hunger and starvation



# Why do people eat the way they do?

## Indian Residential Schools in Alberta

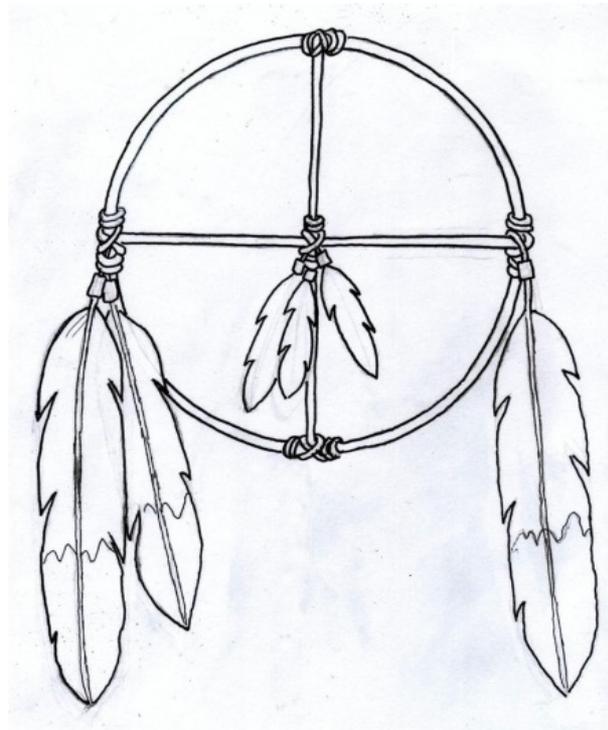
- 1884: Immaculate Conception Indian Residential School, Cardston opened
- 1975: Immaculate Conception Boarding School, Cardston closed
- Some of the most common testimonials from residential school survivors are about hunger and food not fit for human consumption – **“we were always hungry”**. Malnutrition in childhood is connected to stunting, obesity, diabetes, high blood pressure and cardiovascular disease. Intergenerational impacts are complex and also contribute to diabetes, obesity.

## Theodore Fontaine, Sagkeeng Objibway First Nation

- For years after leaving school, I gorged almost every day on bacon, sausage, ham, bologna and eggs. I'd cut long slices into my toast and insert tracks of butter into them, and I routinely laid a piece of bread or bannock in the pan where I'd just fried bacon and let it soak up the grease, unaware of the health risks associated with eating this treat. I'd acquired a taste for a high-fat, low nutrient diet, which later contributed to my clogged arteries and need for open-heart surgery.

## How this knowledge can help us today

- Encourages us to approach people with kindness and gentleness.
- If people are struggling with diabetes, weight, emotions, it isn't their fault. There are many factors to people feeling unwell. Diabetes is tough.
- Everyone wants to live a long and healthy life.
- Encourages us to advocate on behalf of vulnerable individuals.
- Encourages us to learn more.





# What's in our food - macronutrients

- **Carbohydrates**

- Have the most effect on blood sugar



- **Protein**

- Have very little effect on blood sugar



- **Fat**

- Have indirect effects on blood sugar



## Carbohydrates: 45-60% of energy

Carbohydrate is the main source of fuel for the body and brain.

Carbohydrates include sugars, starches, and fibre.

Found in:

Grains products	Fruits	Potatoes	Beans and lentils	Candy
Milk and yogurt	Honey	Pop	Sugary Foods	Corn

Carbohydrates raise blood sugar because they are broken down into glucose in the body. Remember glucose = sugar!

Fibre is a special carbohydrate – it does not get converted to sugar in your body. Fibre can slow down how fast sugar gets into your blood. Eating foods with fibre can make you feel full longer. And eating foods with fibre can help control the fats in your blood!

# Carbohydrates in Food

Alberta Health Services has a two page handout that clearly shows what foods are carbohydrates and what foods are not.

Every serving size mentioned is equivalent to 15 g of carbohydrate.

For example, ¼ bagel, ½ cup potato, 1 medium apple and 1 cup of milk all have 15 g carbohydrate.

[https://www.albertahealthservices.ca/assets/nfo/nutrition/if-nfs-carbohydrate-in-foods\(Pictorial\).pdf](https://www.albertahealthservices.ca/assets/nfo/nutrition/if-nfs-carbohydrate-in-foods(Pictorial).pdf)

## Carbohydrate in Foods

This handout can help you find out which foods are higher and lower in carbohydrate. Knowing this can help you manage your blood sugar.

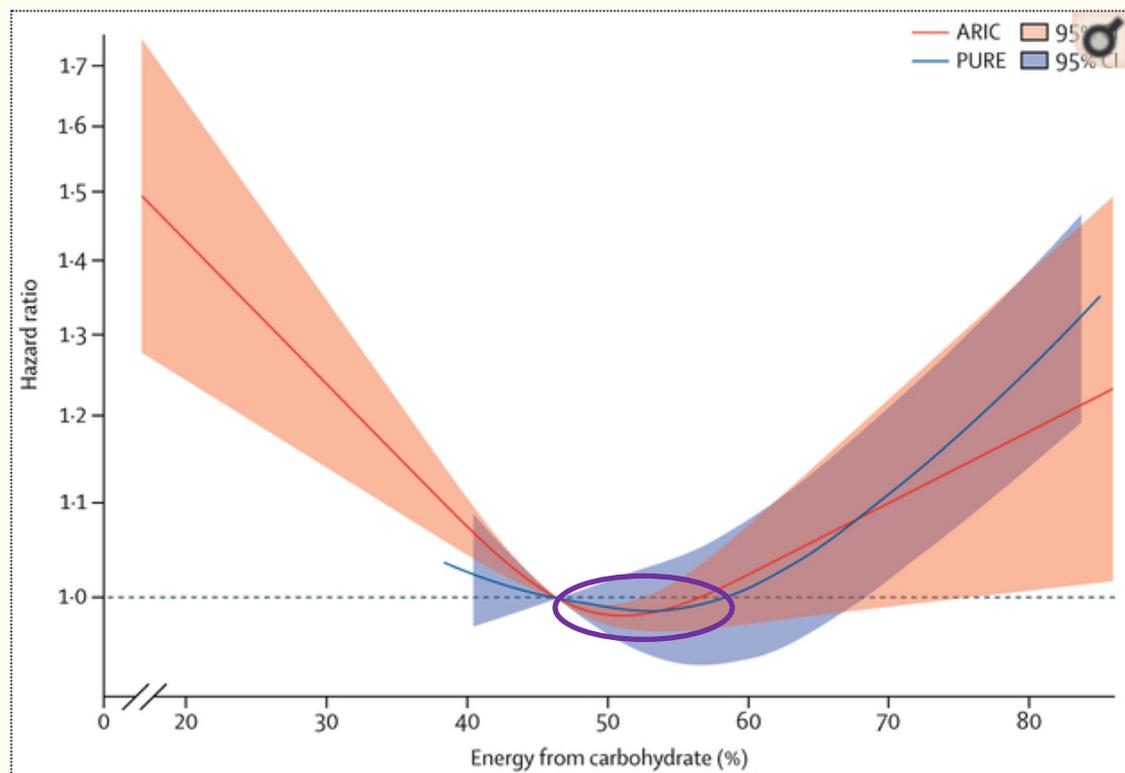
### Carbohydrate foods

These foods turn into sugar in your blood. You can have some carbohydrate foods every day.

Each serving below is 1 choice.  
1 choice = 15 grams of carbohydrate.

Grains							
 1 slice	 2x2x1 inch (5x5x2.5 cm)	 ¼	 ½	 7	 ¾ cup (175 mL)	 ½ cup (125 mL)	 1 (4 inch or 10 cm)
 ½ cup (125 mL)	 ¾ cup (75 mL)	 1 cup (250 mL)	 1/12 of 12 inch or 30 cm pizza	 ½ (6 inch or 15 cm)	 1 (6 inch or 15 cm)		
Starchy Vegetables							
 ½ cup (125 mL) cooked	 ½ cup (125 mL)	 1 cup (250 mL)	 ½ cup (125 mL)	 ¾ cup (175 mL)	 ½ cup (125 mL)		
Fruit							
 1 medium	 ½ large	 1 cup (250 mL)	 2 cups (500 mL)	 15	 ½ cup (125 mL)	 2 medium	 1 large
 1 cup (250 mL)	 1 small	 ¾ cup (175 mL)	 2 medium	 ½ cup (125 mL)			
Milk and Alternatives							
 1 cup (250 mL)	 ¾ cup (175 mL)	 ½ cup (75 mL) or 100 g	 ½ cup (125 mL)				
Other foods							
 1 Tbsp (15 mL)	 ½ cup (125 mL)	 3 cups (750 mL)					

# Why are carbs 45 – 60% of energy?



This study involved more than 150,000 people who were followed for 25 years.

The lowest mortality was in people who consumed between 50 and 55% of their energy as carbohydrates!

Figure 3:

U-shaped association between percentage of energy from carbohydrate and all-cause mortality in the ARIC and PURE cohort studies

## Proteins: 15-20% of energy

Protein Foods provide the building blocks for our muscles, bones, skin and blood.

Protein Foods contain key minerals like iron, zinc and magnesium.

Found in:

Wild meat	Beef	Chicken	Beans and lentils	Fish
Nuts and seeds	Eggs	Tofu	Milk and Cheese	Pork

Certain protein foods also contain some carbohydrates. Dried beans, lentils, milk, yogurt contain both protein and carbohydrate. Dried beans and lentils also contain fibre.

## Fats: 20-35% of energy

Fats are needed for health. Did you know fat is a building block for all our cells? Fats are a source of energy. Fats help us absorb certain vitamins and minerals.

Found in:

Nuts and seeds

Processed Meat

Processed Foods

Fatty fish

Butter Lard

Fast Foods

Cooking Oil Margarine

Cheese Chips

Shortening



Unsaturated Fats

Saturated Fats

Trans Fats

# What's in our food - micronutrients

The food we eat contains important vitamins and minerals needed for health. We only need a small amount for health, so are called micronutrients.

- Vitamins: A, B (many), C, D, E, K
- Minerals: Iron, Calcium, Magnesium, Sodium, Potassium, Zinc

If we choose to eat whole foods, we should get all of the micronutrients we need for our health.

Micronutrients are also available in supplement form.



# What's in our food – Ultra Processed Foods

Food can be classified into four categories:

- Unprocessed or minimally processed food
- Processed culinary ingredients
- Processed foods
- Ultra processed foods

Ultra processed foods make up about 50% of the foods we eat. About 20% is from sweetened foods and beverages.



The more sugar, fat and salt we eat, the harder it is to control blood sugar, blood pressure and cholesterol.

# Is there a “diabetes diet”?



**NO!**

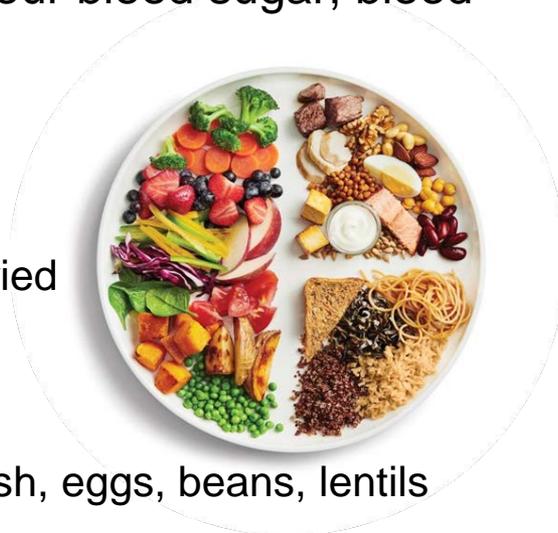
Eating healthy foods and choosing healthy food behaviours are important for all Canadians.

Healthy eating can reduce your risk of many diseases and complications.

# Healthy Eating and Diabetes

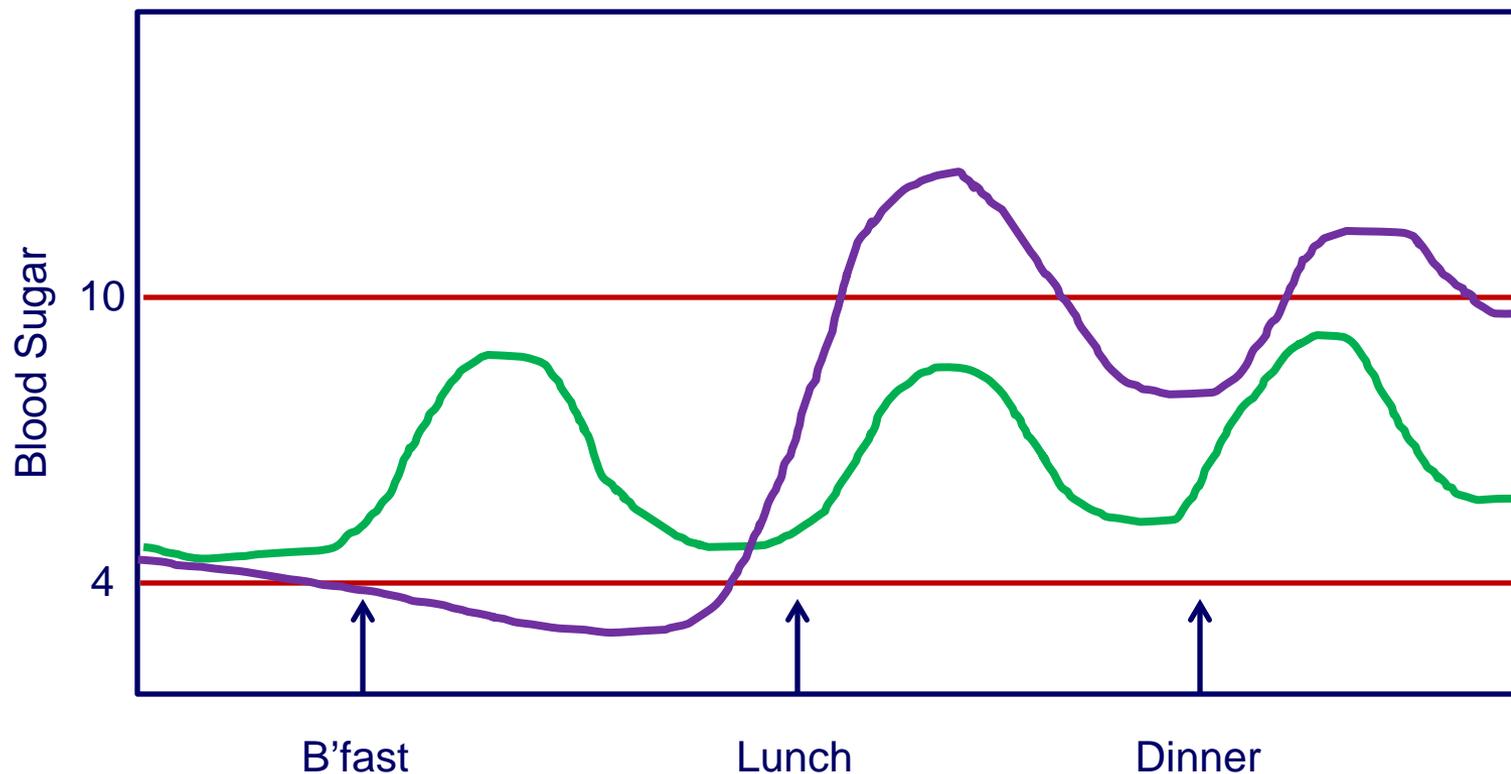
The food we eat can play a big part in how well our blood sugar, blood pressure and cholesterol is controlled.

- Foods that can **help** us control our ABC's:
  - Vegetables and fruit: fresh, frozen, canned and dried
  - Whole grain foods: breads, pasta, cereals
  - Lower fat milk products: fluid milk, yogurt, cheese
  - Lean meats (beef, pork, chicken, moose, deer), fish, eggs, beans, lentils
- Food that can make it **harder** to control our ABC's
  - Ultra processed foods high in sugar: pop, candy, sweetened cereal, desserts
  - Ultra processed food high in carbohydrates, fat and salt: fast foods, potato chips, snack foods
  - Ultra processed food high in fat and salt: bologna, garlic, hot dogs, chicken nuggets



# When to Eat - timing

Daily snapshot



# How do I check my blood sugar?

## Self-monitoring of Blood Glucose (SMBG)

- Fasting or pre-meal targets: 4 – 7 mmol/l
- Two hr after eating: 5-10 mmol/l
- Patterns for checking should be individual

The only way to know if a change is working!



Checking when a change happens can help people to take charge of their care.

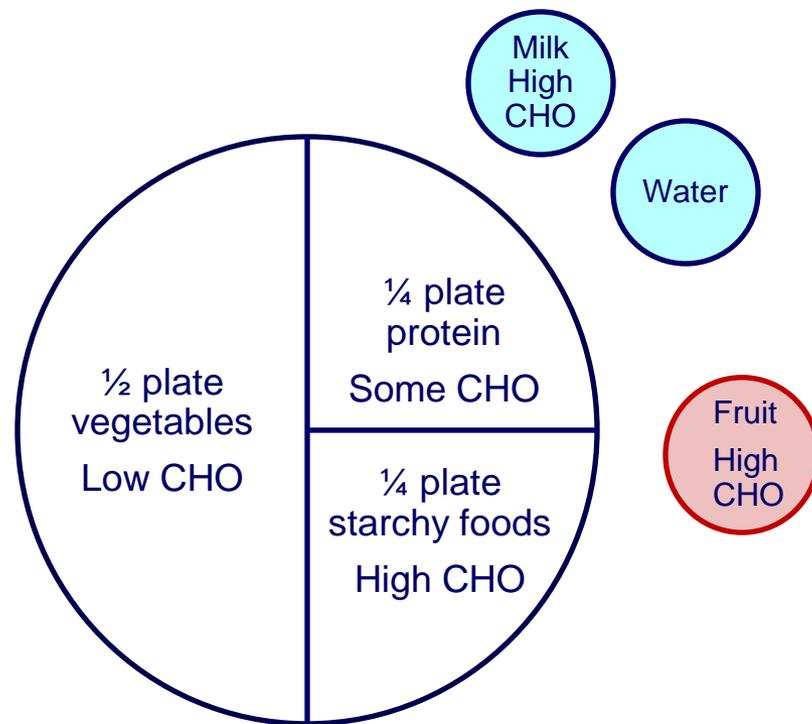
- Say I start eating breakfast. I would want to check before and 2 hours after breakfast but also before lunch to see the impact breakfast had.
- I might also want to reflect on how I was feeling – more energy, less hungry, less cranky?

# How Much to Eat: Plate model

Following a 'healthy plate' model at meals can help us eat the right amount of carbohydrates throughout the day



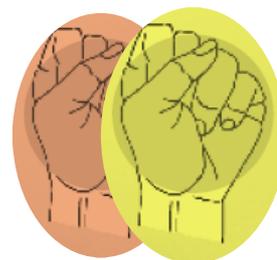
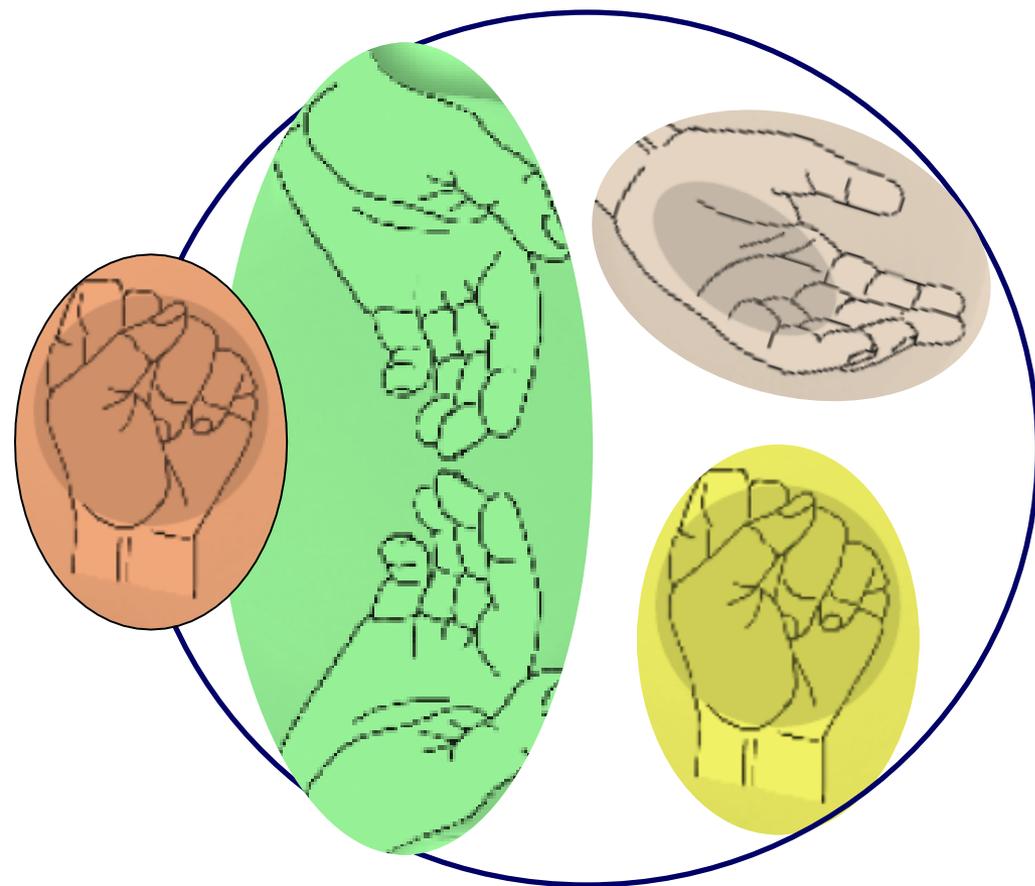
Canada's Food Guide



Diabetes Model

CHO = carbohydrate

## Another way to “eyeball” portions



A fist is about 1 cup  
or a medium fruit



Two open hands hold  
about 1.5 cups



The palm of a hand is  
about ½ cup or 75 g

## A bit more about Carbohydrates: Quality

Not all carbohydrates are created equally! We've already discussed how ultraprocessed foods are high in sugar, fat and salt. These lower quality foods quickly turn into sugar in your body.

Another way to consider carbohydrate quality is Glycemic Index (GI). Foods with a high GI raise your blood sugar higher and faster than a food with a low GI.

Low GI	Medium GI	High GI
Whole Grain Tortilla	Whole Grain Bread	White or Whole Wheat Bread
All-Bran Cereal	Oats	Rice Krispies, Corn Flakes
Dried Beans and Lentils	Cornmeal	Puffed Wheat, All-Bran Flakes
Pasta (al dente)	Wild Rice	Instant White Rice
Converted or Parboiled Rice	Brown Rice	Carrots
Sweet Potato	Potatoes (cooled)	Potatoes (hot)
Popcorn	Rye Crisp Crackers	Soda Crackers
Apple, Orange, Berries	Cherries, Grapes, Banana	Watermelon
Milk, Yogurt		

# Ultraprocessed foods

Ultraprocessed foods make blood sugar higher. These foods contain sugar, fat and/or salt.

No foods are forbidden – but making healthy choices can help control your blood sugar and prevent complications. Often sugary choices happen when eating out or stopping at a convenience store.



**94 grams** of carbohydrate

- **60 grams** of sugar
- 32 grams of starch
- 2 grams of fibre

**26 grams** of fat

**658 calories**

## Beverages

The new Canada's food guide encourages us to drink water. Other healthy beverages include unsweetened lower fat milk, unsweetened coffee, unsweetened tea. Do you see the trend?

Health Canada has approved non-nutritive sweeteners as safe up to the Acceptable Daily Intake (ADI). These sweeteners do not raise blood sugar and can be helpful as people with prediabetes and diabetes make changes related to food.

Diabetes Canada has created a helpful handout that describes the ADI for the non-nutritive sweeteners currently available in Canada.

<http://guidelines.diabetes.ca/docs/patient-resources/sugars-and-sweeteners.pdf>

Change is hard and we need to support people with evidence and facts. There is a lot of misinformation about non-nutritive sweeteners on the internet.

# What about traditional foods?

- Foods from the land are the way the Creator made them and are healthy.
  - The meat from wild game is an excellent low-fat source of iron and protein.
  - Berries are great sources of vitamins, minerals and fibre.
- Traditional foods are an important part of ceremony and protocols
- Using traditional foods is a way to connect across generations.
- Alberta First Nations Food Sovereignty Declaration, June 2017
  - Elders from all three treaty areas came together to discuss food sovereignty and how to increase the use of traditional foods in community programs and facilities
  - The resulting document guides how Nations and ISC to move forward together.



# Emotional Side of Eating

The new Canada's Food Guide encourages us to be mindful of our eating habits. What does this mean?

- Food is not only about eating
- Food is used to celebrate life and culture
- Food can be used to deal with stress, sadness or boredom
- Food is medicine



Being mindful is taking these things into consideration.

- Are you hungry or are you eating out of habit?
- Are you angry, sad, happy, excited, bored, lonely?
- Do I take time to eat my meal or am I rushed?
- Do I eat in my car? Do I eat in front of the TV?
- Do I enjoy my food?



# Back to checking blood sugars...

Things to think about if blood sugars are above target after a meal:

- Has it been 2 hours since you ate?
- Was your plate bigger than usual?
- Did you follow the plate method for proportions?
  - Was half your plate vegetables?
  - Did you choose whole grain foods like brown bread or brown rice?
  - Did you include protein foods like lean meat, eggs, beans?
- Did you take your medications the way your doctor or nurse told you?
- Was your food ultraprocessed or closer to the way the Creator made it?
- Did you choose a healthy drink like water or milk or unsweetened tea?



# Barriers to Healthy Eating

- Healthy foods are too expensive
- I don't have enough money for food
- Too many mouths to feed
- I don't have a kitchen
- I don't have time
- I don't like vegetables
- My ancestors never ate vegetables
- I don't know how to cook
- I don't have a car
- These pills are taking care of me – I can eat what I want
- I work hard – I deserve a donut
- I only have a touch of the sugar
- They give me too much food at a feast
- I don't...

# What Nutrition Activities help Address the Barriers?

- Good Food Box/Meal Bags
- Grocery Store Tour (virtual)
- Cooking classes
- Food Budgeting
- Samples of Healthy Foods
- Organize transportation to store
- Diabetes classes
- Posters in Kitchen
- Individual Conversations
- Kitchen in a Box
- Berry and medicine picking
- Lunch and Learns
- Group Activities
- Talk about emotions
- Traditional foods
- Gardening
- Label Reading
- Potluck with healthy choices
- Involve Elders
- Engage the youth
- Partnerships in community

# Helping people set goals – I want to eat healthier

Here are three quick questions that can help people meet their goals:

1. How **important** is it for you to <insert self-management goal> - low, medium, or high?

(Goal examples: increase levels of physical activity, reduce weight, improve A1C, lower BP)

If importance (motivation) is rated low, ask what would need to happen for importance to go up?

A high level of importance will indicate that the person is ready to change.

2. How **confident** are you in your ability to <insert target outcome here> - low, medium, or high?

If their confidence is rated low, explore what needs to happen to increase their confidence. Usually this has to do with improving knowledge, skills or resources and support.

A high level of confidence indicates that the person is ready to change.

3. Can we set a **specific** goal for you to try before the next time we meet? What steps will **you** take to achieve it? Think SMART goals: Specific, Measurable, Achievable, Realistic and with a Time Frame.

# Helping people set goals – Decisional Balance

Decisional Balance – Weighing the Pros and Cons of Changing (or Not Changing) Behavior				
The change I'm thinking of making is:				
STEP 1: Consider staying the same	<b>PROS</b> of staying the SAME:	<b>How big a deal is it?</b> 1 = not such a big deal 10 =big deal!	<b>CONS</b> of staying the SAME:	<b>How big a deal is it?</b> 1 = not such a big deal 10 =big deal!
	* _____ * _____ * _____ * _____ * _____	_____ _____ _____ _____ _____	* _____ * _____ * _____ * _____ * _____	_____ _____ _____ _____ _____
STEP 2: Consider making the change	<b>CONS</b> of making a CHANGE:	<b>How big a deal is it?</b> 1 = not such a big deal 10 =big deal!	<b>PROS</b> of making a CHANGE:	<b>How big a deal is it?</b> 1 = not such a big deal 10 =big deal!
	* _____ * _____ * _____ * _____ * _____	_____ _____ _____ _____ _____	* _____ * _____ * _____ * _____ * _____	_____ _____ _____ _____ _____
STEP 3: Add	_____		_____	
STEP 4: Compare	<b>Which number is bigger?</b>			
	 If this number is bigger, the balance is leaning towards <b>STAYING THE SAME.</b>		 If this number is bigger, the balance is leaning towards <b>MAKING A CHANGE.</b>	



diabetes.ca | 1-800 BANTING (226-8464) | info@diabetes.ca

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# Nutrition Policy

Nutrition policy can help communities address many nutrition-related issues like food insecurity, diabetes, weight, malnutrition, high blood pressure, dental caries.

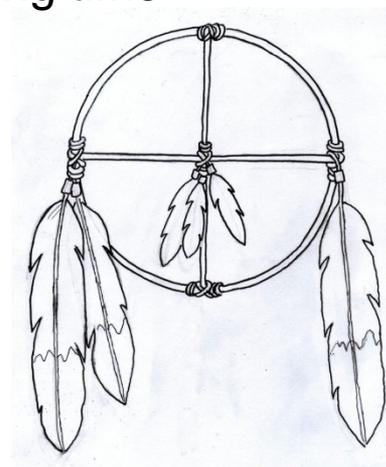
Things to consider could include:

- Pop and other sweetened drinks
- Ultraprocessed foods
- Community Feasts
- Health education activities
- Schools
- Elder's Lodges
- Traditional Foods
- Water
- Local Stores



# Moving Forward

- Make understanding culture a key part of your wholistic practice.
- Healthy Eating is part of a Healthy Lifestyle.
- Healthy Eating is about choosing foods that help you maintain your body.
- Healthy Eating is also about making small changes in your behaviours.
- Healthy Eating is for EVERYONE!
  
- Consider whole foods - closer to the way the Creator made them
- Choose foods you enjoy and eating patterns you can do for a long time
  
- Small changes can make a big difference.
  
- Consult a Registered Dietitian if you want to learn more.



# Where can I get more help?

## 1. TSAG

- a. Continue attending ISC-FNIHB Diabetes 101 Education series with TSAG  
<https://fntn.ca/Home.aspx>
- b. Check out the Nutrition Training videoconferences:  
<https://fntn.ca/Series/NutritionTraining.aspx>

## 2. ISC-FNIHB:

- a. Get to know your Community Nutrition Advisor!
- b. General Diabetes Information: Kathleen Gibson RD CDE, 780-495-8641
- c. Resource Library: <https://www.onehealth.ca/ab/ResourceLibrary/WhatWeOffer.aspx>

## 3. Onehealth - <https://www.onehealth.ca/ab/CommunityHealth/Nutrition.aspx>

- a. The Nutrition Advisory Team has a Food Security Page and a School Nutrition Page
- b. ALL of our nutrition resources are posted on Onehealth!
- c. Many nutrition resources from our partners are posted on Onehealth

# Where can I get more help?

## 4. Alberta Health Services

- a. AHS Indigenous Wellness Program – 780-735-4512, learn more at <https://www.albertahealthservices.ca/findhealth/service.aspx?id=1009563>
- i. Jane Jensen, RD can provide clinical nutrition to communities in Treaty 8 by videoconference.
- b. Health Link: Call 811 or visit [www.MyHealth.Alberta.ca](http://www.MyHealth.Alberta.ca)
- c. Healthy Eating Starts Here resources: <https://www.albertahealthservices.ca/nutrition/Page12598.aspx>
- i. AHS has developed resources for on a wide variety of healthy eating topics for schools, childcare centres, workplace and in the community.
- d. Carbohydrates in Food handout: [https://www.albertahealthservices.ca/assets/info/nutrition/if-nfs-carbohydrate-in-foods\(Pictorial\).pdf](https://www.albertahealthservices.ca/assets/info/nutrition/if-nfs-carbohydrate-in-foods(Pictorial).pdf)

# Where can I get more help?

## 5. Diabetes Canada – [www.diabetes.ca](http://www.diabetes.ca)

### a. 2018 Clinical Practice Guidelines: <http://guidelines.diabetes.ca/>

1. There are so many health care provider and client resources available as part of the Guidelines. Many are interactive to help you learn more.

## 6. Canada's food guide – <https://food-guide.canada.ca/en/>

## 7. Clearing the Plains: Disease, Politics of Starvation, and the loss of Aboriginal Life by James Daschuk, University of Regina Press

### a. Presentations on youtube: <https://www.youtube.com/watch?v=c2IUCd4yX6E>

## 8. Mosby, I and T. Galloway, 2017, “The abiding condition was hunger”: assessing the long-term biological and health effects of malnutrition in Canada's residential schools. British Journal of Canadian Studies 30(2) pp147-162

# Overview of Diabetes 101 Series

- [What is Diabetes?](#) – January 23, 2019 – recording available
- [Diabetes Complications](#) – February 28, 2019 – recording available
- [History Plays a Part in our Health Today](#) – March 7 , 2019 – recording available
- [Diabetes Prevention and Management: Nutrition 101](#) – March 21, 2019
- [Diabetes Prevention and Management: Active Living 101](#) – April 11, 2019
- [Diabetes Prevention and Management: Medications 101](#) – April 25, 2019
- [Meaningful Conversations](#) – May 9, 2019
- [Diabetes in Special Populations: Diabetes in Pregnancy](#) – May 23, 2019
- [Diabetes in Special Populations: Diabetes and Youth](#) – June 6, 2019

# Questions?

# Thank you for Watching Nutrition 101!

- Please fill out the Attendance and Evaluation forms for your site. The forms can be found on [www.fntn.ca](http://www.fntn.ca).
- This information helps us plan additional sessions or new series.
- Please send by fax to 780-495-7338 or scan and email to [kathleen.gibson@canada.ca](mailto:kathleen.gibson@canada.ca)
- Join us on April 11, 2019 for Active Living 101.

