

## Nutrition and Diabetes

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### Learning Objectives

1

Understand how different **foods** affect diabetes management and how the **timing** of meals and **portion sizes** impact **blood sugar control**.

2

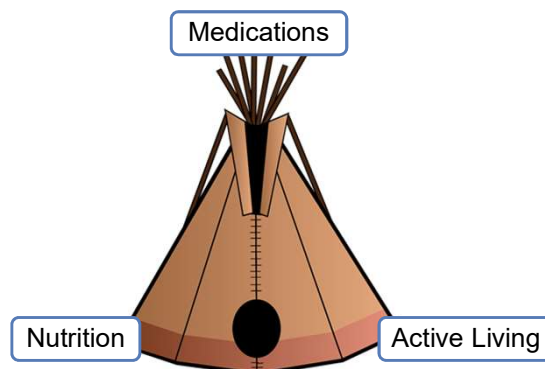
Identify **strategies** to promote healthy eating in the context of understanding **why people eat the way they do**.

## Outline

- Diabetes Prevention and Management
- Healthy Eating
- What's In Our Food
- How Much and When to Eat
- Mindful Eating
- Barriers to Healthy Eating
- Why people eat the way they do
- Helping Clients
- Resources

## Are Prevention and Management Different?

The steps to **prevent** diabetes are the **same** as the steps to **manage** diabetes. Culture is at the core of prevention and management.

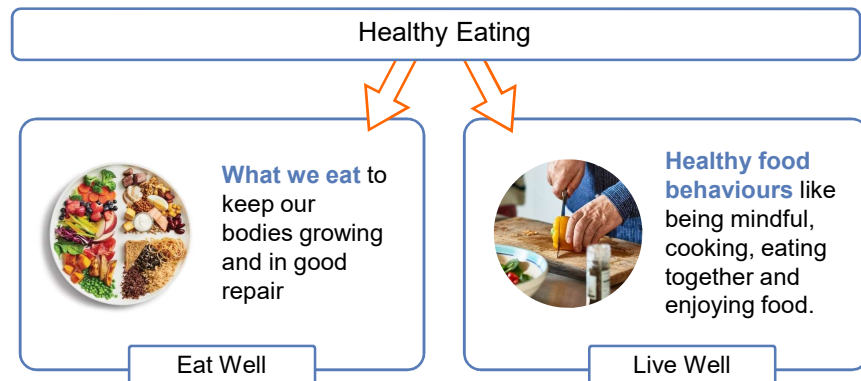


## Is there a “diabetes diet”?

**NO!**

Healthy foods and healthy food behaviours are important for everyone.  
Healthy eating can reduce your risk of many diseases and complications.  
Eat a variety of foods each day!

## What is Healthy Eating?



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

**FOOD is MEDICINE**

## Poll Question



What part of our food affects blood sugars the most?

## 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

## Carbohydrate Foods increase blood sugar

Grains							
Bread	Baked hamock	Bagel	Bun	Soda crackers	Hot cereal	Cold cereal	Pancake or waffle
1 slice	2x2x1 inch (5x5x2.5 cm)	1/2	1/2	7	1/2 cup (175 mL)	1/2 cup (125 mL)	1 (4 inch or 10 cm)
Cooked pasta, quinoa	Cooked rice, barley	Thick soup	Pizza crust	Pita	Roti/chapati		
1/2 cup (125 mL)	1/2 cup (75 mL)	1 cup (250 mL)	1/2 of 12 inch or 30 cm pizza	1/2 (6 inch or 15 cm)	1 (6 inch or 15 cm)		
Starchy Vegetables							
Beans, peas, lentils	Com	Green peas	Potato	Squash	Sweet potato, yam		
1/2 cup (125 mL) cooked	1 cup (250 mL)	1 cup (250 mL)	1/2 cup (125 mL)	1/2 cup (175 mL)	1/2 cup (125 mL)		
Fruit							
Apple, orange	Banana	Blueberries	Other berries	Cherries or grapes	Canned fruit	Kiwis	Peach, nectarine
1 medium	1/2 large	1 cup (250 mL)	2 cups (500 mL)	15	1/2 cup (125 mL)	2 medium	1 large
Melon	Pear	Pineapple	Plums	Juice, 100%			
1 cup (250 mL)	1 small	1/2 cup (175 mL)	2 medium	1/2 cup (125 mL)			
Milk and Alternatives							
Milk or fortified soy beverage, no added sugar	Yogurt, plain or no added sugar	Yogurt with added sugar	Milk or fortified soy beverage with added sugar				
1 cup (250 mL)	1/2 cup (125 mL)	1/2 cup (75 mL.) or 100 g	1/2 cup (125 mL.)				
Other foods							
Sugar, jam, jelly, honey, syrup	Sugary drinks, pop	Popcorn					
1 Tbsp (15 mL)	1/2 cup (125 mL)	3 cups (750 mL)					

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## Non-Carbohydrate Foods do not increase blood sugar

Vegetables							
Meat and Protein Foods							
Fish	Lean meat and poultry	Eggs	Cheese	Cottage cheese	Tofu		
1/2 cup (125 mL)	1/2 cup (125 mL)	1/2 cup (125 mL)	1/2 cup (125 mL)	1/2 cup (125 mL)	1/2 cup (125 mL)		
Fats							
Oil, tub margarine, butter	Salad dressing	Nuts, nut butters, seeds	Olives, avocados				
1 Tbsp (15 mL)	1 Tbsp (15 mL)	1 Tbsp (15 mL)	1 Tbsp (15 mL)				
Extras							
Coffee, tea	Broth	Herbs, spices	Diet pop	Sugar substitutes			
1 cup (250 mL)	1 cup (250 mL)	1 Tbsp (15 mL)	1 can (355 mL)	1 packet			

Alberta Health Services resource

## Fibre

Fibre is a special carbohydrate that **does not turn into sugar**

Fibre acts like a **sponge** to soak up extra sugar and fat in your blood.

Fibre is found only in **plant-based** foods.

**Less fibre** is found in **processed** foods.

Goal is **25g each day**

### High Fiber Food



## What's in Our Food - Micronutrients

The food we eat contains important vitamins and minerals needed for health.

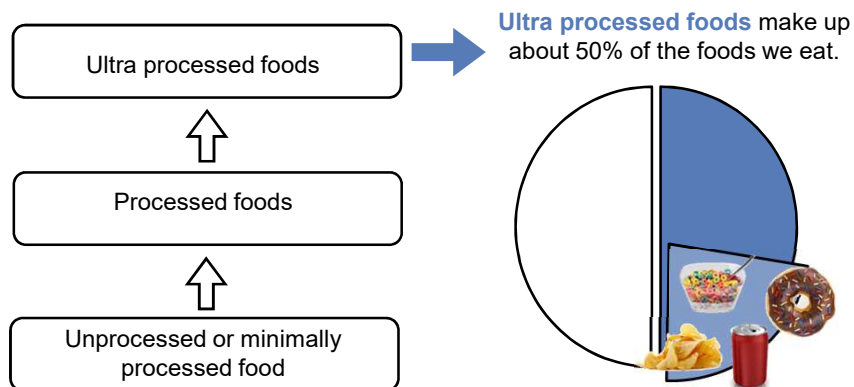
**Vitamins** ⇨ Vitamins A  
Vitamin B(s)  
Vitamin C  
Vitamin  
Vitamin E  
Vitamin K

**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



About 20% is from **sweetened foods and beverages**.

## Poll Question



Ultra processed foods can contain high amounts of \_\_\_\_\_

## Ultraprocessed foods



These foods contain high amounts of **sugar, fat** and/or **salt**.  
These foods contain low amounts of **fibre**.  
Ultraprocessed foods **increase blood sugar**.



94 grams of carbohydrate

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

26 grams of fat


658 calories

**No foods are forbidden** – but making healthy choices can help control blood sugar and prevent complications.

## Looking for Carbohydrate

Fruity O's	1	Oatmeal
<b>Nutrition Facts</b> Per 1 cup (31 g) <b>Calories 121</b> % Daily Value* <b>Fat</b> 1 g 1% Saturated 0 g 2% + Trans 0 g <b>Carbohydrate</b> 27 g Fibre 2 g 8% Sugars 13 g 13% <b>Protein</b> 1 g <b>Cholesterol</b> 0 mg <b>Sodium</b> 116 mg 5% Potassium 34 mg 1% Calcium 5 mg 0% Iron 5 mg 25% Vitamin C 0 mg 0% *5% or less is a little, 15% or more is a lot	← → ← → ← →	<b>Nutrition Facts</b> Per 1 packet (30 g dry) <b>Calories 116</b> % Daily Value* <b>Fat</b> 2 g 3% Saturated 0 g 2% + Trans 0 g <b>Carbohydrate</b> 20 g Fibre 3 g 10% Sugars 0 g 0% <b>Protein</b> 4 g <b>Cholesterol</b> 0 mg <b>Sodium</b> 1 mg 0% Potassium 115 mg 2% Calcium 16 mg 1% Iron 1 mg 6% Vitamin C 0 mg 0% *5% or less is a little, 15% or more is a lot

## Handy Tip: 4 g of sugar is equal to 1 teaspoon

Fruity O's	13g ÷ 4 = 3.25 tsp	Oatmeal
<b>Nutrition Facts</b> Per 1 cup (31 g) <b>Calories 121</b> % Daily Value* <b>Fat</b> 1 g 1% Saturated 0 g 2% + Trans 0 g <b>Carbohydrate</b> 27 g Fibre 2 g 8% Sugars 13 g 13% <b>Protein</b> 1 g <b>Cholesterol</b> 0 mg <b>Sodium</b> 116 mg 5% Potassium 34 mg 1% Calcium 5 mg 0% Iron 5 mg 25% Vitamin C 0 mg 0% *5% or less is a little, 15% or more is a lot		<b>Nutrition Facts</b> Per 1 packet (30 g dry) <b>Calories 116</b> % Daily Value* <b>Fat</b> 2 g 3% Saturated 0 g 2% + Trans 0 g <b>Carbohydrate</b> 20 g Fibre 3 g 10% Sugars 0 g 0% <b>Protein</b> 4 g <b>Cholesterol</b> 0 mg <b>Sodium</b> 1 mg 0% Potassium 115 mg 2% Calcium 16 mg 1% Iron 1 mg 6% Vitamin C 0 mg 0% *5% or less is a little, 15% or more is a lot



## Eating for health



What



How Much



When

## ? What?



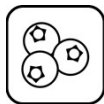
- Foods that can **help** to keep everyone healthy:
  - ✓ Vegetables and fruit: fresh, frozen, canned and dried
  - ✓ Whole grain foods: breads, pasta, cereals
  - ✓ Lower fat milk products: fluid milk, yogurt, cheese
  - ✓ Lean meats (beef, pork, chicken, moose, deer), fish, eggs, beans, lentils
- Food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

## Poll Question



Can traditional foods from the land be part of a healthy diet?

## ? What about traditional foods?



Foods from the land are **healthy** the way the Creator made them.

- Wild game meat 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.

## ? Beverages

Healthy beverages include:

 Water  BEST choice	 Unsweetened lower fat milk	 Unsweetened coffee	 Unsweetened tea
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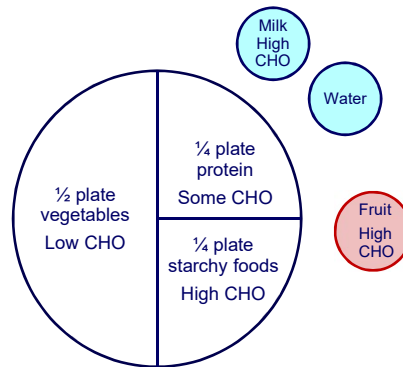
Non-nutritive sweeteners are **safe** to eat and **do not raise blood sugar**. There is a lot of **misinformation** about these sweeteners on the internet.

## 🍴 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

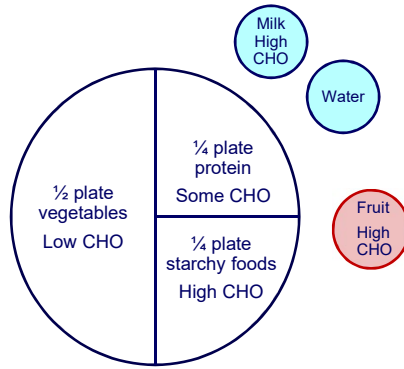
CHO = carbohydrate

## How Much to Eat: Plate model

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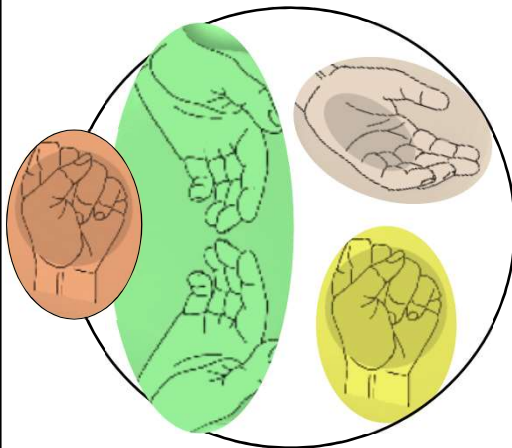
Canada's Food Guide



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 1/2 cup or 75 g

<http://guidelines.diabetes.ca/docs/patient-resources/just-the-basics-EN.pdf>

## Diabetes Canada Statement: Low Carbohydrate Diets

< 130 g per day



### Benefits

- Lower A1C levels
- Reduced insulin needs
- Less glucose variability
- Weight loss



### Cautions

- Long-term impact is unknown
- Can be difficult to follow a lower carbohydrate diet
- Can be harder to get recommended amounts of fiber and other nutrients
- People may need to change insulin and/or diabetes medications



Seek support from a dietitian who can help to create a plan that aligns with an individual's treatment goals

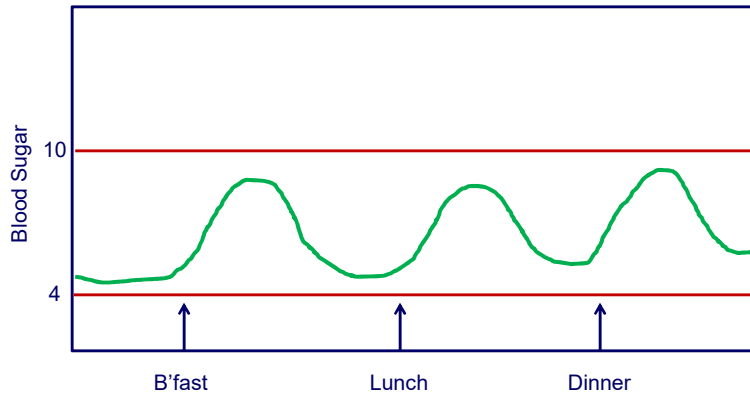
## Poll Question



Eating regular meals throughout the day is helpful for managing blood sugars

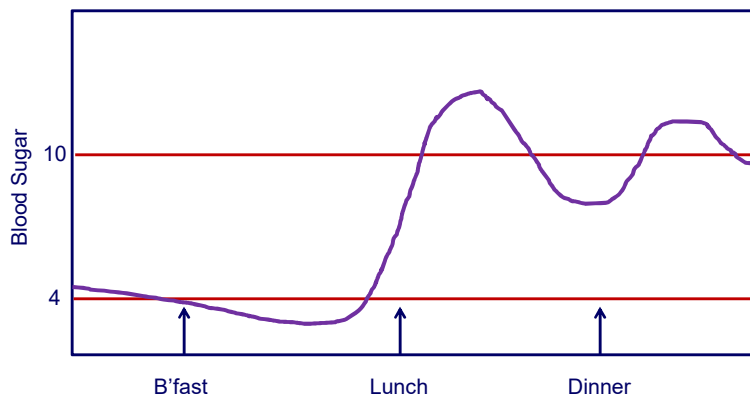
## When to Eat - Timing

Daily snapshot



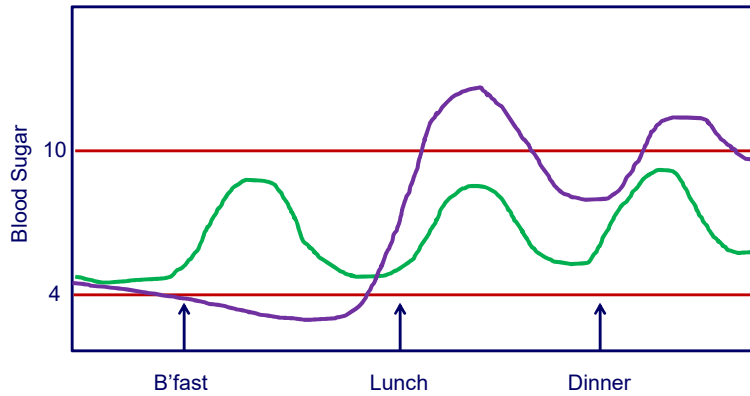
## When to Eat - Timing

Daily snapshot



## When to Eat - Timing

Daily snapshot



## Questions for High Blood Sugar Readings



Has it been 2 hours since you ate?



Was your plate bigger than usual?



Did you follow the "plate method" for proportions?



Did you take your medications the way you were told to?



Was your food ultra processed?



Did you choose a healthy drink?

## Emotional Side of Eating

Be **mindful** of eating habits

- Food is used to **celebrate** life and culture
- Food can be used to **cope** with stress, sadness or boredom
- Food is **medicine**

Being **mindful** is slowing down and asking these questions:

- 🟢 Are you hungry or are you eating out of habit?
- 🟡 Are you angry, sad, happy, excited, bored, lonely?
- 🟠 Do you take time to eat your meal or are you rushed?
- 🔴 Where do you eat? In the car? In front of the TV?
- 🟡 Do you enjoy your food?

## Barriers to Healthy Eating

Healthy foods are too expensive

I don't know how to cook

I don't have enough money for food

I don't have a car

Too many mouths to feed

These pills are taking care of me

I don't have a kitchen

I work hard – I deserve a donut

I don't have time

I only have a touch of the sugar

I don't like vegetables

They give me too much food at a feast

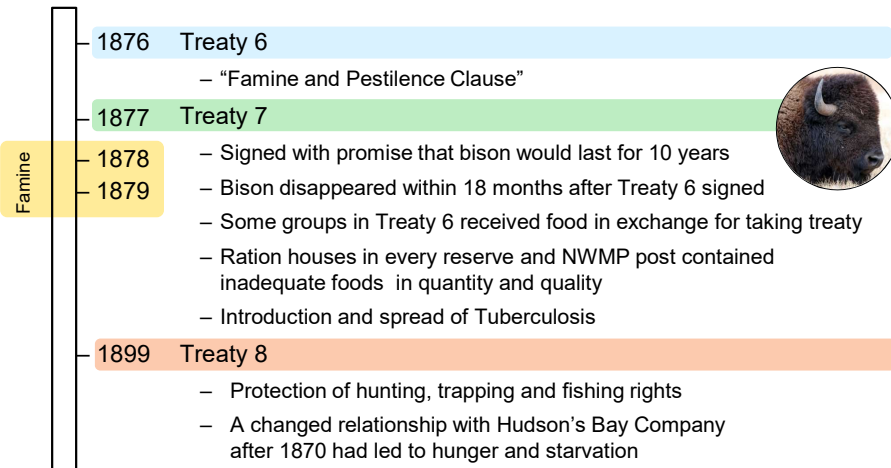
My ancestors never ate vegetables

I don't... I can't... I won't...



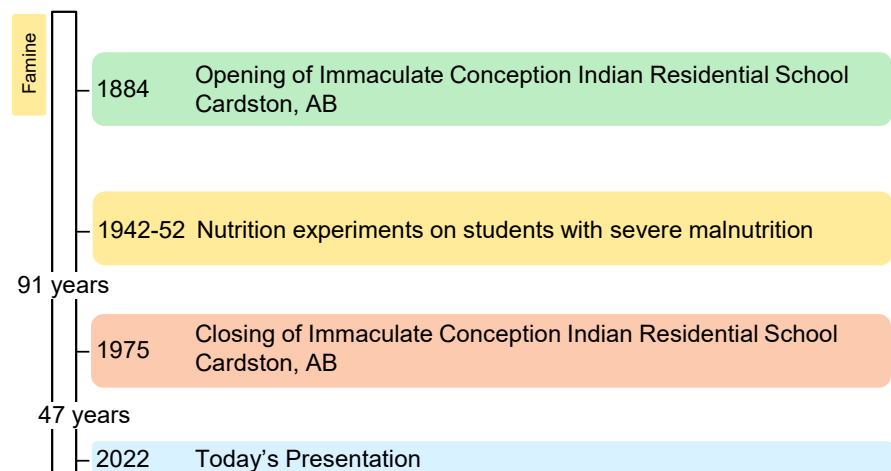
## Why people eat the way they do?

### Colonization of Western Canada



## Why people eat the way they do?

### Indian Residential Schools in Alberta



## Why do people eat the way they do?

Malnutrition in childhood is connected to:

- Stunting
- Obesity
- Diabetes
- High blood pressure
- Cardiovascular disease

Complex intergenerational impacts contribute to:

- Diabetes
- Obesity

“we were **always hungry**”

“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.”

Theodore Fontaine,  
Sagkeeng Objibway First Nation

## 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.



Everyone wants to live a long and healthy life.



Encourages us to advocate on behalf of vulnerable individuals.



Encourages us to learn more.

## What Nutrition Activities Help Address These Barriers?



Good Food Box/Meal Bags



Diabetes classes



Grocery Store Tour



Posters in Kitchen



Cooking classes



Individual Conversations



Food Budgeting



Kitchen in a Box



Healthy Foods Samples



Berry and medicine picking



Organize transportation

## What Nutrition Activities Help Address These Barriers?



Lunch and Learns



Label Reading



Group Activities



Healthy Foods Potluck



Talk about emotions



Involve Elders



Traditional foods



Engage the youth



Gardening



Partnerships in community

## Low-Cost Meal Resources

### Directory of Free Food in Alberta



Call 211 to find information on eligibility and other information



<https://www.albertahealthservices.ca/nutrition/Page16163.aspx>

### The Basic Shelf Cookbook



10 Free Recipes Available Online

[The Basic Shelf Cookbook | Canadian Public Health Association \(cpha.ca\)](http://www.cpha.ca)

## Helping people set goals

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

- 1** How **important** is it the goal?  
What are the pros and cons of staying the same?  
What are the pros and cons of changing?
- 2** How **confident** are you in your ability to reach your goal?  
High confidence? Medium confidence? Low confidence?
- 3** What specific steps will **you** take to achieve your goal?  
Make it **SMART**: **S**pecific **M**easurable **A**chievable **R**ealistic and set a **T**ime Frame

## Where can I get more help?

### Alberta Health Services

- Virtual Diabetes Prevention Program:  
<https://www.albertahealthservices.ca/scns/Page13961.aspx>
- AHS Indigenous Wellness Program: call 1-800-441-4512; email:  
[Indigenous.Health@ahs.ca](mailto:Indigenous.Health@ahs.ca)
- Health Link: Call 811 or visit [www.MyHealth.Alberta.ca](http://www.MyHealth.Alberta.ca)
- Healthy Eating Starts Here resources:  
<https://www.albertahealthservices.ca/nutrition/Page12598.aspx>  
AHS has developed resources for on a wide variety of healthy eating topics for schools, childcare centres, workplace and in the community.
- Carbohydrates in Food pictorial handout:  
<https://www.albertahealthservices.ca/assets/info/nutrition/if-nfs-carbohydrate-in-foods-pictorial.pdf>



## Where can I get more help?

### OKAKI Diabetes Virtual Care Clinic

- Email: [virtualcare@okaki.com](mailto:virtualcare@okaki.com) or call: 587-882-4477
- New service providing virtual CDE appointments and virtual group classes

### TSAG

- Diabetes 101 Education series (2019) <https://fntr.ca/Series/Diabetes-101>

### Diabetes Canada

- [www.diabetes.ca](http://www.diabetes.ca)
- 2018 Clinical Practice Guidelines: <http://guidelines.diabetes.ca/>
- There are so many health care provider and client resources available as part of the Guidelines. Many are interactive to help you learn more.

### Canada's Food Guide

- <https://food-guide.canada.ca/en/>



## Moving Forward

- ⇒ Make understanding culture a key part of your wholistic practice.
- ⇒ Healthy Eating is for EVERYONE not just people with diabetes.
- ⇒ 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.



## Questions?



The FNIHB **Nutrition Advisory Team** is here to help!



Contact **Laura White** at [laura.white@sac-isc.gc.ca](mailto:laura.white@sac-isc.gc.ca) to connect with the team



Contact **Kathleen Gibson** at [kathleen.gibson@sac-isc.gc.ca](mailto:kathleen.gibson@sac-isc.gc.ca) with any questions about today's presentation