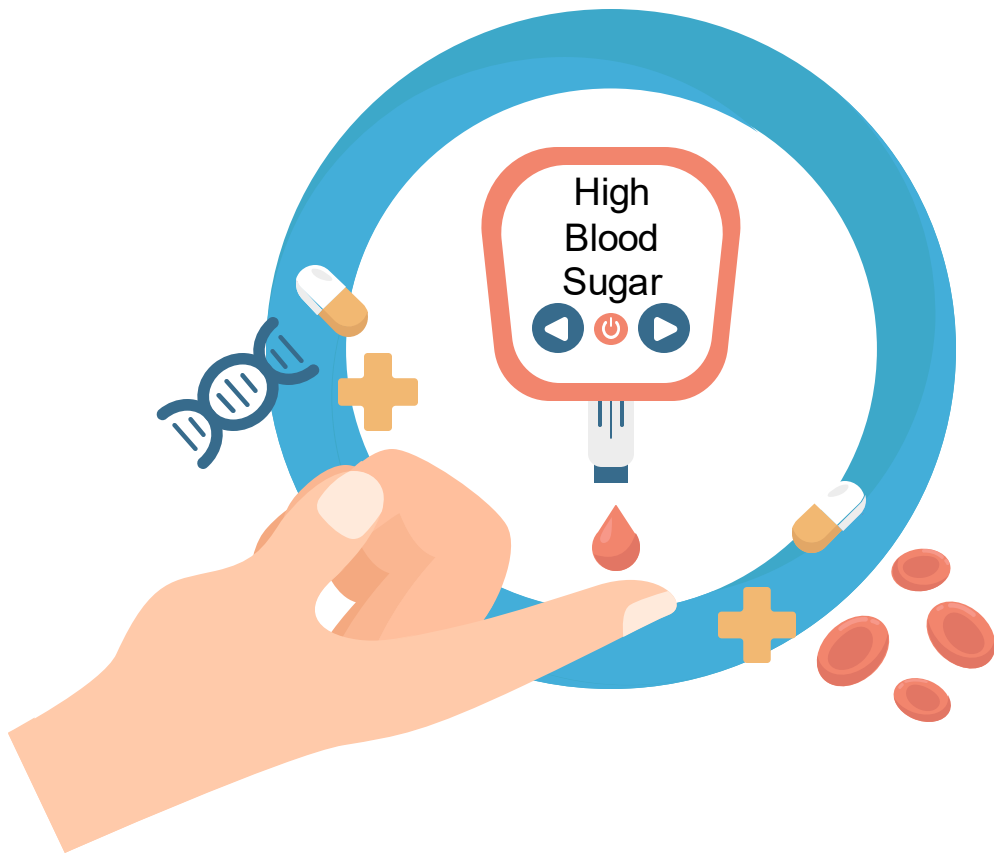




From Diagnosis to Management: Navigating the Diabetes Journey

Your facilitators for today's session



Lori Trofymowych,
Registered Nurse



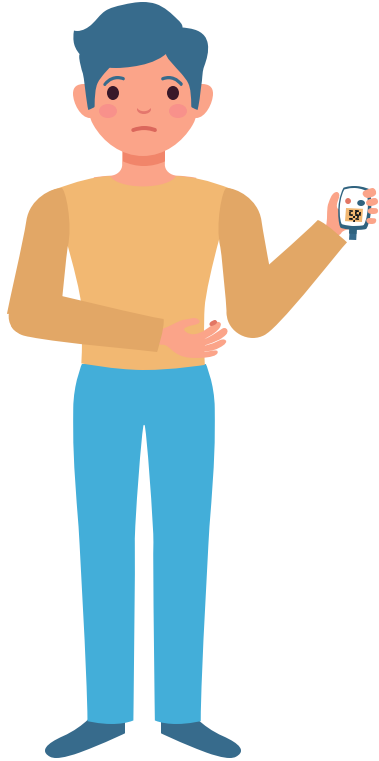
Haneen Youssef,
Registered Dietitian



Paul Smits,
Health Promotion Specialist



Agenda



What is Prediabetes &
Type 2 Diabetes

Medications and
Hypoglycemia



Healthy Eating Patterns,
Balanced Plate and
Portion Control

Carbohydrates (types and
impact on blood sugar),
meal planning and label
reading



Physical Activity and
Stress Management

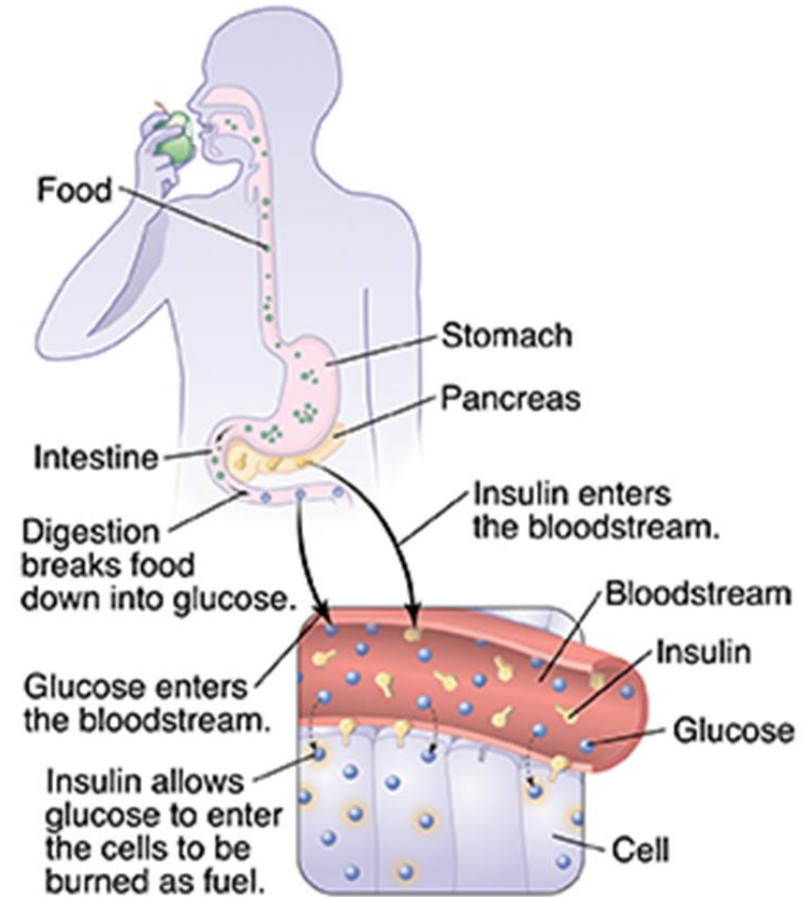
Incidence of Diabetes

- Nearly **1 in 3** Canadians have (type 1, 2, or prediabetes, diagnosed or non diagnosed)
- 11 million Canadians



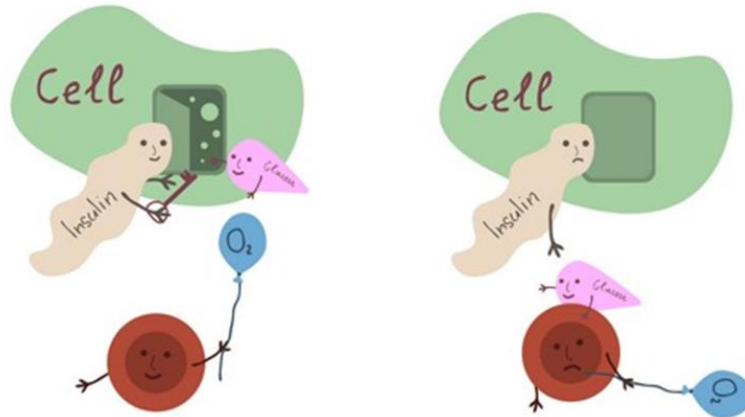
What is diabetes?

- Diabetes is a condition where blood sugar levels are higher than normal.
- The diagram shows exactly what happens when we eat.
- In type 2 diabetes, the body cannot make enough insulin or cannot properly use insulin
- Insulin is needed to control blood sugar levels; in the case of type 2 diabetes, sugar builds up in the blood and can lead to serious health complications



Insulin resistance

- Insulin is the key that allows glucose to enter into all the cells in the body, for use as energy. Insulin resistance occurs when the cells in your body don't let the insulin unlock the door to let glucose come from the blood into the individual cells.
- In turn, your pancreas releases more insulin but your blood sugars stay higher for longer
- **Maintaining a healthy weight and being active reduce insulin resistance.**



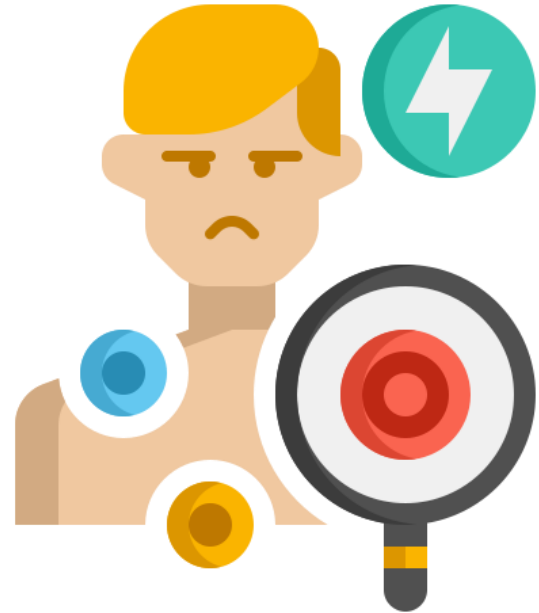
Risk factors for Prediabetes & Type 2 Diabetes

- Over the age of 40
- Being overweight or a high waist circumference
- Family history of type 2 diabetes (parent or sibling)
- Ethnic background (African, Arab, Asian, Hispanic, Indigenous, South Asian)
- High blood pressure
- High cholesterol
- Previous Gestational Diabetes
- PCOS (polycystic ovarian syndrome)
- Psychiatric disorders (depression, bipolar disorder)
- Obstructive sleep apnea
- Glucocorticoid medication use

Signs and symptoms of Prediabetes and Type 2 Diabetes

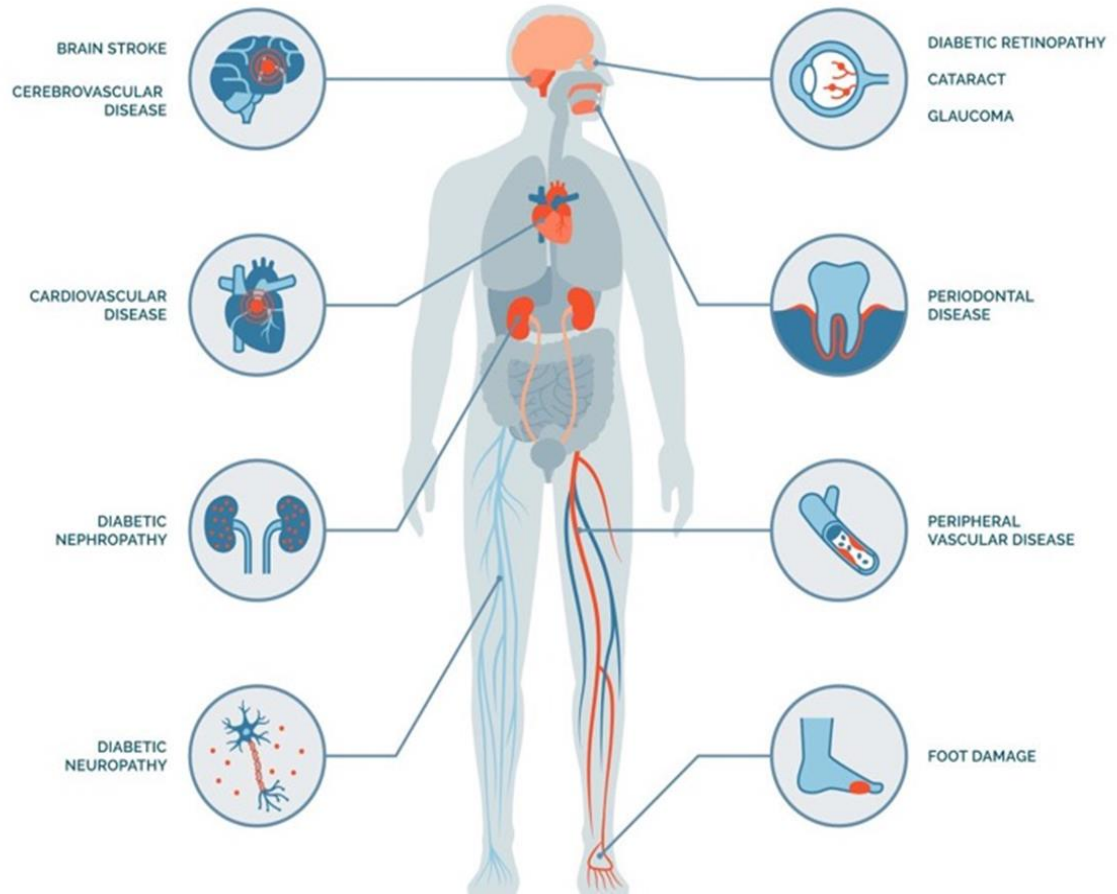
- Unusual thirst
- Frequent urination
- Weight changes
- Lack of energy
- Blurred vision
- Frequent infections
- Cuts and bruises that are slow to heal
- Tingling or numbness in hands and feet

* Some people do not experience any symptoms of prediabetes



Possible complications of Diabetes

- Can reduce your lifespan 5-15 years
- Mortality from all causes is twice as high



Diagnosis of Prediabetes / Type 2 Diabetes

Prediabetes

- Fasting blood sugar ≥ 6.1
- 2hrs after eating > 7.8
- A1C = 6-6.4

Type 2 Diabetes

- Fasting blood sugar ≥ 7
- 2hrs after eating ≥ 11.1
- A1C ≥ 6.5

Self Monitoring of Blood Glucose

- Test with purpose (to assess effects of food and exercise)
- Timing of testing - Fasting, before meals, 2hours after meals
- Ask your Health Care Provider if self monitoring is recommended for you



Blood Sugar Targets

Prediabetes

- Fasting Blood Sugar 4 – 6
- 2 hours after eating ≤ 7.8
- A1C < 6

Type 2 Diabetes

- Fasting Blood Sugar 4 – 7
- 2 hours after eating 5 – 10
- A1C < 7

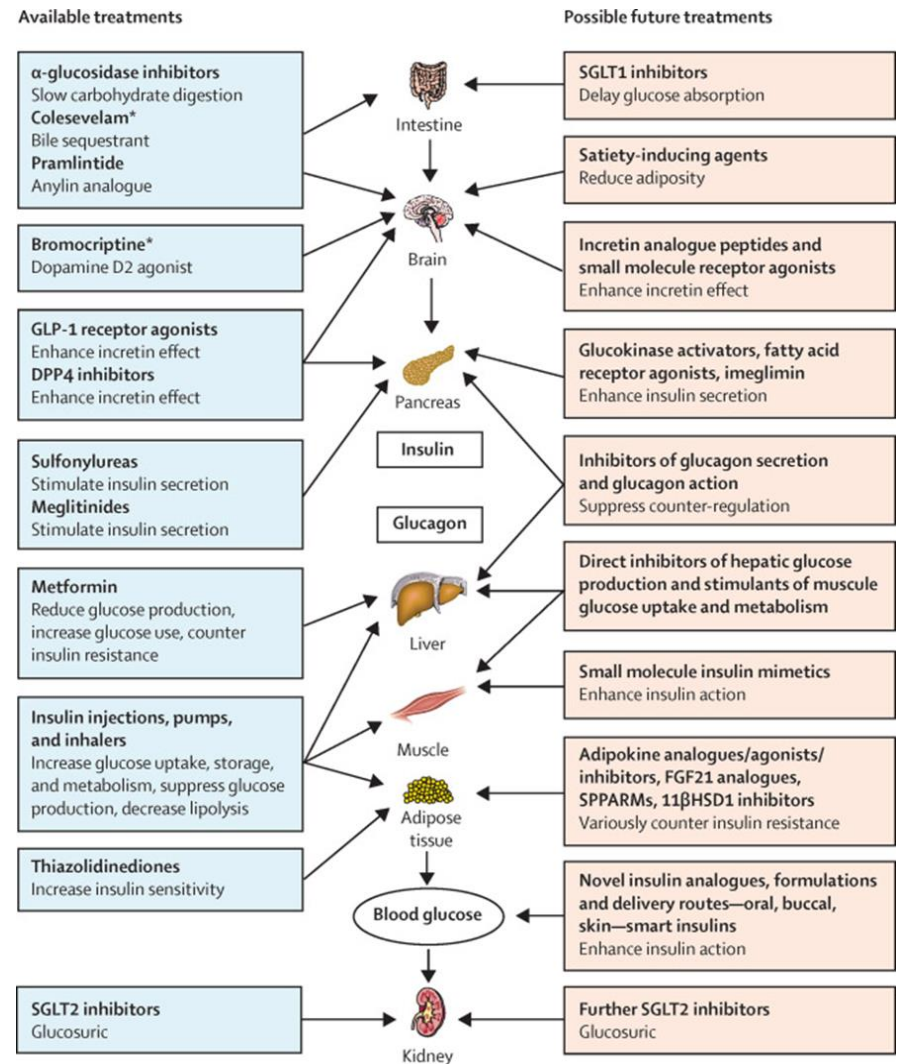
Physician Monitoring & Follow-Up

- **For patients with Prediabetes**
 - ✓ Blood work (A1C) every 6-12 months
- **For patients with Type 2 Diabetes**
 - ✓ Bloodwork (A1C) and follow up physician visit every 3 months
 - ✓ Foot exam yearly
 - ✓ Eye exam yearly
 - ✓ ECG every 3-5 years



Medications

- Medications are one of many tools to help control blood sugars
- There are many types of medications & they all target different organs in our body to help control our blood sugars
 - Examples: Metformin, Janumet, Ozempic, Jardiance, Insulin, etc.



HYPOglycemia

- Low blood sugar (blood glucose <4.0 mmol/L)



Sweating



Pallor/Paleness



Hunger



Fatigue



Irritability
or Anxiety



Rapid Heart
Rate



Lack of
Concentration

HYPOglycemia Treatment: Rule of 15



HOW TO: Treat Low Blood Sugar

1

Test if you suspect low blood sugar.

2

If <4.0 mmol/l, treat with 15 g of fast-acting sugar.

3

Wait 15 min and re-test blood sugar.

4

Eat food (carb + protein) within 1 hour.

What is 15g of Fast-Acting Sugar?



Four
Dex4 tablets



2/3 cup (150ml)
Juice



2/3 cup (150ml)
Regular Pop



1 tbsp
Honey



1 tbsp
Sugar in Water



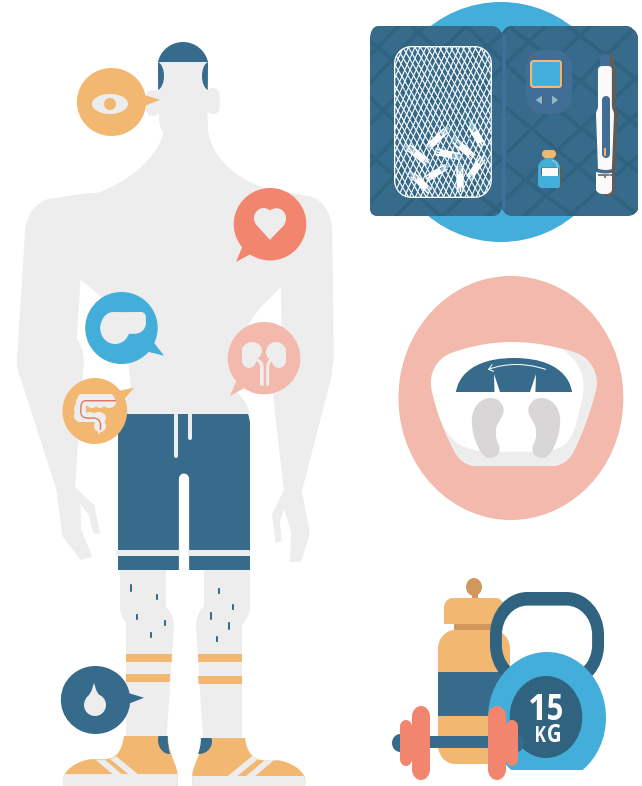
Candies
(e.g. 6 Lifesavers)

Management of Prediabetes / Type II Diabetes

The goal of pre-diabetes/diabetes management is to help control blood glucose levels to minimize risk for adverse health outcomes.

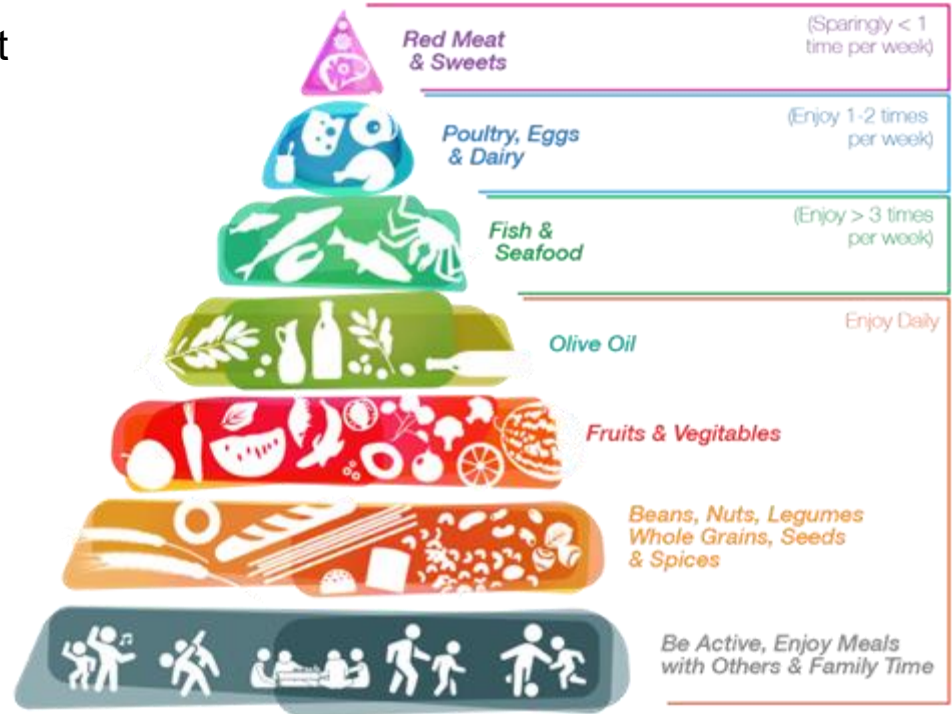
How do we manage pre-diabetes or type 2 diabetes?

1. Healthy diet
 - Balanced plate, carb controlled
 - Low glycemic carbohydrates
2. Regular exercise
 - Aerobic exercise
 - Resistance training
3. Stress Management
4. Maintenance of healthy body weight or sustaining a 5-10% loss if overweight
5. Medication and/or insulin (if prescribed)

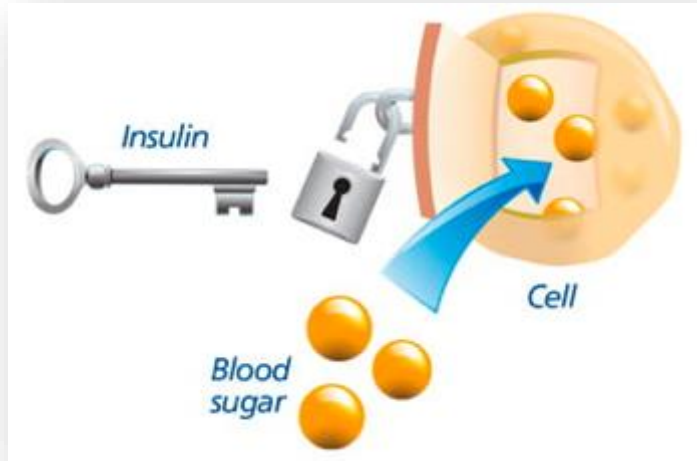


Healthy Eating Patterns

- Pre diabetes and diabetes puts you at higher risk of heart disease and other health complications
- Mediterranean diet is the most well-studied eating pattern to date. It is plant-based with evidence to support its role in:
 - reducing risk for diabetes and /or improving blood sugars
 - reducing risk for heart disease
 - improving weight control
 - improving body inflammation
 - improving mental health



Carbohydrates and Blood Sugar



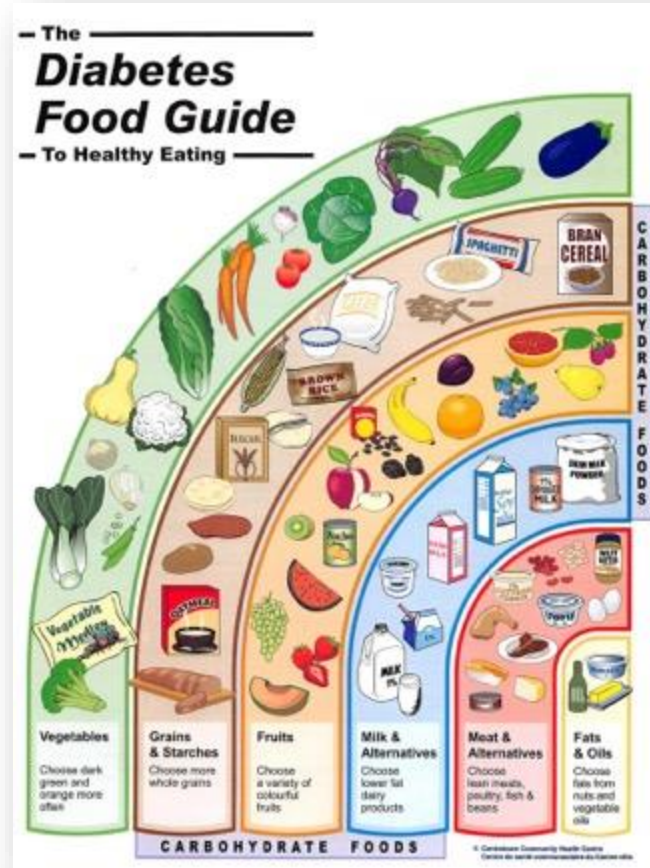
- ❖ **Carbs are your body's preferred source of energy.**
- ❖ Carbs that are eaten get **broken down into simple sugars** by digestion.
- ❖ Sugars enter the bloodstream and cause blood sugar to rise, triggering the pancreas to release **insulin**.
- ❖ Insulin is a hormone that prompts cells to **absorb sugar from the blood** to use for energy.

Next:

What foods contain carbohydrates?

Do all types of carbohydrate rich foods need to be limited?

What foods provide carbohydrates?



Carbohydrate Categories

Simple

- Milk & Alternatives
- Fruit
- Sweets

Complex

- Grains & Starches

Blood Sugars - Simple vs Complex Carbohydrates

Simple Carbohydrates

- digest quickly & can spike blood sugar
- provide short-lasting energy
- **“Added sugars”**
 - white/brown sugars, honey, maple syrup, agave, glucose-fructose, desserts, baked goods, pop, candy etc.
- **Natural sources**
 - milk, yogurt, fruit – include daily
 - contain other beneficial nutrients for health and generally don't spike blood sugars
 - exception: avoid fruit juice



Blood Sugars - Simple vs Complex Carbohydrates

Complex Carbohydrates

- Take longer to breakdown into sugars & provide more lasting energy, especially if high in fibre

- **Starches**

- Many simple sugars strung together
- Foods: grains, legumes, potatoes, pasta, corn

- **Fibre**

- Part of plant foods our body can't digest or absorb
- Foods: fruits, vegetables, nuts, seeds, beans, whole grains



Fibre Benefits

- Part of plant foods that cannot be completely broken down by human digestive enzymes
- Zero calories
- Benefits include
 - Healthy bowels
 - Heart health
 - Blood sugar control
 - Starches rich in soluble fibre (e.g. oats, barley, beans & lentils) raise blood sugar levels more slowly than simple carbohydrates

Recommended Daily Fibre Intake

Men	38 g per day
Women	25 g per day

Foods rich in Fibre

- Whole grains
- Legumes such as beans, lentils, chickpeas, soybeans
- Fruits
- Vegetables
- Nuts & seeds

Fruit Intake with Diabetes

- Fruits contain sugar (glucose and fructose) AND fibre, vitamins, minerals & antioxidants - nutrients important for health
- Most fruits are low glycemic index (do not spike blood sugars) since fructose is slower to process by our body than other sugars

TIPS

- Choose the whole fruit instead of juice
- Watch portion size
- Enjoy 2-3 servings/day as part of a healthy diet

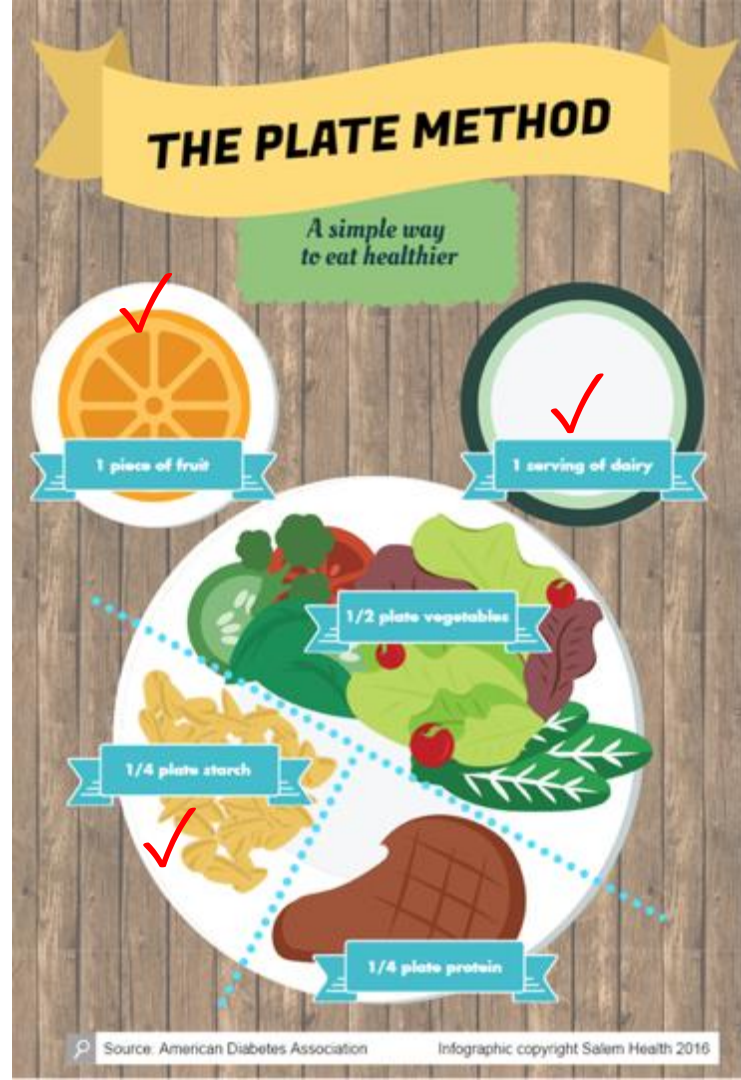


Fruits 3 choices a day	1 medium: apple, orange, pear	2 cups strawberries, blackberries, raspberries	½ cup unsweetened applesauce, canned fruit in juice
	2 medium: kiwi, plums, clementine oranges	1 cup blueberries	½ cup unsweetened juice
	½ medium mango	1 cup melon	¼ cup mixed dried fruit
	1 small banana, grapefruit	¾ cup fresh pineapple	
	1 large peach, nectarine	15 grapes, cherries	

Meal Planning for Blood Sugar Control

- **The Plate Method** is a practical way to portion control carbohydrates as part of balanced & satisfying meals for people looking to manage their blood sugar levels
- **Recall**
 - carbs are your brain & body's preferred energy source - provide about half of your daily calorie needs
 - fibre rich carbohydrates are broken down slowly → more gradual & lower rise in blood sugars
- **Meal routines are important!**
 - 3 meals per day plus balanced snacks if meals are more than 4-5 hours apart
 - Breakfast after a natural 12 - 14 hour overnight fast

✓ Carbohydrate containing foods

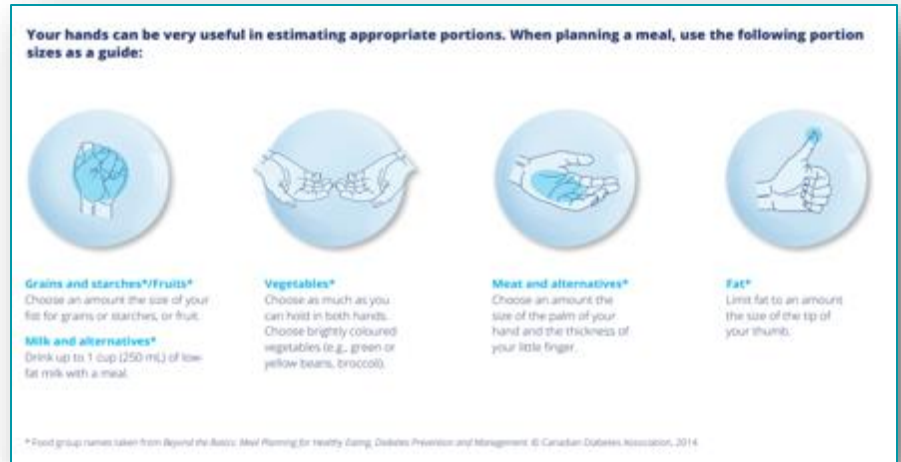


Meal Planning for Blood Sugar Control

- Balanced Plate Method



- Hand Portion Guide



NOTE: proteins, non-starchy vegetables, fats & oils → minimal impact on blood sugars

Label Reading & Determining Net Carbs

Carbohydrates = Fibre + Sugars + Starches

Fibre – slows blood sugar rise

- look for foods with 3 g or more (>10% DV) per serving

Sugars – increase blood sugars quickly

- look for foods with <15% DV per serving
- includes natural & added sugars – check ingredient list

Starches – rarely listed

Nutrition Facts Valeur nutritive	
Per 1 cup (250 mL) pour 1 tasse (250 mL)	
Calories 110	% Daily Value* % valeur quotidienne*
Fat / Lipides 0 g	0 %
Saturated / saturés 0 g	0 %
+ Trans / trans 0 g	
Carbohydrate / Glucides 26 g	
Fibre / Fibres 0 g	0 %
Sugars / Sucres 22 g	22 %
Protein / Protéines 2 g	
Cholesterol / Cholestérol 0 mg	
Sodium 0 mg	0 %
Potassium 450 mg	13 %
Calcium 30 mg	2 %
Iron / Fer 0 mg	0 %
*5% or less is a little, 15% or more is a lot *5 % ou moins c'est peu, 15 % ou plus c'est beaucoup	

Step 1 - Compare the serving you consume to the serving size listed on the label.

Step 2 - Use the %DV to choose products with desired level of nutrients:

< 15% DV – sodium, sugar

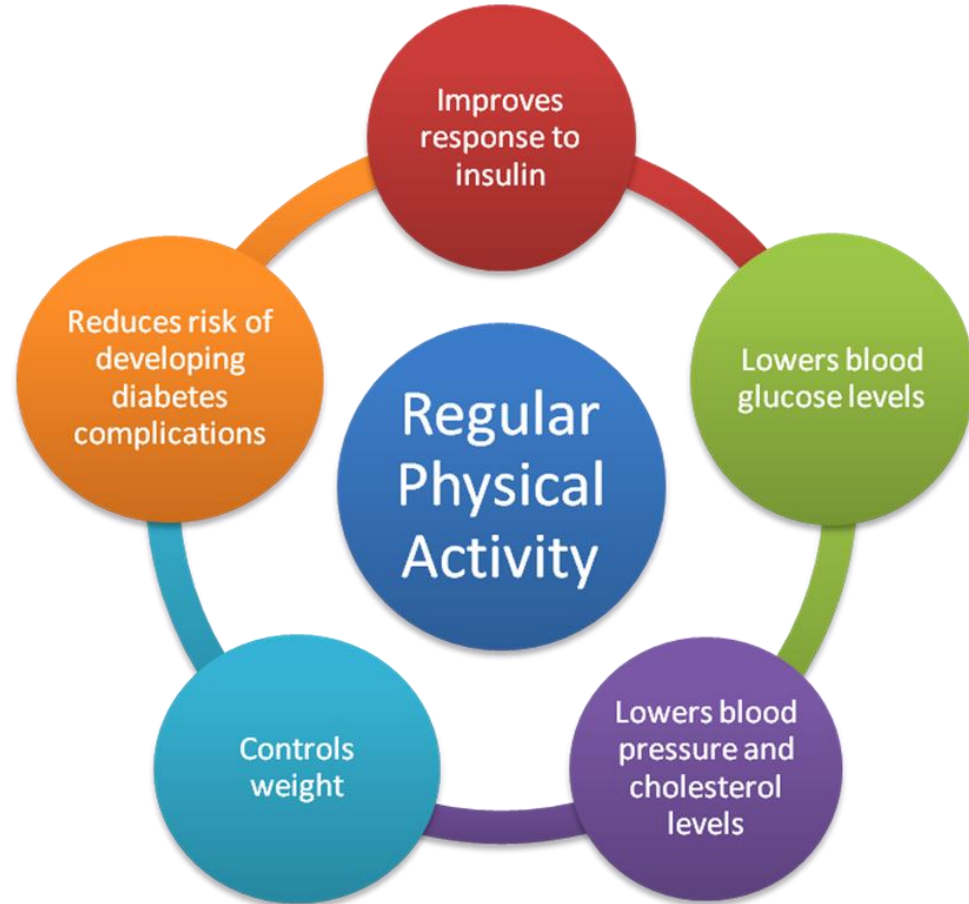
>15% DV - fibre, vitamins, minerals

< 5% DV - saturated fats

Little to no trans fats

Physical Activity

- There are a few ways that exercise lowers blood sugar:
- Insulin sensitivity is increased, so your muscle cells are better able to use any available insulin to take up glucose during and after activity.
- When your muscles contract during activity, your cells are able to take up glucose and use it for energy whether insulin is available or not.



Physical Activity

- Strive to complete at least **150 minutes of moderate-to vigorous-intensity aerobic exercise each week** (e.g. 30 minutes, five days a week) and **resistance exercises, two to three times a week.**
- Aerobic exercise is continuous exercise such as walking, bicycling or jogging that elevates breathing and heart rate.
- Resistance exercise involves brief repetitive exercises with weights, weight machines, resistance bands or one's own body weight.



Physical Activity

- **Find a few activities that you enjoy doing**
 - Ex. Walking and ice skating for aerobic exercise, gardening and weight training for resistance exercise
 - You can make it even more fun by doing exercise with a friend or family member
- **Start small and increase over time**
 - If you haven't been physically active, start with 10 or 15-minutes each day and work your way toward 30-minutes in a few weeks or months
 - You can also start at a light intensity and work your way toward a moderate and vigorous intensity
- **Add more movement into your day**
 - Park further away when completing errands, take the stairs more often (up or down), walk your dog or offer to walk a neighbour's dog

Stress Management

These are the 4 elements of the stress response:



B BODY
(Physiology)

A ACTIONS
(Behaviour)

T THOUGHTS
(Cognition)

E EMOTIONS
(Affect)

Healthy Coping Strategies:



Resources

- [Tools & resources](#) – Diabetes Canada
- [Getting started: healthy eating and diabetes](#) – Diabetes Canada
- [Benefits of Physical Activity](#) – Diabetes Canada
- [Taking care of your mental health](#) – Diabetes Canada
- [Managing your blood sugar fact sheet](#) – Diabetes Canada
- [Hypoglycemia: low blood sugar in adults](#) – Diabetes Canada
- [Nutrition Prescriptions](#)



Thank you for attending!!!

Does anyone have any
questions?