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**Family Health Team**

# **Sweet Talk: Managing Your Blood Sugars**

*Presented by:*

Registered Dietitians, Nurses and/or Pharmacists  
at Thames Valley Family Health Team

# Outline

- Discover what prediabetes is and why we should pay attention
- Review risk factors that you can and cannot change.
- Impact of Health Behaviours
- Fundamentals of Healthy Eating
- Activity and Sedentary Behaviors
- Medications
- Mental Health
- Goal Setting
- RxFood App – Dr. Alfonsi



# What Is Prediabetes?

- When your blood sugar levels are higher than "normal", but not high enough to be diagnosed as type 2 diabetes
- Remember! Not everyone with prediabetes will develop type 2 diabetes



# What is Diabetes (Type 2)?

- When there is a lack of insulin and/or insulin does not function properly causing an elevation of blood glucose above normal levels
- You can have prediabetes or undiagnosed Type 2 diabetes without having any obvious warning signs
- Presently there is no cure for diabetes



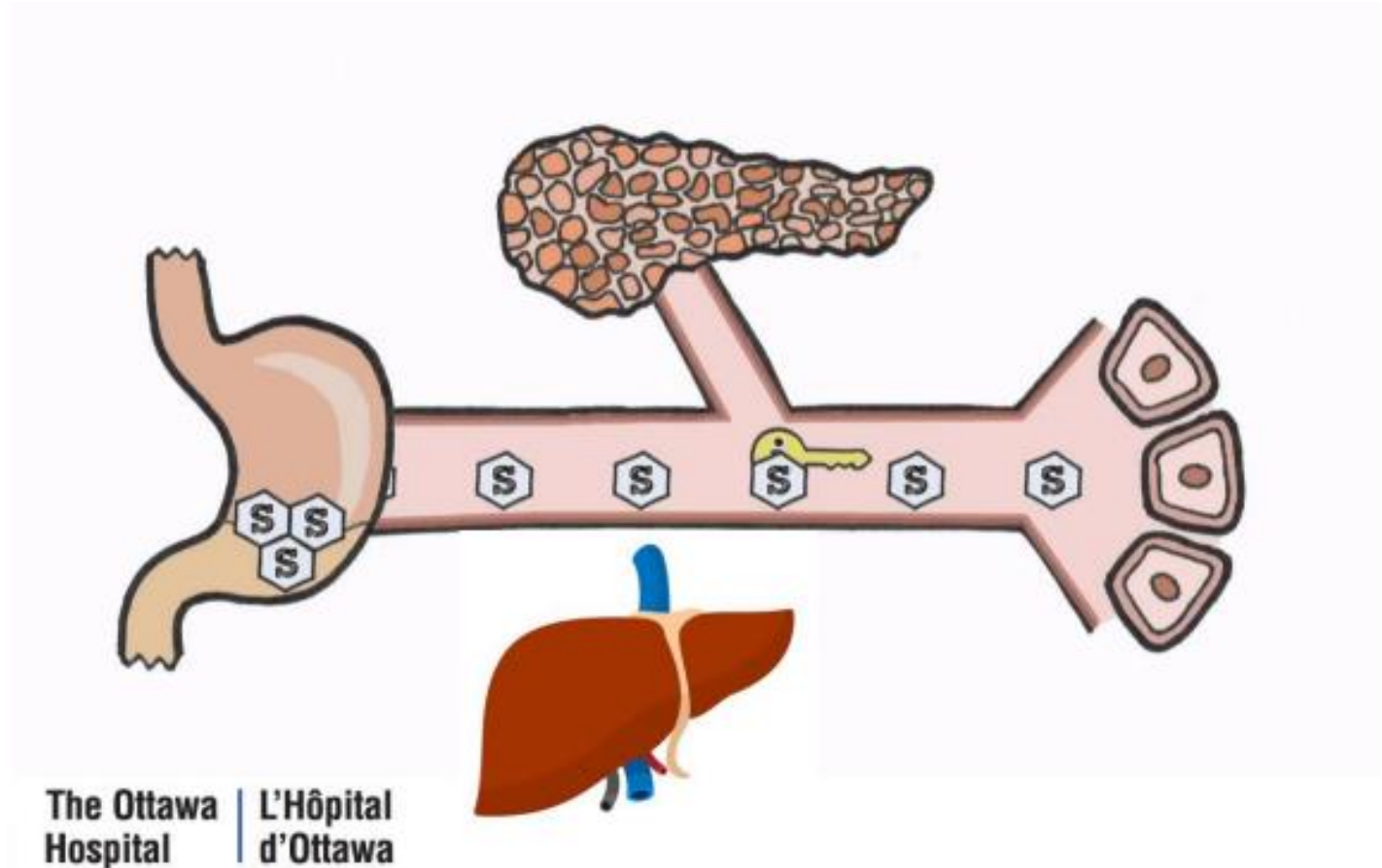
# What do my numbers mean?

	Normal	Prediabetes	Diabetes
<b>Fasting Blood Glucose</b> (sugar level after not eating)	In the range of 3.6 to 6.0 mmol/L	In the range of 6.1 to 6.9 mmol/L (IFG)	7 mmol/L or higher (IFG)
<b>Oral Glucose Tolerance Test</b> (sugar level 2 hours after a sugar drink)	Less than 7.8 mmol/L	In the range of 7.8 to 11.0 mmol/L (IGT)	11.1 mmol/L or higher (IGT)
<b>Hemoglobin A1c</b> (sugar on blood cells)	Less than 6%	In the range of 6.0 to 6.4%	6.5% or higher

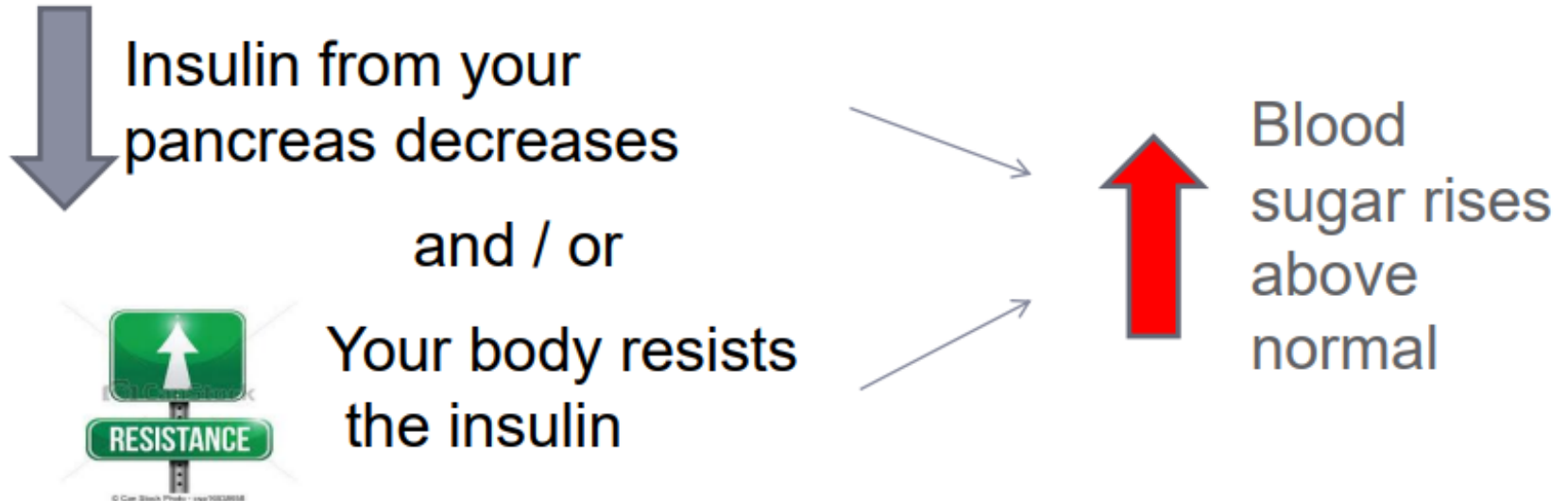
IFG – Impaired fasting glucose, IGT – Impaired glucose tolerance



# How does your body normally absorb sugar?



# What makes blood sugar rise?



# What happens when blood sugars are high over time?

## What I might feel...

- Blurred vision
- Pain and numbness in feet and fingers
- Sexual difficulties
- Low energy
- Irritability
- Increased infections and slow healing
- Frequent urination and thirst

## Possible health problems from diabetes...

- Blindness
- Nerve damage
- Kidney damage
- Heart attacks, heart disease and strokes
- Amputations





# What Led To This?



# What are the risk factors I can't control?

- Being diagnosed with pre-diabetes
- Having a parent, brother or sister with diabetes
- Age 40 or older
- High risk ethnic group (Indigenous, Hispanic, Asian, African, Arab)
- History of diabetes during pregnancy (baby and mom)
- Having a baby 9 lbs or heavier at birth
- Taking medications that are associated with diabetes (steroids, antipsychotics)
- Other Medical problems (polycystic ovarian syndrome, psychiatric disorders, HIV infection, obstructive sleep apnea)



# What are the risk factors I can control?

- ✓ Activity levels
- ✓ Food choices
- ✓ Blood pressure
- ✓ Cholesterol
- ✓ Smoking
- ✓ Stress management
- ✓ Sleep habits



## Research shows...

- Time and time again, leading a healthy lifestyle has proven to lower your risk of developing type 2 diabetes



# Fundamentals of Healthy Eating for Blood Glucose Control

Regularity

Fibre

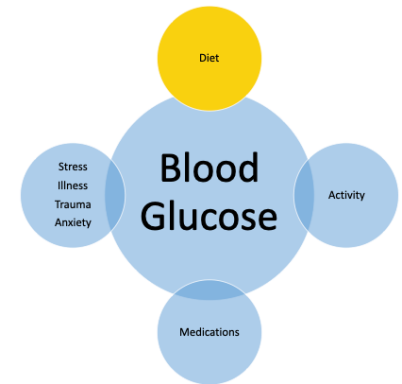
Fluids

Fat

Balance

Carbohydrates

Sugar and Sweets



# Healthy Eating: *Regularity*

<i><b>Tip</b></i>	<i><b>Reason</b></i>
Eat 3 meals per day at regular times and space meals no more than six hours apart. You may benefit from a healthy snack.	Eating at regular times helps your body control blood glucose levels.

- Regularity of dietary intake can also support good appetite control & may help with weight management.



# Healthy Eating: *Limit Sugars & Sweets*

<b><i>Tip</i></b>	<b><i>Reason</i></b>
Limit sugars and sweets such as sugar, regular pop, desserts, candies, jam and honey.	The more sugar you eat, the higher your blood glucose will be. Artificial sweeteners can be useful.

- Can be natural/organic = sugar
- Estimates are that at least half of processed foods have added sugars



# Healthy Eating: *Limit High-Fat Intake*

<b><i>Tip</i></b>	<b><i>Reason</i></b>
Limit the amount of high-fat food you eat such as fried foods, chips and pastries.	High-fat foods may cause you to gain weight. A healthy weight helps with blood glucose control and is healthier for your heart.





# Healthy Eating: *Fibre!*

<b><i>Tip</i></b>	<b><i>Reason</i></b>
Eat more high-fibre foods such as whole grain breads and cereals, lentils, dried beans/peas, brown rice, vegetables and fruits.	Foods high in fibre may help you feel full and may lower blood glucose and cholesterol levels.

- Only 1/10 Canadian adults achieve fibre targets
  - 21-25 g/day (female) to 30-38 g/day (male)
- Fibre does not increase in blood glucose levels



# Healthy Eating: *Fluids*

<b><i>Tip</i></b>	<b><i>Reason</i></b>
If you are thirsty, drink water.	Drinking regular pop and fruit juice will raise your blood glucose.

- Avoid drinking your calories
- Eat your fruit vs. having fruit juices
- General guidelines for daily intake:
  - 9 cups/day (women) / 12 cups/day (men)



# Fundamentals of Healthy Eating: *Alcohol*

<i><b>Tip</b></i>	<i><b>Reason</b></i>
Limit alcohol consumption.	Alcohol can affect blood glucose levels and cause weight gain.

## » **New Canadian Alcohol Guidelines**

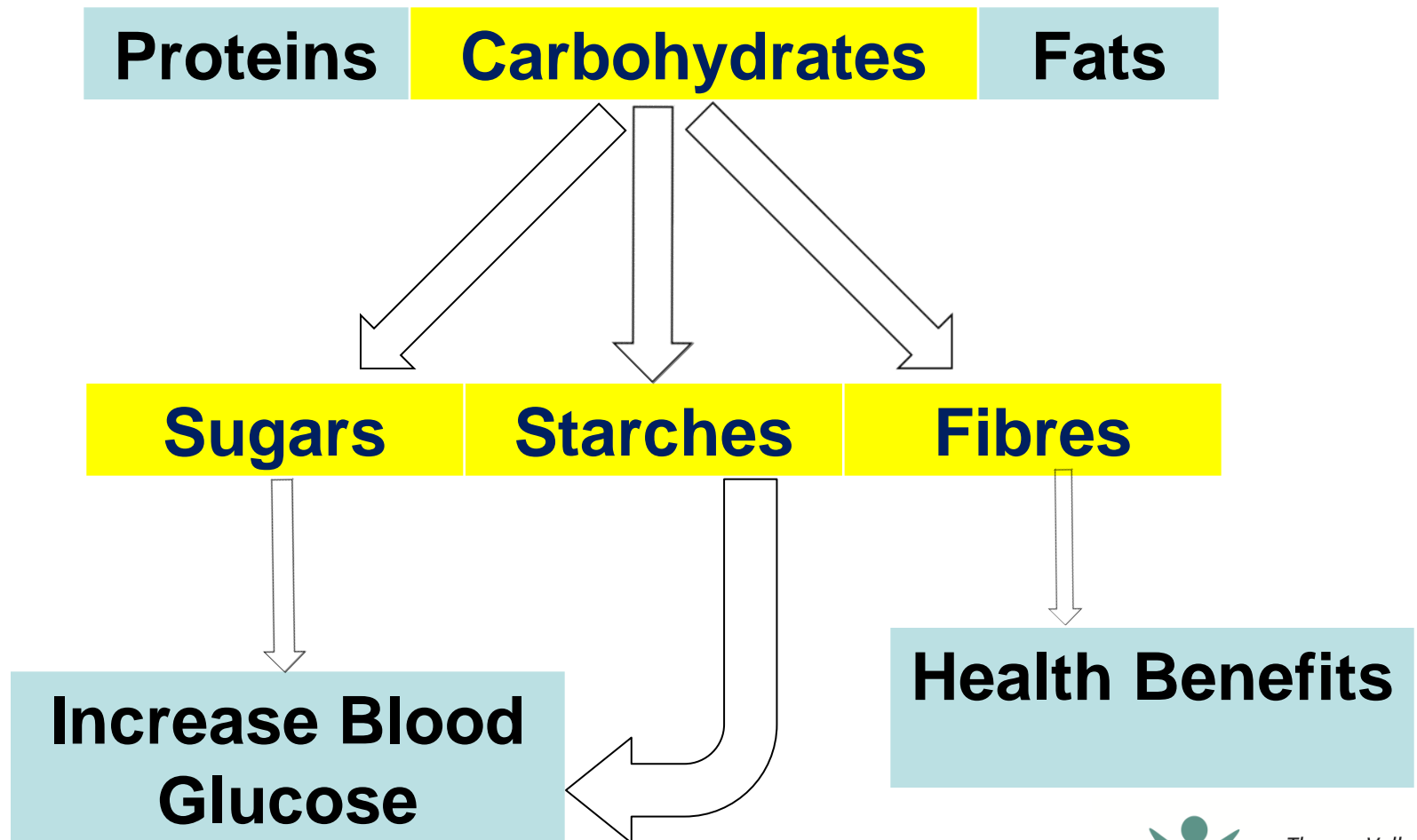
» Low risk is considered 2 drinks or less a week

» Moderate is considered less than 6 drinks a week

» 7 drinks & above is considered increasingly higher risk.



# Fundamentals of Healthy Eating: Know Your Carbs!



## SAMPLE MENU ACTIVITY

*Can you pick out the foods that will have a significant influence on your blood glucose?*



# Identify the Carbs

## Breakfast

- Hot cereal
- Whole wheat toast
- Natural peanut butter
- Natural orange juice
- Low-fat yogurt



# Identify the Carbs

## Breakfast

- Hot cereal
- Whole wheat toast
- Natural peanut butter
- Natural orange juice
- Low-fat yogurt

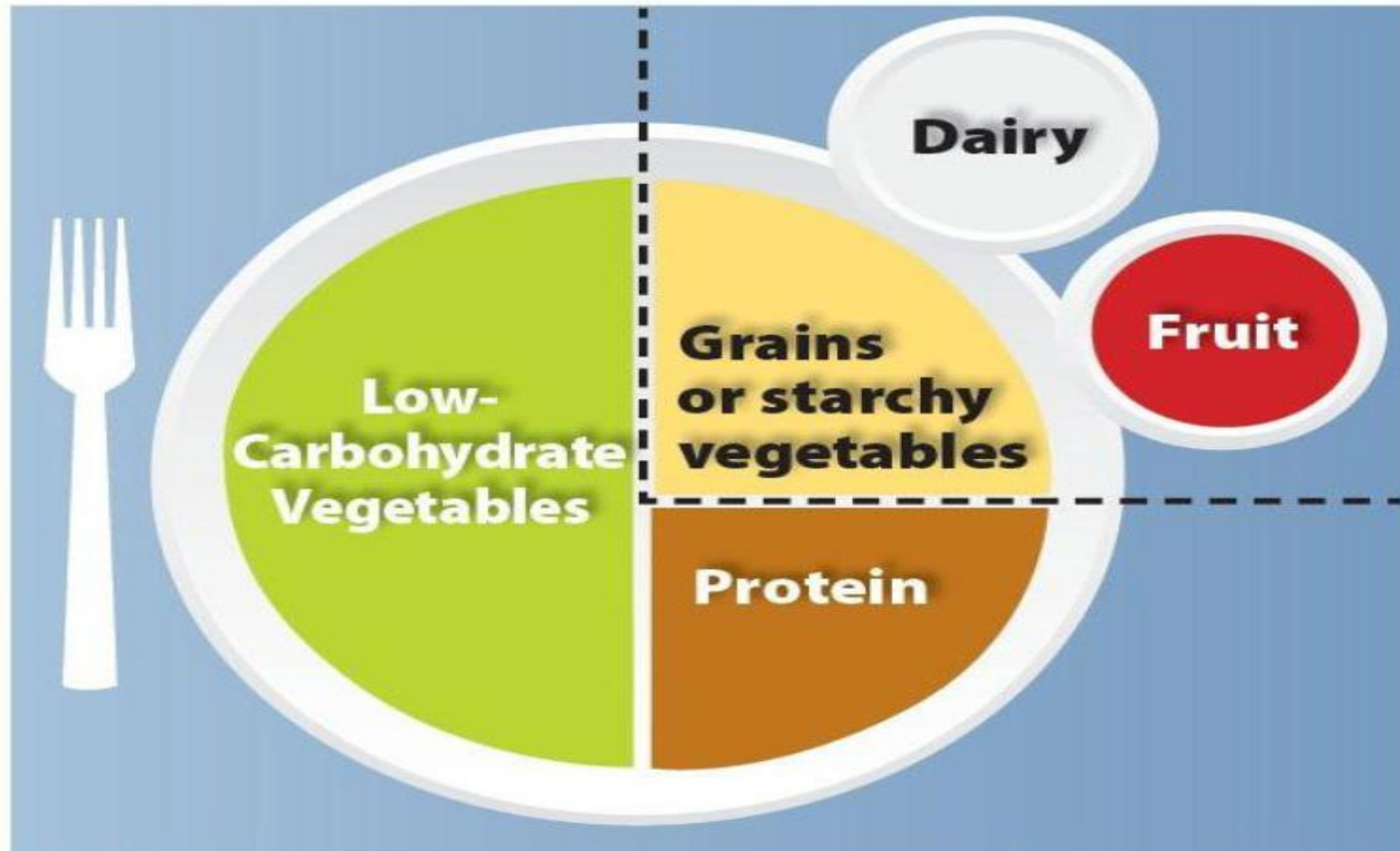


# Relative Balance / Portions





# **Eat What You Love, Love What You Eat with Diabetes Plate**



© 2012 Eat What You Love, Love What You Eat with Diabetes



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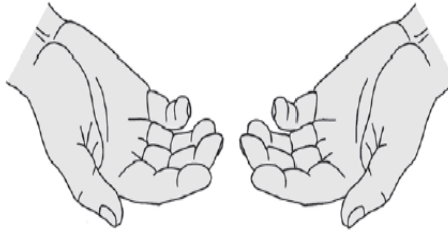
# Handy portion guide

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 and Starches, and Fruit.



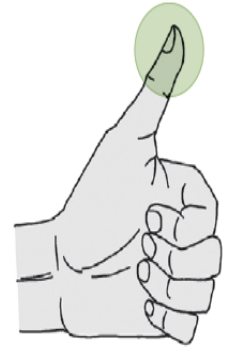
## **VEGETABLES\*:**

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\*:**

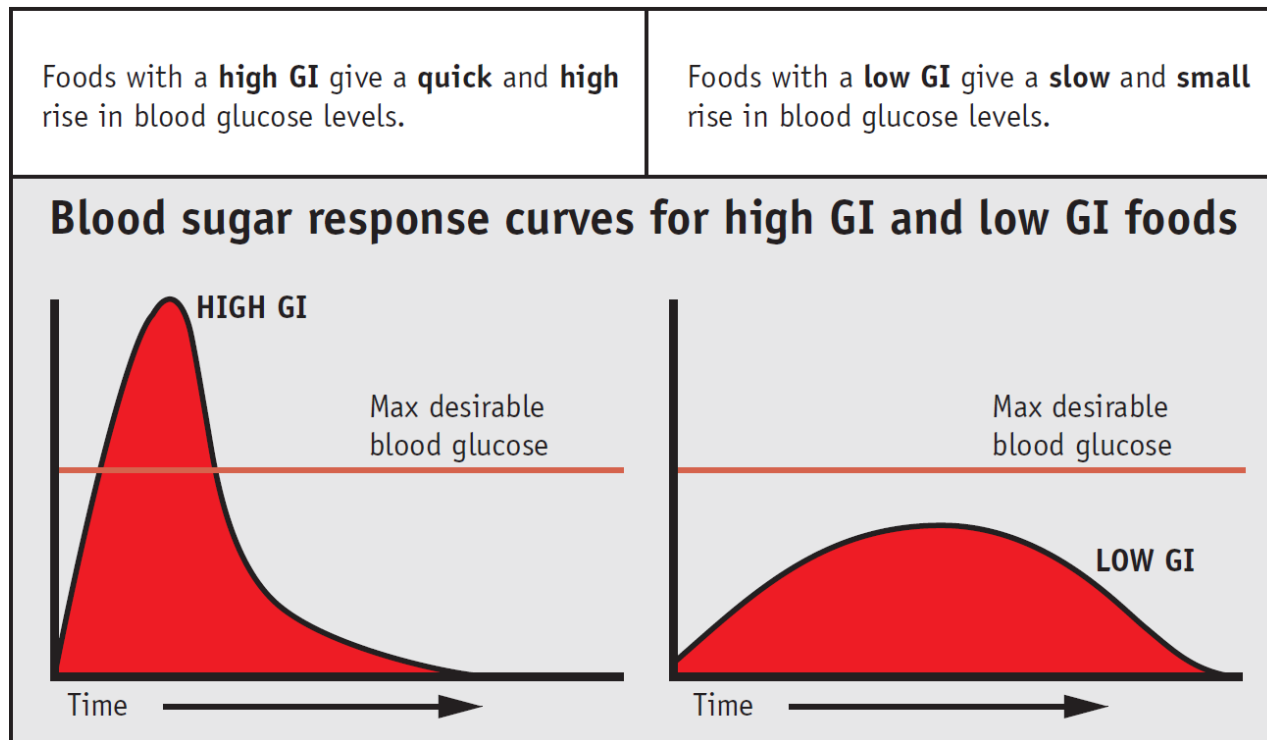
Limit fat to an amount the size of the tip of your thumb.

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



# Glycemic Index (GI)

A scale to rank carbohydrate-rich foods/fluids based on how quickly and how high they will increase blood glucose when ingested.



# Glycemic Index (GI)



## **Green = Go**

Low GI (55 or less) Choose Most Often

## **Yellow = Caution**

Medium GI (56 to 69) Choose Less Often

## **Red = Stop and think**

High GI (70 or more) Choose Least Often

## Fruits

### Low Glycemic Index (55 or less) Choose Most Often

Apple  
Apricot (Fresh, Dried)  
Banana (Green, Unripe)  
Berries  
Cantaloupe  
Grapefruit  
Honeydew Melon  
Mango  
Orange  
Peach  
Pear  
Plum  
Pomegranate  
Prunes

### Medium Glycemic Index (56 to 69) Choose Less Often

Banana (Ripe, Yellow)  
Cherries (Bottled) ▲  
Cherries (Fresh)  
Cranberries (Dried)  
Figs (Fresh, Dried)  
Grapes  
Kiwi  
Lychee  
Pineapple  
Raisins

### High Glycemic Index (70 or more) Choose Least Often

Banana (Brown, Overripe)  
Watermelon



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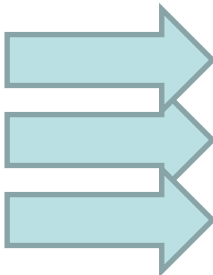


# Label Reading

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www.glasbergen.com



**"This simplifies things! Each serving contains 10 grams of 'stuff that will kill you' and 15 grams of 'stuff that won't kill you'."**

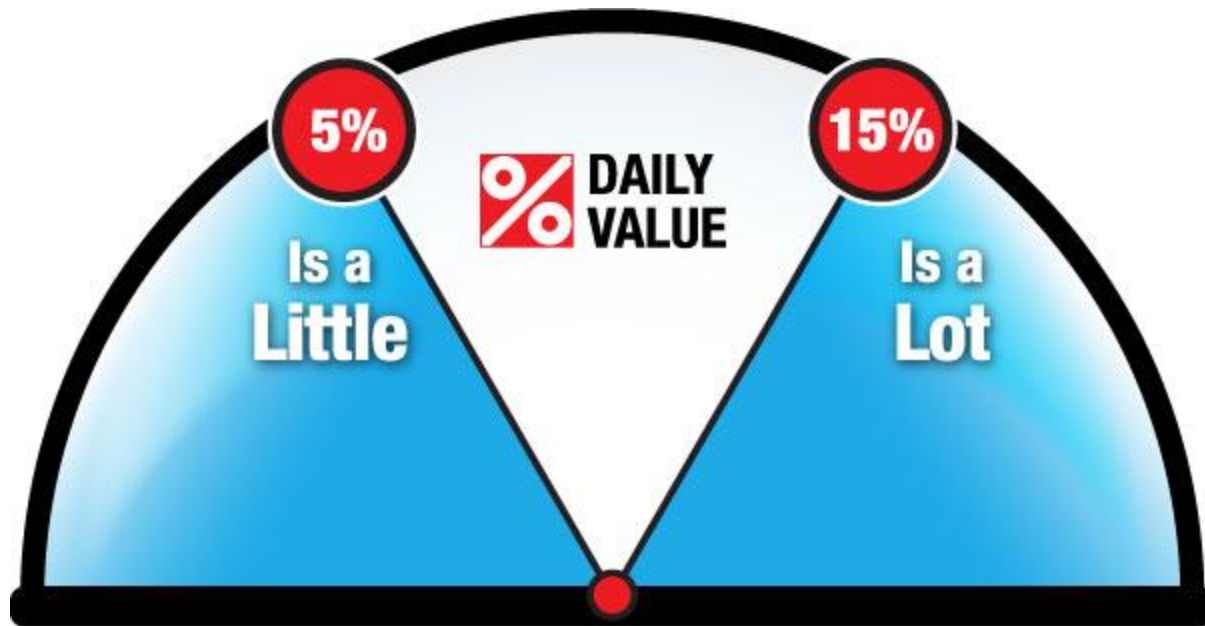
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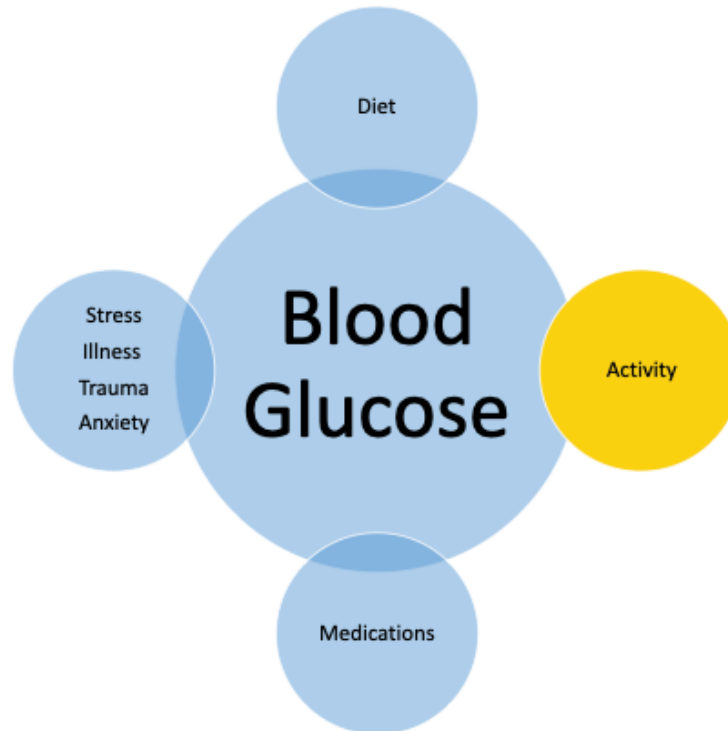
Nutrition Facts			
Per 125 mL (87 g)			
Amount		% Daily Value	
Calories 80			
Fat 0.5 g		1 %	
Saturated 0 g + Trans 0 g		0 %	
Cholesterol 0 mg			
Sodium 0 mg		0 %	
Carbohydrate 18 g		6 %	
Fibre 2 g		8 %	
Sugars 2 g			
Protein 3 g			
Vitamin A	2 %	Vitamin C	10 %
Calcium	0 %	Iron	2 %



# % Daily Value



# What else can I do?





# Canadian 24-Hour Movement Guidelines



## Physical Activity: Sweat

- 150 minutes of moderate to vigorous aerobic physical activity PER WEEK
  - Bouts of 10 minutes or more
- 2x/week muscle strengthening



# What is Moderate to Vigorous Exercise?

- » **Talk Test: Test to determine how hard an individual is working:**
  - **Low intensity exercise: able to talk and sing**
    - Typically used in warm up or cool down
    - Ex. Easy walking, yoga, laundry, stretching
  - **Moderate intensity: able to talk but not sing**
    - Able to sustain steady conversation
    - Ex. Brisk walking, mowing the lawn, swimming
  - **High intensity: Not able to speak more than a few words at once**
    - Running, fast cycling, basketball, hockey



# Aerobic Training Progression

Program Stage	Week	Frequency (days/week)	Intensity		Duration (min)
			Exertion Level	RPE (10 pt)	
Improvement	1 - 4	4	Somewhat hard	4	25 - 30
	5 - 7	4	Somewhat hard	4	30 - 35
	8 - 10	4	Somewhat hard	4	35 - 40
	11 - 13	4	Somewhat hard - Hard	4 - 5	40 - 45
	14 - 16	4 - 5	Somewhat hard - Hard	4 - 5	45 - 50
	17 - 20	4 - 5	Hard	5 - 6	50 - 55
	21 - 24	4 - 5	Hard	5 - 6	55 - 60
Maintenance	25 +	4 - 5 +	Moderate - Hard	4 - 6	30 - 60

Table adapted from: Warburton, et al. 2006



# Resistance Training

## » Resistance training exercises include:

- Weights
- Resistance bands
- Weight machines
- Body weight exercises



# Resistance Training Examples

Begin with 8 exercises. As you feel comfortable, add 1-2 exercises a week (up to 12 exercises).

## Hips & Thighs

1.



**Start:** Sit at the front of the chair, chest up, and feet hip width apart. Slowly lift out of the chair with your knees directly over your toes. Keep your back straight and arms out.

**Finish:** Hold the top position with knees bent. Slowly bend knees to lower yourself to the chair. Don't drop to the chair.

## Chest

2.



**Start:** Place the band around your upper back. Grab the ends of the band with elbows bent and palms facing down or inward.

**Finish:** Press out, extending your elbows forward to shoulder level. Slowly return to starting position.

## Upper Back

3.



**Start:** Grasp the band with both hands in front of your chest with the elbows slightly bent and shoulders down.

**Finish:** Keep elbows slightly bent and pull band outward until the band reaches across your middle chest. Hold the end position briefly, squeezing the shoulder blades together. Slowly return to starting position.

## Middle Back

4.



**Start:** Wrap the middle of the band around an extended foot. Grasp both ends of the band at the outside of your knee with your outside hand.

**Finish:** Pull band backwards and slightly up until your outside hand is beside your ribcage. Pause. Slowly lower to starting position.

## Shoulders

5.



**Start:** One foot and hand anchor one end of the band. The other hand is beside the shoulder grasping the band, hand level with the chin, and arm straight up from the floor.

**Finish:** Extend the arm overhead until directly over the shoulder. Try not to lean to one side. Pause. Slowly lower to starting position.

## Shoulders

6.



**Start:** Anchor as per #5 with slightly shorter band. Grasp the band at position just outside the knee. Can have palm down or palm forward (easier on the shoulders).

**Finish:** Lift arm to side with elbow slightly bent. Lift to shoulder height or slightly below shoulder height if you have shoulder problems. Pause. Slowly lower to starting position.

## Upper Arm – Front

7.



**Start:** Keep same anchor position as #6, except slightly shorter band length. Grasp band with palm facing up.

**Finish:** Curl hand to shoulder keeping your elbow at your side at the lower ribs. Pause. Slowly lower to starting position.

## Upper Arm – Back

8.



**Start:** Seated at the front edge of the chair and chest up. Place the band around your knee, anchoring the band with one hand on the opposite thigh and holding the other end of the band down at your side with your elbow bent.

**Finish:** Extend your elbow until your arm is straight down by your side. Pause. Slowly return to starting position.

## Legs – Front

9.



**Start:** Tie the band in a knot and wrap around your feet, or tie the band around one leg of the chair with your foot through the loop.

**Finish:** Extend one leg out, keeping your knee in the same position. Keep your posture. Pause. Slowly return to starting position.

## Legs – Back

10.



**Start:** Stand behind the chair holding the back for support. Wrap the tied band around your ankles, or tie the band around a leg of the chair with your foot through the loop.

**Finish:** Curl one ankle up. Keep the knee in the same position and your back stable. Pause. Slowly return to starting position.

## Lower Back

11.



**Start:** Stand behind the chair holding the back for support, with knees slightly bent, and leaning forward with back straight. You can wrap a band around your ankles, or do the exercise without a band.

**Finish:** Extend one leg out so that it is in line with your body. Don't over-extend the leg or arch in the low back. Pause. Slowly return to starting position.

## Abdominals

12.



**Start:** Seated comfortably in the chair, chest up, and both knees bent with the feet on the ground in front of you.

**Finish:** Lift one knee so that it is higher than the opposite knee, or slightly rock back with both feet on the ground. Tighten your abdominals. Keep your chest up. Pause. Slowly return to starting position.



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# Resistance Training Progression

Program Stage	Week	Frequency (days/week)	Intensity		Duration (min)
			Exertion Level	RPE (10 pt)	
Initial stage	1	2	Light	2	1 x 8
	2	2	Light	2	1 x 10
	3	2	Moderate	3	1 x 12
	4	2	Moderate	3	2 x 8
Improvement*	5 - 7	2	Moderate	3	2 x 10
	8 - 10	2	Moderate	3	2 x 12
	11 - 13	3	Moderate	3	2 x 8
	14 - 16	3	Somewhat Strong	4	2 x 10
	17 - 20	3	Somewhat Strong	4	2 x 12
	21 - 24	3	Somewhat Strong	4	2 x 15
Maintenance	25 +	2 - 3	Moderate Strong	3 - 4	2-3 x 8-15

Table adapted from: Warburton, et al. 2006



# Canadian 24-Hour Movement Guidelines

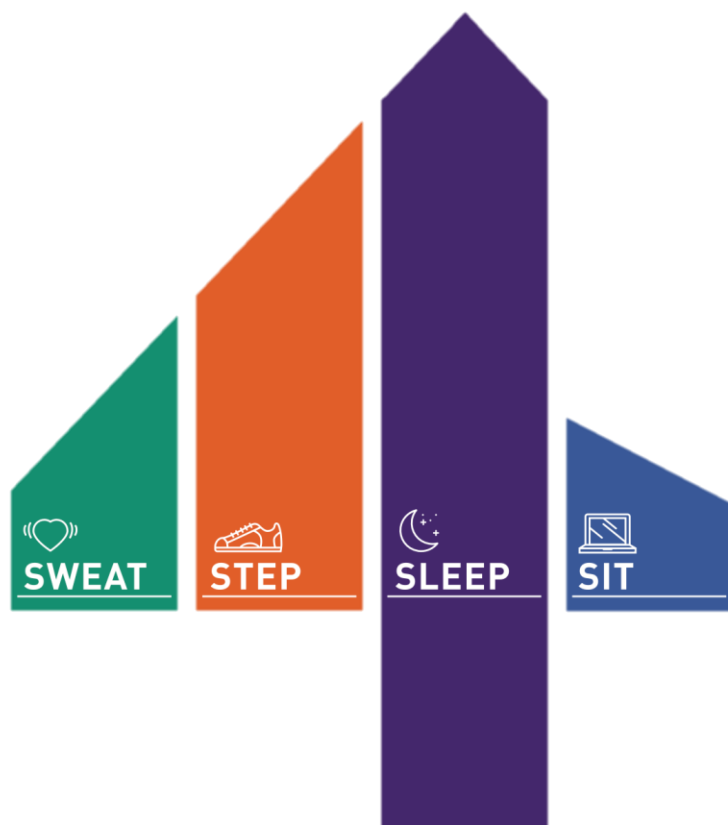


## Physical Activity: Steps

- Several hours of light physical activities including standing
- Break up long periods of sitting as often as possible by getting up briefly every 20-30 minutes
- Steps Guidelines
  - Daily suggested goal is 7,500 steps per day!
  - If your baseline is under this level:
    - increase your steps by 500 per day every 3-4 weeks until you reach 7,500 steps!



# Canadian 24-Hour Movement Guidelines



## Sleep:

- 7 to 9 hours of good quality sleep on a regular basis
  - Have consistent bed and wake up times

## Sedentary Behaviour: Sit or laying down

- Limit sedentary time to 8 hours or less
- No more than 3 hours of recreational screen time





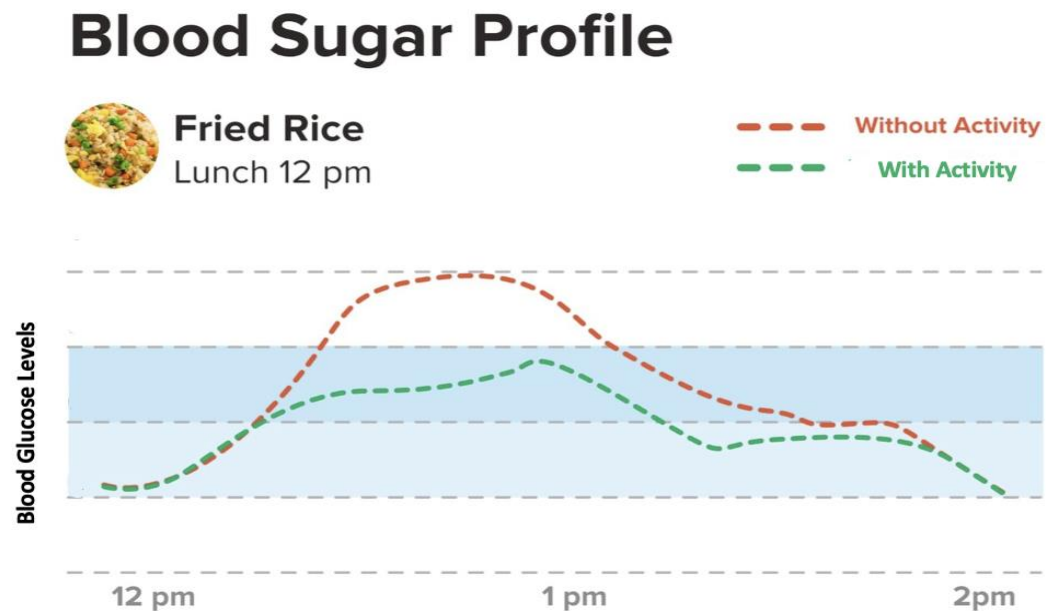
# Benefits of Reducing Sedentary Behavior After a Meal

## » Without Activity:

- Bigger glucose spike outside of normal/healthy range

## » With Activity:

- Smaller glucose spike within normal/healthy range

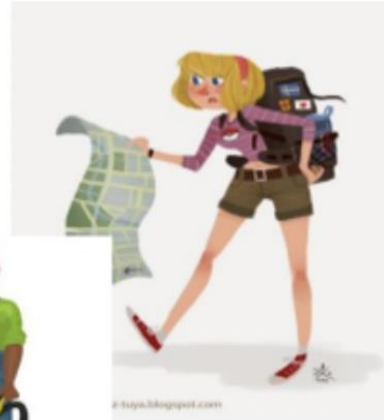


# Finding Opportunities to be More Active

- ▶ Lifting and carrying groceries
- ▶ Choose walking when possible
- ▶ Yard work (raking, gardening, shoveling, etc.)
- ▶ Wearing a backpack
- ▶ Opening doors
- ▶ Using Nordic poles
- ▶ Household cleaning



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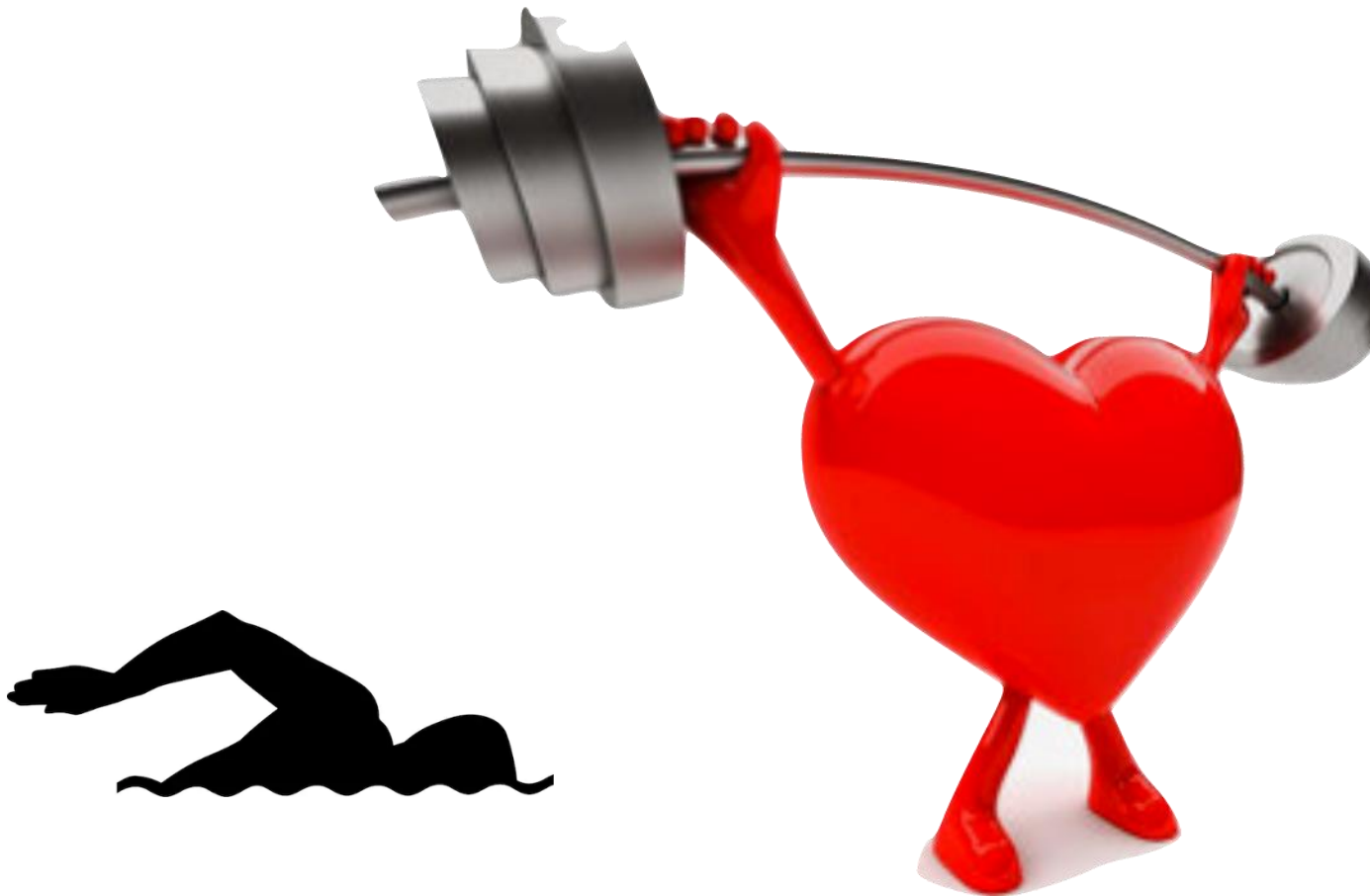


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# The Benefits of Active Living...

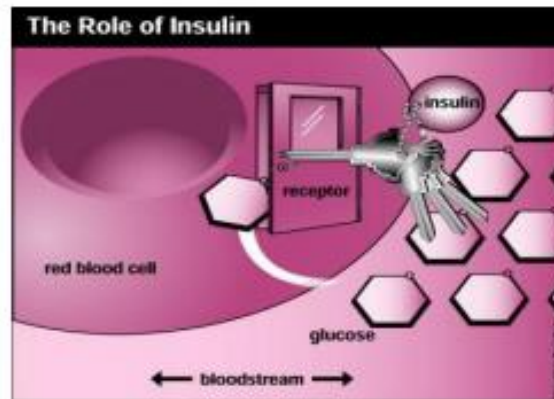


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# Blood Sugar Benefits

Helps your body use the insulin it makes

- Lowers blood sugar within 1 hour
- Lowers resistance to insulin (long-term)



Better blood sugar control!!!



# Health Benefits

- ▶ Reduces risk of heart attack, stroke and death (↓ blood pressure and improves cholesterol)
- ▶ Keeps your pancreas, kidneys, eyes and nerves healthy
- ▶ Helps achieve and maintain a healthy body weight
- ▶ Strengthens bones and muscles
- ▶ Reduces the risk of some cancers



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# Quality of Life Benefits

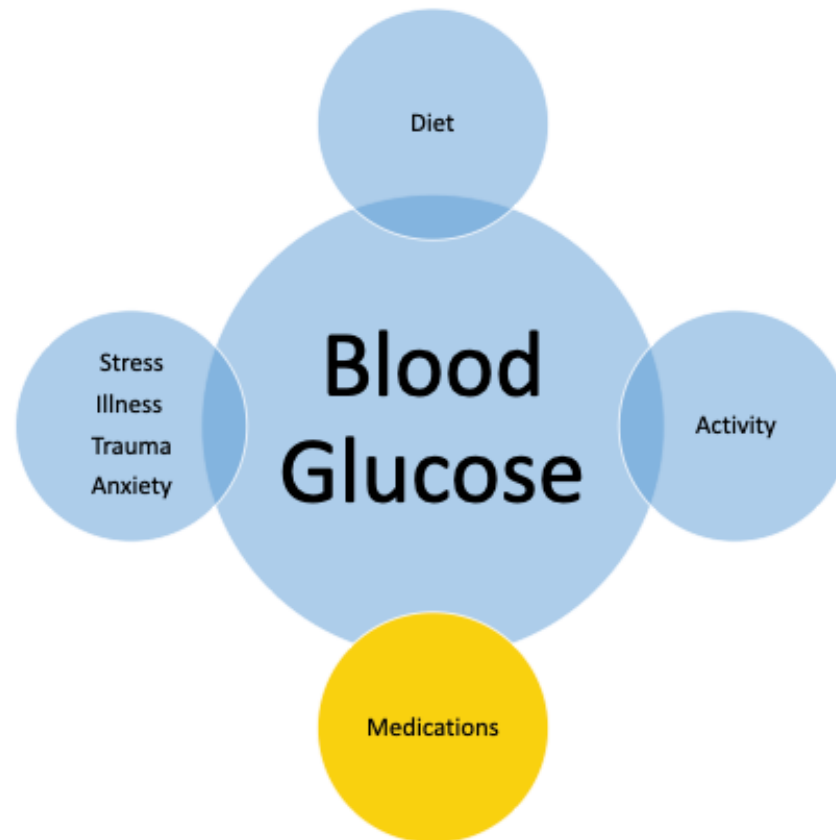
- ▣ Improves mood, feelings of wellbeing
- ▣ Improves quality of sleep
- ▣ Increases energy levels
- ▣ Improves memory and concentration
- ▣ Increases self-confidence, feeling of accomplishment



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# Medications



# What about medications?

- Not an indication of failure!
- Metformin is first line for most patients
- Medications not only lower blood glucose but can also protect heart and kidneys





# Mental Health

- Managing a health condition can be burdensome and promote anxiety
- Distress, decreased mood, and anxiety will be barriers to your ability to manage your blood glucose
- Recognize if this is a barrier for you and reach out



# Goal Setting

- Goals
  - S.M.A.R.T.
  - Start small and ensure it's YOUR goal
- Barriers
  - Time
  - Money
  - Social
  - Fear
  - Resources



# Goal Setting

## S.M.A.R.T. Goal Sheet

Specific  
Measurable  
Action-oriented  
Realistic  
Time framed

Example of a SMART Goal: By the end of the month, I will increase my fibre intake to 25 grams per day.

Action Steps	Barriers/Road Blocks	Solutions
<ul style="list-style-type: none"><li>• Cereal with at least 6 g <u>fibre</u></li><li>• Whole grain breads</li><li>• 6-7 vegetable and fruit servings per day</li></ul>	<ul style="list-style-type: none"><li>• family dislikes whole grain</li><li>• vegetables go bad in fridge</li><li>• vegetable preparation time</li><li>• skip some meals</li></ul>	<ul style="list-style-type: none"><li>• freeze whole grain bread for me</li><li>• plan ahead and buy only what is needed, prepare ahead</li><li>• have fruit handy for snacks</li></ul>



# “Take Home Messages”

- Blood glucose control tends to worsen over time
- No matter where your blood glucose control is currently, your health behaviours play a key role in managing it
- What are you willing/able to do?
- Reframe “slips”!!



# Services at your fingertips

- You may have access to the following clinician services through your doctor's office:
  - Registered Nurse
  - Registered Dietitian
  - Pharmacist
  - Social Worker
  - Nurse Practitioner
  - Foot Care Nurse



# RESOURCES

- [www.diabetes.ca](http://www.diabetes.ca)
- Resources included with email received in advance of today's presentation



# Questions & Evaluation

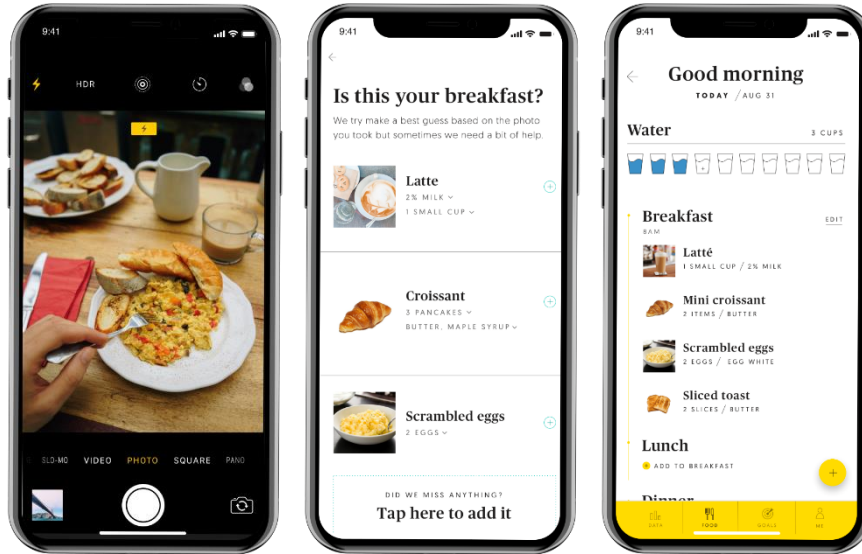




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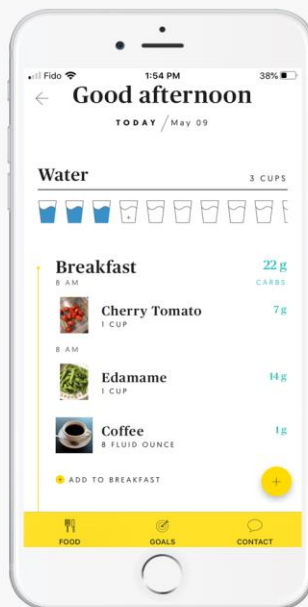




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Interested in a photo food assessment?

Email [j.alfonsi@utoronto.ca](mailto:j.alfonsi@utoronto.ca)



Once you are done, we can go over your results and provide some small changes to promote a better diet.

# Thank you!

