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## Diabetes A resource for newly diagnosed patients





## **Diabetes** A resource for newly diagnosed patients

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#### NOTE:

The following information was created by UBC pharmacy students. Only general information is provided on this topic and is subject to change. Please consult with your pharmacist or health care provider for any client-specific questions.

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### What is diabetes and how is it classified?



- Diabetes is a disease defined by the presence of higher than normal blood sugars.
- Diabetes is diagnosed when:
  - Fasting blood glucose  $\geq$  7.0 mmol/L

#### OR

• Random blood glucose  $\geq$  11.1 mmol/L

OR

• Hemoglobin A1c  $\geq$  6.5%, measured in a blood sample at a lab, reflecting blood sugar level control over the past 3 months



Type 1 diabetes (T1D) results when the cells that produce insulin are attacked by the immune system.

T1D usually manifests before age 25 years and affected individuals require insulin therapy.



Type 2 diabetes (T2D) manifests when the body tissues become less sensitive to insulin produced by the body.

T2D can manifest from late teens to old age. Numerous medications are available to treat T2D. Insulin may also be required.

### Why is managing diabetes important?

#### People living with diabetes are:

- **3x** more likely to be hospitalized with cardiovascular disease.
- 12x more likely to be hospitalized with endstage kidney disease.
- 20x more likely to be hospitalized with nontraumatic lower leg amputation.

Diabetes can reduce an individual's lifespan by **5-15 years.** 

The mortality rate for individuals living with diabetes is **twice as high** compared to those living without diabetes.

Diabetes is the **leading cause of new** cases of blindness in Canada among working-aged adults

Vision loss can result in an increased risk of falls, hip fractures, and death



### How can I measure my blood sugar?

A blood glucose meter is the most common way to measure blood sugars **Pros:** 

• Does not require you to wear a device constantly

A continuous glucose monitor (CGM) is used in those with type 1 diabetes or those prone to low blood sugars **Pros:** 

• Provide alerts to help manage high/low





 Provides more accurate measurement of blood sugars

#### Cons:

- Can be uncomfortable to prick fingers for each test
- Hard to predict high/low blood sugar events
- Only provides a snapshot of blood sugars
- blood sugars
- Shows blood sugar trends over a period of time, which can inform drug therapy

#### **Cons:**

- Cost can be a prohibitive factor
- No finger pricks but potential body image issues

\*Please consult your pharmacist or health care provider to help choose a blood-glucose monitor that is right for you\*

### What are the complications of diabetes?







Heart Disease



Stroke

Kidney Disease

## .

#### Nerve and foot disease



#### How can I minimize the risk of these complications?

- Patients with diabetes are at an increased risk of foot disease/infections because diabetes can cause nerve damage and poor blood flow to the feet
- Managing your blood sugars along with regular footcare can help prevent these complications, improving your overall wellbeing
- Recommended blood sugar targets for most patients living with diabetes are:
  - $\circ$  A1C  $\leq$  7%
  - Fasting blood sugar 4-7 mmol/L
  - Blood sugar 2 hours post-meal 5-10 mmol/L

#### **Proper footcare entails:**

- Thoroughly checking your feet daily for any cuts/injuries/brusies
- Washing your feet in warm water, drying them carefully, and applying lotion to heels/soles
- Trimming your toenails in a straight line
- Wearing professionally fit shoes with support and low heels (less than 5 cm) that do not pinch your foot
- Elevating your feet while sitting
- Exercising daily, wiggling your toes, and moving your ankle to improve circulation
- Having a complete foot examination by a
- doctor/podiatrist at least once a year

#### Products available include:

Diabetic socks to promote circulation <u>(~\$25-</u>\$50)



Diabetes skin moisturizers



Diabetic shoes for proper support (~\$50-\$200)



## Types of Insulin ...and their costs

\$ = ~\$25/15 mL \$ \$ = ~\$50-\$75/15 mL \$ \$ \$ = ~\$100+/15 mL		
Generic Name (Duration of Action)	<b>Brand Name</b>	<b>Cost</b> (PharmaCare Benefit?)
Insulin Aspart (Rapid-Acting)	Novorapid <sup>®</sup> , Fiasp <sup>®</sup> , Trurapi <sup>®</sup>	\$ \$ (\vee)
Insulin Glulisine (Rapid-Acting)	Apidra®	\$ \$ (\vee)
Insulin Lispro (Rapid-Acting)	Humalog®, Admelog®	\$ \$ (~)
Insulin Regular (Short-Acting)	Humulin R <sup>®</sup> Novolin ge Toronto <sup>®</sup>	\$ \$ (~)
Insulin Regular U500 (Short-Acting)	Entuzity®	\$ \$ \$ (~)
Insulin NPH (Intermediate-Acting)	Humulin N® Novolin ge NPH®	\$ \$ (~)
Insulin Degludec (Long-Acting)	Tresiba®	<pre>\$ \$ \$ (``)- with special authority</pre>
Insulin Detemir (Long-Acting)	Levemir®	\$ \$ \$ (~)- with special authority
Insulin Glargine U100 (Long-Acting)	Lantus® Basaglar®	\$   \$   \$   \$     \$   \$   \$   \$     (>)- with special authority
Insulin Glargine U300 (Long-Acting)	Toujeo®	<pre>\$\$\$\$ (\$)- with special authority</pre>
Insulin Icodec (Long-Acting*)	Awiqli®	<pre>\$\$\$\$ (?)- currently under review</pre>

#### Rapid-Acting Insulin:

- Starts working within 5-10 minutes
- Reaches maximum strength (peak) in 30-90 minutes
- Lasts 2 hours in the body.

#### Short-Acting Insulin:

- Starts working within 30-60 minutes
- Reaches maximum strength (peak) in 2-5 hours.
- Lasts ~6 hours in the body.

#### Intermediate-Acting Insulin:

- Starts working within 1-2 hours.
- Reaches maximum strength (peak) in 4-12 hours.
- Lasts ~22 hours in the body.

#### Long-Acting Insulin:

- Starts working within 1-2 hours.
- Does not peak
- Lasts ~24 hours in the body.
- \*Awiqli<sup>®</sup> is a new form of insulin that lasts 7 days in the body (once weekly injection)



Common Non-Insulin Medications and their costs			
\$ = ~\$25/30 days \$ \$ = ~\$50-\$75/30 days \$ \$ \$ = ~\$100+/30 day			
Class	Mechanism of Action (Example)	<b>Cost</b> (PharmaCare Benefit?)	
Biguanide	Increase body's sensitivity to insulin (Metformin)		
DPP-IV inhibitors	Increase insulin secretion & reduce hunger (Linagliptin)	\$\$ (~) - with special authority*	
GLP-1 Receptor Agonists	Increase insulin secretion & reduce hunger (Semaglutide)	<pre>\$\$\$\$ (``) - with special authority**</pre>	
GIP & GLP-1 Receptor Agonist	Increase insulin secretion & body's sensitivity to insulin (Tirzepatide)	\$\$\$\$ (X)	
Sulfonylureas	Stimulate insulin secretion (Gliclazide)	\$ (~) <sup>†</sup>	
SGLT2 Inhibitors	Increase glucose excretion in the urine (Empagliflozin)	\$ (~)*	

\*Only Linagliptin and Saxagliptin are PharmaCare benefits with special authority.

\*\*Only Semaglutide subcutaneous injection is a PharmaCare benefit with special authority.

<sup>+</sup>Glyburide and Gliclazide are PharmaCare benefits. Gliclazide requires special authority.

\*Dapagliflozin and Empagliflozin are PharmaCare benefits. Empagliflozin requires special authority.

## Basic Meal Planning

Watch your portions -Follow Canada's food guide



Eat healthy carbohydrates rich in fibre such as legumes, whole grains, fruits and vegetables



Avoid highly processed foods containing high amounts of sodium, sugars, and saturated fats



Avoid sugary drinks/foods that can spike your blood sugars



Choose foods rich in unsaturated fats









#### The "Handy" Portion Guide For each meal:



Call

Choose an amount of grains, starches, and fruits equal to the size of your fist Choose as many brightly coloured vegetables as your hands can hold



Choose meat and alternatives equal to the size of your palm and thickness of your pinky finger.



Choose an amount of fat equal to the size of your thumb tip

#### Other non-drug methods for managing diabetes



Regularly exercising for 30 minutes at least 5 days/week can help lower your blood sugars.

Examples include running, resistance training, swimming, or participating in any sport!



Managing stress and creating a relaxing environment is an excellent way to further control blood sugar levels, as being stressed can result in uncontrolled diabetes.



Maintaining an appropriate weight can further help manage blood sugars.

A body mass index (or BMI) calculator is a useful tool that can help determine a healthy weight.

## How to Get Help Dietitians Endocrinologists



**Fort St. John Dietitian** - Melanie Chapple <u>https://mindfuleatingmatters.ca</u> **OR** Call (250) - 261 - 7213 for a healthcare referral

**Dawson Creek Dietitian** Call (250) - 719 - 6500 for a healthcare referral

#### Tumbler Ridge Dietitian

Call (250) - 874 - 9525 for a healthcare referral

• Dial 8-1-1 (or 7-1-1 for hearing impaired) to talk to a BC health-line dietitian.

• For a listing of local dietitian services: <u>https://www.northernhealth.ca/health-</u> <u>topics/nutrition-and-dietitian-services</u>



#### Fort St. John, Tumbler Ridge, and Dawson Creek

Talk to your family physician regarding a referral to an endocrinologist.
Call 8-1-1 (or 7-1-1 for hearing impaired) for BC health-line

## **Diabetes Educator**



### **Foot Care**



#### Fort St. John Pharmacy & Wellness Centre #300 – 9730 101 Avenue Fort St. John, BC V1J 2A8 Phone: 250-785-3234

**Dawson Creek** Sandy's Foot Care mobile service Phone: 250-719-6139

#### Tumbler Ridge

Call 8-1-1 to talk to the BC health-line for foot care services.

**Fort St. John Diabetes Education Centre** 8407-112th Avenue, Fort St John, BC V1J 0J5 Phone: 250-261-7439

#### **Dawson Creek Diabetes Education Centre** 1001 – 110 Avenue, Dawson Creek, BC V1G 4X3 Phone: 250-719-6500

#### Tumbler Ridge

http://

Call 8-1-1 (or 7-1-1 for hearing impaired) to talk to the BC health-line to speak with a diabetes educator.

Visit Diabetes Canada (<u>www.diabetes.ca</u>) for more in-depth information surrounding the condition

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