

# A Guide for Living with Post Transplant Diabetes Mellitus



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#### Part 1 – Introduction

The information in this book helps you learn about diabetes.

The members of your health care team want to help you manage your diabetes and stay healthy. Some members of your team are the transplant doctor, diabetes nurse, dietitian, physiotherapist, pharmacist and social worker. Others may join your team when needed.

You are a very important part of the team. There is a lot to learn about diabetes and how to manage it. Please feel free to talk to any member of the team. Be involved by asking questions and talking about your concerns.



**This book is for you.** You may want to involve family members, friends or others in your care. Share this book with them.

#### Remember . . .

 In this book the diabetes nurse is called the diabetes nurse. The diabetes nurse is one team member that helps you learn about diabetes and how to manage it.

#### How to use this book

Each section starts with learning goals. This helps you decide if you want to read the section or move to the next one.

Each part ends with some fun ways to test what you have learned. After testing your knowledge you can decide if you want to review any information.



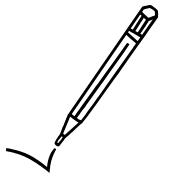
You may also decide if you want to talk to your diabetes nurse or any other member of the team for more information.

#### Remember...

- This book contains a lot of information.
- Take your time reading it.
- Bring this book when you meet with members of your health care team.
- You have lots of help learning about diabetes and how to manage it.

### A final test

There is a test at the end of the book that you can do when you feel ready. This test contains questions from all sections of the book. No one is watching you do this test so give it a try.



# Part 2 – What is Diabetes?



# After reading this part you will be able to:

- check the correct cause of diabetes after a kidney transplant
- find 6 common symptoms of too much sugar in the blood

#### **Diabetes after Kidney Transplant**

#### What is diabetes?

Diabetes is when there is too much sugar in the blood. The sugar from the food you eat stays in your blood instead of going into your cells. The cells do not get the energy from the food you eat.

The full name in medical books is called diabetes mellitus. It is most often called diabetes for short.

# You learn more about blood sugar in Part 3 on page 11.

# What are the symptoms of diabetes?

There are some common symptoms that some people get before they know they have diabetes. These symptoms are caused by high blood sugar.

Some people get all of these symptoms while others do not notice any.

Check any symptoms you have noticed:

- ☐ voiding, urinating or passing water often
- ☐ increased thirst
- ☐ increased appetite
- weight loss
- ☐ feeling very tired most of the time
- ☐ blurred vision



### Types of diabetes

There are 4 types of diabetes:

- Type 1
- Type 2
- Gestational which means when a woman is pregnant
- Post transplant

# You have post transplant diabetes.

This book is about post transplant diabetes only.

# Post transplant diabetes

Post transplant diabetes is a type of diabetes that some people get after a kidney transplant. This is what the words mean:

- Post means after.
- **Transplant** means having a kidney from someone else put into your body by surgery.
- Diabetes is when there is too much sugar in the blood. This is caused by some of the medications needed to keep the new kidney working in your body. These medications are called immunosuppressants. Some names of medications that can make blood sugar go up are:
  - prednisone
  - tacrolimus
  - cyclosporine
  - sirolimus

Post transplant diabetes means you did not have diabetes before you had a kidney transplant.

#### Remember...

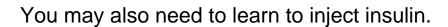
 In this book, we use the word diabetes when we talk about post transplant diabetes.

#### Is there a cure for diabetes?

At this time there is no known cure for diabetes. There is a lot of research being done looking for a cure.

Diabetes can be controlled. To control diabetes, you will need to learn to:

- test your blood sugar
- follow a healthy diet
- follow an activity plan
- take medication if ordered



This book helps you learn how to control diabetes.

#### Remember . . .

- There are many members of the team who can help and support you as you learn new skills.
- Members of your health care team will tell you when there is new information about diabetes.



# Test Yourself Review page 5 for help.



☑ The cause of diabetes after a kidney transplant is:

Not doing enough healthy activity before getting a new kidney	Some medications taken after getting a new kidney to keep it working
There is no cause. – it just happens	Eating the wrong food after getting a new kidney

# Test Yourself Answer

☑ The cause of diabetes after a kidney transplant is:

Not doing enough healthy activity before getting a new kidney	Some medications taken after getting a new kidney to keep it working
'	

	There is no cause. – it just happens
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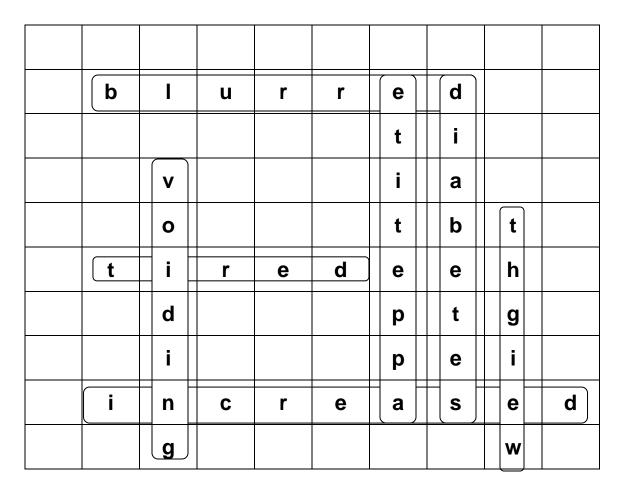
Eating the wrong food after getting a new kidney

# Symptom Search Find the symptoms of too much sugar in the blood. Review page 4 for help.

р	I	а	i	u	S	I	t	V	z
е	b	I	u	r	r	е	d	С	0
W	i	q	h	S	m	t	i	j	d
m	а	V	r	у	b	i	а	r	u
е	h	0	w	а	е	t	b	t	е
у	t	i	r	е	d	е	е	h	S
q	u	d	р	I	а	р	t	g	d
С	I	i	d	у	n	р	е	i	0
r	i	n	С	r	е	а	S	е	d
b	u	g	0	z	t	h	е	w	а

# Fill in the blanks then find the word in the Symptom Search:

# Symptom Search Answers



# Fill in the blanks then find the word in the symptom search:

- 1. too much sugar in the blood is called diabetes
- 2. voiding often
- 3. increased thirst
- 4. increased appetite
- 5. weight loss
- 6. feeling tired most of the time
- 7. blurred vision

# Part 3 – What is Blood Sugar?



glucometer – used to test blood sugar

# After reading this part you will be able to:

- pick the part of the body that makes insulin
- name of the hormone you need to move sugar into your body
- pick what you need to measure blood sugar
- pick the number that shows a normal blood sugar

# What is blood sugar?

Your body needs sugar. Sugar gives you energy to do all the things you do each day. Your body needs sugar to help you:

- walk, move, work, play
- laugh, learn, think
- and do all of the other things you do

You get sugar from food you eat and drink. You may know that many foods contain carbohydrates. After you eat a carbohydrate it breaks down into sugar in your body.

# Here is what happens when you eat or drink:

Each time you drink or eat your stomach goes to work. Your stomach breaks the food into tiny pieces such as vitamins, minerals, sugar, protein and much more. You need these to keep your body going and stay healthy.

When the food leaves your **stomach**, it goes into the **small intestine**. At the same time the **pancreas** which is behind your stomach is also working hard. The pancreas is making a hormone called insulin. It sends insulin to meet up with the food in the small intestine.

#### **Diabetes after Kidney Transplant**

The small intestine has many blood vessels flowing through it. As the blood flows it picks up the vitamins, minerals, protein, sugar and the insulin.

The blood takes the insulin and sugar all over your body. Your body uses the insulin to move the sugar into the cells in your legs, muscles, brain and all over. This is how your body gets the energy to move, think and do all the things you do.

When you have diabetes your body cannot use the insulin to move the sugar into the cells. The sugar stays in your blood. The sugar in your blood goes higher and higher and your cells do not get the sugar they need. Your cells do not have energy so you may feel tired all of the time.

When you read about blood sugar it is also called blood glucose. We will use the words blood sugar in this book.

#### Remember . . .

 You may see blood sugar written as BS on some forms. For example, your doctor may order a FBS. This stands for Fasting Blood Sugar. This means that you have a blood test after not eating or drinking for at least 8 hours.

### How do I know what my blood sugar is?

You will learn how to test your blood sugar. When you test your blood sugar at regular times you begin to see patterns. You can see the times of day when your blood sugars are up or down. These numbers help you and your health care team plan your treatment.

You can read more about testing your blood sugar in Parts 4 (page 21) and Part 5 (page 29).

# What should my blood sugar be?

Blood sugar is measured in units called millimols per litre. The short form is mmol/L.

Your diabetes team will tell you the target numbers you are aiming for.

### Blood sugar targets are:

First thing in the morning	4.0 to 6.0 mmol/L
Before all other meals	5.0 to 8.0 mmol/L
2 hours after a meal	5.0 to 8.0 mmol/L

You can read more about these numbers in Part 4 on page 21.

### How do I test my blood sugar?

You put a test strip into a machine called a glucometer or meter for short. You clean and prick your finger to get a drop of blood. The drop goes on the test strip. The meter shows the number that is the amount of sugar in your blood.

You will get a meter from your diabetes nurse or dietitian. There are also talking meters for people who are visually impaired. Members of your health care team will help you get one if needed.

When you test your blood sugar using a meter you need 4 things:

- a meter and test strip
- a device to pick your finger ->
   called a lancet
- a record book



Your diabetes nurse, dietitian or pharmacist will show you how to test your blood sugar and use your record book. Use this book even though your meter has a memory.

# Who pays for the supplies?

The Ontario Health Insurance Plan called OHIP pays for the strips. You will need to provide a prescription from your doctor. You pay for the lancets. If you have extra insurance, check with your insurance company to see if your plan pays for the supplies.

Your social worker, diabetes nurse and dietitian work closely with you to find ways to pay for your supplies.

#### **Diabetes after Kidney Transplant**

### Do I need to have my meter checked?

You should check your meter at a lab once a year. When you have your blood sugar tested at the lab, bring your meter. Ask the staff to check your meter.

Test your blood sugar using your meter within 20 minutes of the lab technician taking your blood. Your blood sugar should be within 20% of the lab results.

# Here is an example:

- If your blood sugar taken at the lab is 10.0 mmol/L then the test you did using your meter should be between 8.0 to 12.0 mmol/L.
- If your test is not within 20% you can get a new meter from your diabetes nurse, dietitian or the meter company for free.

# What is a hemoglobin A1C?

This is a blood test that shows your average blood sugar over 3 months. The results of this test should be less than 0.07 mmol/L or 7%.



You will learn about hemoglobin A1C and how to control your blood sugar when you meet with members of your health care team.

# **The Matching Game**



Your body needs this hormone to move sugar into the cells...

blood glucose meter

The stomach breaks food up into small pieces and sends it into the...

sugar

You use this machine to measure blood sugar...

pancreas

A carbohydrate breaks into this inside the body...

• insulin

This carries sugar to all parts of the body...

blood sugar

Blood glucose is also called...

• small intestine

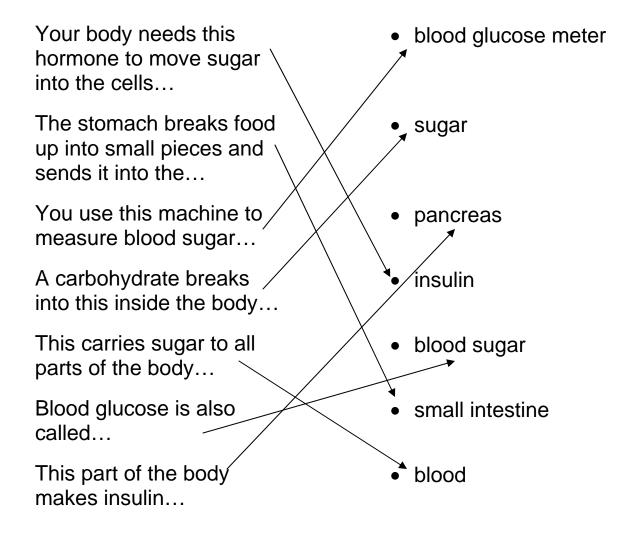
This part of the body makes insulin...

blood



# The Matching Game Answers

Draw a line from the left side to the correct match on the right side:

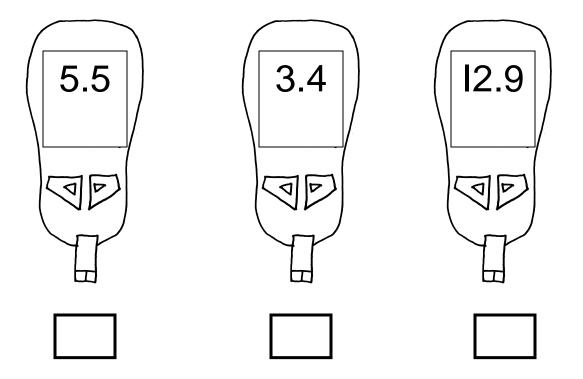


# Which one?

Here are 3 blood sugar tests using a meter.

Check the one that is the best number for a target blood sugar.

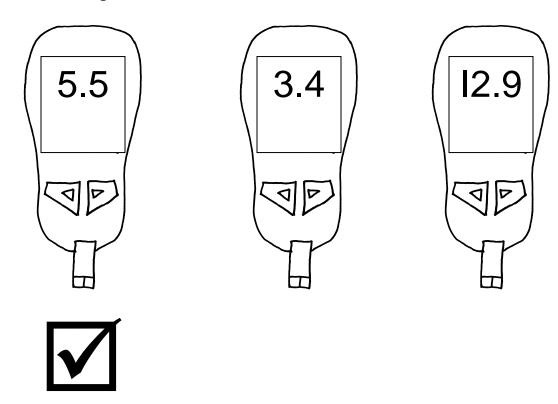




# Which one? Answer

Here are 3 blood sugar tests using a meter.

Check the one that is the best number for a target blood sugar.



Part 4 – High Blood Sugar



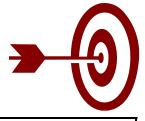
# After reading this part you will be able to:

- pick the correct number that shows a high blood sugar
- fill in the correct words for treating high blood sugar

# A quick review . . .

Blood sugar is measured in mmol/L.

# Blood sugar targets are:



First thing in the morning	4.0 to 6.0 mmol/L
Before all other meals	5.0 to 8.0 mmol/L
2 hours after a meal	5.0 to 8.0 mmol/L

# What is high blood sugar?

High blood sugar is having:

- a morning blood sugar over 6.0 mmol/L or
- a blood sugar over 8.0 mmol/L 2 hours after a meal

# What causes high blood sugar?

The causes of high blood sugar are:

- taking too little diabetes medication
- forgetting to take your diabetes medication
- eating a larger amount of food than you should
- eating high sugar foods such as candy, pop, cake
- getting sick
- having an infection
- feeling tense or stressed

# What are the symptoms of high blood sugar?

Some people feel all of these symptoms. Some people do not feel any.

#### You may:

- void, urinate or pass water more often
- feel thirsty
- feel hungry
- feel tired
- have blurred vision



# What is the treatment for high blood sugar?

The treatment of high blood sugar includes:

- following your meal plan and eating the right amount of food from your meal plan
- working with your doctor, dietitian and diabetes nurse to find the right amount of medication for you
- staying away from food high in sugar such as candy, pop, cake and pies

# Can I drive with a high blood sugar?

When you drive you need to keep your blood sugar in your target range. It is not safe to drive with a blood sugar that is too high. When you have symptoms of high blood sugar you cannot focus on safe driving.



Page 33 covers Safe Driving Guidelines in detail.

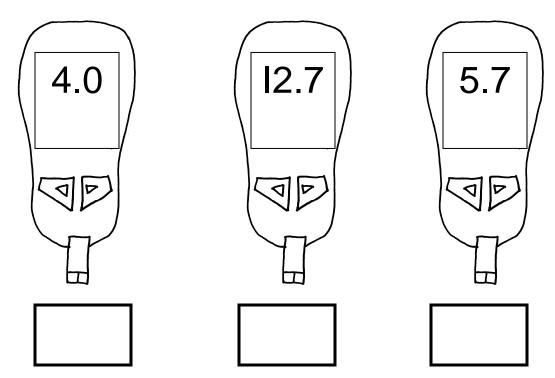
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Notes:				

# Which one?

Here are 3 blood sugar tests using a meter.



Check the one that is high blood sugar:

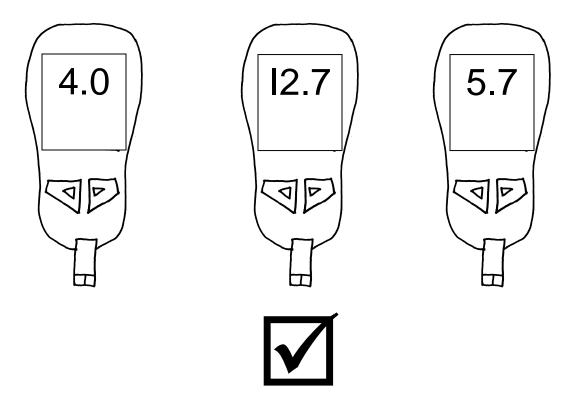


# Which one?

#### **Answer**

Here are 3 blood sugar tests using a meter.

Check the one that is high blood sugar:



# Test Yourself Review page 23 for help

# Fill in the blanks.

The	treatment of high blood sugar includes:
•	following your plan
•	the amount of food advised on your meal plan
•	staying away from food in sugar such as candy, pop, cake and pies
•	working with your doctor, dietitian and diabetes nurse to find the right amount of for you

# Test Yourself Answers

#### Fill in the blanks.

The treatment of high blood sugar includes:

- following your meal plan
- <u>eating</u> the amount of food advised on your meal plan
- staying away from food <u>high</u> in sugar such as candy, pop, cake and pies
- working with your doctor, dietitian and diabetes nurse to find the right amount of <u>medication</u> for you

Part 5 – Low Blood Sugar



# After reading this part you will be able to:

- pick the correct number that shows a low blood sugar
- find the common symptoms of too little sugar in the blood
- put the steps for how to manage low blood sugar in the correct order
- write the number your blood sugar should be over before you can drive safely

# What is low blood sugar?

A low blood sugar is less than 4.0 mmol/L.

# What causes a low blood sugar?

The causes of low blood sugar are:

- taking too much of your diabetes medication
- being more active than usual
- eating less than you usually eat or skipping a meal
- not having your meals on time

# How do I know when I have low blood sugar?

When you have a low blood sugar, you may feel:

- hungry
- grouchy
- dizzy

- tired
- nervous
- shaky



- a headache
- cold, clammy skin
- pale skin
- slurred speech



Some people lose coordination or become confused.

### When your blood sugar is below 4.0 mmol/L:

- Take 15 grams of a fast acting carbohydrate right away. Taking 15 grams of a fast acting carbohydrate raises your blood sugar quickly. Examples of 15 grams of fast acting carbohydrates are:
  - ☐ Chew glucose or dextrose tablets read the package to know how many total 15 grams or
  - ☐ Drink 175 ml or ¾ cup orange juice or
  - ☐ Drink 175 ml or ¾ cup regular pop
- 2. Wait 15 minutes and check your blood sugar again.
- 3. If your blood sugar is still below 4.0 mmol/L, treat again with 15 grams of a fast acting carbohydrate listed above.
- 4. Repeat these steps until your blood sugar is above 4.0 mmol/L.

### After your blood sugar is above 4.0 mmol/L then:

If your next meal or snack is more than 1 hour away, you need to eat to keep your blood sugar above 4.0 mmol/L. Make sure you eat:

- ☐ ½ meat or cheese sandwich or
- □ 6 crackers with cheese or
- ☐ 1 slice of bread with peanut butter

Check your blood sugar every ½ hour until it stays above 4.0 mmol/L.

If you follow a special diet or are vegetarian, your dietitian will talk to you about what food to eat and carry with you.

#### **Diabetes after Kidney Transplant**

#### Caution...

- If you take medication called Acarbose or Prandase you must use glucose tablets to treat low blood sugar.
- Your diabetes nurse, dietitian or doctor will review the steps with you.

# What is glucagon?

Glucagon is a very fast acting carbohydrate given by injection. Glucagon is only used if you become unconscious because of a low blood sugar. If this happens, someone else can give you glucagon to save your life.

Your diabetes nurse will talk to you about glucagon when you meet.

# How do I prevent having low blood sugar?

If your meal is going to be delayed, make sure you eat a snack such as:

- □ ½ meat or cheese sandwich or
- □ 6 crackers with cheese **or**
- ☐ 1 slice of bread with peanut butter

Always carry a fast acting carbohydrate in your purse, pocket, back-pack and vehicle. If your meal or snack is going to be delayed, take a fast acting carbohydrate to prevent problems.



You can carry glucose tablets or special bars for this purpose. Talk to your pharmacist about the tablets. Talk to your dietitian about the bars.



#### Remember . . .

 For your safety, wear medical alert identification so you can get the correct help right away.

#### When can I drive?

When you drive you need to keep your blood sugar in your target range. It is not safe to drive with a blood sugar that is too high or too low. You should always be safe, alert and in control.



#### Remember...

- For driving the rules change to "Over 5 to Drive."
- This means your blood sugar must be over 5.0 mmol/L to drive safely.

#### Safe driving guidelines:

- test your blood sugar just before driving
- test your blood sugar after every 4 hours of driving

If your blood sugar is less than 5.0 mmol/L, follow the steps on the next page.

#### If your blood sugar is less than 5.0 mmol/L:

 Take 15 grams of a fast acting carbohydrate right away. Taking 15 grams of a fast acting carbohydrate raises your blood sugar quickly.

Examples of 15 grams of fast acting carbohydrates are:

- ☐ Chew glucose or dextrose tablets read the package to know how many total 15 grams or
- ☐ Drink 175 ml or ¾ cup orange juice or
- ☐ Drink 175 ml or ¾ cup regular pop
- 2. Wait 15 minutes. Do not drive. Check your blood sugar again.
- 3. If your blood sugar is still below 5.0 mmol/L, treat again with 15 grams of a fast acting carbohydrate listed above.
- 4. Repeat these steps until your blood sugar is above 5.0 mmol/L.

#### After your blood sugar is above 5.0 mmol/L:

If your next meal or snack is more than 1 hour away, you need to eat to keep your blood sugar over 5.0 mmol/L. Make sure you eat:

- □ ½ meat or cheese sandwich or
- □ 6 crackers with cheese or
- □ 1 slice of bread with peanut butter or
- □ 1 granola bar

#### Caution...

- Always wait 45 to 60 minutes before driving if you had a low blood sugar.
- Low blood sugar affects your reflexes and ability to drive safely.
- Remember "Safety first for everyone."

### When you are driving:

If you feel that your blood sugar is going low:

- pull to the side of the road and stop driving
- take your keys out of the ignition
- test your blood sugar
- treat a low blood sugar
- wait 45 to 60 minutes before driving

#### **Emergency driving kit:**

Keep an "emergency driving kit" in your vehicle to prevent or treat low blood sugars.

#### This kit should contain:

- glucose or dextrose tablets
- drinks with sugar such as orange juice or pop
- granola bars
- packaged cheese and crackers
- packaged peanut butter and crackers



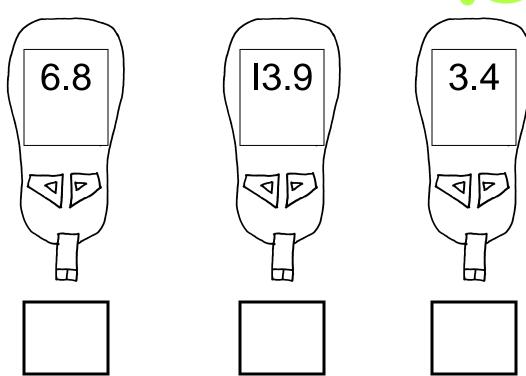
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# Which one?

Here are 3 blood sugar tests using a meter.

Check the one that shows low blood sugar.

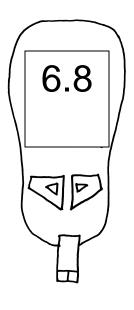


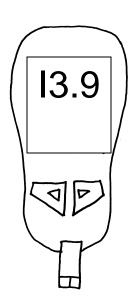


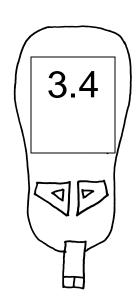
# Which one? Answer

Here are 3 blood sugar tests using a meter.

Check the one that shows low blood sugar:









# Symptom Search Find some symptoms of low blood sugar. Review page 30 for help.

С	G	R	0	U	С	Н	Υ	S	Н
Р	L	Α	Q	U	D	Е	Т	L	E
W	Q	Α	S	Т	I	Р	D	U	Α
Α	I	U	M	Α	Z	Α	K	R	D
Е	D	В	K	M	Z	L	Z	R	Α
Н	U	N	G	R	Υ	E	Р	E	С
S	Н	Α	K	Υ	Р	S	Α	D	Н
Z	Υ	٧	N	Н	I	W	K	S	E
I	X	M	Т	S	D	E	R	I	Т
N	Е	R	V	0	U	S	Р	Р	N

HUNGRY SLURRED (speech)

GROUCHY PALE

TIRED HEADACHE

DIZZY SHAKY

NERVOUS SHAR

# Symptom Search Answers for Low Blood Sugar

	G	R	0	U	С	Н	Y	S	H
					D			L	Е
					ı	P		U	Α
					Z	Α		R	D
					Z	L		R	Α
H	U	N	G	R	(Y)	E		E	С
S	Н	Α	K	Y				D	Н
									E
					D	E	R	ı	T
N	Е	R	V	0	U	S			

HUNGRY SLURRED (speech)

GROUCHY PALE

TIRED HEADACHE

DIZZY SHAKY

**NERVOUS** 

# The Right Steps Review page 31 for help.

Put the steps for looking after a low blood sugar in the correct order from # 1 to # 5.

If your next meal or snack is more than 1 hour away, you need to eat to keep your blood sugar greater than 4.0 mmol/L.
Wait 15 minutes and check your blood sugar again.
Take 15 grams of a fast acting carbohydrate right away.
Repeat these steps until your blood sugar is above 4.0 mmol/L.
If your blood sugar is still below 4.0 mmol/L, treat again with 15 grams of a fast acting carbohydrate.

# **The Right Steps**

# **Answers**

6	If your next meal or snack is more than 1 hour away, you need to eat to keep your blood sugar greater than 4.0 mmol/L.
2	Wait 15 minutes and check your blood sugar again.
0	Take 15 grams of a fast acting carbohydrate right away.
4	Repeat these steps until your blood sugar is above 4.0 mmol/L.
8	If your blood sugar is still below 4.0 mmol/L, treat again with 15 grams of a fast acting carbohydrate.

# **Road Safety**

Fill in the blar
------------------

Over \_\_\_\_\_ to \_\_\_\_\_.



# **Test Yourself**

# **Road Safety**

# **Answer**

Fill in the blanks:

Over 5 to drive.



# Part 6 – Diet and Meal Planning



# After reading this part you will be able to:

• pick the most balanced meal from a menu

#### How do I know what to eat?

You work with your dietitian to learn healthy eating. Your dietitian gives you a copy of Canada's Food Guide and shows you how to plan meals and snacks. This is based on your age, gender, health, activity level and other factors.

Since each person has different needs this part gives general guidelines only. Follow your dietitian's advice first. If you follow a special diet or are vegetarian, your dietitian will talk to you about what food to eat and carry with you.

### What is eating healthy?

You eat healthy when you have 3 balanced meals a day. You need a healthy balance of fluids too based on your health history.

Eat around the same time each day. Try to keep the portion sizes about the same.

Have a variety of foods from the 4 food groups in Canada's Food Guide:

- Vegetables and Fruit
- Grain Products
- Milk and Alternatives
- Meat and Alternatives

### What type of food should I avoid?

Limit foods high in sugar such as:

- candy
- pop
- chocolate
- donuts
- fruit pies
- sugar
- cake
- honey
- jello
- molasses
- fruit juice
- sweet drinks

## More about healthy eating . . .

#### Remember...

A carbohydrate changes to sugar in your body to give you energy.

Healthy eating means you need to pay attention to food groups that contain carbohydrates such as grains, milk and fruit.

#### **Vegetables**

Vegetables are a good source of vitamins, minerals and fibre.

Eat a variety of vegetables in your daily diet. Aim for 2 vegetables with meals.



#### **Fruit and Juice**

Fruit provides vitamins, minerals and fibre to your diet. Eat a variety.

Since fruit and juice are high in natural sugar, follow your dietitian's advice about adding fruit to your diet. Fruit is a better choice than juice.



#### **Grain Products**

Grain products are a main source of carbohydrate in your diet. To meet the demands of your body, have carbohydrates with each meal in smaller amounts.



Choose high fibre products such as:

- whole-wheat products such as bread, flat bread, pitas, cereals, pastas and crackers
- bulgur, quinoa and couscous
- brown rice

These fill you up, prevent constipation, lower cholesterol and raise blood sugar slowly.



#### Milk and Alternatives

These are good sources of calcium and protein. Choose lower fat products. You may choose fortified soy drinks as well.



#### **Meat and Alternatives**

Protein is important for growth and body repair. Protein does not affect blood sugar directly. The type of protein you eat can affect weight and risk of heart disease. Your dietitian will help you plan the amount and type of protein to eat using these guidelines:

- choose lean varieties of meat and limit servings as recommended by your dietitian
- bake, broil or barbeque meat
- limit processed meats such as hot dogs, salami and bologna

#### Fat

Fat carries fat soluble vitamins in your body. It protects your organs and insulates your body against heat loss.

To lower fat and cholesterol in your daily diet, limit the amount of fat you eat. This includes butter, margarine and oil. Limit the amount of fat you cook and prepare foods with. Avoid deep-fried food. Only eat small amounts of salad dressing and mayonnaise. Use healthy oils such as olive or canola oil.



Store bought baked goods such as donuts, pies, cakes, cookies and muffins are high in fat and sugar. Snack foods such as potato chips and chocolate are also high in fat.

#### **Alcohol**

Talk to your doctor about drinking alcohol. Alcohol can cause problems with some medications. Alcohol is high in calories and can increase your weight.



- Always have food when you drink alcohol.
- Drink in moderation. This means no more than 1 or 2 drinks a day. One drink is 5 ounces (150 ml) dry wine or 1½ ounces (45 ml) liquor or 1 bottle of beer.
- Avoid sweetened mixes, liqueurs, coolers, sweet wine and tonic water.
- Choose sugar free pop, club soda or water for mixes.

When you drink alcohol, it is a good idea to medical alert identification. Alcohol may cause low blood sugar.



#### Remember...

- You and you dietitian work together to plan a healthy balanced diet for you.
- Follow your dietitian's guidelines.
- Contact your dietitian when you have questions or concerns.



## Welcome to

# Book's Bistro Menu

Enjoy a healthy, balanced meal while you relax in Book's Bistro. Chose the best meal based on what you have learned so far.

#### ☐ Menu Choice 1

- grilled chicken
- brown rice
- mixed vegetables
- fruit salad

**જ** 

#### ☐ Menu Choice 2

- mile high hamburger
- tortilla chips
- tomato salsa
- peaches

≪

#### ☐ Menu Choice 3

- tuna wrap
- corn on the cob
- baked potato wedges
- ice cream with strawberries

**જ**ે



#### Test Yourself Answer



# Welcome to

# Book's Bistro Menu

Enjoy a healthy, balanced meal while you relax in Book's Bistro. Chose the best meal based on what you have learned so far.

### ☑ Menu Choice 1

- grilled chicken
- brown rice
- mixed vegetables
- fruit salad

≪

### ☐ Menu Choice 2

- mile high hamburger
- tortilla chips
- tomato salsa
- peaches

≪

#### ☐ Menu Choice 3

- tuna wrap
- corn on the cob
- potato wedges
- ice cream with strawberries

**જ** 



# Part 7 – Activity



# After reading this part you will be able to:

- name some of the activities you can try
- see how you can walk 50 kilometres

#### Why is activity important?

Physical activity is one of the most important things you can do to maintain your diabetes control, mental health and quality of life. You can also improve your circulation by being more active.

When you are active you:

- lower your blood sugar
- promote weight loss
- improve blood flow in blood vessels
- lower stress



### How much activity do I need?

It is best to be active every day. The recommended amount of physical activity is 150 minutes a week of moderate activity. For example, this is the amount of activity you would have if you were active 30 minutes a day, 5 days a week.

#### How should I get started if I have not been active?

If you have not been active, then start with activities you can easily build into your daily routine. Your goal is to build up your activities to 30 to 60 minutes a day.

Build up slowly. **★**Do not try to do too much at once. Walking is a great way to start.

Gardening, doing housework and taking the stairs instead of an elevator also help you stay active.

#### Follow these guidelines if you take insulin:

- If you plan to exercise hard for periods of ½ hour or longer, you need to eat to prevent low blood sugar.
- You should eat something as described below before you do the activity. You may need extra food during the activity.

# For strenuous activity such as hockey, swimming, running and skiing:



- Eat 1 to 2 extra fruit choices right before you exercise. This will last 20 to 30 minutes.
- Eat additional 1 to 2 choices for each extra ½ hour of exercise.

# For moderate activity such as bicycling, gardening, brisk walking and washing floors:

- Eat 1 extra fruit choice for ½ hour of activity.
- Eat 1 extra fruit choice for ½ hour of extra activity.

# For light activity such as longer than usual shopping or walking:

 Eat 1 extra fruit choice for the whole activity time.



# Remember...

• Your diabetes nurse and dietitian help you with your activity plan.

# **Take Action!**

This search contains 12 activities you can do. Can you find them all?



There are no hints for this puzzle. Think of an activity and see if you can find it.

Α	Q	U	Α	F	I	Т	W	S	Н
G	N	I	K	I	Н	X	G	K	J
Р	0	S	Т	Υ	Т	I	N	Α	K
L	Т	Υ	0	G	Α	Н	I	Т	Q
R	N	U	V	N	I	С	K	I	U
0	I	S	W	I	М	М	I	N	G
L	М	Υ	М	С	В	С	В	G	F
L	D	S	I	N	N	E	Т	Α	I
E	Α	X	W	Α	L	K	I	N	G
R	В	L	Α	D	I	N	G	Т	Р

# Take Action! Answers

This search contains 12 activities you can do. Did you find them all?

A	Q	U	Α	F	I	Т		S	
G	N	I	K	I	Н		G	K	
	0				T	_	N	Α	
	Т	Y	0	G	<b>A</b>	Н	I	Т	
R	N			N	I	C	K	ı	
0	ı	S	W	I	M	M	I	N	G
L	М			С			В	G	
L	D	S	I	N	N	Е	T		
E	Α		W	Α	L	K	I	N	G
R	В	L	Α	D	I	N	G		

- walking
- biking
- hiking
- swimming
- yoga
- skating

- rollerblading
- tennis
- badminton
- aquafit
- dancing
- tai chi

# **Challenge Yourself**





You can buy a pedometer or ask for one as a present. A pedometer measures how far you walk when you clip it on your waistband.

Check off the kilometres on the next page as you walk. Remember start slow and walk each day.

If you do not have a pedometer, follow these steps:

- ask a friend to drive 1 kilometre from your home
- look at your watch and remember the time
- start walking at your regular speed
- look at your watch when you get to the place your friend reached
- this is how long you took to walk 1 kilometre

For example – if it took you 20 minutes to walk to the place, then you walk 1 kilometre in 20 minutes.

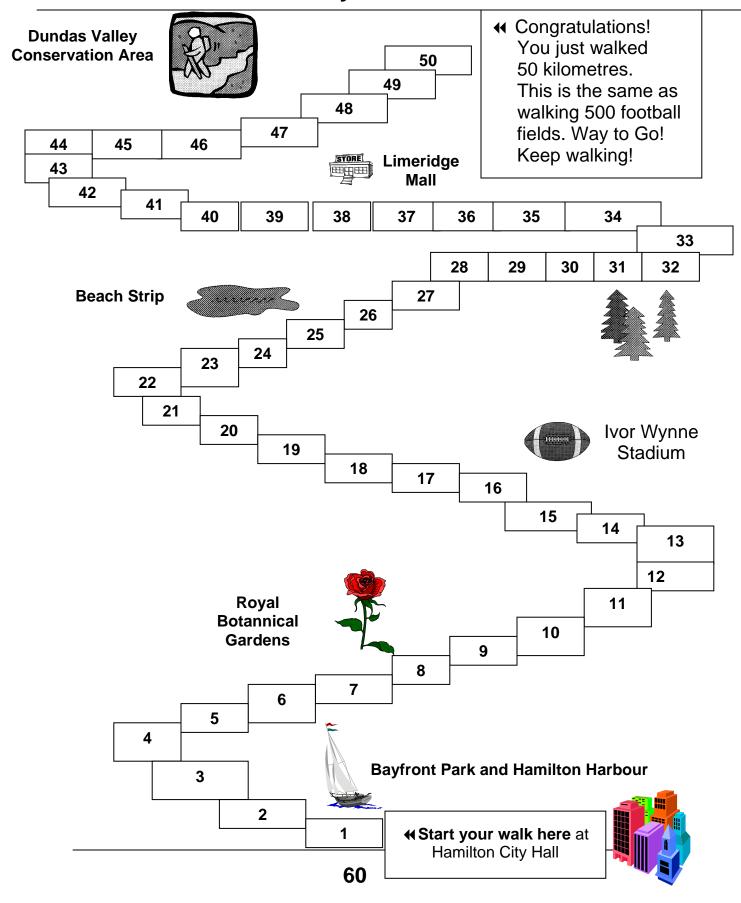
Each time you walk for that amount of time you can check off 1 kilometre on the next page.

Have fun walking and see how far you go. Take a friend along!





# Way to Go!



#### Part 8 - Oral Medications



# After reading this part you will be able to:

 fill in the correct words about why you need to take oral medication

#### Note . . .

- some people take oral medication to control blood sugars
- some people take insulin to control blood sugars
- some people take both oral medications and insulin to control blood sugars

If you only take insulin, go to Part 9 on page 67.

# **Blood sugar targets are:**



First thing in the morning	4.0 to 6.0 mmol/L
Before all other meals	5.0 to 8.0 mmol/L
2 hours after a meal	5.0 to 8.0 mmol/L

### How does oral medication help?

Taking oral medication:

- helps bring your blood sugar down
- helps your new kidney work better
- helps prevent or delay problems caused by diabetes

#### What oral medication is best for me?

Your doctor and diabetes nurse works with you to help you find the best medication for you.

#### Remember:

- it takes time to reach your blood sugar target
- you may need to change the dose of your oral medication
- you may need to change to a different oral medication
- you may need to also take insulin

# What should I do if I want more information about my medication?

You get an information sheet that explains your oral medication from the pharmacy. If you are not clear on how the oral medication works, talk to your pharmacist, doctor or diabetes nurse.



# Can I stop taking the medication that caused the diabetes?

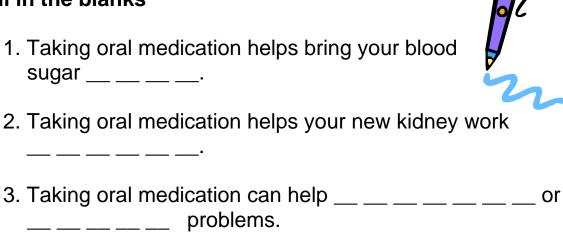
No. You must always take the immunosuppressant medications that help your new kidney to work.

If you stop taking the immunosuppressant medications, your body will reject the new kidney.

_	Diabetes after Kidney Transplant	
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### **Test yourself**

### Fill in the blanks



# **Test yourself**

#### **Answers**

#### Fill in the blanks

- Taking oral medication helps bring your blood sugar down.
- 2. Taking oral medication helps your new kidney work better.
- 3. Taking oral medication can help <u>prevent</u> or <u>delay</u> problems.

# Part 9 - Insulin



### After reading this part you will be able to:

- fill in the correct words as to why it is important to take insulin
- fill in the correct words for 2 places NOT to store insulin
- choose how many days an insulin vial or cartridge can be left at room temperature

#### Note . . .

- some people take oral medication to control blood sugars
- some people take insulin to control blood sugars
- some people take both oral medications and insulin to control blood sugars

#### What is insulin?

Insulin helps carry sugar into your cells. The cells use sugar as energy. If you have too much sugar in your blood, you may need to give insulin by injection.

#### How does insulin help?

- helps bring your blood sugar down
- helps your new kidney work better
- helps prevent or delay problems caused by diabetes

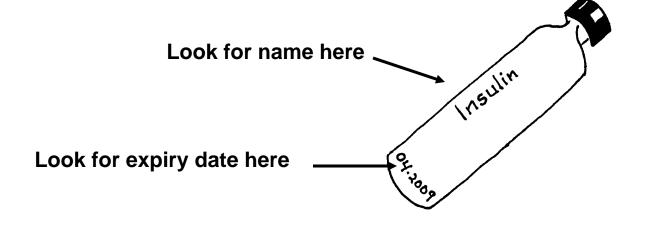
#### What insulin is best for me?

Your doctor and diabetes nurse help choose the right insulin for you. Insulin is given using an insulin pen. Insulin pens are easy to use and take with you. Your diabetes educator shows you how to give insulin.

#### Remember...

Before you give yourself insulin check:

- to make sure it is the correct name
- the expiry date



#### How do I store insulin?

Most insulin cartridges can be stored at room temperature for 28 days after the seal is broken. Your pharmacist, diabetes nurse and dietitian will tell you how long you can store the type of insulin you take.

Store unopened insulin in the refrigerator.

#### Do not store insulin:

- in a vehicle in hot or cold weather
- near a stove or microwave
- in a freezer



### How do I get rid of used lancets and pen needles?

Put used pen needles and lancets in a sharps container. You can get a sharps container from your pharmacy.

# Can I stop taking the medication that caused the diabetes?

No. You must always take the immunosuppressant medications that help your new kidney to work. If you stop taking the immunosuppressant medications, your body will reject the new kidney.

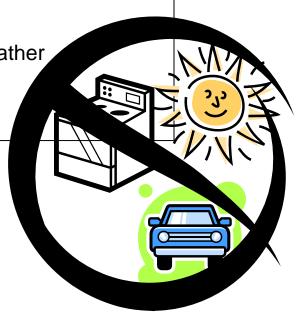
# Remember . . .

## Do not store insulin:

• in a vehicle in hot or cold weather

• near a stove or microwave

• in a freezer



# **Test yourself**

# Fill in the blanks.

1.		me to take insulin gars down. This h work better.	elps my
2.	Two places I shou	uld NOT store insu or in a	
3.	Most insulin cartri temperature after	dges can be left a the seal is broken	
	□ 90 days	☐ 28 days	☐ 10 days



# **Test yourself**

#### **Answers**

Fill in the blanks.

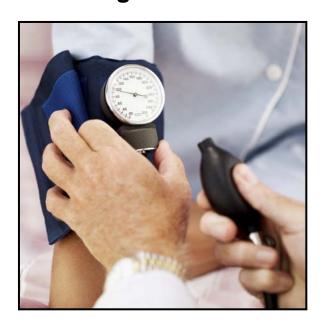
1.	It is important for me to take insulin so I can
	keep my blood sugars down. This helps my
	new kidney work better.

2. Two places I should NOT store insulin are near a <u>stove</u> or in a <u>freezer</u>.

3.	An insulin vial or cartridge can be left at room
	temperature after the seal is broken for:

□ 90 days
□ 28 days
□ 10 days

# **Part 10 – Preventing Problems**



# After reading this part you will be able to:

• complete 5 healthy hints to prevent or delay problems

### Why do I need to watch out?

When you have diabetes, you are at risk for problems with your blood vessels and circulation. There are many things you can do to help prevent these problems.

### **Blood pressure**

Diabetes may cause an increase in blood pressure. Have your blood pressure checked when you see a member of your health care team. You can also buy a blood pressure to check your own blood sugar at home.

If you are taking a medication for high blood pressure, take it regularly. If you smoke, try to quit. Smoking can cause high blood pressure.

#### **Blood vessels**

Diabetes may cause blood vessels to become narrow inside. This is called atherosclerosis. A build up of fat and other materials inside the blood vessels causes this.

The blood then has trouble flowing and some vessels become blocked. You can help yourself by:

- following a low fat meal plan
- following an activity program
- stopping smoking if you smoke
- taking medication prescribed for you
- having your cholesterol and triglyceride blood levels checked 1 time a year

### **Kidneys**

Diabetes and high blood pressure can damage the tiny blood vessels in the kidneys that act as filters to remove waste.

Good blood pressure and blood sugar control helps prevent damage. Medications are often used to protect the kidneys. You may need to lower the amount of protein you eat to avoid kidney damage. Your dietitian will help you plan your diet.

### **Eyes**

There may be no signs to warn you when there is a problem with your eyes. A change in the blood vessels of your eyes is called retinopathy. Early discovery and treatment of retinopathy can prevent damage to your eyes.

You need to have your eyes checked each year by an eye doctor called an optometrist.

OHIP covers the cost of an optometrist visit every year.

Your doctor or optometrist may refer you to a special eye doctor called an ophthalmologist.



#### **Feet**

People with diabetes often have problems with blood flow in their legs and feet.

When you have diabetes you should look at your feet each day. If you cannot see your feet well ask a family member or friend to check them for you.

Look at the top and bottom of both feet.

Look for cuts, sores, blisters, swelling or red spots. Contact your doctor right away if you see any problems or changes.

Wash your feet daily. Be sure to dry your feet and between your toes well.

Put lotion on the top and bottom only. \*Do not put lotion between your toes as this can cause problems. Report any changes to your doctor right away.

### **Toenails**

Use an emery board to shape your nails even with your toes. If it is hard for you to do your own foot care have a foot doctor or nurse do it for you. Look in the yellow pages of the telephone book for a foot care clinic near you. A foot doctor may also be called a chiropodist or podiatrist.

### Shoes

Wear shoes that fit. Wear seamless socks with your shoes. **★** Do not go barefoot.



#### **Teeth**

When you have diabetes, you can have problems with your teeth and gums. This is caused by having extra sugar in your blood.

To help prevent problems:

• Brush and floss your teeth each day.



See a dentist every 6 months.

Tell your dentist that you have diabetes.
 Your dentist and hygienist will take special care when looking after your mouth.



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### Test Yourself Secret Code

Use the secret code to find 5 healthy hints to prevent or delay problems.



#### Secret code:

1	2	3	4	5	6	7	8	9	10	11	12	13
Z	Υ	X	W	V	U	Т	S	R	Q	Р	Ο	Ν
14	15	16	17	18	19	20	21	22	23	24	25	26
М	L	K	J	I	Н	G	F	Е	D	С	В	Α

# Test Yourself Secret Code Answers



5 healthy hints to prevent or control problems are:

- CONTROL BLOOD PRESSURE AND BLOOD SUGAR – there are 2 healthy hints here
- 2. CHECK FEET
- 3. YEARLY EYE EXAM
- 4. QUIT SMOKING

# Part 11 – Your Feelings



# After reading this part you will have information on:

- some of the feelings you may have and why
- members of the team who can help

There are no puzzles at the end of this part.

### What feelings can I expect?

### Нарру...

You have a new kidney. Most people are very happy to be free from dialysis and kidney disease. They look forward to the changes that this brings. At first you still need to recover from surgery. As you recover, you will begin to feel better and better each day.

#### Shock...

During your recovery, you have been told that you have diabetes. This was caused by the medications you must take to keep your new kidney healthy. You may be in shock. You know that you now have something else to deal with.

### Mixed feelings and mood swings...

It is common to have mixed feelings about all of this. Your feelings may go up and down. At one time you may feel thankful then angry. You may feel happy then sad. These feelings and mood swings are caused by the medication called prednisone.

You need to take prednisone after surgery to keep your new kidney working. As you recover your doctor slowly lowers the amount of prednisone that you take. The goal is to find the lowest dose needed to keep your kidney working.

As you take less and less prednisone your mood swings and feelings may improve. However, some people may still have mood swings on a low dose of prednisone.

### What can I do to manage my feelings?

Talk to your friends, family and supports.
Tell them how they can help you
manage your feelings. For example,
when you are sad your partner could
rent a funny movie to watch together.



Be honest and open about your feelings. Listen to how others feel as well. Work with your friends, family and supports to find ways to cope.

### Who can I ask for help?

You may need help from members of your health care team. You can talk to your doctor, diabetes nurse, social worker, dietitian or spiritual care specialist. You may need to see a special doctor called a psychologist or psychiatrist. This can be arranged.

Listen to your friends, family and support persons. If someone suggests you need help to manage your feelings, then ask for it. Some people deny there is a problem. This is not healthy for you or your supports.

#### Remember...

You are not alone. We can help.

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# Part 12 – Community Resources



# After reading this part you will know:

 when to contact members of the health care team for help

There are no puzzles or questions at the end of this part.

### Who can help me manage diabetes?

Your doctor, diabetes nurse, dietitian and social worker can help you manage diabetes. You can telephone or email your questions or concerns.



You will get contact information for each team member.

### Call your diabetes nurse if you:

- have low or high blood sugar problems
- have a sudden change in your blood sugar levels
- need help using your glucose meter or insulin pen
- have support persons who want to learn how to use the blood glucose meter or insulin pen
- have a problem getting a prescription filled or supplies

### Call your dietitian if:

you would like some help with your meal plan

### Contact your social worker if:

- you have problems with your expenses
- you want to talk about your feelings and get support

#### Remember . . .

- Other members of the team are involved as needed.
- For example, if you want to start an exercise program you can meet with a physiotherapist.

# Here are other ways to get more information...

#### **Canadian Diabetes Association:**

Hamilton & District Branch 1685 Main Street West Hamilton, Ontario

Call: 905-528-3111

Website: www.diabetes.ca

#### **Diabetes Hamilton:**

HSC-3E27 McMaster University 1200 Main Street West Hamilton, Ontario

Call: 905-525-9140 ext. 22351

Website: www.diabeteshamilton.ca

# **Dietitians of Canada:**

Website: www.dietitians.ca

### **Eating Well with Canada's Food Guide:**

Website: www.healthcanada.gc.ca/foodguide

#### **Health Canada:**

Website: www.hc-sc.gc.ca

# St. Joseph's Healthcare Hamilton:

Website: www.stjoes.ca





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# **Super Quiz**

If you like to do multiple choice questions try this Super Quiz. Feel free to go back and read any parts of the book as you do this challenge.



Read each question then circle your answer. To check your answers, go to page 94.

- 1. Diabetes means:
  - a) there is not enough of a hormone called betes in the blood
  - b) there is too much sugar in the blood
  - c) there is not enough sugar in the blood
- 2. Post transplant diabetes is:
  - a) a problem with low blood sugar after a kidney transplant caused by some medications
  - b) a problem with high blood sugar after a kidney transplant caused by some medications
  - c) a virus you catch after having a kidney transplant
- 3. Your body needs sugar to:
  - a) help you get to sleep
  - b) mix with your medications to help them work better
  - c) give you energy to move, work, and play
- 4. Pick the best blood sugar numbers for first thing in the morning:
  - a) 4.0 to 6.0 mmol/L
  - b) 5.0 to 8.0 mmol/L
  - c) 5.0 to 10.0 mmol/L
- 5. Pick the best blood sugar numbers for before a meal:
  - a) 4.0 to 7.0 mmol/L
  - b) 5.0 to 8.0 mmol
  - c) 5.0 to 10.0 mmol/L

- 6. Pick the best blood sugar numbers for 2 hours after eating a meal:
  - a) 4.0 to 7.0 mmol/L
  - b) 5.0 to 8.0 mmol/L
  - c) 5.0 to 10.0 mmol/L
- 7. Pick the number that is high blood sugar:
  - a) 4.9 mmol/L
  - b) 7.9 mmol/L
  - c) 18.2 mmol/L
- 8. Pick 2 symptoms of a high blood sugar:
  - a) sweaty and cold
  - b) thirsty and passing urine more often
  - c) relaxed and not eating well
- 9. What are 2 ways to prevent high blood sugar?
  - a) go to bed and rest
  - b) skip your medication and eat
  - c) follow your meal plan and limit food high in sugar
- 10. Pick the number that is low blood sugar:
  - a) 3.6 mmol/L
  - b) 6.2 mmol/L
  - c) 15.1 mmol/L

Keep going – you are doing great →

- 11. Pick 2 symptoms of a low blood sugar:
  - a) constipation, feeling full
  - b) dizzy, shaky
  - c) happy, excited
- 12. Pick 2 food items to treat low blood sugar right away:
  - a) steak, seafood
  - b) broccoli, carrots
  - c) juice, regular pop
- 13. Pick 1 way to prevent low blood sugar:
  - a) follow your meal plan
  - b) take your medication only when you remember
  - c) eat meals only when you feel hungry
- 14. What number must your blood sugar be over to drive?
  - a) 4.5 mmol/L
  - b) 5.0 mmol/L
  - c) 5.5 mmol/L
- 15. What are the 4 food groups for meal planning?
  - a) fruits, yoghurts, breads and vegetables
  - b) juices, breads, pastas, and vegetables
  - c) vegetables and fruit, grains, milk and alternatives, meat and alternatives

- 16. What are the best ways to get information about your diet?
  - a) friends and family members who have diabetes
  - b) Canada's Food Guide and my dietitian
  - c) my local library or the internet
- 17. How much moderate activity should you have a week?
  - a) 30 minutes
  - b) 90 minutes
  - c) 150 minutes
- 18. What are 2 things I can do to prevent or delay problems caused by poor blood sugar control?
  - a) watch TV and play video games
  - b) wash my feet daily and
  - c) check my feet every day and have an eye exam once a year

# Great job.

You have finished the Super Quiz!



Check your answers on the next page →

### Super Quiz Answers

- 1. Diabetes means:
  - b) there is too much sugar in the blood
- 2. Post transplant diabetes is:
  - b) a problem with high blood sugar after a kidney transplant caused by some medications
- 3. Your body needs sugar to:
  - c) give you energy to move, work, and play
- 4. Pick the best blood sugar numbers for first thing in the morning:
  - a) 4.0 to 6.0 mmol/L
- 5. Pick the best blood sugar numbers for before a meal:
  - b) 5.0 to 8.0 mmol/L
- 6. Pick the best blood sugar numbers for 2 hours after eating a meal:
  - b) 5.0 to 8.0 mmol/L
- 7. Pick the number that is high blood sugar:
  - c) 18.2 mmol/L
- 8. Pick 2 symptoms of a high blood sugar:
  - b) thirsty and passing urine more often
- 9. What are 2 ways to prevent high blood sugar?
  - c) follow your meal plan and limit food high in sugar

- 10. Pick the number that is low blood sugar:
  - a) 3.6 mmol/L
- 11. Pick 2 symptoms of a low blood sugar:
  - b) dizzy, shaky
- 12. Pick 2 food items to treat low blood sugar right away:
  - c) juice, regular pop
- 13. Pick 1 way to prevent low blood sugar:
  - a) follow your meal plan
- 14. What number must your blood sugar be over to drive?
  - b) 5.0 mmol/L
- 15. What are the 4 food groups for meal planning?
  - c) vegetables and fruit, grains, milk and alternatives, meat and alternatives
- 16. What are the best ways to get information about your diet?
  - b) Canada's Food Guide and my dietitian
- 17. How much moderate activity should you have a week?
  - c) 150 minutes
- 18. What are 2 things I can do to prevent or delay problems caused by poor blood sugar control?
  - c) check my feet every day and have an eye exam once a year

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# Tell us what you think...

After reading this book, please respond to the following statements. Your answers and comments will help us improve the information for all of our patients.

Circle one number for each statement	strongly disagree <b>↓</b>				trongly agree <b>↓</b>
The words are easy to read.	1	2	3	4	5
Comments:					
The information is easy to understand.	1	2	3	4	5
Comments:					
Reading this information was helpful.	1	2	3	4	5
Comments:					

Please turn over →

Diabetes after Kidney Transplant						
The information answered my questions.	1	2	3	4	5	
List other questions you have:						
I would recommend this information to other people with this problem.	1	2	3	4	5	
Comments:						
Other comments and sugges	tions:					
Thank you	ı very	much.				
Please return this form to: Paula Eyles, CNS, Pat St. Joseph's Hospital, 50 Charlton Avenue Ex Hamilton, Ontario L8N	Room ast		n			
You can mail this form in or brir visit. Ask a member of your heal hospital mail for you.	•		•		•	

