# Pathway to Wellness

A Handbook for Indigenous Peoples Living with Diabetes



onal Associat Jenous Nationa etes Autocht ciation Diabète



## ACKNOWLEDGEMENTS

The original Pathway to Wellness series (2005) was a joint initiative with the National Indigenous Diabetes Association (NIDA) and the Canadian Indigenous Nurses Association. This updated edition is the product of a partnership between the National Indigenous Diabetes Association, The Spirit Healthcare Group, the Canadian Association of Optometrists, and the Diabetes Integration Project.

The National Indigenous Diabetes Association, the Spirit Healthcare Group, the Canadian Association of Optometrists, and the Diabetes Integration Project acknowledge and graciously thank all the people who contributed their time and expertise in updating Pathway to Wellness. Special thanks to NIDA Elders Caroline Daigneault and Robert Fenton for sharing about the Medicine Wheel, Jillian Paulmark and Derek Risbey for their dedication, guidance and contributions, Amanda de Faye for her contributions to the physical activity section, and Canadian Association of Optometrists for contributing the Diabetic Retinopathy section.

## INTRODUCTION

The National Indigenous Diabetes Association, The Spirit Healthcare Group, the Canadian Association of Optometrists, and the Diabetes Integration Project ("we") offer this handbook as a guide to help you understand what you need to know about diabetes. This handbook is for Indigenous peoples (First Nations, Inuit, and Métis people) who are either living with diabetes or who are hoping to prevent it.

This handbook is partially based on information provided in the Canadian Diabetes Association's 2018 Clinical Practice Guidelines for the Prevention and Management of Diabetes in Canada. We recommend you use this book along with proper medical advice and guidance from your health care professionals. You can find the 2018 Clinical Practice Guidelines here: *http://guidelines.diabetes.ca/cpg* 

## **HOW WE ORGANIZED THIS HANDBOOK**

Each chapter has action items for the reader.

We developed handouts you can use for quick reference—they are at the end of the book You can also find these handouts available as PDFs at *www.nada.ca/resources* 

# Pathway to Wellness

A Handbook for Indigenous Peoples Living with Diabetes



National Indigenous Diabetes Association Association Nationale Autochtone Diabete



Published by the National Indigenous Diabetes Association, Inc. 202 – 160 Provencher Boulevard, Winnipeg, Manitoba, R2H 0G3

The original Pathway to Wellness series was developed in 2005 and has since become among our more popular resources for Indigenous people living with diabetes.

> Printed in Canada. All rights reserved.

## **TABLE OF CONTENTS**

## **CHAPTER ONE: LEARNING ABOUT DIABETES**

WHAT IS DIABETES	6
HOW DO I FIND OUT IF I HAVE DIABETES	7
WHAT IS PRE-DIABETES	7
AM I AT RISK FOR GETTING DIABETES	8
WHAT IS PCOS	8

## **CHAPTER TWO: CULTURE AND DIABETES**

THE MEDICINE WHEEL	10
THE FOUR DIMENSIONS OF WELLNESS	11
TRADITIONAL STORYTELLING	13
FASTING AND DIABETES	13

## **CHAPTER THREE: PREVENTING DIABETES**

HEALTHY EATING AND WHY ITS IMPORTANT	15
BENEFITS OF TRADITIONAL/ORIGINAL FOODS	15
EATING WELL WITH CANADA'S FOOD GUIDE – FIRST NATIONS, INUIT AND MÉTIS	16
MACRONUTRIENTS	16
SERVING SIZE AND PORTIONING	17
READING FOOD LABELS	18
HOW FOOD CHANGES BLOOD SUGAR LEVELS	19
SIMPLE CARBOHYDRATES (SUGARS)	20
COMPLEX CARBOHYDRATES	20
FIBRE	20
FAT	22
SUGAR	23
SODIUM	23
FOOD CHOICES AND COOKING TIPS	23
HOW BODY WEIGHT AFFECTS YOUR HEALTH	24
GUT HORMONES	26
BARIATRIC SURGERY	27
PHYSICAL ACTIVITY AND WHY ITS IMPORTANT	27

## **CHAPTER FOUR: MANAGING DIABETES**

FINDING OUT YOU HAVE DIABETES 3	30
DEVELOPING A PLAN TO MANAGE DIABETES 3	30
CREATING YOUR DIABETES HEALTH CARE TEAM 3	30
TESTING AND MONITORING BLOOD SUGAR LEVELS	31
WHAT CAN I EAT? HOW DO I CONTROL MY BLOOD SUGARS WITH EATING	34
COUNTING CARBOHYDRATES 3	35
LEARNING ABOUT HYPERGLYCEMIA, HYPOGLYCEMIA AND DIABETIC KETOACIDOSIS	37
WHY DO I NEED PILLS/INSULIN TO HELP WITH MY BLOOD SUGAR LEVELS	39
DIABETES MEDICATIONS AND SIDE EFFECTS 4	11
FASTING WHILE YOU HAVE DIABETES 4	12
INSULIN THERAPY & INJECTION 4	12
INJECTING INSULIN	13
COMPLICATIONS FROM DIABETES 4	17
DIABETES AND YOUR EYES 4	17
PROTECTING YOUR NERVES AND FEET	19
PREVENTING NERVE DAMAGE 4	19
KIDNEY DISEASE (NEPHROPATHY) DIABETES	50
HEART AND CARDIOVASCULAR HEALTH	53
GUIDELINES ON WHAT TO DO IF YOU GET SICK WHILE LIVING WITH DIABETES	54
CONTINUOUS GLUCOSE MONITOR (TYPE 1 DIABETES 5	57
WHEN DO YOU NEED TO SEE A HEALTH CARE PROFESSIONAL	57
LIVING WELL WITH DIABETES 5	57

## CHAPTER FIVE: MENTAL HEALTH

FINDING OUT YOU HAVE DIABETES	60
DEPRESSION AND DIABETES	60
ANXIETY AND DIABETES	60
STRESS, TRAUMA, AND DIABETES	61
MANAGING STRESS	61
GOOD THINGS THAT HAPPEN TO YOUR MENTAL HEALTH FROM EXERCISE	61

## CHAPTER SIX: DIABETES AND LIFESTYLE

DIABETES AND PREGNANCY	64
DIABETES AND TRAVEL	66
DIABETES AND DRIVING	67
SMOKING AND DIABETES	68
DIABETES AND ALCOHOL	69
DIABETES AND NARCOTICS	70
STIMULANTS	70
DEPRESSANTS	71
DIABETES AND SEXUAL DYSFUNCTION	71
DIABETES AND SLEEP APNEA	72

GLOSSARY
----------

## HANDOUTS

HANDOUT #1: RISK FACTORS FOR GETTING DIABETES	H.2
HANDOUT #2: SYMPTOMS OF DEPRESSION	H.6
HANDOUT #3: REFLECTING ON YOUR EATING HABITS	H.7
HANDOUT #4: TIPS FOR CONTROLLING YOUR BLOOD SUGARS	H.16
HANDOUT #5: SOURCES OF FAT	H.17
HANDOUT #6: SOURCES OF SODIUM	H.18
HANDOUT #7: TIPS FOR INCREASING FIBRE IN YOUR LIFE	H.19
HANDOUT #8: IDEAS FOR GETTING ACTIVE	H.20
HANDOUT #9: TIPS FOR MANAGING STRESS	H.22
HANDOUT #10: CREATING YOUR DIABETES HEALTH CARE PLAN	H.23
HANDOUT #11: HOW TO INJECT INSULIN	H.24
HANDOUT #12: TIPS FOR EYE CARE	H.25
HANDOUT #13: CARING FOR YOUR FEET	H.26
HANDOUT #14: WHEN TO SEE A HEALTH CARE PROFESSIONAL	H.27
HANDOUT #15: FLOW CHART FOR MANAGING TYPE 2 DIABETES	H.28
HANDOUT #16: TESTING WITH CONTROL SOLUTION	H.29
HANDOUT #17: DIABETES CARE WORKSHEETS	H.31

## **CHAPTER ONE**

# LEARNING ABOUT DIABETES

Diabetes was not always a health issue for our ancestors. Historically, they lived a traditional lifestyle and diabetes was not a concern. Our ancestors passed their values, beliefs, customs, and traditions from generation to generation by word of mouth and through storytelling. Living active lives and eating foods from the land was their way of life and survival. Many people believe that the change from this traditional lifestyle to one that is less active with a diet of over-processed foods high in sugar, salt, and saturated fat has led to increased rates of diabetes. If you are Indigenous: First Nations, Inuit, or Métis, you are at higher risk for getting diabetes and young Indigenous people are developing type 2 diabetes more often than ever before.

## THIS CHAPTER COVERS THE FOLLOWING:

- What is diabetes?
- What does the pancreas do and why is it important if you have diabetes?
- Types of diabetes
- What are the symptoms of diabetes?
- How do I find out if I have diabetes?
- What is pre-diabetes?
- If I have pre-diabetes, does this mean I will absolutely get diabetes?
- Am I at risk for getting diabetes?

## WHAT IS DIABETES?

Diabetes is a disease that happens when your body does not make or use insulin the right way. There are three main types of diabetes:

## **TYPES OF DIABETES**

**TYPE 1 DIABETES** happens when the body will no longer make any insulin. The little cells in the pancreas that make insulin are no longer working properly and don't make any insulin at all. Once diagnosed with Type 1 diabetes, people have to start taking insulin right away because pills will not help them. People with Type 1 diabetes have to take insulin or they will not survive. Only 10 % of people in Canada who have diabetes, have Type 1. If someone is taking insulin, it does not necessarily mean that they have Type 1 diabetes. People with Type 2 diabetes can also be taking insulin, but the difference is that people with Type 2 diabetes still make some insulin in their body.

**TYPE 2 DIABETES** happens when the body does not make enough insulin or has trouble using the insulin. When the pancreas does not make enough insulin or the body can't use it

Type 1

Type 2

Gestational diabetes

properly, we do not absorb the sugar from the foods we eat the way the body should. A lot of the sugar stays in the blood and our blood sugars are high, this is Type 2 diabetes. Type 2 is the most common type of diabetes, 90% of people with diabetes in Canada have Type 2.

**GESTATIONAL DIABETES** is a type of diabetes that occurs during the second or third trimester of pregnancy. Mothers produce a hormone in pregnancy that makes her not able to use her own insulin properly. This can cause her blood sugars to go up. After giving birth, the hormone is no longer produced and the diabetes could potentially go away. Usually you will be tested between 24-28 weeks of pregnancy. If you have a high risk of getting diabetes or a lot of people in your family have diabetes, you may be tested at the beginning of your pregnancy or before the 24-28th weeks.

## WHAT DOES THE PANCREAS DO AND WHY IS IT IMPORTANT IF YOU HAVE DIABETES?

The main part of your body that is involved with diabetes is the pancreas. The pancreas is a gland located behind the stomach on the left side. It is about the same size as a hand. The pancreas has two jobs to do in the body. These are:

**TO MAKE INSULIN** – this hormone helps our cells (basic living unit of all plants and animals) take in sugar (glucose) from the blood to give you energy to keep your body working properly.

**TO MAKE ENZYMES**- these help the body digest food. Enzymes break down the food we eat to use the nutrients we need to live.



## WHAT HAPPENS WHEN WE EAT FOOD?

When we eat food, it is broken down in our body to sugar, protein and fat

- Our bodies use sugar for energy
- Our pancreas puts insulin out into your blood when we eat
- Sugar has to get into our cells, so we are able to use it for fuel
- Insulin helps the sugar pass into our cells

- Think of a lock and key, insulin is the key and our cells are the locks
- Insulin (the key) unlocks the cell, so the sugar can go in

(eg. yeast or bladder)

your vision may be blurryyour cuts may be slow to heal

men may have problems with

dry, itchy skin

"getting it up"

This helps to control how much sugar is in our blood and to help us use sugar for energy.

## WHAT ARE THE SYMPTOMS OF DIABETES?

If you don't know you have diabetes, you may feel:

- tired
- 📕 thirsty
- 📕 irritable
- 📕 you may be peeing a lot
- you may have weight loss or gain
- you may have infections that don't go away or keep coming back

**HOW DO I FIND OUT IF I HAVE DIABETES?** 

Your doctor/healthcare provider will order a blood test.

You will be told you have diabetes if your test results show your hemoglobin A1c (a blood test which measures how much sugar has been stuck to your hemoglobin (red blood cells) over the past 3 months)

is 6.5% or greater or

 if your morning blood sugar level (fasting for 8 hours) is 7.0 or greater If you have been testing your blood sugar levels on someone else's blood sugar meter or your healthcare provider tests it and you get a result of 11.1 or greater and you have the symptoms of diabetes, you may also be told you have diabetes.

If you are sent to drink a sugary drink and they take your blood 2 hours later and your blood sugars are 11.1 or greater, you will also be told you have diabetes.

## WHAT IS PRE-DIABETES?

When your blood sugar levels are not high enough to be told that you have diabetes, but they are higher than normal. This puts you at a very high risk of getting diabetes and is called pre-diabetes. If your blood levels are in these ranges, you will be told you have pre-diabetes:

- 6.0 6.4 Your average blood sugar over 3 months (hemoglobin A1C)
- 6.1 6.9 Your morning blood sugar level (after fasting for 8 hours)
- 7.8 11.0 two hours after you drank a sugary drink

## IF I HAVE PRE-DIABETES DOES THIS MEAN I WILL ABSOLUTELY GET DIABETES?

- NO! It means you are on your way, but you can do things to stop the diabetes from showing up.
- What is suggested for pre-diabetes is the same thing that is suggested if you are diagnosed with diabetes.
- You would look at how you are taking care of yourself:
  - Are you eating as healthy as you possibly can?
  - Are you moving as much as you can?
  - Are you looking after your mental, emotional and spiritual health?
  - Taking care of yourself on all levels can slow down diabetes from coming

## **AM I AT RISK FOR GETTING DIABETES?**

You are at risk of getting diabetes if you:

- Are First Nations, Metis, or Inuit
- Have a family history of diabetes:
- Your family history is a fact of life.
   Diabetes has a genetic link and can be passed from generation to generation
- If you have people in your family who have diabetes, you are at a high risk of getting diabetes.
- Are overweight
  - Do you carry extra weight around your stomach?
  - If you do, this adds to your risk of getting diabetes

- Have any of the following: • **High blood pressure** (also called
- hypertension) it is linked to obesity, heart disease, and diabetes
- High cholesterol

   (a type of fat in your blood)
   (a type of fat in your blood)
- Heart disease
- If you weighed over 9 lbs when you were born
- Had gestational diabetes or given birth to a baby weighing over four kilograms or nine pounds, this often leads to diabetes later in life
- Have polycystic ovarian syndrome (PCOS) (see definition below)
- Have schizophrenia
   a mental health condition that makes it hard for a person to tell what is real and what is imaginary.
- It affects how people think, how people talk, how they behave, and how they show emotions

## WHAT IS PCOS?

- Women who have a lot of cysts (small fluid sacks) on their ovaries
- This makes getting pregnant difficult
- Your periods may not be regular
- It may also be difficult to lose weight
- You may also have more facial or body hair
- Or a lot of pimples/acne

## SEE HANDOUT #1: RISK FACTORS FOR FOR DIABETES (CANRISK assessment)

To review these risk factors and calculate your level of risk

## **CHAPTER TWO**

# CULTURE AND DIABETES

## THIS CHAPTER COVERS THE FOLLOWING:

- The Medicine Wheel
- The four dimensions of wellness
- Fasting and diabetes

## THE MEDICINE WHEEL

Some First Nations cultures have a symbol that represents a balanced way of living. The symbols are different for each group. They have been seen in the form of the medicine wheel, sweat lodge, quests, sacred fires, ceremonies, healing practices, and medicines. The common theme between all these symbols is that life needs a balance for healthy living. The Medicine Wheel represents a balanced life.

Many Nations use the circle and the four directions of the Medicine Wheel to symbolize completeness, wholeness, connectedness, unity, and strength. The Medicine Wheel is based on cultural values, traditions, and beliefs. It can:

- Help us understand the changes we encounter on our journey in life
- Explain difficult concepts, helping us to see and understand things that we normally do not see or understand
- Show how things are connected within us and with the rest of creation
- Provide us with a way to understand life and the world around us
- Provide us with a holistic outlook on life

The Medicine Wheel appears throughout the handbook to remind us how diabetes affects all parts of our lives. It encourages taking a holistic approach for treating and managing diabetes. It is divided into four parts, each representing a part of our life:

- 1. PHYSICAL (the body)
- 2. **EMOTIONAL** (emotions)
- 3. SPIRITUAL (spirit)
- 4. MENTAL (mind)

When we keep all four parts of the Medicine Wheel in balance, we have a healthy life.

This handbook uses the Medicine Wheel as a way to identify a path to reach well-being. It can help you to:

- Discover your own sense of self-worth and how to use it in your healing process
- Make positive healthy choices and commit to making changes in your life
- Take responsibility by taking care of the life the Creator has given you
- Live in harmony with others by involving family, friends, and community



#### DIABETES AFFECTS ALL FOUR ASPECTS OF LIFE: PHYSICAL, EMOTIONAL, SPIRITUAL and MENTAL

With proper understanding of what diabetes is and what symptoms we need to watch for, we are caring for the mental parts of ourselves. When we eat healthy foods and are physically active, we are caring for our bodies or the physical parts of ourselves.

Learning to live with diabetes means we must accept that diabetes is part of our lives and have the strength to find the will to live a healthy lifestyle. This means to become emotionally strong and acknowledge any feelings of denial. Finally, we must develop a strong spiritual sense for healing and the feeling of connection between our body, our Creator, and the world around us.

#### THE FOUR DIMENSIONS OF WELLNESS

PHYSICAL CARE for a healthy body EMOTIONAL CARE for a healthy mind SPIRITUAL CARE for a peaceful spirit MENTAL CARE for a healthy mind

#### THE PHYSICAL DIMENSION

The physical aspect addresses cultural activities like nature walks, traditional dancing, and traditional seasonal activities like snowshoeing or berry picking. It is very important because it improves the health of our bodies. See *Benefits of Being Physically Active* on page 28 for more information. There are many activities we can do to increase physical activity. We encourage you to find activities you enjoy. Your level of exercise depends on your level of fitness. At the start, it is best to go slow. Start with five minutes a day. Gradually increase to 20 minutes or more a day.

#### THE EMOTIONAL DIMENSION

The emotional aspect addresses negative emotions and feelings as well as improving self-esteem. If you have diabetes, you may have a hard time coming to grips with it but addressing the things that upset you is extremely beneficial.

If the diagnosis of diabetes overwhelms you, it is time to share your emotions with someone else. Try any of the following: Join support groups for people living with diabetes. You realize you are not alone and you can learn new ideas about coping with stress of diabetes.

- Talking to people about your problems can help.
- Meet and talk with Elders in your community. They can give ideas on how to take things easy and provide insightful perspective to your unique situation and health.

### **THE MEDICINE WHEEL CON'T**

#### THE SPIRITUAL DIMENSION

Spirituality means different things to different people. The spiritual aspect focuses on healing through using ceremonies or prayer to create a sacred healing place by clearing the pathway to healing. These include using the cleansing or smudging ceremony with one or all of the sacred herbs of tobacco, cedar, sage, and sweetgrass helps to begin with a good heart and a receptive spirit.

Prayer to acknowledge the Creator and to give thanks for all gifts can be an important part of daily life, such as prayer before each meal. It may take place at the beginning of the day or beginning of a session with a sunrise ceremony, pipe ceremony, or with a prayer in the four directions.

Meditation is one way of helping to get to know you by listening to the spirit. Traditional teachers/ Elders have explained that "meditation is to the spirit what sleep is for the body and what learning is to the mind."

Relaxation, humour, laughter, and fun help to create a pleasant and friendly atmosphere, giving everyone a sense of belonging. They are to enjoy as 'medicine for the spirit.' Sharing is done on a personal level, as everyone gets to know one another. Doing things in a fun way promotes participation.

#### THE MENTAL DIMENSION

This is the ability to enjoy life and deal with everyday challenges – whether that involves making choices and decisions, adapting to and coping in difficult situations, or talking about one's needs and desires. Strengthening your mental wellness and promoting resilience to handle life's stressors may reduce your risk of mental health conditions. It can contribute to improved physical, emotional, and spiritual health.

Mental disorders may take many forms such as:

- Mood disorders (depression, bipolar disorder)
- Anxiety disorders (obsessive -compulsive disorder, phobias)
- Schizophrenia
- Personality disorders

   (anti-social personality disorder)
- Eating disorders (bulimia, anorexia nervosa)

Although the exact cause of most mental disorders isn't known, it's becoming clear that many of these conditions are caused by a combination of the following factors:

- biological (heredity, illness, infections, prenatal exposures);
- psychological (early loss, grief, traumas, abuse); and
- environmental (diet, food supply, family life, poverty, isolation, separation, family substance use).

The presence of any of these conditions alone does not guarantee that a mental health issue will arise, but when conditions are compounded, long lasting, or ignored, the risk becomes greater.

Historical determinants, such as the legacy of residential schools, impact the mental health of Indigenous peoples. The Aboriginal Healing Foundation (2010) commissioned a research project and found that 75 per cent of the case files for a sample of residential school survivors showed the most common mental health diagnoses being post-traumatic stress disorder, substance use disorder, and major depression.

Depression is twice as common in people with diabetes than for those without diabetes. Major depression is present in at least 15 per cent of people with diabetes. Depression is also associated with higher blood sugar levels, health complications, and decreased quality of life.

# SYMPTOMS OF DEPRESSION

You can also learn more in CHAPTER FIVE: MENTAL HEALTH

## TRADITIONAL STORYTELLING

Storytelling is both a gift and a very old custom, sanctioned by our ancestors. It has a place, and it has those who are recognized by the community as translators of this custom. In Indigenous storytelling there is a difference between stories used more for entertainment and those that are more focused on the teachings of culture, ceremonies, and spirituality. There are many stories that are tied to the ceremonies and spirituality of our cultures. Stories of this nature are used not as entertainment, but as messengers. These stories may not be as entertaining to those unaccustomed

## FASTING AND DIABETES

Fasting is an important ceremony in many cultures. If you practice fasting as part of your spirituality, please refer to the section called *Fasting While You Have Diabetes* on page 42. to the process of why and what we communicate. These stories are used more as a bridge to get a teaching across to the audience.

Stories that must remain as true to their origins as possible are usually ones that are fundamental to the teachings, ceremonies, and way of life of our peoples.

Let's use the gift of traditional storytelling to receive messages and to educate future generations about the risk of diabetes and what to do to prevent it. Share your stories of living a healthy life or a healthy life with diabetes.

## **SUGGESTED ACTION ITEMS:**

Seek out traditional teachers and Elders from your nation who can provide you with teachings on staying healthy.

Review Handout #2 for a full list of depression symptoms.

See Benefits of Being Physically Active on page 28 for more information.

## **CHAPTER THREE**

# PREVENTING DIABETES

"You can't change your family history or your genetics, but you can take steps to keep yourself healthy."

## THIS CHAPTER COVERS THE FOLLOWING:

- Healthy eating and why its important
- Benefits of traditional/original foods
- Eating Well with Canada's Food Guide First Nations, Inuit and Métis
- Macronutrients
- Serving size and portioning
- Reading food labels
- How food affects blood sugar levels
- Counting carbs
- Sources of fat
- Sugar addiction
- Nutrition for pregnancy
- Food choices and cooking tips
- Fasting and diabetes
- How body weight affects your health
- Physical activity

## **HEALTHY EATING AND WHY ITS IMPORTANT**

Eating for what your body needs is important. It helps to keep your body strong and nourished.

## SEE HANDOUT #3 MY EATING HABITS to examine issues connected to this.

This can help to prevent disease and give you overall wellness. You need to look at the diets of your ancestors to see how you need to be eating. Eating from the land, traditional/original or country foods are best for Indigenous peoples. Your ancestors did not have all the con-

venience foods/fast foods that are available today and they were healthier for it. Did you know that your body does not have to work as hard to digest fast/convenience food because it is overprocessed?

## Trying to eat healthy can sometimes be a challenge. You may not:

- Have enough food
- Have many different foods available
- Have somewhere to store the food
- Know how to cook or prepare the food
- Know what healthy food is

You can only work with what you have... but you can try and make the best choices you can with what is available. If you are not able to eat a lot of traditional foods, then you must eat what is available.

Healthy eating can help prevent and manage Type 2 diabetes. It gives you what your body needs and helps you manage your weight.

## **TIPS FOR HEALTHY EATING**

- Try to add traditional foods to your diet either daily or weekly.
- Ask your Elders or others in the community to help you find out about traditional foods.
- Cut back on high sugar foods and drinks.

- Get enough fibre. (see section on fibre)
- Drink healthy beverages: Drinks that have artificial sweeteners do not raise your blood sugars. Whether you want to use them or not is up to you, but water is always the best choice. (even if it has to be boiled)

## **BENEFITS OF TRADITIONAL/ORIGINAL FOODS**

Foods from the land, water, and sky were once the only sources of food for Indigenous Peoples. Roots, berries, greens, teas, animal and fish innards and other body parts such as eyes, skin, fat, and bones are important sources of many nutrients. Today, most people eat a mix of store-bought and traditional food.

The benefits of traditional food include:

- Fewer calories which helps weight control
- They are not processed-better for your health

- Less saturated fat better for the heart
- More lean meats and fish better for the heart and body in general
- More iron better for muscles and blood
- More zinc better for wound healing and fighting infection
- More vitamin A better for vision and fighting disease
- Strengthened cultural ties and well-being

#### **EATING WELL WITH CANADA'S FOOD GUIDE** - FIRST NATIONS, INUIT AND MÉTIS

*Canada's Food Guide* helps people make healthy food choices. It shows Canadians aged two and older how much food and what types of food to eat each day to get the nutrients needed for good health. This is called a healthy eating pattern.

Eating Well with Canada's Food Guide – First Nations, Inuit and Métis reflects food choices and traditions of our peoples. This guide shows how traditional foods, or country foods, can be part of a healthy eating pattern, along with foods you could buy in a store. It has the same healthy eating pattern as Canada's Food Guide. In this section, we use information from Eating Well with Canada's Food Guide – First Nations, Inuit and Métis, which is sometimes called "Canada's Food Guide."

If you choose the amount and type of food recommended by Canada's Food Guide, you will get the nutrients you need to stay healthy. Following Canada's Food Guide helps you lower your risk of:

- Obesity
- Type 2 diabetes
- Heart disease
- Certain types of cancer
- Osteoporosis



You can download a copy of *Eating Well with Canada's Food Guide – First Nations, Inuit and Métis* from here: https://www.canada.ca/en/ health-canada/services/food-nutrition/ reports-publications/eating-well-canadafood-guide-first-nations-inuit-metis.html

## MACRONUTRIENTS

Macronutrients are the nutrients that you need the most that are in the food you eat. There are three main macros:

- CARBOHYDRATES are sugars and starches. They give you energy and keep your body fueled and moving and change into your blood sugar.
- **PROTEINS** are the building blocks in our body, they help build and repair all our cells. Protein also contains fat. Fat helps slow how quickly other foods are absorbed including the carbohydrates that change into blood sugars.
- **FATS** are important because they give you energy, keep you warm, build cells, help your body absorb vitamins from foods, and produce hormones that help your body work properly.

## **SERVING SIZE AND PORTIONING**

What is a proper portion? You can either use your plate as a guide or your hands.

#### When you are using your hands as a guide, you want to aim for:



You also want to look at your environment and the reasons why you are eating.



## **READING FOOD LABELS**

You can read the nutrition information on food labels to help make informed choices. You can find this information on most pre-packaged foods. There are three main places to look for nutrition information on the label:

- Ingredient list
- Nutrition Facts table
- Nutrition claims

#### **1. INGREDIENT LIST**

This list lets you know all the ingredients you will find in that food item. The ingredients are listed in order from top to bottom by weight. In other words, the ingredient listed first is the highest in the food. This helps you understand if a food is higher in fat or sugar. If sugar is listed first on the label, the food is mostly made of sugar.

#### **2. NUTRITION FACTS SHEET**

The percent of daily value (%DV) shows if a food has a lot of a nutrient or only a little. If a food has a %DV of 5 or less, then it means it has only a little of it. If the %DV is 15 or greater, then it has a lot. Percent Daily Value (DV) on the Nutrition Facts label is a guide to the nutrients in one serving of food. For example, if the label lists 15% for calcium, it means that one serving provides 15% of the calcium you need each day. DVs are based on a 2,000calorie diet for healthy adults. Even if your diet is higher or lower in calories, you can still use the DV as a guide.

The Nutrition Facts table lists the amount of calories, fat, carbohydrates, protein, and some vitamins among other nutrients. This table is a helpful tool to help you compare and choose foods lower in fat, salt (sodium), and sugar.

For people who are counting their carbohydrates, it is important to read the nutrition label. The top of the label will list the portion size. Carbohydrates includes sugars and starches, as well as fibre. The sugar and fibre content is listed seperately so that you can tell how fast the food will raise your blood sugar. It's important to not only focus on the amount of sugar listed, but instead look at the true amount of carbs that will turn into blood sugar. To calculate the true amount of carb (net carb) in the serving size, you would look at the total carbohydrate and the fibre content. Fibre is listed under carbohydrate, but it does not change into blood sugars. For this reason, we have to subtract the fibre off the total carbohydrate to get the true carb (net carb) amount.

#### See example below:

Serving size- ½ cup (125mL) Carbohydrate-18g Sugar 2g Fibre 2g

To calculate it would be: Carbohydrate – Fibre = Net Carb 18g – 2g = 16g carb

The true amount of carb (net carb) in this serving is **16g**, not 18g.

## Nutrition Facts Valeur nutritive

Amount Teneur %	% Daily Value valeur quotidienne
Calories / Calories 80	
Fat / Lipides 0.5 g	1%
Saturated / saturés 0 g + Trans / trans 0 g	0%
Cholesterol / Cholestér	ol 0 mg
Sodium / Sodium 0 mg	0 %
Carbohydrate / Glucide	s18g 6%
Fibre / Fibres 2 g	8%
Sugars / Sucres 2 g	
Protein / Protéines 3 g	
Vitamin A / Vitamine A	2 %
Vitamin C / Vitamine C	10 %
Calcium / Calcium	0 %
Iron / Fer	2 %

#### **3. NUTRITION CLAIMS**

#### You can find two types of nutrition claims on labels:

**NUTRIENT CLAIMS** tell you how much of a specific nutrient – like sugar, fat, fibre or sodium – are in the food.

Nutrient content claims use five main words:

FREE - A nutritionally insignificant amount For example: Sugar free, no sugar, or sugarless means that it has less than 0.5 grams of sugar per serving

**LOW** - A very small amount of a nutrient For example: Low fat means three grams of fat or less per serving

**REDUCED** - At least 25 per cent less of a nutrient when compared with a similar product For example: Reduced in calories means that there is at least 25 per cent fewer calories than the food it is being compared to

**SOURCE** - A significant amount For example, source of fibre means two or more grams of fibre in a serving

**LIGHT** - Reduced in fat (for example, light in fat), reduced in energy (for example, light in calories) by at least 25 per cent less of a nutrient when compared with a similar product or light in terms of a feature (for example, light in colour). **HEALTH CLAIMS** tell you how including this food in your diet can affect your health. Understanding health claims can help you choose healthy foods.

## NOTE:

While a product that is sugar free must have fewer than 0.5 grams of sugar and fewer than 5 calories per serving, a food that claims to have "no added sugar" can still contain natural sugars (from fruit or milk).

## **HOW FOOD CHANGES BLOOD SUGAR LEVELS**

Carbohydrates change into blood sugar. There are complex and simple carbohydrates, they both affect blood sugar levels. You can use the word sugar instead of carbohydrate, they mean the same thing.

## SIMPLE CARBOHYDRATES (SUGARS)

- Simple sugars quickly change into blood sugar.
- They have an immediate effect on our blood sugar levels.
- They have also possibly been linked to increasing our risk for heart disease.
- Simple sugar can affect your blood sugars and possibly your heart.
- If you eat a lot of simple sugar at one time and have diabetes, your blood sugar can spike very high.
- Traditional diets did not have a lot of simple sugars.

Simple sugars do not have fibre so you can eat a lot of them and still not feel full

#### FOODS HIGH IN SIMPLE SUGARS ARE:

- table sugar
- brown sugar
- jam
- candy
- рор
- syrup
- slurpees
- sweets
- honey
- 📃 corn syrup
- molasses
- high fructose corn syrup

### COMPLEX CARBOHYDRATES

- Complex carbs are starches and take longer to break down in the body
   They contain fibre
   FOODS HIGH IN COMPLEX CARBS:
   whole grain breads and cereals
   wild rice beans
  - vegetables
  - fruits

#### **FIBRE**

- Fibre is not broken down by the body
- Fibre does not change into blood sugar
- Fibre helps slow down how quickly sugar or starch is absorbed into your blood because it slows digestion
- This helps control your blood sugars because it will not spike as high after eating
- Fibre also makes you feel fuller longer.

peas

Eating foods high in fibre may help to control how much food you eat at a meal or snack.

## **QUICK TIP:**

Brown (whole wheat or whole grain) is always better than white when choosing grains or starches (bread, macaroni, rice etc.) because it has more fibre.

## FIBRE CON'T

#### THERE ARE TWO TYPES OF FIBRE:

#### **1. INSOLUBLE FIBRE**

- is not broken down by the body and passes right through.
- It provides bulk which helps to keep you 'regular'.
- It also has also been shown to prevent some types of cancers.
- Insoluble fibre is found in whole grain breads and cereals and fruits and vegetables.

#### 2. SOLUBLE FIBRE

- Dissolves in water, but is not completely broken down in the body.
- It helps to slow digestion by forming a gel as it dissolves, which slows how quickly sugar goes into the blood
- This helps control blood glucose (sugar) levels and lower cholesterol levels.
- Soluble fibre is found in oatmeal, barley, beans, lentils and some fruits such as apples and berries.

## **HOW MUCH FIBRE DO YOU NEED?**

Diabetes Canada recommends adults get 30-50g of fibre daily. Here are the recommendations for the general population if you don't have diabetes.

SEX	AGES	GET AT LEAST:
Men	ages 19 to 50 51+	38 grams of fibre per day 30 grams of fibre per day
Women	19 to 50 51+	25 grams of fibre each day 21 grams of fibre per day

#### HOW MUCH FIBRE DO CHILDREN NEED?

Male	1-3	19 grams of fibre per day
	4-8	25 grams of fibre per day
Male	9-13	31 grams of fibre per day
	14-19	38 grams of fibre per day
Female	1-3	19 grams of fibre per day
	4-8	25 grams of fibre per day
	9-13	26 grams of fibre per day
	14-19	26 grams of fibre per day

## **REVIEW HANDOUT #7:**

Tips for Increasing Fibre in Your Life.

## FAT

There are different types of fats in foods. Some you want to eat more often and others less often.

#### **CHOOSE LESS OFTEN:**

**TRANS FATS** are in processed foods and help them stay moist and "fresh." They are in foods such as crackers, margarine, pastries, and doughnuts. The food industry created these because they wanted to be able to have foods stay on the store shelves longer without spoiling. If a food package ingredient list has "partially hydrogenated" or "hydrogenated" oil on it, it contains trans fats.

In Sept. 2018 the Canadian government banned trans fats in foods, however there is a 2 year wash out period where some foods that have already been produced, can be sold. So, try and avoid these.

**SATURATED FAT** are in meat and dairy products. Eating too much saturated fat is linked to increasing your risk for heart disease. Saturated fats are found mostly in storebought animal products, such as:

- Butter
- Cream
- Cheeses
- Milks
- The fat in and on meats
- The skin of chicken

Wild meat is healthier and a better choice then store bought meat. It still has saturated fat but much less because it is leaner.

#### TIP:

An easy way to remember which foods have saturated fats which you should choose less often is:

## "Anything that comes from something that has a mother! (EXCEPT FISH)"

#### -Kris Swenson RN,CDE & Betty Brackenridge MS, RD, CDE

#### **CHOOSE MORE OFTEN:**

**UNSATURATED FATS** are healthier than other kinds of fat (these include mono and polyunsaturated fats).

Examples of unsaturated fats are:

- Vegetable oils (such as canola, olive, sunflower, soybean, corn and peanut)
- Soft, non-hydrogenated margarine
- Salad dressing made with non-hydrogenated oils (canola, soybean)
- Traditional fats that are liquid at room temperature, such as seal and whale oil, or oolichan grease
- Fish
- Nuts and seeds

#### TIP:

An easy way to remember which fats to eat more often is:

## "If it grows out of the ground or swims, its good!"

-Kris Swenson RN,CDE & Betty Brackenridge MS, RD, CDE

## see handout #5: SOURCES OF FAT

## SUGAR

Eating sugar releases hormones in your brain that make us feel good. Many people say that they are addicted to sugar because it can have a drug-like effect on them. You can feel good for a while, but then you seem to crash and then eat more sugar to feel good again.

When you have diabetes your blood sugars will spike very high if you eat a lot of simple sugars (sweets). This can cause you to feel tired. This may make you eat more sugar to try to feel good again. The food industry has added more and more sugar to our foods to get us "hooked" into buying their products. You can help yourself by retraining your brain to not crave sugar all the time. Your body gets used to the amount of sugar you now eat. If you slowly start to cut back, your body will adapt.

#### **CUTTING BACK ON SUGAR INTAKE**

If you were drinking four cans of regular pop each day, try cutting down to three/d for a week, then two/d the next week, then one/d the following week and then none. This is easier for your body to accept the changes, instead of quitting cold turkey or overnight.

If your blood sugars are really high, you may need to drink diet pop instead, right away.

Drinking water is always the best thing for you, even if you have to boil it first.

#### SOURCES OF SUGAR

"Sugar" may be listed as:



Words ending with "ose," such as sucrose, fructose, glucose, and dextrose are also sugars. Honey, molasses and syrup are also sugar.

## SODIUM

You can find sodium in many ingredients such as sodium

chloride and monosodium glutamate, and other ingredients ending with salt, such as garlic salt or celery salt. Baking soda also contains sodium.

If your blood pressure is high or if you are having problems with your kidneys, you may have been told to cut back on your sodium or salt. Salt is made up of two compounds, both sodium and chloride. Normally, extra fluid leaves the body through the kidneys (pee). When you eat salt, it stops some of the fluid from leaving your body, because salt holds on to water. This causes an increase in your blood pressure. This can damage the kidneys because it puts extra strain on the blood vessels that go to the kidneys. It also puts extra strain on your heart.

SEE HANDOUT #6 SOURCES OF SODIUM Learn more about salt.

# FOOD CHOICES AND COOKING TIPS

 $\checkmark$ 

Choose fresh, frozen, or canned vegetables and fruits.



Choose lean meats and alternatives.



Steam, boil, or roast your vegetables and fruits.

 $\checkmark$ 

Bake, broil, or boil skinless boneless chicken, ground lean meats, wild game meats, and fish.



Avoid frying foods in large amounts of oil, lard, shortening, and hydrogenated margarine.



If you use oil, use canola or extra virgin olive oil.

## **HOW BODY WEIGHT AFFECTS YOUR HEALTH**

#### Being above a healthy weight raises your risk for getting diabetes

- If you carry more of your weight around your middle, you have more fat close to your liver, heart, pancreas, and other organs. This causes them to not work properly.
- By losing even a small amount of weight (5 to 10 per cent) of your current weight, you can lower your risk and your blood sugar levels. For example: If you weigh 200 pounds, you can lower your risk by losing 10 to 20 pounds. If you weigh 180 pounds, you can lower your risk by losing 9 to 18 pounds.
- With less weight, blood sugars come down because we need less insulin.
- Instead of focusing on weight loss and the scale, look at what you are eating and how much you are moving.
- If you change what you eat (if you need to) and you are moving more, a side effect can be weight loss!
- Even if you don't lose weight and you are eating properly and moving more, you will still see a difference in your blood sugar levels. That is what will keep you healthy!

Two different ways to measure if you are at risk for health problems are the body mass index (BMI) and waist circumference. We use these for adults 18 years of age or older and not for pregnant (or breastfeeding) women.

#### **BODY MASS INDEX (BMI)**

Your health care provider may talk with you about your Body Mass Index (BMI). This is a calculation which lets you know if your health is at risk based on your height and weight. Some people don't agree with using BMI to measure risk because people who have a lot of muscle and not a lot of fat may get a high BMI. Muscle weighs more then fat, so they may have a higher weight. It is not higher from fat, but from muscle. Your healthcare professional, might still use this to figure out your risk for health problems.

To figure out your BMI, you take your weight in kilograms divided by a your height in meters squared (kg/m2) or look at the chart on the next page. Find your height on the left of the chart and your weight on the bottom of the chart. Follow the columns to the square where your height and weight meet. This number is your BMI.

Starting at 25.0, the higher your BMI, the greater your risk for developing health problems.

Being underweight (below 18.5) also carries health risks.

## BMI RANGES ARE: UNDERWEIGHT: BELOW 18.5 NORMAL WEIGHT: 18.5 TO 24.9 OVERWEIGHT (NOT OBESE): 25.0 TO 29.9 CLASS 1 OBESITY (LOW RISK): 30.0 TO 34.9 CLASS 2 OBESITY (MODERATE RISK): 35.0 TO 39.9 CLASS 3 OBESITY (HIGH RISK): 40.0+

Height fei¢V inchrists	711																												
8'4"	102.5	12	19	13	14	15	16	17	10	18	18	20	21	22	22	23	(24	24	26	26	27	28	29	28	33	31	32	33	з
6'3"	190	12	13	14	15	16	10	-17	10	40	20	20	21	22	23	24	24	25	26	27	28	29	29	30	31	32	33	34	34
6'2"	187.5	131	13	14	15	18	17	18	10	18	20	21	22	23	24	24	25	20	27	26	29	28	00	-31	32	33	.34	34	36
8:1**	185	120	14	15	15	16	17	18	19	20	21	22	22	23	24	25	26	27	28	29	29	.30	21	L	-33	34	34	36	37
6.01	182.5	13	14	15	16	17	18	19	20	20	21	22	23	24	24	26	21	28	29	20	20	31	32	120	34	84	36	37	38
5'11"	160	14	15	15	16	17	38	19	20	21	22	23	24	.24	26	27	27	20	29	-30		32	30	34	34	36	37	36	39
of 101	177 5	14	15	16	17	18	19	20	21	22	23	23	24	25	28	27	28	29	30	131	32	33	34	34	35	37	38	39	40
6.9	176	14	15	16	17	18	19	20	21	22	24	24	25	28	21	28	28	30	-37	132	30	34	34	35	31	38	36	40	41
5'8"	172.5	15	16	17	10	19	20	21	22	23	24	24	28	27	28	29	20	31	32	31	34	31	56	37	33	39	40	41	42
57	170	15	16	.17	18	19	26	21	22	24	24	26	27	28	20	29	31	37	33	34	34	36	37	38	38	40	41	42	43
5'6'	167.5	18	17	18	19	20	21	22	23	24	25	25	27	29	29	31.	42	33	34	34	36	37	38	39	-40	41	42	43	45
5'5"	166	16	17	18	19	21	22	23	.24	24	26	27	28	23	30	32	35	34	34	36	37	36	39	40	42	43	44	45	46
5.4"	102.5	17	10	19	20	21	22	23	24	20	27	25	29	07	31	33	24	3	36	37	38	38	41	42	43	44	45	46	47
5'2"	160	17	18	20	21	22	23	24	25	27	28	28	30	31	32	34	н	36	37	38	39	41	42	45	44	45	46	48	49
6'2'	167.6	18	19	20	24	23	24	24	26	27	29	29	31	32	33	34	36	37	38	40	41	42	43	44	46	47	48	49	60
5'1"	155	18	20	21	22	25	24	26	27	28	23	31	32	33	34	36	37	38	40	41	42	43	45	46	47	48	50	51	52
5'0"	102.5	19	20	21	23	24	25	27	28	29	31	32	33	34	36	37	38	40	41	42	43	45	46	47	49	50	51	52	54
1'11"	150	20	21	22	24	24	20	28	28	-30	32	32	34	38	37	38	40	41	42	44	45	48	48	48	50	52	53	54	56
4'10"	147.5	20	22	23	24	26	27	28	29	31	33	34	35	37	38	40	41	42	44	45	46	48	49	51	52	\$3	55	56	57
4'9"	145	21	22	24	25	27	28	29	31	32	34	35	37	38	39	41	42	44	45	47	48	49	51	52	54	55	57	58	59
4'5	142.5	22	23	24	-25	28	79	21	32	TP.	34	36	35	35	41	42	44	45	47	48	50	51	53	34	36	57	59	60	62
Wegni	(IA)	44	47	60	58	ŝŝ	59	62	65	68	$\overline{0}$	74	$\overline{n}$	30	83	85	89	92	95	-	101	104	107	110	113	til	115	122	12
Weight	(80)	97	100	510	117	123	130	185	143	150	155	163	165	:76	163	185	196	202	209	216	222	229	235	242	249	255	262	268	275

#### WAIST CIRCUMFERENCE

Your waist circumference is the size of your waist. Too much weight around the waist and upper body (sometimes called an "apple" body shape) increases your risk of getting health problems, more than if extra weight is found on the hip and thigh areas (sometimes called a "pear" body shape).

A large waist increases your risk of getting health problems such as:

- Type 2 diabetes
- Heart disease
  - Gall bladder disease
- High blood pressure

In general, the risk of developing health problems goes up as the waist measurement goes above the cutoff points. You are at a higher risk for heart disease and type 2 diabetes if your waist is larger than these measurements:

102 cm. (40 in.) or more for men
89 cm (35 in.) or more for women
You are also at a higher risk if your waist is bigger than your hips.

#### TO CALCULATE WAIST CIRCUMFERENCE:

- Stand with your feet about 25 to 30 cm. (10 to 12 in.) apart.
- Place the measuring tape half way between the top of your hip bone and your lowest rib.

Note: This will be about 5 cm. (1.5 in.) above your belly button.

- 3 Wrap the tape measure around you in a circle. **Make sure** the tape measure is: Level all the way around Not too tight or pushing into the skin
- 4 Breathe in and then out. At the end of the "out" breath, take the measurement.

# HEALTHY AT EVERY SIZE

**Healthy at Every Size (HAES)** is based on five principles. It was started by people who were tired of being told that they were not healthy based on how much they weighed, what their BMI was, or how big their waist was. They were also tired of being told that being overweight was a choice.

## HAES has five principles:

- **1. WEIGHT INCLUSIVITY**: Accept and respect all body shapes and sizes. Don't accept the need to reach an ideal or specific weight.
- **2. HEALTH ENHANCEMENT**: Support health policies that improve and make equal, access to information, and health services that look at a person's physical, economic, social, spiritual, emotional, and other needs.
- **3. RESPECTFUL CARE**: Look at our own views. Try and end judging people based on their weight. Provide care from an understanding that race, gender, how much money we have, age, sexual preference, and other thoughts can affect how we judge people's weight. If this is happening, correct or change these thoughts.
- **4. EATING FOR WELL BEING**: To suggest that a person eat based on hunger, if they are full, what their body needs for nutrition, and pleasure rather than a fixed meal plan focused on weight loss.
- **5. LIFE-ENHANCING MOVEMENT**: Support physical activity that allows people of all sizes, abilities, and interests to participate in enjoyable movement to the amount that they choose.

#### **GUT HORMONES**

Different hormones from your stomach, pancreas, and intestines affect your weight and blood sugars. When you have diabetes:

- You do not properly use a hormone called GLP-1.
- This hormone signals the pancreas to put out insulin.
- It also slows how quickly foods leave the stomach. This makes you feel fuller longer and helps to stop your blood sugars from spiking too high after a meal.
- It is released in the intestine.
- GLP-1 does not work properly when we have Type 2 diabetes. This is partly why our blood sugars go high.

You can take GLP-1 as a medication to help lower your blood sugars. It is injected and very expensive. It may be called Trulicity, Byetta, Bydureon, Victoza, Ozempic, or Adlyxine. It can also come mixed with insulin and called Xultophy or Soliqua. You may need to take this daily or weekly.

GLP-1 is also now available in a pill form called Rybelsus. It is expensive, like the injectable. You take it once daily on an empty stomach with no more then 120 ml of water and you cannot eat until 30 minutes after taking it.

The stomach releases a hormone called Ghrelin, which helps you to feel hungry.

The intestine releases a hormone called PYY. It helps to slow how quickly food leaves the stomach. This helps you to feel fuller longer. There are no medications yet that have PYY, however there may be in the future.

#### **BARIATRIC SURGERY**

Some people have Bariatric surgery to help with weight loss and to help with their blood sugar levels. As you lose weight your blood sugars come down because with less weight, you need less insulin. Bariatric surgery can involve removing part of:

- your stomach (sleeve); or
- part of your stomach and part of your small intestine (bypass).

People lose weight after surgery for a number of reasons:

- Your portions are cut down because your stomach is smaller
- If you have diabetes, for some reason the GLP-1 and insulin hormones start to work better
- There may be a smaller amount of the hormone Ghrelin (because part of the stomach was removed). This can make you feel less hungry.

We don't fully know why some people's blood sugars go back to normal right after surgery, but we do know that it must have something to do with the hormones in your body working well again. How well the hormones start working again depends on how long you have had your diabetes, what diabetes meds you were on before the surgery and your age.

## **PHYSICAL ACTIVITY AND WHY IT'S IMPORTANT**

Physical activity has the power to change lives (Jiannine, 2018 and McKinney, Lithwick, Morrison, Nazzari, Isserow, Heilbron, & Krahn, 2016). It's a widely underused medicine to which we have unlimited access. No other medicine is as effective for preventing and managing lifestyle diseases (such as diabetes, heart disease, high blood pressure, oste-

## SEE HANDOUT #8 IDEAS FOR GETTING ACTIVE to make your own plan for being physically active.

oporosis, and some types of cancer) with little to no side effects (Sallis, 2009).

If you live with diabetes, regular physical activity is important to lower and regulate your blood sugar levels but being active has so many benefits beyond blood sugar levels. You can read more about the

benefits of physical activity on page 28. Best of all, unlike other Western medicines, physical activity is free and accessible to everyone! Historically, Indigenous Peoples had low rates of diabetes and other lifestyle diseases. As Elder **Gerry Oleman** from St'atimc Nation in Shalath, BC, says, "We come from a healthy people. Our traditional ways of knowing and being made us healthy in mind, body and spirit."

Colonization and the loss of our traditional lands and lifestyle has caused the rise of diabetes and other lifestyle diseases. Our ancestors did not have to make time to be active, instead they were active on a daily basis as they secured their needs of food, water, and shelter. Now that we have increasingly inactive lifestyles, we need to take care of our communities and ourselves by prioritizing physical activity as the medicine that it is.

The best way to be active is be out on the land. Simply going for a walk in the forest has been shown to lower blood pressure, anxiety and stress, as well as improve mood (Hansen, Jones, & Tocchini 2017). Spending time on the land and engaging in traditional activities, including hunting, fishing, canoeing, snow shoeing, chopping firewood, or harvesting connects us to our culture and fulfils all aspects of the medicine wheel. When we do these activities with others, particularly youth, we benefit from spending quality time together and create an opportunity to share our traditional teachings.

In Canada, the snowy, cold winters often prevent people from being active. However, Indigenous communities in northern BC do not let the cold weather stop them from walking and running as they prepare for the Vancouver Sun Run as part of the Indigenous Sport, Physical Activity and Recreation Council's RunWalk program. Most of these groups walk or run laps inside their community hall or school gym three times a week for three months as they train for the 10-kilometer event. Setting a finish goal like the Vancouver Sun Run or a smaller, local community event can help you get started and stay motivated during the winter months.

A common misconception is that being active means exercising for a long period of time or doing a high intensity activity like running. In contrast, every little bit of physical activity benefits health! Although the Canadian Physical Activity Guidelines recommend 150 minutes of moderate to vigorous physical activity per week, there is evidence to suggest that as little as an hour a week broken up into 10-minute periods can improve health. Individuals who are the least active will benefit the most from starting to become more active (Oguma and Shinoda-Tagawa, 2004).

#### **BENEFITS OF BEING PHYSICALLY ACTIVE**

Physical activity is important because it:

- Lowers blood sugar levels
- Helps insulin work better
- Uses up extra fat in the body
- Relieves tension and stress
- Improves digestion
- Improves blood circulation
- Lowers high blood pressure
- Lowers high cholesterol
- Burns calories
- Helps maintain/manage weight
- Improves the overall health of our bodies
- Helps to keep the heart in shape
- Improves sleep
- Improves sexual function
- Improves low mood
- Improves memory
  - and more

(Warburton, Nicol, & Bredin, 2006)

You can reduce your risk for diabetes and complications of diabetes by adding physical activities into your daily life. You don't have to join a gym. Just think about traditional physical activities you can do in your community.

## TIPS BEFORE ENGAGING IN PHYSICAL ACTIVITY

Stretch before and after exercise helps prevent injuries

- Plan to exercise after a meal or snack
- Carry water and a source of sugar in case it is needed
  - Wear comfortable clothing with well fitted shoes and have fun
  - If you have diabetes, test blood sugar levels before you exercise and after you are done, record in your log book

## **CHAPTER FOUR**

# MANAGING DIABETES

## THIS CHAPTER COVERS:

- Finding out you have diabetes
- Developing a plan to manage diabetes
- Creating your diabetes health care team
- The importance of getting tested regularly
- Learning about Hyperglycemia, Hypoglycemia, and Diabetic Ketoacidosis
- Learning about insulin
- Testing and monitoring blood sugar levels
- Therapy flow chart for managing type 2 diabetes
- Diabetes medications and their side effects
- Sick day rules

## **FINDING OUT YOU HAVE DIABETES**

It is normal for people to have different feelings when you first learn you have diabetes. **You may feel:** 

Scared
Worried
Confused
Shocked
Depressed
Alone
Sad
Anxious
Angry

It is important you speak with someone who will listen. It is common to not want to accept/ believe you have diabetes when first diagnosed. Not wanting to accept you have diabetes may stop you from learning what you need to know to stay healthy. Once you understand what you need to do and how diabetes affects your body, living with it, will become easier.

Sharing your feelings and experiences with Elders, family, friends and health care providers is helpful. You will realize that you are not alone. You can learn new ideas about living with diabetes.

## **DEVELOPING A PLAN TO MANAGE DIABETES**

SEE HANDOUT #10 CREATING YOUR DIABETES HEALTH CARE PLAN The most important parts of a wholistic diabetes management plan are:

Trying to manage how much stress you have
 Taking care of yourself and your mental health

- Healthy eating
- More moving/physical activity
- Plans for checking your blood sugar levels
- Diabetes pills or insulin if needed

You can work with health care professionals in your community to create a plan. But first you need to know who your diabetes health care team might be.

## **CREATING YOUR DIABETES HEALTH CARE TEAM**

A diabetes healthcare team is part of living a healthy and happy life. This team is a group of people that supports you living with diabetes in the four parts of life (mind, body, emotions, and spirit) by helping you to:

- Accept that you have diabetes
- Help you to make changes in your life if they are needed
- Help you to understand how you can manage your blood sugar levels

## A diabetes healthcare team should include people who can help:

- Care for your body and your health (physical support)
- Cope with stress (mental/emotional)
- Find understanding, peace, and contentment in life (spiritual support)
- To learn about diabetes and its effects on the body (physical/mental support)

#### Members of a diabetes team can be a:

- Physician
- Pharmacist
  - Dietitian
- Diabetes educator
- Aboriginal Diabetes Initiative (ADI) worker
- Nurse practitioner
- Community health nurse
- Nutritionist
- Community health worker

The role of the ADI worker is to provide information on diabetes and how it affects your overall health. It is very important that you understand what it means to have diabetes. You can live a long life if diabetes is properly managed.

## **TESTING AND MONITORING BLOOD SUGAR LEVELS**

It is very important for you to monitor your blood sugar levels. Testing your blood sugars allows you to know what is going on inside your body.

#### Aim for the following ranges:

- 4 to 7 before meals
  - 5-10, 2 hours after a meal

A blood testing kit measures the amount of sugar in blood. It is an important part of helping you manage your diabetes. The blood testing kit includes:

- GLUCOSE METER machine that reads your blood sugar level
- TESTING STRIPS strips to place a drop of blood
- LANCET needle to poke your finger
- LOG BOOK to record and monitor your blood sugar levels

Follow the directions in the blood testing kit.

Wash your hands before you test your blood sugars and if you can't, use an alcohol swab and make sure your hands are dry before you test. If you have anything on your fingers it can affect the test.

It is easier to test your blood sugar if you place your hand down on a table instead of trying to test with your hand in the air (because you might pull away).

Always remember to change your lancet after every use. If you reuse it, it becomes dull and testing becomes more painful. Never throw lancets in the garbage, dispose of them in a sharps containers only.

How often you test depends a lot on what medications you are taking and how you are feeling. There is also a restriction on how many strips people are allowed to use.

	NUMBER OF STRIPS	HOW OFTEN YOU CAN TEST
People using insulin	800/100 days	8x/d
People taking pills that could cause low blood sugars (glyburide,diamicron(gliclazide), repaglinide)	400/365 days	Once daily
People taking pills that won't cause a low blood sugar (all other pills other then glyburide, diamicron(gliclazide) and repaglinide	200/365 days	3-4x/wk
People on no pills and diet and exercise only	200/365 days	3-4x/wk

#### Across Canada, some provinces have the following restrictions:

### AT THE VERY BACK OF THIS BOOK, WE HAVE MONITORING SHEETS WHERE YOU CAN RECORD YOUR BLOOD SUGAR LEVELS.

There are 6 different ones. Which one you use depends on if you are or aren't taking pills, insulin or if you are pregnant. If you test in the shaded areas you will stay within the strip restriction and you won't run out of test strips before the end of the year. You need to be checking your meter using control solution to make sure that it is working properly and that you are getting accurate results. Control solution is a sugar solution that the manufacture makes and it is used, instead of your blood to see if your machine is working properly. Ask your pharmacist for control solution when you pick up your meter (control solution is usually not included in the box with your meter)

#### WHY DO I NEED TO TEST MY METER?

Things can go wrong and if you aren't checking your machine regularly, you may not realize it is not working properly. If people are using the test results as a guide for how much insulin they need to take and the result is not accurate, this can cause a lot of problems. People might be under or over dosing their insulin and this can lead to actual blood sugars that are trending too high or too low. If a person's blood sugars are too low, they will know it fairly quickly, but if they are too high they might not realize it or become fully aware of it for quite a while. So, it is very important to be checking your meter and making sure it is working properly.

How you measure the accuracy of your meter is by using a small bottle filled with Control Solution. Control Solution has an expiration date and after it is opened, it only lasts for 3 months. It is very important that you ask your pharmacist to give you a bottle of Control Solution when you pick up your meter.

Always test your blood sugar meter to make sure it is working properly and giving you accurate results!

#### HOW DO YOU USE THE CONTROL SOLUTION?

In fact, very easily! You use the Control Solution the same way you would use your own drop of blood.

- 1. Shake your Control Solution
- 2. Take a strip and insert it into your meter
- 3. Remove the cap of the control solution and place it on the table
- 4. Place a drop of the Control Solution on the top of the cap
- 5. Line up the test strip with the drop of Control Solution the same way you would with your own drop of blood
- 6. Allow the strip to take up the solution and wait for a test result.
- 7. Record the test result
- 8. Look at the reference range on your container/box of strips, an example might be: 6.8-8.9.

This means that if your meter and strips are working properly and are accurate, your test result should be between 6.8-8.9 when using the Control Solution.

If your test result is either higher or lower then the range, you need to stop using your meter immediately as it is not giving you accurate results.

Check to make sure that your strips have not expired. If your strips are not outdated, then it could be the meter not working properly.

Phone the 1-800- number for the meter company, or take the machine and strips back to your pharmacist.

see handout #15 TESTING WITH CONTROL SOLUTION
#### HOW OFTEN SHOULD YOU BE TESTING THE ACCURACY OF YOUR METER?

- 1. As soon as you get your machine
- 2. When you use a new container of strips
- 3. When you change the battery
- 4. If the meter or test strips are not functioning properly
- 5. If you drop or damage the meter or if you leave it in the cold or heat
- 6. If you feel the numbers you are getting are not accurate and don't match how you feel and you think something isn't right
- 7. You should check your meter against a laboratory blood test every year.

Ex. If you are going to the lab to have blood work drawn first thing in the morning, take your blood sugar meter with you and test your blood sugar right before it is drawn. There should not be more than a 15% difference between the lab value and the value you got with your machine.

Ex. If your doctor tells you your blood sugar result was 8.0 your meter should give you a number between 6.8-9.2 (15% on either side of 8).

8. If you have your blood taken at the lab and you find that your numbers don't match with the numbers your doctor told you.

#### **FLASH GLUCOSE MONITORING**

There is a new technology which allows people to no longer have to test their blood sugar levels by poking their finger and it is called flash glucose (blood sugar) monitoring. It is a small sensor that you wear just under your skin. It records your blood sugar levels continuously throughout the day and night. You check your blood sugars by scanning a meter or an app on your phone over the sensor and it will tell you your blood sugar level. It will also show you how your blood sugars have been trending. The sensors last for 2 weeks and then they need to be changed. You are able to shower with them on, but it is not advised to go in water more then 3 feet deep for more then 30 minutes. The flash technology should not be used when you feel your blood sugar is low. It is not as accurate as finger poking and if you are having a low blood sugar, it is always recommended to double check by pricking your finger to get a blood sugar level.

#### **CONTINUOUS GLUCOSE MONITORING**

Continuous glucose monitoring (CGM) tracks your blood sugar levels throughout the day and night. Similar to flash technology, a tiny sensor is inserted under the skin. A transmitter wirelessly sends information to a monitor. For people you have Type 1 diabetes their CGM may be part of their insulin pump. Some CGM's send information to smartphones or tablets. An alarm can sound if your blood sugar levels are going too low, or can alert a parent on their phone if their child is having a low blood sugar level. The sensor needs to be changed every 10 days.

#### WHAT CAN I EAT? HOW DO I CONTROL MY BLOOD SUGARS WITH EATING?

Carbohydrate (sugar) from food is broken down into glucose (blood sugar).

- If we eat a lot of carbohydrate foods, our blood sugars can go quite high after a meal if we have diabetes or pre-diabetes.
- Try and have foods that change into your blood sugars with foods that don't.
- Learning to eat proper portions for our body and mixing different foods together can help us learn how to control our blood sugars

#### Mix these foods together to slow how quickly the sugar goes into your system:

DO CHANGE INTO BLOOD SUGAR	DON'T CHANGE INTO BLOOD SUGAR
CARBOHYDRATES	
STARCH	FAT
Flour foods	Butter
Bannock, Bread, Crackers	Margarine
Macaroni/Spaghetti	Lard
Perogies, Cereal, Rice	Sour Cream
Beans	Oil
Potatoes, Potato chips	Fat on Meat
Tortillas, Taco chips	
	PROTEIN
MILK GROUP	Meat, Wild Meat
Skim 1%, 2%, whole	Cheese
Powdered milk	Eggs
Evaporated	Peanut Butter, Nuts
Soy or Rice milk	Chicken
Yogurt	Turkey
	Fish
FRUITS AND CERTAIN VEGETABLES	
All fruit and fruit juices	VEGETABLES
Corn	Peas, Cauliflower,
Potato and Sweet Potato	Green beans,
	Yellow beans,
SWEETS	Carrots, Broccoli,
Jam, Jelly,Sugar, Brown Sugar	Lettuce, Tomato,
Candy, Pie, Cake, Donuts, Danish, pastry, Pop,	Peppers, Cucumber,
Slurpees, Iced tea, Drink crystals, Chocolate bar	Onion, Garlic,
	Spaghetti Squash,
	Zucchini

# SEE HANDOUT #4 TIPS FOR CONTROLLING YOUR BLOOD SUGAR

For information on how to control your sugars

For proper portioning and serving sizes of foods see the section called, "Serving size and portioning" in the previous chapter as well as **Handout #3** dealing with, "My Eating Habits" to look at your environment and the reasons why you are eating.

- Another way to figure out what foods your body is happy with and which ones it is not happy with, is to test your blood sugar before you eat and 2 hours after eating to see how high your blood sugars go.
- If your blood sugar levels don't go up more then 2-3 points from before the meal to 2 hours after, your body was happy with what you ate.

#### EXAMPLE:

#### Blood sugar before the meal = 6 2 hours after eating = 8

this is okay because it only went up 2 points (from 6 to 8). If you test before you eat and your **blood sugar = 10** 

#### 2 hours later = 20

that is a 10 point difference and this is too much (from 10 to 20) Your body was not happy with the amount of food you ate that changed into blood sugar at your meal.

# **COUNTING CARBOHYDRATES**

You can learn how to count your carbohydrates (carbs). Your doctor/healthcare professional may want you to take a certain amount of rapid acting insulin (Humalog, Apidra, NovoRapid or Fiasp)-(see the section on medications) to cover the food (carbs) you eat at a meal. They will tell you to take a certain amount of insulin and ask you to learn how to count your carbs. You will see a dietitian who can teach you to count your carbs. They will teach you how much food equals one serving of carb. The dietitian will help you figure out how many carbs you should have at each meal or in the day (you are able to have more than 1 serving at a meal). The amount a person needs is different for everyone. Your dietitian or healthcare professional will look at the amount you eat, how active you are and where your blood sugars are in order to help you figure out how much is best for your body.

#### As an example, one serving of carb is:

- 1 apple or
- <sup>1</sup>∕₂ cup of macaroni or
- 1/3 cup or rice or
- 1/2 cup of mashed potato or
- <sup>1</sup>/<sub>2</sub> cup of corn or
- 1 cup of milk or
- 3 tsp of white sugar

To learn how to count your carbs using a nutrition label **PLEASE SEE P.18** 

# **DOES BEING ACTIVE HELP MY BLOOD SUGARS?**

You can read more about this in the section Physical Activity and Why it's Important" on page 27

#### Some key points to remember are:

- Exercise is the grease/oil for your cells.
- Normally when you don't have diabetes, insulin locks with your cells and let's sugar in for your body to use as fuel.
- When you have diabetes, insulin is not locking properly with your cells to let the sugar in. So, some sugar is getting in the cells, but the rest builds up in your blood.
- When you exercise, it's like grease for your cells. Insulin locks with your cells and easily lets the sugar in. So, exercise is like WD40 for your cells!

- The more you move, the lower the blood sugars go!
- If you go for a walk today your cells stay greased only for 48 hours.
- It is best to be active daily or at least every second day, to keep things working properly and to give you more energy!
- You will find on the days you move, your blood sugar levels are lower than on the days you don't.
- If you can, just keep moving!

# THE IMPORTANCE OF GETTING TESTED REGULARLY

Visiting your healthcare professional regularly will help you to stay healthy. If you are living with diabetes, you should be seen regularly to check if diabetes is having an effect on your body.

#### Your healthcare professional should be checking the following:

- Blood sugar levels every 3 months your Hemoglobin A1c should be checked (this blood test measures your blood sugars levels over the past 3 months)
- Blood pressure (every visit)
- Cholesterol (every year unless there are problems and then it might be more often)
- Eye exams (every year unless there are problems and then it might be more often)
- Kidney function (how well your kidneys are working) (every year unless there are problems and then it might be more often)
- You should take your shoes and socks off at every visit so your healthcare professional can exam your feet and have a sensory foot exam done on your feet every year (see handout #13).

During your first visit with the diabetes worker, ask for a health assessment. Record your bloodtest results, blood pressure and how your kidneys are working so you can compare them with your results, at your next visit (see handout #17)

Ask for an A1C test every three months. It shows your average blood sugar level over a period of three months. If blood sugar levels are not within target range, you may need to add in pills or insulin.

#### Aim for the following ranges:

- 4 to 7 before meals
- 5-10, 2 hours after a meal
- A1c=7.0% or below

# LEARNING ABOUT HYPERGLYCEMIA, HYPOGLYCEMIA AND DIABETIC KETOACIDOSIS

# HYPERGLYCEMIA (blood sugars that are too high)

If there is a lot of sugar in the blood, this is called hyperglycemia or high blood sugar. **This may occur when you:** 

- do not take your diabetes medications properly;
- are ill;
- have an infection or injuries;
- are eating too many sugary foods;
- are not getting enough physical activity; and/or
- have too much stress in your life.

Targets for your blood sugars are:

- 4 to 7 mmol/L: before a meal or first thing in the morning
- 5 to 10 mmol/L: two hours after a meal

Having your blood sugars high for a long time can lead to health problems (see complications from diabetes).

# HYPOGLYCEMIA (blood sugars that are too low)

If there is very little sugar in the blood (blood sugar less than 4), this is called hypoglycemia or low blood sugar. If you blood sugars are below 4 then they are too low. Medicines like glyburide, gliclazide, repaglinide or insulin can sometimes cause blood sugars to go too low.

#### You may feel the following if they are too low:

- Anxious
- Confused
- Difficulty concentrating

#### The following may cause low blood sugars:

- Taking too much insulin, glyburide, gliclazide or repaglinide
- Skipping a meal

#### If your sugars are below 4, you need to:

- Bring your sugars up quickly by taking 15 grams of some quick acting sugar.
  - Quick-acting sugars to keep handy:
  - 4 glucose tabs (4 grams each)
  - 3 teaspoons sugar stirred into water
  - 5 cubes of sugar
  - 2/3 cup juice or regular pop
  - 6 Lifesavers
  - 1 tablespoon of honey or maple syrup

- Nausea/feeling sick to your stomach
- Sweating
- Trembling
- Not eating enough carbs
- Being more active or exercising more than normal
- Test your blood sugar 15 minutes after you take the quick sugar.
- If your blood sugar is still below 4, re-treat with 15 grams of quick sugar again.
- If it is above 4 and your next meal is more then 1 ½ hours away, you should have a snack of 1 carbohydrate (CHO) choice and some protein.

DO NOT use chocolate or other foods to treat a low blood sugar. You need fast-acting sugar to bring your blood sugars up quickly. You need to be cautious with chocolate because it has fat. Fat slows how quickly the sugar goes into your blood. If you use chocolate or other foods with fat, it will make your low last longer instead of fixing it quickly.

Some people may have blood sugars that are usually in the high teens. When their blood sugar drops to 10, they feel like they are having a low blood sugar. This is not a "true" low, but people may feel uncomfortable and might want to treat the "feeling."

**EXAMPLES OF A SNACK:** 6 soda crackers and cheese or <sup>1</sup>/<sub>2</sub> sandwich with meat or peanut butter.

## **DIABETIC KETOACIDOSIS (DKA)**

- People who have type 1 diabetes need the right amount of insulin in their body at all times (remember they no longer are able to make their own insulin). Your body uses sugar as your energy source. When you get sick your blood sugars go up. You need extra insulin to help the extra sugar get into your cells.
- If someone with type 1 hasn't taken enough insulin, extra sugar won't go into the cells and won't be used for energy. The body chooses to use fat for energy instead.
- When fat gets burned it makes something called ketones. Ketones are acid. They make the blood more acidic.

Diabetic ketoacidosis (DKA) is when your body can become too acidic. This is very serious.

#### SYMPTOMS OF DKA

- Sore stomach
- Throwing up
- Fruity-smelling breath
- Rapid breathing
- Very tired

**SEE SICK DAY RULES FOR TYPE 1 DIABETES ON PAGE 55** to learn more about symptoms

and treatment for DKA.

#### **ACIDOSIS AND TYPE 2 DIABETES**

Normally only people with Type 1 diabetes can develop DKA, however if you have Type 2 diabetes and you are taking the medication: Jardiance (Empagliflozin), Forxiga (Dapagliflozin), Invokana (Canagliflozin), Xigduo, Invokamet or Synjardy (see medication section SGLT2's) you can become too acidic if you are taking these meds and you are eating a no/low carb diet (paleo, keto, Atkins) or if you have had bariatric surgery or on the preop diet for bariatric surgery or you are throwing up or have diarrhea. Your blood sugars may not be high or they may be in the normal range, but you are having similar symptoms of ketoacidosis (see above). Never take these medications (SGLT2's) if you are throwing up or have diarrhea, on a low/no carb diet or on the preop diet for bariatric surgery or after bariatric surgery.

It is important to understand and recognize the warning signs of high and low blood sugar levels. The quicker you can spot the signs, the faster medical treatment can begin to prevent or stop severe situations. See Learning about Hyperglycemia, Hypoglycemia, and Diabetic Ketoacidosis on page 37 for more information about high and low blood sugar levels.

# WHY DO I NEED PILLS / INSULIN TO HELP WITH MY BLOOD SUGAR LEVELS?

When you find out you have diabetes, you may start with healthy eating and activity alone or you may have to take pills/insulin right away. If blood sugar levels are not within the normal range of 4-7 before meals and 5-10 (2 hours after a meal) when you go back to see your healthcare professional, they may suggest that you add on more pills or insulin. This does not mean you have failed, but instead that your body needs more help. There are many possible combinations of pills/insulin and it will take time to figure out what is best for you.

# PILLS

Pills are used along with activity, healthy eating and managing stress to:

- Control blood sugar levels
- Help the pancreas to produce more insulin
- Help your body use insulin better
- Help your liver, so it doesn't put out too much sugar
- Move your sugar into your body cells more easily

Here are a list of medications that your doctor, nurse practitioner, diabetes educator or pharmacist may have you start taking and how they help you:

**METFORMIN** helps to make sure that your liver does not put out too much sugar. It also helps your insulin to lock with your cells and let the sugar in. It works 80% at the liver and 20% at the cells.

Have you ever tested your blood sugar before bed and it was 10 and then when you woke up in the morning it was 12? And you wonder how could it have gone up as I did nothing but sleep?

- Well, you are right!
- What happened over night is your liver puts out sugar because you need fuel for your body to keep working overnight
- This is normal, but when we get diabetes this system doesn't work as well and we can end up with a higher blood sugar in the morning because the liver puts out too much sugar
- When you take metformin, it tries to stop the liver from putting out too much sugar.

#### GLYBURIDE/GLICLAZIDE(DIAMICRON)

these pills pump your pancreas so that it puts out more insulin, these are called pancreas pumpers.

- If you are taking these pills you have tomake sure you are eating throughout the day.
- If you don't, you could have a low blood sugar (below 4) because the pill is pumping your pancreas to put insulin out even if you aren't eating.
- Too much insulin in your blood + not enough food (carb) = low blood sugar

**GLUCONORM (REPAGLINIDE)** this pill also pumps your pancreas, but it is only for a short time (it lasts for 4 hours)

- You normally take this medication when you are eating a meal with carbs
- If you don't eat carbs, you don't take it
- The pill works only to cover the meal you just ate, so by the next meal you would take another pill
- Since it is a pancreas pumper, you could have a low blood sugar if you take too much or take it and you don't eat carb at the meal.

#### ACTOS (PIOGLITAZONE)/AVANDIA

**(ROSIGLITAZONE)** it helps your insulin lock with your cells and lets sugar in and also helps at the liver to stop it from leaking sugar. These pills work 80% at the cells and 20% at the liver.

People who have heart failure should not be on these meds because they cause you to hold more water in your body

**ACARBOSE(GLUCOBAY)** this pill slows how quickly you breakdown and absorb the sugar from your meal in your intestine.

This pill can cause a lot of gas and bloating

#### JANUVIA (SITAGLIPTIN), TRAJENTA (LINAGLIPTIN) AND ONGLYZA

**(SAXAGLIPTIN)** these pills help you to use your own insulin better

#### JARDIANCE (EMPAGLIFLOZIN), FORXIGA (DAPAGLIFLOZIN) OR INVOKANA (CANAGLIFLOZIN) (SGLT2'S) these pills help

you to pee out the extra sugar in your blood

- You have to make sure you are drinking 6-8 cups water per day while taking this pill.
- If you don't, then the sugar that you are peeing out will be concentrated and you could get a bladder or yeast infection.
- If you drink 6-8 cups of water your pee will be diluted and then you may not get any infections
- Be cautious with this if you are already taking a water pill which makes you pee a lot
- Some people find this pill helps them lose weight
- You should never take these pills if you are following a low or no carb diet or after bariatric surgery or if you are vomiting or have diarrhea.

TRULICITY (DULAGLUTIDE), BYETTA (EXENATIDE), BYDUREON (EXENATIDE EXTENDED RELEASE), VICTOZA (LIGAGLUTIDE), OZEMPIC (SEMAGLUTIDE), OR ADLYXINE (LIXISENATIDE) these are not pills but medications you inject either daily or weekly. This is not insulin, but another hormone called GLP-1.

- **GLP-1** tells the pancreas to put out insulin
- It also slows how quickly foods leave the stomach. This makes us feel fuller longer and helps to stop our blood sugars from spiking too high after a meal.
- You make GLP-1 in your body, but when we get Type 2 diabetes we do not use it properly.
- By injecting yourself with GLP-1, you can bring down your blood sugars
- It is a very expensive medication
- People who use this drug might find they lose weight with it

**RYBELSUS (SEMIGLUTIDE)** is a new pill form of GLP-1. It works the same as the injectable version. You take it once daily and you have to make sure it is taken on an empty stomach with no more than 120 ml water and you cannot eat for 30 mins after taking it.

#### THERE ARE MANY DIFFERENT TYPES OF PILLS FOR DIABETES.

Take your pills/medications as suggested by your healthcare professional or pharmacist to help control your blood sugar levels.

On the next page is a chart showing all the pills for diabetes, what the maximum dose is, how many times a day you should take it and what some of the side effects might be. You will also see that some of the pills are combined with metformin into one pill.

**EDUCATORS, SEE HANDOUT #16** THERAPY FLOWCHART FOR MANAGING TYPE 2 DIABETES

#### DIABETES MEDICATIONS AND SIDE EFFECTS

MEDICATION	MAX DAILY DOSE	USUAL DOSE	SIDE EFFECTS	
Metformin	2000-2500mg/d	2-3x/d	Diarrhea, bloating, gas, lactic acidosis, low Vitamin B12	
Metformin extended release	2000mg/d	1x/d	Diarrhea, bloating, gas, lactic acidosis, low Vitamin B12	
Gliclazide/Diamicron (80mg)	320mg/d	2x/d	Can cause low blood sugars	
Gliclazide MR/Diamicron MR	120mg/d	1-2x/d	Can cause low blood sugars	
Glyburide	60mg/d	2x/d	Can cause low blood sugars	
Gluconorm (Repaglinide)	4g/meal or 16mg/d	At meals (optional at bedtime)	Can cause low blood sugars if not enough carb is eaten at the meal	
Invokana (Canagliflozin)	300mg/d	1x/d	Urinary tract infections, yeast infections. Do not take if on a low carb diet	
Forxiga (Dapagliflozin)	10mg/d	1x/d	Urinary tract infections, yeast infections, dehydration. Do not take if on a low carb diet	
Jardiance (Empagliflozin)	25mg/d	1x/d	Urinary tract infections, yeast infections, dehydration. Do not take if on a low carb diet	
Xigduo (Forxiga + Metformin)	10mg + 2000mg/d	2x/d	Urinary tract infections, yeast infections, dehydration, gas, bloating, diarrhea, lactic acidosis, low Vit B12. Do not take if on a low carb diet	
Invokamet (Invokana + metformin)	300mg +2000mg/d	2x/d	Urinary tract infections, yeast infections, dehydration, gas, bloating, diarrhea, lactic acidosis, low Vit B12. Do not take if on a low carb diet	
Synjardy (Jardiance + Metformin)	25mg + 2000mg/d	2x/d	Urinary tract infections, yeast infections, dehydration, gas, bloating, diarrhea, lactic acidosis, low Vit B12. Do not take if on a low carb diet	
Trajenta (Linigliptin)	5mg/d	1x/d	Rare cases of pancreatitis and severe joint pain	
Onglyza (Saxagliptin)	5mg/d	1x/d	Rare cases of pancreatitis and severe joint pain	
Januvia (Sitagliptin)	100mg/d	1x/d	Rare cases of pancreatitis and severe joint pain	
Jentadueto (Trajenta + Metformin)	5mg + 2000mg/d	2x/d	Rare cases of pancreatitis and severe joint pain, gas, bloating, diarrhea, lactic acidosis, low Vit B12	
Janumet (Januvia + Metformin)	25mg + 2000mg/d	2x/d	Rare cases of pancreatitis and severe joint pain, gas, bloating, diarrhea, lactic acidosis, low Vit B12	
Komboglyze (Onglyza + Metformin)	5mg + 2000mg/d	2x/d	Rare cases of pancreatitis and severe joint pain, gas, bloating, diarrhea, lactic acidosis, low Vit B12	
Glyxambi (empagliflozin + linagliptin)	25mg + 5mg/d	1x/d	Urinary tract infections, yeast infections, dehydration. Do not take if on a low carb diet. Rare cases of pancreatitis and severe joint pain	
Avandia (Rosiglitazone)	8mg/d	1x/d	Fluid retention, do not use with CHF. Some flu like symptoms	
Actos (Pioglitazone)	45mg/d	1x/d	Fluid retention, do not use with CHF. Some flu like symptoms	
Acarbose (Glucobay)	100mg	3x/d before meals	Uncontrolled gas and watery stools	
Rybelsus (Semiglutide)	14mg	1x/d	Nausea, vomiting and diarrhea	

# **FASTING WHILE YOU HAVE DIABETES**

If you are fasting, you may need to stop or adjust certain diabetes medications. If you are taking any of the following, make sure you speak to your health care provider before you fast:

- Forxiga (Dapagliflozin)
- Gliclazide (Diamicron)
- 📕 Glyburide
- Glyxambi (Empagliflozin and linagliptin)
- 📕 Insulin
- InvokametXR (Canagliflozin and metformin extended release)
- Invokamet (Canagliflozin and metformin)
- Invokana (Canagliflozin)

- Jardiance (Empagliflozin)
- Segluromet (Ertugliflozin and metformin)
- Synjardy (Empagliflozin and metformin)
- QTERN (Dapagliflozin and saxagliptin)
- Xigduo (Dapagliflozin and metformin)

Fasting is a ceremony practiced in various Indigenous cultures. For more information please see **Chapter Two: Culture and Diabetes on page 9**.

# **INSULIN THERAPY:**

If your blood sugars are not controlled on diet, activity and pills, your healthcare provider may suggest you start insulin. Insulin is not a punishment and it does not mean you have "bad" diabetes. If you have to start insulin it means that your pancreas can't make enough insulin, so you need to add some to help control your blood sugar levels. There are many different types of insulin and you can take it 1-4x/d depending on which one you are taking. Normally people will start taking a longer acting insulin at bedtime which acts overnight to bring down your blood sugars in the morning. You may still be on pills when you start insulin or you might be taken off pills and only be on insulin.

#### The different types of insulin available are:

- Rapid-acting insulin and Ultra rapid-acting insulin
   EXAMPLES: RAPID-ACTING: Humalog, Apidra, Novo Rapid
   ULTRA RAPID-ACTING: Fiasp
  - Given only with meals and you take it right before you eat
  - This insulin is clear
  - Rapid-acting starts working within 10-15 minutes (Humalog, Apidra and NovoRapid), while Ultra rapid-acting Fiasp works within 4 minutes
- Short-acting insulin
  - EXAMPLES: Regular or R
  - Given 30 minutes before a meal
  - Can be given at breakfast and supper or breakfast, lunch and supper
  - This insulin is cloudy

Intermediate-acting insulin

EXAMPLE: NPH or N

- This insulin is cloudy
- Usually given at breakfast and bedtime or break fast and supper or only at bedtime

#### Long-acting insulin

- EXAMPLE: Lantus, Levemir, Basaglar
- This insulin is clear
- Taken once or twice each day
- This insulin does not peak and works constantly in the background for 16-24 hours

#### Ultra long-acting insulin

#### **EXAMPLE:** Tresiba

- This insulin is clear
- This insulin does not peak and works constantly in the background for up to 48 hours
- Taken once each day

Some insulins are combined together so that you only have to take one shot instead of two. The chart below shows how all the insulins work and how the combination insulins work.

INSULIN	WHEN TO TAKE	HOW QUICKLY DOES IT START WORKING?	WHEN DOES IT PEAK?	HOW LONG DOES IT LAST?	WILL LAST AT ROOM TEMP FOR
Short acting-Novolin R or Humulin R	2-3x/d before meals	30 min	2-3 hrs	6.5 hrs	28 days
Intermediate acting- Novolin N or Humulin N	1-2x/d Usually before B and Su or at bedtime	1-3 hrs	5-8 hrs	Up to 18 hrs	28 days
Rapid acting-Novorapid, Humalog or Apidra Ultra rapid-acting- Fiasp	Usually before meals Before meals	10-15 min 4 min	1-2 hrs 30 min	3-5 hrs 3-5 hrs	28 days 28 days
Long acting- Lantus or Basaglar	1x/d	90 mins	peakless	24 hrs	28 days
Long acting-Levemir	1-2x/d	90 mins	peakless	16-24 hrs	42 days
Ultra long acting- Tresiba	1x/d	90 mins	peakless	Up to 48 hrs	8 weeks
Mixes- Novolin or Humulin 30/70	2x/d	This is a mix of 30% R and 70% N			28 days
Novolin 40/60	2x/d	This is a mix of 40%R and 60%N			28 days
Novolin 50/50	2x/d	This is a mix of 50%R and 50%N			28 days
Humulin Mix 25	2x/d	This is a mix of 25%rapid and 75% N			28 days
Humulin Mix 50	2x/d	This is a mix of 50% rapid and 50% N			28 days

See chart below for all insulins and combination insulins.

# **INJECTING INSULIN**

There are different ways to inject insulin. Insulin is a liquid and you can inject it into your body with:

- a syringe; or
- an insulin pen;
- or by using a pump

Syringes aren't used as much now, but you will see them used in the hospital. You have to draw up insulin into the syringe from a vial.

With an insulin pen, the insulin is already in a cartridge ready for you to use. All you have to do is dial up the number of units you need to take and then inject.

People who have Type 1 diabetes may be on an insulin pump. It is attached to their body and gives them a constant stream of insulin. At meals they will program how much insulin they should give themselves to cover their food. Wearing an insulin pump means they don't have to inject insulin daily, but the pump tubing that enters the body has to be changed every 3 days.

Your healthcare provider may suggest you take insulin one to four times daily, usually at mealtime. Some people take insulin at bedtime.

#### **HOW AND WHERE DO I INJECT?**

- The best place to inject is your stomach, thigh or butt.
- You can use the back of your arms, but



it is often not easy to inject there and not often recommended.

- You do not want to be giving insulin into your legs if you are going to be walking a lot or exercising because you will absorb it too quickly.
- You also need to rotate where you are giving your insulin and don't always give it in the same place.
- If you give insulin into the same place over and over, you may develop a bump.
- If you keep giving insulin there, the bump will grow and you won't be absorbing the insulin properly.
- If you ever feel like you have a little or large bump in the place you give your insulin, you have to avoid giving it in that area, until the bump goes away.
- You also must change your insulin needle every time you use it and not leave the needle on your insulin pen.
- Keep unopened insulin in the fridge
- Insulin that is in your pen can stay at room temperature (see chart above for how long your insulin will last)
- Once you have injected, unscrew the needle from the pen and place the needle in a sharps container. Never leave a used needle on your pen.

**DO NOT** throw needles in the garbage. The best places to inject is your stomach and thighs.

You will notice that there are four numbered places on your stomach and your thighs to inject. You want to make sure that you inject at least 2 inches away from your belly button, which is why there is an opening around your belly button in the picture.



This picture shows how you can rotate where your insulin is given. Each dot represents where you can give a shot. You can rotate within one quadrant and then move to the next and so on.



# **HOW TO INJECT INSULIN**

- Attach pen needle to pen cartridge
  - If using cloudy insulin (N, NPH, 30/70 etc), gently roll your insulin 10x, tip it back and forth 10x. Make sure that your insulin is mixed and there are no clear spots (so it is all white)
- Do an air shot with 2 units of insulin or until a drop of insulin appears at the tip of the needle.
- Dial the number of units of insulin needed.
- Inject into the stomach area and rotate your sites staying 2 inches away from the belly button and away from scar tissue.
- Inject at a 90 degree angle, looking down at your insulin pen, press the button so the insulin goes into your body
- Once the insulin is injected and the pen displays "0", slowly count to 10 before removing the needle from your stomach
- Unscrew the needle from the pen and throw it away in a sharps container
- Recap the pen.

#### STORAGE

- Keep the pen and its' opened cartridge of insulin at room temperature for up to 28 days: throw away after 28 days (42 days for Levemir)
- Store unopened insulin in the fridge until the expiry date
- Do not use insulin past its' expiry date or if it has frozen

SEE HANDOUT #11 HOW TO INJECT INSULIN \*Give this sheet to clients

# REMEMBER

- When taking insulin you could have a low blood sugar (below 4) if you are more active, don't eat enough or you give too much by accident.
- Any blood sugar below 4 is too low!

# If your sugars are below 4 mmol/L, you need to:

Bring your sugars up quickly by taking 15 grams of some quick acting sugar

#### QUICK-ACTING SUGARS TO KEEP HANDY:

- 4 glucose tabs (4 grams each)
- 3 teaspoons sugar stirred into water
- 5 cubes of sugar
- 2/3 cup juice or regular pop
- 6 Lifesavers
- 1 tablespoon of honey or maple syrup
- Test your blood sugar 15 minutes after you take the quick sugar.
- If your blood sugar is still below 4 mmol/L, re-treat with 15 grams of quick sugar again.
- If it is above 4 mmol/L and your next meal is more then 1 ½ hours away, you should have a snack of 1 CHO choice and some protein.

#### **EXAMPLES OF A SNACK:**

6 soda crackers and cheese or ½ sandwich with meat or peanut butter.

# **INJECTION TECHNIQUE: THE BASICS**



Inject into a clean injection site using clean hands. (alconol is not required)



Gather your supplies, including your pen, insulin and pen needles. If your pen is not pre-loaded, load your insulin cartridge into your pen.



If you are using cloudy insulin, mix by rolling it 10 times and tipping it 10 times to ensure that it is a milky white consistency, (clear insulin does not need to be mixed)









Choose your injection site. (injection into the back of your own arm is not recommended)



Rotate between injection sites.





Rotate within injection sites.



Attach your pen needle and remove. both the outer and inner caps.



Prime your pen. Dial up 2 units and depress the plunger while holding the pen needle pointing up. If drops come out, your pen needle is primed, if not, repeat the steps until drops come out of the top of the pen.

(GLP-1 pens only need to be primed the 1st time you use them)



Dial your dose and insert pen needle into skin at a 90 degree angle.

(refer to chart on page 2 on whether or not you should perform a skin lift and/or inject at an angle)



Push down the thumb button completely.

Count to 10, slowly. Grow may have to count past so seconds for larger doses)



Withdraw the needle from the skin and release skin lift, if appropriate.



Remove pen needle and dispose of it in an approved sharps container. Replace pen cap.



Store insulin in use at room temperature.

(Once in use insulin should not be used for longer than 28 days, or as per manufacturer's instructions. Store extrainsulin supply in the refrigerator. Check the expiry date before using.)

Adapted from: The Community Diabetes Education Program of Ottawa handout, Practical Insulin Injection Tips and FIT Technique Plus Technique for All handout, Education tools based on FIT Canada Recommendations for best practice in Insulin Injection Technique



Use pen needles and syringes only once.



# **COMPLICATIONS FROM DIABETES**

- If your blood sugars aren't under control, it may cause other health problems.
- It can lead to other serious health complications such as:
- Heart disease, strokes, and heart attacks
- Eye damage and blindness
- Kidney disease and kidney failure
- Poor circulation, numbness, cramping, and pain

- Amputations
- Foot and skin infections
- Problems with "getting it up" (sexual issues)
- Yeast infections and vaginal dryness
- Birth defects, stillbirths, and miscarriages
- Bladder infections

# **DIABETES AND YOUR EYES**

#### THIS SECTION COVERS:

- Diabetes and its impact on vision
- Symptoms of diabetic retinopathy (DR)
- Treating vision loss from DR
- Risk factors for developing DR
- Preventing DR
- Eye exams and why they are important

#### **DIABETES AND ITS IMPACT ON VISION**

People with diabetes are at risk of complications that can affect vision, the most common being diabetic retinopathy (DR). For people with DR, poorly controlled blood sugar levels result in damage to the tiny blood vessels in the retina. Anyone with type 1 or type 2 diabetes can develop DR. If left untreated, it can result in blindness (CNIB Foundation, 2019). Half a million Canadians are living with diabetic retinopathy https://www.fightingblindness. ca/eye-diseases-pathways/diabetic-retinopathy/#:~:text=Overview,blindness%20among%20 working%2Dage%20adults.

#### According to Diabetes Canada, DR affects:

- 23 per cent of people with type 1 on insulin therapy; and
- 14 per cent of people with type 2 diabetes.

#### SYMPTOMS OF DIABETIC RETINOPATHY (DR) PREVENTING DR

# Diabetic retinopathy causes no symptoms initially, but as the disease progresses, symptoms include:

- Loss of central vision
- Blurry vision
- Flashes of light in field of vision
- Inability to see colours
- Black spots or holes in vision

#### **TREATING VISION LOSS FROM DR**

There is treatment that can minimize the damage from DR, which your optometrist can recommend following a routine eye exam. Controlling your diabetes helps to minimize your risk of developing retinopathy.

In the early stages, you can manage DR by controlling blood sugar levels. However, as DR progresses, options to maintain vision include:

- anti-VEGF injections;
- laser treatment; or
- surgery.

Early detection of diabetic retinopathy is crucial, as treatment is much more likely to be successful at an early stage.

#### **RISK FACTORS FOR DEVELOPING DR**

Factors that increase the risk of developing DR include:

- poor blood sugar control;
- smoking;
- high blood pressure;
- drinking alcohol; and
- pregnancy.

# SEE HANDOUT #12: TIPS FOR EYE CARE

to get ideas on caring for your eyes when you have diabetes.

#### Monitor and maintain control of vour diabetes

- See your health care provider regularly
- Follow instructions about diet, exercise, and medication
- See your optometrist for a thorough eye exam when you are first diagnosed with diabetes. Then see your optometrist annually or more frequently if recommended.

#### EYE EXAMS AND WHY THEY ARE IMPORTANT

The less controlled your blood sugar is and the longer you have diabetes, the more likely you are to develop diabetic retinopathy.

Optometrists can often see indicators of diabetic retinopathy in the eyes before diabetes is formally diagnosed by a physician. A comprehensive eye exam by an optometrist can:

- lead to early detection of diabetic retinopathy;
- reduce the risk of vision loss; and
- lessen the risk of other life-threatening complications from diabetes such as heart disease and kidney failure.

A comprehensive eye exam by your optometrist will include a thorough case history to determine any visual difficulties you may be having, the presence of diseases such as diabetes, and current medications. Further testing will often include procedures to better evaluate the health of the retina, including:

- dilation of the pupils to afford a full view;
- retinal imaging to document the status of the retina; and
- specialized testing to assess for leakage of fluids.

# **PROTECTING YOUR NERVES AND FEET**

#### This section talks about preventing nerve damage (neuropathy) and care for your feet.

Neuropathy is nerve damage caused by high blood sugar levels. The nervous system is a message network that sends information from the brain to the rest of the body.

#### The nerves that are affected by diabetes are:

- **MOTOR NERVES** help with movement and control muscles.
- SENSORY NERVES are in the feet, arms, hands, and legs. They help sense things such as hot or cold temperatures; touching rough or smooth objects; or tingling and numbness sensations.
- AUTONOMIC NERVES control the internal body functions, such as the heart, digestive system, sweat, sexual organs, and bladder.

#### **PREVENTING NERVE DAMAGE**

Nerve damage may develop within 10 years of having diabetes, in 40 to 50 per cent of people (or sooner if a person had diabetes and didn't know it).

#### Some ways to prevent nerve damage are:

- Get annual screening to see if you are at risk of getting foot ulcers. Screening can prevent amputations.
- Get a test to check how much the feet can feel. Vibration, touch, and temperature tests can show how sensitive feet are. Have this test done at least once a year.
- Another test is done by pricking different parts of the bottom of your foot with a tiny little wire and seeing how much feeling there is in the feet. Try and keep your blood sugars in target range of 4 to 7 before meals and 5-10, two hours after a meal.

By controlling blood sugars, you can prevent many diabetes-related issues.

Doing proper foot care is very important. It can prevent pain and amputations.

Foot problems for people with diabetes are the major cause of illness and injury. Lower limbs, such as the legs and feet, are at high risk for amputation if you don't take care of them. Minor problems or infections can lead to gangrene if not properly cared for. Gangrene occurs when the tissue or part of the body does not get any blood and starts to die (turns black in colour). The dying limb must be amputated. Many people do not even know they have problems with the nerves to their feet until an infection happens.



REVIEW HANDOUT #13: CARING FOR YOUR FEET

# **KIDNEY DISEASE (NEPHROPATHY)**

Kidney disease is called nephropathy. Kidneys act like filters for the body. When the kidneys are damaged, they can no longer get rid of toxins, which are poisonous to the body. You have two kidneys, one on either side of your body. They are located under your ribs. Kidneys are shaped just like kidney beans. Each of the kidneys are the size of your fist. The kidneys in adults have about 2 to 3 million tiny filter they are called the glomeruli.

#### WHAT DO YOUR KIDNEYS DO?

The kidneys are the house cleaners in your body, they get rid of the wastes in your body. They keep in balance, minerals and water in your body. They make hormones in your body to help you keep your blood pressure regular, they keep your bones healthy and they make your red blood cells (also known as hemoglobin)

#### THE FACTS ABOUT DIABETES AND KIDNEY DISEASE

- Diabetes is one of the major causes of kidney disease. It's important to keep your blood sugars as close to normal as possible to prevent kidney disease. Good blood sugars can slow down the damage to the kidneys. Know what your blood sugar targets are. Talk to your Doctor and/or diabetes team.
- You need to do a pee test every year to check your kidney function.
- Your blood pressure needs to be as close to 130/80 as possible.
- There are pills that help lower your blood pressure.
- When your blood sugars are high this can cause a stress on your body. When you add the stress of daily life on top of it, this can really affect your kidneys.
- By lowering your blood pressure and stress it helps your kidneys work better.

# WHAT ARE YOUR RISK FACTORS FOR CHRONIC KIDNEY DISEASE (CKD)?

Anyone can develop kidney disease. **You are at high risk if you have...** 

- Diabetes
- high blood pressure
- Family history of kidney disease
- Heart disease
- Other known kidney problems
- Urinary tract problems
- Auto-immune disease (Lupus)
- Indigenous or Asian descent
- Overweight
- Older age
- Smoking



#### SIGNS OF CHRONIC KIDNEY DISEASE (CKD)

- Your pee could be cloudy, or the color of tea, it could also be foaming.
- You pee more often
- You have swelling around the eyes, hands or feet

#### THERE ARE FIVE STAGES OF CHRONIC KIDNEY DISEASE (CKD)

To know what stage you are in, you would do a pee test and blood test. These tests check on how many of the good things that should stay in your blood are now being peed out, like protein. Both the blood and pee test are also checking to see how good the filters in your kidneys are working. This test is called and estimated Glomerular Filtration Rate (eGFR)

#### STAGE 1

- Your filters are working more than 90 eGFR
- Kidneys are still working normally
- Usually you don't have symptoms at this stage

#### **STAGE 2**

- Your filters are working between 60 and 89 eGFR
- Protein in your pee will be present
- Having protein shows that there is damage to your kidneys
- Since your kidneys are not filtering properly, your blood and urine will show an increase in Creatinine. in your urine.(remove these last few words)
- The waste in your blood starts to build up, this waste buildup in called Uremia.
- At this stage your blood pressure could start to increase.
- Your red blood cells start to decrease and you may be told you have anemia
- You may also find out you have early bone disease.
- You may feel more tired

- Shortness of breath
- You have less energy, feeling tired all the time, or you feel more confusion
- Kidney disease is often SILENT!

# **REMEMBER:** TO HELP PREVENT KIDNEY DISEASE...

- Keep your blood sugars as close to normal as possible,
- Keep your blood pressure as close to 130/80 as possible
- Keep active
- Get the right amount of sleep
- Decrease your stress
- And eat a regular balanced diet.
- Get help from your health team as you have questions and don't ignore symptoms when they arise.
- Have increased swelling because the kidneys are not able to balance the water in your body
- There may be more fluids in your lower legs, ankles, hands, abdomen, face and chest
- With more fluid in your lungs you may feel short of breath
- Your urine may be foamy if there is protein
- Or may be dark orange, tea colored or red if it contains blood
- You may notice that you go pee more often, (this is often mistaken for getting older and not able to hold our water)
- You may also feel back pain under your ribs, where your kidneys are located.

#### **STAGE 3**

- Your filters are working between 30 and 59 eGFR
- Protein in your pee will be present
- Having protein shows that there is damage to your kidneys
- Since your kidneys are not filtering properly, your blood and urine will show an increase in Creatinine. in your urine.(remove these last few words)
- The waste in your blood starts to build up, this waste buildup in called Uremia.
- At this stage your blood pressure could start to increase.
- Your red blood cells start to decrease and you may be told you have anemia
- You make also find out you have early bone disease.
- You may feel more tired

#### Have increased swelling, because the kidneys are not able to balance the water in your body.

- There may be more fluids in your lower legs, ankles, hands, abdomen, face and chest.
- With more fluid in your lungs you may feel short of breath
- Your urine may be foamy if there is protein,
- Or may be dark orange, tea colored or red if it contains blood
- You may notice that you go pee more often, (this is often mistaken for getting older and not able to hold our water)
- You may also feel back pain under your ribs, where your kidneys are located.

#### STAGE 4

- Your filters are working between 15 and 29 eGFR
- This is a severe decrease in your kidney's filters.
- The spilling of creatinine and protein will increase in your urine
- Your blood pressure will go up
- Your ability to make red blood cells will decrease and you will be told you have anemia
- You will develop bone disease, heart disease and blood vessel problems
- It is likely that someone at this stage will need to have dialysis or a kidney transplant in the future

#### SYMPTOMS THAT DEVELOP IN THIS STAGE ARE

- Increased fluid, the kidneys are not able to keep the balance of water in your body
- Too much water can build up in your lower legs, hands, stomach, face and lungs
- Too much fluid in the lungs can cause shortness of breath
- You pee more but not much pee comes out
- Your pee will be foamy, or can be dark orange, brown, tea colored or red if there is blood in it.
- Increased back pain which is caused by kidney pain
- You may have increase sleep problems, such as falling asleep or staying asleep
- Have increase dry skin and more itchiness, cramps in your muscles or restless leg pain, peeing more overnight may also cause poor sleep

# **STAGE 5** ALSO KNOWN AS KIDNEY FAILURE

- Your kidney filters are working less than 15eGFR
- You will need to be on dialysis or kidney transplant

# HEART AND CARDIOVASCULAR HEALTH

Damage to blood vessels and nerves can develop when blood sugars are high for long periods of time.

The blood is made of different parts. Red blood cells carry oxygen to all parts of the body. When the amount of sugar in the blood is too high, it can cause inflammation and damage. This can lead to strokes, heart attacks, high blood pressure, hardening of the arteries, and poor circulation.

# The following are a few points describing how diabetes affects your heart, brain, and the larger blood vessels:

- Heart disease occurs two to four times more often in people with diabetes.
   It is a major cause of illness and death in people with diabetes.
- Coronary Artery Disease occurs when the arteries in the body become clogged. The arteries move the blood to the heart, brain, and other body parts.
- A stroke occurs when the blood supply cannot get through to the brain.
- People with diabetes may have arteries and veins that are clogged. This makes it difficult for blood to flow through them. A heart attack occurs when there is a little or no blood supply to the heart.

Controlling blood sugar levels can help with keeping your arteries healthy. Cholesterol is a wax-like fat that is produced in small amounts by the body. Cholesterol can collect in your arteries and lead to blocking them. Having high blood sugars can make this worse. Certain fats in our diet can also cause this. Any fat that comes from something that had a mother (animal, except fish) can do this and they are called saturated fats. Butter came from something that had a mother, as does milk, eggs, meat and bacon, so the key is to not have too much of them. Wild meat comes from an animal but is very lean and is better for you then meat you buy at the grocery store. If cholesterol builds up in your arteries, it can cause blood flow in the arteries to slow down and even stop, leading to a heart attack. You can lower your cholesterol levels in the blood by limiting



all animal fats (except fish), choosing healthy fats (nuts, seeds, vegetable oils), exercising, and controlling your weight.

After a heart attack, people with diabetes are at a greater risk for heart failure. Risk of another heart attack is four times greater for people with diabetes. People with diabetes are also twice as likely to develop heart arrhythmias, which means the heart beats randomly and not in rhythm. When the heart beats it pushes the blood through the body. If the heart beats randomly, the blood is moving at different speeds to the brain and body. The body may not be getting all the oxygen or nutrients it needs.

# HEART AND CARDIOVASCULAR HEALTH CONTINUED

There is a higher chance of getting Peripheral Vascular Disease (PVD). PVD results from circulation problems in the veins. The veins become blocked. They cannot carry the blood to the arms, legs, and feet. This can cause cramps, pains, numbness, and a higher risk of gangrene and amputation. The best way to prevent strokes, heart disease, and PVD is to live a healthy active lifestyle. **Here are a few suggestions:** 

- Keep blood sugars between 4 to 7 before meals and 5-10, 2 hours after a meal
- Eat healthy foods low in fat, sugar, and salt
- Control your weight
- Maintain an active lifestyle
- Reduce stress
- Avoid alcohol
- Quit smoking

### GUIDELINES ON WHAT TO DO IF YOU GET SICK WHILE LIVING WITH DIABETES

Remember to always talk to your health care professional about rules you should follow when you are sick. There are always new medications available, which may not be listed in this booklet. When you are sick you need to test your blood sugar levels more often.

## REMEMBER TO STOP THESE MEDS ONLY IF YOU ARE THROWING UP OR HAVE DIARRHEA (FOR TYPE 1 or TYPE 2 DIABETES)

TYPE OF MEDICATION	MEDICATION NAME
Blood sugar meds	Glyburide, Gliclazide (diamicron), Gliclazide MR (diamicron MR), Repaglinide (Gluconorm) Metformin, Jardiance, Invokana, Forxiga, QTERN, Invokamet, Invokamet MR, Xigduo, Synjardy, Glyxambi, Segluromet
Pain relief (NSAIDS)	Advil, Aleve, Ibuprofen, Aspirin, Voltaren, Celebrex, Motrin, Naproxen
Blood pressure meds	Benazepril (Lotensin), Captopril (Capoten), Cilazapril (Inhibace), Enalapril (Vasotec), Fosinopril (Monopril), Lisinopril (Prinivil, Zeatril), Perindopril (Coversyl), Quinapril (Accupril), Ramipril (Alatace), Trandolapril (Mavik) Candesartan (Atacand), Eprosartan (Teveten), Irbesartan (Atacand), Eprosartan (Cozaar), Omesartan (Olmetec), Telmisartan (Micardis), Valsartan (Diovan), Chlorthalidone, Ethacrynic acid (Edecrin) Aliskiren (Rasilez)
Water pills/blood pressure meds	Furosemide (Lasix), Hydrochlorothiazide, Indapamide (Lozide), Metolazone (Zaroxolyn)

You should also **avoid any over the counter medicines** that have pain relief in the form of NSAIDS (see above)

Talk to your pharmacist and make sure any over the counter medicines are sugar free

# SICK DAY RULES FOR PEOPLE WITH DIABETES

Discuss sick day rules with your doctor, diabetes educator, or pharmacist before you get sick. The following tables give you some guidelines to refer to when you are sick for both type 1 and type 2 diabetes.

INFO	WHAT TO DO
	TYPE 1
	<ul> <li>Be aware of the following information:</li> <li>People with Type 1 diabetes need the right amount of insulin in their bodies at all times.</li> <li>Your blood sugars go up when you are sick. You need extra insulin to help the extra sugar get into your cells.</li> <li>If you don't have enough insulin, extra sugar won't go into the cells. Your body will use fat for energy instead.</li> <li>When fat is burned, your body makes something called ketones.</li> <li>Ketones are acid. They make the blood more acidic.</li> <li>Diabetic ketoacidosis (DKA) is when your body becomes too acidic. This is very serious.</li> </ul>
When to check your ketones	<ul> <li>Dip a ketone strip in your urine to check your ketones if:</li> <li>your blood sugars are &gt;14 before meals; or</li> <li>you have any symptoms of DKA.</li> <li>If your ketones are mild to moderate based on the ketone strip, you need to seek medical attention.</li> </ul>
Treatment for DKA	<ul> <li>Stay aware of any symptoms of diabetic ketoacidosis:</li> <li>Sore stomach</li> <li>Throwing up</li> <li>Rapid breathing</li> <li>Fruity-smelling breath</li> <li>Very tired</li> <li>You need to be testing your blood sugars every 2 hours. You need to continue your basal (long-acting insulin), but you may need to adjust your rapid insulin. If you are not eating and if your blood sugars are high, you may need to take a small dose of rapid insulin to keep your blood sugar levels down (speak to your doctor about this).</li> </ul>
If you are throwing up or if you have diarrhea If you are not able to eat solids	You may be losing fluids and you may not be able to replace them. This can lead to you becoming dehydrated. You may go into DKA. Certain medications can cause harm to your kidneys. You must stop them if you are throwing up or have diarrhea. SEE THE MED LIST BELOW THE TABLES FOR WHICH ONES TO STOP
	You should sip sugar-containing fluids (15 grams carbohydrate) every hour you are awake to make sure you get enough fluid and to even out blood sugars. Choose from:

INFO	WHAT TO DO	
TYPE 2 DIABETES		
When to test your blood sugars:	<ul> <li>If you are taking:</li> <li>Insulin, test your blood sugars every two hours</li> <li>Pills, test your blood sugars every two to four hours</li> </ul>	
If you are not throwing up or having diarrhea, but you are unable to eat solids foods:	<ul> <li>If you are not taking any meds for diabetes or you aren't taking Glyburide, Gliclazide (Diamicron), Gliclazide MR (Diamicron MR), Repaglinide (Gluconorm) or insulin, you are not at risk for having a low blood sugar if you aren't eating.</li> <li>You do have to make sure you get enough fluids, but you can use water or sugar free pop or drinks so blood sugars don't go too high.</li> <li>You should be drinking one cup of sugar-free, caffeine-free fluid every hour you are awake to keep hydrated.</li> <li>Avoid caffeine because it makes your body lose water.</li> <li>Choose from:</li> <li>Water</li> <li>Broth</li> <li>Crystal Lite or Mio in water or other sugar free drinks</li> <li>Caffeine free tea or caffeine free herbal tea Sugar free Jell-O or sugar free popsicles</li> <li>Sugar free caffeine free pop (diet ginger-ale)</li> <li>Talk to your pharmacist and make sure any over the counter medicines are sugar free.</li> </ul>	
If you are not throwing up or having diarrhea and you are unable to eat solid foods and taking Glyburide, Gliclazide (Diamicron), Gliclazide MR (Diamicron MR), Repaglinide (Gluconorm) or on insulin	<ul> <li>You need to be aware of how certain medications might affect you Insulin lowers your blood sugars and can cause a low blood sugar if you don't eat</li> <li>If you are taking Glyburide, Gliclazide, Gliclazide MR or Gluconorm, these pump your pancreas to put out insulin, putting you at higher risk for low blood sugars</li> <li>If you are sick, this causes your blood sugars to go up, but you still can have a low blood sugar if you are not eating and these medications are working</li> <li>If you are unable to eat solids but taking Glyburide, Gliclazide, Gliclazide MR, Gluconorm and/or insulin - you may need to have a small amount of carbohydrate (sugar) containing foods to make sure your blood sugars don't go too low.</li> <li>You should sip sugar-containing fluids (15 grams carbohydrate) every hour. Choose from:</li> <li><sup>3</sup>/<sub>4</sub> cup regular soft drink (no caffeine)</li> <li>1 cup Gatorade</li> <li>1 cup milk</li> <li><sup>1</sup>/<sub>2</sub> cup regular Jell-O</li> <li>4 glucose tabs</li> </ul>	
If you ARE throwing up or having diarrhea	<ul> <li>You may need to stop your medications if you are throwing up or have diarrhea.</li> <li>When you are sick, your blood sugars go up naturally because it is a stress on the body</li> <li>Your body loses fluids. You may not be able to replace them. This may cause you to become dehydrated.</li> <li>If you are on certain medications they can harm your kidneys or cause other side effects. You must stop them if you are throwing up or have diarrhea. See chart below</li> </ul>	

**REFER TO HANDOUT #14** WHEN TO SEE A HEALTH CARE PROFESSIONAL for information on when you should seek medical attention.

# **CONTINUOUS GLUCOSE MONITOR**

You must be careful when taking Tylenol as it can give you false high blood sugar levels. If taking over the recommended daily dose of Tylenol, test your blood sugar by pricking your finger before you take any extra insulin or medication. (When in doubt always test your blood sugars using a blood sugar monitor)



# WHEN DO YOU NEED TO SEE A HEALTH CARE PROFESSIONAL?

- Unable to keep fluids or food down for more than 6 hours (Type 1 or Type 2 if taking forxiga, Invokana or Jardiance-but these should be stopped if you are vomiting or have diarrhea)
- Showing signs of being dehydrated such as a very dry mouth, cracked lips, dry skin, sunken eyes or very dark urine.
- Unable to care for yourself or you are worried about your condition
- Unsure about your medications and if they need to be adjusted

- Have a fever (above 38.3 degrees C or above 100.9 degrees F) for more than 24 hours
- Blood sugar stays below 4 for 2 readings and it will not come up even with proper treatment
- Blood sugar has been higher than 15 for more than 12 hours(Type 1)
- Having difficulty breathing
- If you have mild to moderate ketones (Type 1)

# LIVING WELL WITH DIABETES

Many people think that they are absolutely going to be diagnosed with diabetes and this could be the worst thing for them. In fact, it may be that getting diagnosed can help you make changes so that you can live long, happy and healthy lives. You can do this by taking care of yourself and:

- Dealing with and reducing stress
- Eating as healthy as possible
- Being active daily or as often as possible
- Testing blood sugar as suggested and having regular tests and check-ups
- Taking diabetes medications (if needed) as prescribed by your health care provider

# The purpose of managing diabetes is to maintain good health and wellness

# **SUGGESTED ACTION ITEMS:**

If you have recently been diagnosed with diabetes and are feeling overwhelmed, seek out someone who can support you by listening to your concerns. An Elder, traditional person, or a health care provider are some options.

- REVIEW AND COMPLETE HANDOUT #10: Creating Your Diabetes Health Care Plan.
- Learn more about caring for your feet while living with diabetes. SEE HANDOUT #12: Caring for Your Feet.

Talk to your health care provider about what you should do when you get sick.

Read through the "sick day rules" and keep them handy so that you know what to do if you do get sick.



# MENTAL HEALTH

# THIS CHAPTER EXAMINES:

- Finding out you have diabetes
- Depression and diabetes
- Risk factors for getting depression
- Anxiety and diabetes
- Stress, trauma, and diabetes
- Ideas for managing stress
- Benefits of exercise on mental health
- Other ideas for self care
- Emotional wellness
- Emotional impact
- Managing stress
- Preventing diabetes complications

# FINDING OUT YOU HAVE DIABETES

The link between diabetes and mental health is often not looked at (Robinson, Coons, Haensel, & Yale, 2018). Finding out you have diabetes can cause you stress, as well as make you feel not so good about yourself. This can make controlling your blood sugar levels difficult. Normal fears, such as a fear of taking insulin or the fear of having low blood sugar levels (hypoglycemia), can keep you from having good control.

Problems with mental health can also affect how you take care of yourself and your blood sugar levels. Some of the medications you take for mental health issues can change blood sugar levels. It is important for you to make sure you are getting the support you need to deal with your mental health issues. Talking with a nurse at the nursing station, with your doctor or with an elder can help point you in the right direction, so you can get the help you need. If you are taking pills for diabetes, giving yourself insulin, or taking any pills for mental health reasons, **remember to take the medications as your healthcare provider suggested.** 

If you are concerned that there may be bad things happening because of or between your medications it is important to tell your healthcare provider.

# **DEPRESSION AND DIABETES**

For many people finding out that they have type 2 diabetes is upsetting. It may lead to you feeling hopeless and unhappy. You may become depressed, but you and others around you may not understand what is happening. If you are feeling different and off, make sure to talk about this with your healthcare provider. People with Type 1 diabetes often have high rates of depression, but people with Type 2 diabetes also get depressed.

#### RISK FACTORS FOR GETTING DEPRESSION IN PEOPLE WITH DIABETES

The following are the risk factors for getting depression if you are living with diabetes:

- Being female
- Being a teenager or young adult
- Older adults
- Being poor
- People who don't have a lot of support from family/friends/ healthcare providers
- Stressful things happening to you
- Poor blood sugar control, especially people who have a lot of low blood sugars
- Being sick
- Having diabetes for a long time

# **ANXIETY AND DIABETES**

There is a close link between anxiety and diabetes, as well as between anxiety and depression. If you live with type 2 diabetes, you are more likely to have anxiety than if you have type 1 diabetes.



# STRESS, TRAUMA, AND DIABETES

Having bad things happen to you early in life can affect your physical health. It increases your risk for getting type 2 diabetes. Post-traumatic stress disorder (PTSD) also increases your risk of getting type 2 diabetes.

#### **MANAGING STRESS**

Stress is a normal part of life. Stress happens when something makes the body act like it is being attacked. The body reacts and gets ready to deal with the problem. This reaction is called the "fight or flight response." The body signals to the liver to add more sugar to the blood so it is ready to be used. If there is not enough insulin to take up the sugar, the blood sugar level goes high.

A great way to help with stress and bad feelings is being active and moving (physical activity or exercise). Moving more helps to lower blood sugar levels. It also helps with depression (HelpGuide, 2019). It releases natural chemicals in the body that make a person feel happier and helps to take your mind off your stresses and worries.

People can get post-traumatic stress disorder (PTSD), if bad things happen to them at any point in their life. Getting a lot of exercise has been shown to help someone dealing with PTSD even before their counselling and healing starts. Focusing on the movement of your arms and legs, such as when swimming or dancing, can reduce the symptoms of PTSD.

# GOOD THINGS THAT HAPPEN TO YOUR MENTAL HEALTH FROM EXERCISE

**BETTER MEMORY AND THINKING** – the natural chemicals that make you feel happier after exercising are also able to help you concentrate and think better.

#### MAKES YOU FEEL BETTER ABOUT YOURSELF –

when regular activity becomes a habit many people feel better about themselves and where they are at.

#### BETTER SLEEP –

Exercise in the morning or at mid-day, even for short periods has been shown to improve how you sleep.

#### MORE ENERGY-

When we do exercise such as running, bicycling, or even walking we raise our heart rate which, if done regularly, it gives us an energy boost.

# DIABETES AND LIFESTYLE

# THIS CHAPTER BRIEFLY COVERS HOW DIABETES INTERSECTS WITH THE FOLLOWING ISSUES:

- Pregnancy
- Travel
- Driving
- Smoking
- Alcohol
- Narcotics
- Sexual dysfunction
- Sleep apnea

# **DIABETES AND PREGNANCY**

Diabetes in pregnancy can happen when mom already has diabetes and becomes pregnant or when mom doesn't have diabetes and her blood sugars go up when she is pregnant.

#### **GESTATIONAL DIABETES**

Gestational diabetes is when mom does not have diabetes before pregnancy, but her blood sugars go up while she's pregnant. Usually blood sugars start to go up between 24-28 weeks of pregnancy. This happens because the placenta (the sack that holds baby) puts out a hormone that makes mom not be able to use her own insulin properly and this makes mom's blood sugars go up.



#### **RISK FACTORS FOR GDM**

- If you are 35 yrs of age or older
- If you are Indigenous, African, Asian, Hispanic, Arab or South Asian
- If you are carrying extra weight (BMI=30 or greater)
- If you are taking steroids
- If you had gestational diabetes in your last pregnancy
- If you gave birth to a baby that weighed more then 9 lbs
- If you have a family history of diabetes
- If you have PCOS (Polycystic ovarian syndrome) or acanthosis nigricans (dark patches of skin)

#### HOW DO I FIND OUT IF I HAVE GDM?

You will be asked to drink a sugary drink between 24-28 weeks. If you are at high risk, you may be asked to do this before your 24th week. The lab will take blood one hour after having the drink. If your blood sugars come back with a result of:

- Less than 7.8 you do not have GDM
- 7.8-11.0 they will send you for another drink higher in sugar to see if you have GDM
- 11.1 or greater you are diagnosed with GDM

If your blood sugars are 7.8-11.0-you will be sent to have a drink even higher in sugar. If your results come back and they are:

- Higher then 5.3 before you have the drink
- **Higher then 10.6**, 1 hr after drinking it
- **Higher then 9.0**, 2 hrs after drinking it

If you get even one of these numbers, then you are diagnosed with GDM.

#### HOW DO I MANAGE MY BLOOD SUGARS IN PREGNANCY?

The goal is to have your blood sugars in a certain range to make sure you and baby stay healthy. The target range for your blood sugars are:

- 5.3 or less first thing in the morning
- 7.8 or less 1 hr after eating a meal

6.7 or less 2 hrs after eating a meal

You will be taught how to test your blood sugars and given a sheet to record them.

Another way to manage your blood sugars is by looking at what you eat (see healthy eating section). You need to make sure you are eating throughout the day and trying to balance your meals as best as you can. You should not starve yourself in pregnancy to control your blood sugars. You and baby both need energy to stay healthy. It is often recommended that mom have a small snack in the evening before bed to make sure baby is getting enough fuel. A small snack might be a ½ sandwich or a piece of bannock with cheese or peanut butter or a slice of toast with meat, cheese or peanut butter. A healthcare professional will sit down with you and review your diet to make sure you are not eating too much carb at one time (carbs affect blood sugars-see healthy eating section) and that you are getting enough nutrients. Try and not drink sugary drinks or juice as these make your blood sugars go up very quickly. Artificially sweetened drinks are safe to drink in pregnancy (if you choose to use them).

Going for walks and being active will also help to manage your blood sugars while you are pregnant.

If your blood sugars aren't where they should be, you might be told you have to start insulin. Insulin won't harm the baby, in fact it will help. If mom's blood sugars are high in pregnancy, baby's little pancreas is working over time to control its' blood sugars. If baby receives too much fuel because mom's blood sugars are high, baby will develop a fat line and baby will be very big. This raises baby's risk of developing diabetes and obesity later in life. You are able to inject insulin into the sides of your tummy when pregnant and this will not harm the baby.

#### WHAT ARE THE RISKS TO MOM AND BABY?

If mom's blood sugars aren't controlled, baby can get too big and it can be a difficult delivery, there is also an increased risk of miscarriage and baby being stillborn. Baby may also be born with a low blood sugar because the sugar source from mom is cut off and baby's blood sugars will drop too low-this is high risk for baby. Baby being big increases their risk for diabetes and obesity in the future. Baby is also at higher risk for being born jaundice (yellow) which can increase how long baby has to be in hospital. You may be induced before your due date to make sure baby stays safe. Usually after delivery, mom's blood sugars will return to normal. Mom should be checked at 6 weeks to 6 months after delivery to make sure her blood sugars are normal because having GDM raises your risk of being diagnosed with Type 2 diabetes. Following a healthy lifestyle through eating healthy, being active and returning to a pre-pregnancy weight can help mom to not develop Type 2 diabetes.

#### **IF YOU HAVE DIABETES AND ARE PREGNANT**

If you already have Type 1 or 2 diabetes and are planning on having a baby, you need to talk to your healthcare provider and let them know. Having good blood sugar before becoming pregnant can help both mom and baby. A goal for your blood sugars before becoming pregnant would be having an A1c ( blood test measuring your 3 month average) of 7.0% or less.

Sometimes things happen and we find out we are pregnant and we didn't plan it. If you find out you are pregnant and you have diabetes, you HAVE to see your healthcare provider immediately. Having high blood sugars in pregnancy, can cause problems for mom and baby. If blood sugars aren't controlled, there is a higher risk of mom losing the baby through miscarriage, baby having malformations, baby being a stillbirth, baby being jaundice, baby having a low blood sugar at birth which puts baby at high risk, mom developing high blood pressure or mom having issues with her eyes. So, you need to see your healthcare provider as soon as you find out you are pregnant.

Insulin will be needed to help mom if you have Type 2 and you are on pills. Eating healthy balanced meals, being active and taking a prenatal vitamin (which has 1.0 mg folic acid), will be recommended for all moms. Moms should also be getting their eyes checked in the first trimester to make sure there are no issues and may need to have them checked again in the pregnancy depending on what the first test showed. Blood sugar targets are the same as for women who have gestational diabetes (see above). You will most likely be induced before your due date to make sure baby stays safe.

### **DIABETES AND TRAVEL**

#### This section adapted from the pamphlet Air Travel-Diabetes Canada

#### **IF YOU ARE TRAVELLING BY AIR:**

- Keep your medication, meal and snack times as regular as possible
- If traveling by air or car, try to do some form of activity during your trip: such as stretches in your seat, circle your ankles, raise your legs or move around once in awhile in the aisles.
- If traveling or hiking in remote areas, bring along a first aid kit and if you use insulin, glyburide or gliclazide, quick acting sugar to use if your blood sugars go too low. If you have Type 1 diabetes you will need a glucagon kit.
- Carry a list of medications (including the generic names and their dosages) from your pharmacist
- If you are going to be very active during your trip, you may need less diabetes medication, make sure to talk to your nurse practitioner, doctor or diabetes educator before you go.
- Always carry your insulin, pills and blood sugar meter and strips with you in your carry on. Do not pack it in your luggage as it will be exposed to changes in temperature and luggage can be lost.
- Blood sugar meters are safe to go

#### **STORING INSULIN WHEN YOU TRAVEL**

- Insulin must be stored properly because it can spoil if left in temperature that are too hot or too cold
- Insulin is good for 28 days at room temperature. If traveling in hot temperatures, store your insulin in an insulated bag with ice packs (do not put the insulin directly on the ice pack). If you are traveling in cold temperatures, keep your insulin close to your body to stop it from freezing.

through the x-ray machine at security, but insulin pumps, continuous glucose monitors and extra sensors for flash technology should not go through the x-ray machine

- You are allowed to carry liquids such as insulin, juice, or gels to treat low blood sugars even if the amounts are more then 100ml. Just make sure you tell the people at security when being screened
- Syringes and needles are allowed to be in your carry-on as long as you are carrying your injectable medication with you (insulin, Bydureon, Trulicity, Saxenda, Victoza, Byetta, Ozempic, Adelyxine)
- Have a letter from your doctor stating that you need to carry medicines or supplies because some airlines in some countries require you to. Syringes and needles can be an issue when entering some countries.
- Check with your doctor if you need to wear compression stockings because you may be sitting for long periods of time
- You can carry a small sharps container to store used needles and syringes while traveling.
- Take spare insulin pens, syringes and insulin as backups.
- If you can't wash your hands, carry alcohol swabs, baby wipes or hand sanitizer to clean your fingers before testing. Make sure your hands are dry before testing.

#### **TRAVELING ACROSS TIME ZONES:**

- You need to speak with your doctor or diabetes educator before making change when you take your medications when you travel
- When travelling east, your travel day will be shorter, if you lose more then 2 hours you may need fewer units of your longer acting insulin

#### YOU SHOULD ALWAYS HAVE A LETTER FROM YOUR DOCTOR STATING:

- Your diabetes treatment plan so doctors in the places you travel can understand your needs
- That you need to carry insulin pen needles, syringes and lancets as part of your diabetes treatment. Having this will help you at security

#### **OTHER TIPS:**

- Remember to make sure you drink enough water when you are traveling. It's easy to get dehydrated during air travel or in warmer climates, which can be dangerous if you are taking medications that make you pee out extra sugar (Forxiga, Invokana, Jardiance, Invokamet, Xigduo, Synjardy)
- Bring healthy snacks. A meal replacement bar or shake can save you if you aren't able to have a meal

- When travelling west, your day will be longer, if you gain more then 2 hours you may need extra short acting insulin and food.
- If you are crossing time zones you need to discuss your meal and insulin schedule with your doctor or diabetes educator.
- The supplies you need for your diabetes care. Be sure to keep syringes, needles, pens and lancets in the same boxes that they came in with the original prescription label on them.
- Traveling also can mean we eat more or walk more, which can cause higher or lower blood sugars. Make sure you bring extra strips for your blood sugar meter so you are able to test as often as you need.
- If you are walking more, make sure you have comfortable, proper fitting shoes. If you have lost any feeling in your feet from nerve damage, you may not notice if blisters or cuts have developed from shoes that don't fit properly.

#### **DIABETES AND DRIVING**

# Adapted from *Drive Safe with Diabetes* pamphlet, Diabetes Canada

If you are taking glyburide, gliclazide (diamicron), gliclazide MR(diamicron MR), repaglinide (gluconorm) or insulin, you have to make sure you have fast acting sugar in the car where you can reach it because these meds can cause low blood sugars.

Test your blood sugar before driving. Do not start driving if your blood sugar is below 4. For driving long distances you should be checking your blood sugar levels every 4 hours.

If you are feeling low, pull over and test. If you are below 4, treat with 15g of quick acting sugar (see hypoglycemia section) Wait until your blood sugar level is above 5 to start driving. Your brain might need 40 minutes to recover after you have treated a low before you can safely drive again.

Tell your healthcare provider if someone else had to help you with a low blood sugar.

# **SMOKING AND DIABETES**

If you already have diabetes, smoking makes it even more difficult to control your blood sugars. High blood sugars levels can lead to:

- Higher risk of a heart attack or stroke
- Higher risk of nerve damage and kidney problems
- Higher blood sugars and high blood pressure
- More colds or infections
- Damaged blood vessels which make it harder for the body to heal
- Problems with erections (getting it up)

The poisonous chemicals that you inhale from cigarette smoke attack your blood vessels and cause hardening of the arteries (atherosclerosis). This makes it harder for the body to carry oxygen throughout the body.

#### **HOW DO I QUIT?**

Speak with your health care provider. There are different aides available to help you through the process. Quitting is not easy. If you start smoking again, remember to never quit trying to quit smoking. Quitting smoking improves your health outlook immensely.



# **BENEFITS OF QUITTING SMOKING**

Adapted from https://www.nicorette.ca/get-ready-to-quit/health-benefits-of-quitting. Quitting smoking is difficult, but worth it in the long run. Your body changes even within minutes of quitting.

- AFTER 20 MINUTES: Your blood pressure and pulse rate return to normal.
- AFTER 8 HOURS: Oxygen levels in your blood return to normal. The levels of nicotine and carbon monoxide are reduced by more than half.
- AFTER 24 HOURS: Carbon monoxide has been eliminated from your body. Your lungs start to clear out mucus and other smoking debris.
- AFTER 48 HOURS: There's no nicotine left in your body. Your ability to taste and smell greatly improves.
- AFTER 72 HOURS: Breathing becomes easier. Your bronchial tubes begin to relax and your energy levels increase.

- AFTER 2 TO 12 WEEKS: Circulation improves throughout the body, making walking and running a whole lot easier.
- AFTER 3 TO 9 MONTHS: Coughs, wheezing, and breathing problems get better as your lung function is increased by up to 10 per cent.
- AFTER 1 YEAR: Your heart-attack risk reduces by half.
- **AFTER 5 YEARS:** Your heart-attack risk falls to about half that of a smoker.
- AFTER 10 YEARS: Risk of lung cancer falls to half that of a smoker. Risk of heart attack falls to same as someone who has never smoked.
# **DIABETES AND ALCOHOL**

Alcohol is generally very harmful to the body. The following conditions are common in diabetes, and alcohol causes even more damage:

- Eye disease
- High blood pressure
- Heart problems
- High blood fats (triglycerides or cholesterol)
- Liver problems
- Nerve damage (it can actually cause you to have more pain instead of less)
- Pancreas problems

Be careful if you are drinking alcohol and are taking any of the following medications:

- Glyburide
- Gliclazide (Diamicron)
- 📕 Gluconorm (Repaglinide)
- 📕 Insulin

These medications bring down your blood sugar levels and can cause you to have blood sugars that are too low. Drinking alcohol while taking them puts you at a higher risk of having a **low blood sugar level for up to 24 hours after drinking.** To stay safe, you should:

- Eat regular meals
- Have five or six hard candies or <sup>3</sup>/<sub>4</sub> cup regular pop or juice handy to treat a low blood sugar
- Have something to eat while drinking alcohol
- Make sure you are with someone who knows the signs and symptoms of low blood sugar so he or she can help if needed
- Get up on time the morning after drinking alcohol to take medication and food

#### **BEING ACTIVE AND DRINKING ALCOHOL**

Drinking alcohol, not eating enough and being active can be dangerous. Let's pretend you were out chopping wood for most of the day and you had taken your gliclazide (diamicron), glyburide, repaglinide (diamicron) or insulin as you normally would.

Glyburide, gliclazide and repaglinide cause your pancreas to pump more insulin out into your blood, just the same as taking insulin. This lowers your blood sugar levels.

If you worked through the day and didn't eat enough, your blood sugars will start to drop. You might start to feel funny (having a low), feeling shaky, sweaty. You decide to go inside and have a some hard liquor mixed with a diet drink instead of eating. This could cause your blood sugars to drop further. Your body will try to find sugar to help to bring your blood sugar up. The biggest storage tank of sugar in the body is the liver. When your blood sugar is dropping, your body sends a signal to the liver. It asks for sugar, but the liver responds and says, "Take a number, I'm busy processing the alcohol!" The liver does not release sugar to help bring your blood sugars up.



What happens then? If your blood sugars keep dropping, you can pass out. People may think you are drunk, but instead you are having a low blood sugar. If not treated, you might not wake up!

#### IF YOU ARE GOING TO DRINK ALCOHOL:

Follow these steps to help avoid serious health issues if you are taking insulin, glyburide, gliclazide (diamicron) or repaglinide (gluconorm) and drinking alcohol:

- Drink alcohol in moderation and with a meal. Ensure the meal has a carbohydrate – Eating carbs helps to keep your blood sugars up and having it with a meal lets the alcohol mix with everything else in your stomach and it is more slowly absorbed.
- Have some carbohydrate like bread, potato chips, or popcorn when drinking alcohol to keep your blood sugars up:
  - if you haven't had a meal
  - if you are worried you might have a low
- If there is no food around and you are worried you may have a low:
  - Keep alternating your drinks using regular pop as a mix for the first drink, then diet pop for the second, then regular pop for the third, then diet pop for the fourth and so on, so you have some sugar on board.
- You need to test your blood sugar before you go to bed.
- If you aren't able to test yourself, you need to get someone else to test for you.
- If your blood sugar is below 10 and you are taking insulin, have a snack with some carbohydrate in it (cheese and crackers or peanut butter on toast), to make sure your blood sugars don't go low overnight.

#### **IS THERE SUGAR IN ALCOHOL?**

- Beer and wine have sugar
- Hard liquor (rum, rye, vodka, gin etc.) does not have any sugar

If you use regular pop as a mix with your hard liquor, then your drink will have sugar. Even if your alcohol has sugar, we do not recommend taking extra pills or insulin to cover the sugar in it because of the risks of having a low blood sugar.

The greatest concern for your blood sugars when drinking alcohol is if you are taking glyburide, gliclazide, repaglinide and insulin and the possibility of having a low blood sugar.

# **DIABETES AND NARCOTICS**

#### **STIMULANTS**

Stimulants such as caffeine, nicotine, speed, crystal meth, ecstasy and cocaine raise blood pressure and heart rate and may also increase your body temperature. Low blood sugars can be a side effect when taking these drugs because the body will breakdown carbs faster. If people are taking glyburide, gliclazide, gluconorm or insulin they will be at a very high risk for low blood sugars. The drug may alter a person from feeling the signs of a low blood sugar.

Stimulants can cause loss of appetite, so people forget to eat. They also can give you a feeling that you are able to exercise for a long time without needing a break. Not eating and exercising too much can lead to low blood sugars if you are taking certain pills or insulin. Stimulants can also cause nausea, vomiting and dizziness shortly after taking them, which can cause dehydration. This is a problem for people who have Type 2 diabetes and are taking certain medications (see sick day rules for Type 2) or cause DKA in patients with Type 1 diabetes (see sick day rules Type 1).

Cocaine increases blood pressure, your risk of heart attacks and strokes and takes away your appetite (so you might skip meals). Meth changes how your body uses insulin and other hormones and can cause high blood sugars.

All stimulants can cause emotional problems such as depression, anxiety, paranoia, memory and sleep issues and physical changes which can further affect your blood sugar levels.

#### DEPRESSANTS

Heroin changes how your body uses certain hormones and affects your appetite. It can also cause liver, brain and lung damage, slowed breathing, blood vessel damage, bruising and poor circulation. If someone has high blood sugars and already has poor circulation, using heroin further increases their risk of blood vessel, organ damage, ulcers and amputations.

Regular street drug use can cause changes to a person's physical, mental and emotional state. Having diabetes on top of this can cause even more complications. Talk to a counsellor, elder or someone you trust if you are needing help with addictions.

# **DIABETES AND SEXUAL DYSFUNCTION**

Diabetes can cause some form of sexual dysfunction. Speak with your health care provider if you have concerns about sexual dysfunctions.

Sexual dysfunction can happen in both men and women when we have diabetes.

For women, the most common issues are lowered sex drive (desire), issues with lubrication, more pain on intercourse and issues with being aroused (turned on). Issues with lubrication and response can be do to nerve damage. Poorly controlled blood sugars can lead to urinary tract infections and yeast infections. Low sex drive can sometimes be because of depression or anxiety, which are more common in women with diabetes. Women can get help with some of these issues if they speak to their healthcare provider. If they are experiencing vaginal dryness, prescription and over-thecounter lubricants can be used. Kegel exercises, which strengthen the pelvic muscles, can also improve sexual response.

For men the most common issue is erectile dysfunction (ED) (which refers to a man not being able to get it up). It affects approximately 35-45 per cent of men with diabetes. Men can develop damage to the small blood vessels of the penis from high blood sugars. They also may have high blood pressure and high cholesterol which can also contribute to ED. Men can take a medication to help them with this and about 70-80 per cent of men find the medications helpful.

Men and women can help their sexual dysfunction by managing their diabetes through only drinking alcohol in moderation, getting enough exercise, eating as healthy a diet as possible and not smoking. All of these will help with blood sugar control and your sex life. If you are having any issues, please make sure to speak to a healthcare provider.

# DIABETES AND SLEEP APNEA

Sleep apnea is a disturbance in breathing during sleep. There are two kinds of sleep apnea.

**OBSTRUCTIVE SLEEP APNEA** is the most common type. It occurs when the back of the throat collapses, therefore obstructing breathing during sleep.

**CENTRAL SLEEP APNEA** occurs when the central nervous system fails to signal the lungs to continue breathing during sleep.

People with this disorder may stop breathing for one to two seconds for up to hundreds of times during the night.

Obstructive sleep apnea often happens in people who are overweight. Fat collects around the upper airways causing the airway to become narrow. This makes it difficult to breathe properly when laying down. This narrowing causes oxygen levels to go down. When this happens, the brain sends a signal to wake the person up, to take a breath. That's why people with sleep apnea stop and start breathing through the night. You may even hear them gasping for breath. When a person's airway is blocked, it triggers a "flight or fight" response. This produces high levels of cortisol, a hormone produced by the adrenal gland. Cortisol is a "stress hormone" produced during times of stress or anxiety. It increases blood pressure, blood sugars, reduces immune responses, and leads to insulin resistance. You can see that not sleeping properly can affect your blood sugar levels.

#### **SYMPTOMS OF SLEEP APNEA ARE:**

- A feeling of being tired and not getting enough sleep
- Exhaustion during the day, falling asleep at a stop sign or when driving long distances
- Interruption in breathing patterns during sleep
- Snoring

People who are not overweight can also have sleep apnea. If you or your partner think you may have sleep apnea, speak with your health care professional. They may have you do a sleep study. If you are diagnosed, you may have to wear a mask attached to a continuous positive airway pressure (CPAP) machine while sleeping. This provides you with oxygen to breathe.

# **SUGGESTED ACTION ITEMS:**

If you smoke, try to quit.



Learn the signs of sleep apnea.



If you suspect you have it, talk to your health care professional about having a sleep assessment completed.



If you use alcohol, learn more about how it affects you.



Take steps to reduce the harm that may be caused by using alcohol.

# GLOSSARY

THIS LIST CONTAINS SOME TERMS WE USE THROUGHOUT THE HANDBOOK, ALONG WITH A BRIEF EXPLANATION OF WHAT THESE TERMS MEAN. **ARTERIES** are large blood vessels. They carry blood from the heart to all parts of the body. The walls of the arteries are thicker, stronger, and more elastic than walls of veins.

AUTOIMMUNE DISEASE involves immune reactions in which something triggers the immune system to react against the body's own tissues and to produce abnormal antibodies that attack these tissues. An example is type 1 diabetes where our immune system accidentally kills the beta cells in our pancreas the make insulin. Once the beta cells die, the body can no longer make insulin.

**CARBOHYDRATES** such as sugar and starch in food break down into sugar in your blood. This is the main source of fuel for muscles and affects blood sugar more than any other nutrient. There are simple carbohydrates and complex carbohydrates.

**BODY MASS INDEX (BMI)** refers to a relationship between weight and height. It is a math formula that can be used to measure health risk. A BMI of 20 – 24.9 is considered healthy and as you go above 25 the risk to your health increases.

**CHOLESTEROL** is a whitish, waxy fat-like substance. It is made in large amounts by the liver and found in the blood, muscle, liver, brain, and other tissues. The body needs some cholesterol but too much may build up on the walls of arteries and cause the flow of blood to slow down or even stop.

**DIABETES** is caused when the pancreas does not make the right amount of insulin and/or your body does not use your insulin properly. How you might feel if you haven't been diagnosed is: being tired, peeing alot, being very thirsty, blurred vision, and sometimes weight loss.

**ENDOCRINOLOGIST** is a medical doctor who specializes in treating people who have problems with endocrine glands or hormones. The pancreas is an endocrine gland and insulin is a hormone. Some people call them their diabetes doctor. **FAT** is a source of energy for the body. It helps the body use some vitamins and keeps the skin healthy. The body stores energy in this form. There are four types of fats: saturated, unsaturated, trans, and polyunsaturated.

#### **GESTATIONAL DIABETES MELLITUS (GDM)**

Is diagnosed during pregnancy. GDM occurs between the 24th and 28th week of pregnancy. Hormones produced during pregnancy cause the body to not use insulin properly and mom's blood sugars go up. It can be controlled through diet and insulin is added if diet alone does not bring down blood sugars. Usually, mom's blood sugar levels return to normal after her baby is delivered.

**GLUCAGON** is a hormone made by the alpha cells in the pancreas. It does the opposite job of insulin. Instead of causing sugar to go into cells (like insulin does), it helps to bring sugar out of cells and into the blood.

**GLUCOSE** is sugar found in the blood. It comes from the food you eat. It is the body's main source of energy.

HDL is high-density lipoprotein. This is what is called good cholesterol.

**HEALTHCARE PROVIDER** is another way of referring to a health professional. This could include a medical doctor, nurse practitioner, nurse, dietitian, clinical social worker, clinical psychologist, midwife, optometrist, podiatrist, dentist, osteopath or chiropractor.

**HYPERGLYCEMIA** – when blood sugars are high.

**HYPOGLYCEMIA** refers to a low blood sugar. It is when blood sugar goes below 4. This can happen if a person has taken too much insulin; or medication such as Glyburide; has not eaten enough food, has skipped or missed a meal, or done extra activity . Symptoms include feeling nervous, shaky, hungry, weak, dizzy, sweaty, numb, tingling in tongue or lips, mood changes, blurred vision, and may have a headache.

#### **IMPAIRED FASTING GLUCOSE (IFG)** - is

prediabetes. Your numbers are not high enough to be told you have diabetes, but you are very close. IFG is when blood sugar is drawn first thing in the morning (after an 8 hour fast) and your numbers are between 6.1-6.9.

#### IMPAIRED GLUCOSE TOLERANCE (IGT) - is

prediabetes. Your blood is drawn 2 hours after drinking a sugary drink (75g oral glucose) and your numbers are between 7.8-11.0.

**INJECTION SITES** are places on the body where people inject insulin. Please see the diagram in this book for proper injection sites and rotation.

**INSULIN** is a hormone produced by the pancreas. It helps to let sugar into your cells so the body can use it for energy.

**INSULIN RESISTANCE** is when the body is not able to use its own insulin properly.

**LDL** is low-density lipoprotein. It is also known as bad cholesterol.

**LIPID** is a term used for fat. The body stores energy as fat for future use. When it needs energy, it breaks the lipids into fatty acids and burns them like sugar.

**METABOLISM** is a term that describes the way the cells change food so it can be used to give the body the nutrients we need to live. There are two parts to the process: catabolism – the body uses food for energy; and anabolism – the body uses food to build or mend cells.

**MINERALS** such as sodium, potassium, calcium, phosphorus, magnesium, and iron are important for regulating many body functions.

**MMOLS/L** is an abbreviation for millimoles. It refers to a measurement that measures the amount of sugar that contains a specific amount of atoms (Avagadro's number).-take this sentence out. In diabetes, we use it to count how much sugar there is in a specific amount of blood. **MULTIPLE DAILY INJECTIONS** also known as Multiple dose injection (MDI) therapy, and is an alternative term for the basal/bolus regime of injecting insulin. The therapy involves injecting a long acting insulin once or twice daily as a background (basal) dose and having further injections of rapid acting insulin at each meal time.2

**NEPHROPATHY** is kidney disease. It is caused by blood vessel damage to the kidneys. These are the body's filtering system.

**OBESITY** is when a person's body weight is 20 per cent over the ideal body weight for age and height.

**OPTIMAL** is most favourable or the best. Optimal levels refer to glucose levels within the normal range. They are associated with a low risk of developing chronic complications of diabetes.

**PANCREAS** lies just behind the stomach. It makes and releases the hormones: insulin and glucagon into the blood.

#### **PERIPHERAL VASCULAR DISEASE (PVD)**

refers to body wide circulation problems – blood flow to arms, legs, and feet are blocked, creating cramping, pain, or numbness.

**POLYUNSATURATED FATS** are liquid at room temperature, they are vegetable oils, and tend to lower the level of cholesterol in the blood.

**PROTEINS** are made up of amino acids. These are the building blocks for your body. They are necessary for growth and repair of body tissue and they come from meat products, fish, poultry, eggs, lentils, legumes, and milk.

**RETINOPATHY** is blood vessel damage in the eyes.

**SATURATED FATS** are solid at room temperature. They come from animal food products. They raise the level of cholesterol in the blood. **SEVERE HYPOGLYCEMIA** is defined as having low blood glucose levels that requires assistance from another person to treat. Severe hypoglycemia is classed as a diabetic emergency. It can occur in people with diabetes who take insulin and certain anti-diabetic tablets.3

**SUBOPTIMAL** level refers to blood sugars that aren't in range.

**TYPE 1 DIABETES** is an autoimmune disease. It is a result of the pancreas not making any insulin to take the sugar to the cells. The body does not get any energy because the sugar stays in the blood stream. People with type 1 diabetes always need to have insulin by injection every day to stay alive. The cause of this diabetes is unknown. **TYPE 2 DIABETES** is a genetic disease. The body cells don't use insulin properly (insulin resistance) or your pancreas is not producing enough insulin.

**UROLOGIST** is a medical doctor who specializes in urinary and genital conditions.

**VEIN** is a blood vessel. It carries blood from the body parts to the heart.

**VITAMINS** are important for metabolism and normal functioning of the body. These are present in small amounts in natural foods.

# HANDOUTS

# YOU WILL FIND THE FOLLOWING HANDOUTS IN THIS SECTION:

Risk Factors for Getting DiabetesSymptoms of DepressionMy Eating HabitsTips for Controlling Your Blood SugarSources of FatSources of SodiumTips for Increasing Fibre in Your LifeCreating Your Diabetes Health Care PlanWhen to See a Health Care ProfessionalIdeas for Getting ActiveTips for Managing StressCaring for Your FeetWhen to See a Health Care ProfessionalYou can download any of these handouts from www.nada.ca/resources.

# You are at risk of getting diabetes if you Are First Nations, Metis, or Inuit

#### YOUR FAMILY HISTORY:

HANDOUT 1

- Your family history is a fact of life.
- Diabetes has a genetic link and can be passed from generation to generation
- If you have people in your family who have diabetes, you are at a high risk of getting diabetes.

#### **ARE YOU OVERWEIGHT?**

- Do you carry extra weight around your stomach?
- If you do, this adds to your risk of getting diabetes

#### **IF YOU HAVE:**

- High blood pressure (also called hypertension)
   it is linked to obesity, heart disease, and diabetes
- High cholesterol (a type of fat in your blood)
- Heart disease
- Had gestational diabetes or given birth to a baby weighing over four kilograms or nine pounds
   it often leads to diabetes later in life
- Have polycystic ovarian syndrome (PCOS)
   see definition of PCOS below
- Have schizophrenia

• a mental health condition that makes it hard for a person to tell what is real and what is imaginary.

• It affects how people think, how people talk, how they behave, and how they show emotions

#### WHAT IS PCOS?

- Women who have a lot of cysts (small fluid sacks) on their ovaries
- This makes getting pregnant difficult
- Your periods may not be regular
- It may also be difficult to lose weight
- You may also have more facial or body hair
- Or a lot of pimples/acne

You can calculate your risk of getting diabetes by taking the CANRISK questionaire attached to this handout.

# HANDOUT 1

THE **CANADIAN** DIABETES RISK QUESTIONNAIRE

# CANRISK

# $\rightarrow$ Are you at risk?

The following questions will help you to find out if you are at higher risk of having pre-diabetes or type 2 diabetes. Pre-diabetes is a condition where a person's blood sugar levels are higher than normal, but not high enough to be diagnosed as diabetes. You can have pre-diabetes or undiagnosed type 2 diabetes without having any obvious warning signs or symptoms.

Knowing your risk can help you make healthy choices now that will reduce your risk or even prevent you from developing diabetes.

Please answer the questions as honestly and completely as you can. If you wish, a friend or family member can help you to complete this form. The answers to these questions are completely confidential. Answer all questions. Enter your scores for each question in the box on the right-hand side and then add them up to calculate your total risk score.

#### This questionnaire is intended for adults aged 40 to 74 years.

$\rightarrow$	ightarrow AS YOU GET OLDER, YOUR RISK OF DEVELOPING DIABETES GOES UP.																																
1.	Selec O 40 O 45 O 55 O 65	<b>ct you</b> -44 ye -54 ye -64 ye	ears ears ears ears ears	ige	gro	up:																		( 7 1: 1:	) p 7 p 3 p 5 p	oint oint oint oint	ts ts ts					Sco	ore
2.	2. Are you male or female?       O Male       6 points         O Male       0 points       0 points																																
$\rightarrow$	BOD	Y SH	IAF	ΡΕ /	١N	) S	IZE	C C	AN	AF	FE	СТ	YO	UR	RI:	SK	OF	DI	AB	ETE	ES.												
3. How tall are you and how much do you weigh? On the left-hand side of the BMI chart below, circle your height, then on the bottom of the chart circle your weight. Find the square on the chart where your height crosses with your weight, and note which shaded area you fall into. For example, if you were 5 feet 2 inches (or 157.5cm) and 163 pounds (or 74kg) you would fall in the LIGHT GREY area.																																	
	Select your BMI group from the following choices:0O White (BMI less than 25)0O Light grey (BMI 25 to 29)4Dark grey (BMI 30 to 34)9Dark grey (BMI 35 and over)14Desize (BMI 35 and over)14																																
	HEIGHT feet/																																
	6'4"	192.5	12	13	13	14	15	16	17	18	18	19	20	21 2	22	22	23	24	24	6	26	27	28	29	29	30	31	32	33	34			
		172.5																					20						34	34			
	6'3"	190	12	13	14	15	16	16	17	18	19	20	20	21 2	22	23	24	24	25 2	6	27	28	29	29	30	31	32	33		24			
	6'3" 6'2"	190 187.5	12 13	13 13	14 14	15 15	16 16	16 17	17 18	18 18	19 19	20 20	20 2 21 2	21 2 22 2	22 23	23 24	24 24	24 25	25 2 26 2	26 2 27 2	27 28	28 29	29 29	29 30	30 31	31 32	32 33	33 34	34	30			
	6'3" 6'2" 6'1"	190 187.5 185	12 13 13	13 13 14	14 14 15	15 15 15	16 16 16	16 17 17	17 18 18	18 18 19	19 19 20	20 20 21	20 2 21 2 22 2	21 2 22 2 22 2	22 23 23	23 24 24	24 24 25	24 25 26	25 2 26 2 27 2	26 2 27 2 28 2	27 28 29	28 29 29	29 29 30	29 30 31	30 31 32	31 32 33	32 33 34	33 34 34	34 36	36			
	6'3" 6'2" 6'1" 6'0"	190 187.5 185 182.5	12 13 13 13	13 13 14 14	14 14 15 15	15 15 15 16	16 16 16 17	16 17 17 18	17 18 18 19	18 18 19 20	19 19 20 20	20 20 21 21	20 2 21 2 22 2 22 2	21 2 22 2 22 2 23 2	22 23 23 24	23 24 24 24	24 24 25 26	24 25 26 27	25 2 26 2 27 2 28 2	26 2 27 2 28 2 29 2	27 28 29 29	28 29 29 30	29 29 30 31	29 30 31 32	30 31 32 33	31 32 33 34	32 33 34 34	33 34 34 36	34 36 37	38 37 38			
	6'3" 6'2" 6'1" 6'0" 5'11"	190 187.5 185 182.5 180	12 13 13 13 13 14	13 13 14 14 15	14 14 15 15 15	15 15 15 16 16	16 16 16 17 17	16 17 17 18 18	17 18 18 19 19	18 18 19 20 20	19 19 20 20 21	20 20 21 21 21 22	20 2 21 2 22 2 22 2 23 2	21     2       22     2       22     2       23     2       24     2	22 23 23 24 24	23 24 24 24 24 26	24 24 25 26 27	24 25 26 27 27	25 2 26 2 27 2 28 2 28 2	26 2 27 2 28 2 29 2 29 2	27 28 29 29 30	28 29 29 30 31	29 29 30 31 32	29 30 31 32 33	30 31 32 33 34	31 32 33 34 34	32 33 34 34 36	33 34 34 36 37	34 36 37 38	38 37 38 39			
	6'3" 6'2" 6'1" 6'0" 5'11" 5'10"	190 187.5 185 182.5 180 177.5	12 13 13 13 14 14	13 13 14 14 15 15	14 14 15 15 15 16	15 15 15 16 16 17	16 16 17 17 17 18	16 17 17 18 18 18 19	17 18 18 19 19 20	18 18 19 20 20 21	19 19 20 20 21 22	20 20 21 21 22 23 23	20     1       21     1       22     1       22     1       23     1       23     1	21     2       22     2       22     2       23     2       24     2       25     2	22 23 23 24 24 25	23 24 24 24 26 26 26	24 24 25 26 27 27 27	24 25 26 27 27 28	25 2 26 2 27 2 28 2 28 2 29 3	26 2 27 2 28 2 29 2 29 2 29 3 29 3 20 3	27 28 29 29 30 31	28 29 29 30 31 32	29 29 30 31 32 33	29 30 31 32 33 34	30 31 32 33 34 34	31 32 33 34 34 36	32 33 34 34 36 37	33 34 34 36 37 38	34 36 37 38 39	38 37 38 39 40			
	6'3" 6'2" 6'1" 6'0" 5'11" 5'10" 5'9"	190 187.5 185 182.5 180 177.5 175	12 13 13 13 14 14 14	13 13 14 14 15 15 15 15	14 14 15 15 15 16 16 16	15 15 15 16 16 17 17	16 16 17 17 17 18 18 18	16 17 17 18 18 19 19 20	17 18 18 19 19 20 20 21	18 18 19 20 20 21 21 21	19 19 20 20 21 22 22 22	20 20 21 21 22 23 23 23	20     2       21     2       22     2       23     2       23     2       24     2	21     2       22     2       22     2       23     2       24     2       25     2	22 23 23 24 24 25 26 27	23 24 24 24 26 26 27 28	24 24 25 26 27 27 28 28	24 25 26 27 27 28 29 29	25 2 26 2 27 2 28 2 28 2 28 2 29 3 30 3	26     2       27     2       28     2       29     2       30     3       31     3	27 28 29 29 30 31 32	28 29 30 31 32 33	29 29 30 31 32 33 34 24	29 30 31 32 33 34 34 24	30 31 32 33 34 34 36 27	31 32 33 34 34 36 37 29	32 33 34 34 36 37 38 29	33 34 34 36 37 38 39	34 36 37 38 39 40	38 37 38 39 40 41			
	6'3" 6'2" 6'1" 6'0" 5'11" 5'10" 5'9" 5'8" 5'8"	190 187.5 185 182.5 180 177.5 175 172.5 170	12 13 13 13 14 14 14 15 15	13 13 14 14 15 15 15 16 16	14 14 15 15 15 16 16 17 17	15 15 16 16 17 17 17 18	16 16 17 17 17 18 18 18 19	16 17 17 18 18 19 19 20 20	17 18 18 19 19 20 20 21 21	18 18 19 20 20 21 21 21 22 22	19 19 20 21 22 22 22 23 24	20 20 21 21 22 23 23 23 24 24	20       2         21       2         22       2         23       2         24       2         24       2	21     2       22     2       22     2       23     2       24     2       25     2       26     2	22 23 23 24 24 24 25 26 27 28	23 24 24 24 26 26 26 27 28 28	24 24 25 26 27 27 27 28 29 29	24 25 26 27 27 28 29 29 29 31	25     2       26     2       27     2       28     2       28     2       30     3       31     3	26     2       27     2       28     2       29     2       29     2       20     3	27 28 29 29 30 31 32 33 34	28 29 30 31 32 33 34 34	29 29 30 31 32 33 34 34 34	29 30 31 32 33 34 34 34 36	30 31 32 33 34 34 34 36 37 38	31 32 33 34 34 34 36 37 38 38	32 33 34 34 36 37 38 39 40	33 34 34 36 37 38 39 40	34 36 37 38 39 40 41	30 37 38 39 40 41 42 43			
	6'3" 6'2" 6'1" 6'0" 5'11" 5'10" 5'9" 5'8" 5'8" 5'7" 5'6"	190 187.5 185 182.5 180 177.5 175 172.5 170 167.5	12 13 13 13 14 14 14 14 15 15 15	13 13 14 14 15 15 15 16 16 16	14 14 15 15 15 16 16 17 17 17	15 15 16 16 17 17 17 18 18 18	16 16 17 17 18 18 18 19 19 20	16 17 17 18 18 19 19 20 20 20 21	17 18 18 19 19 20 20 21 21 21 22	18         18         19         20         21         21         22         22         23	19 19 20 21 22 22 23 23 24 24	20 20 21 21 22 23 23 23 24 24 24 25	20       2         21       2         22       2         23       2         23       2         24       2         24       2         26       2	21       2         22       2         23       2         24       2         25       2         26       2         27       2	22 23 23 24 24 24 25 26 27 28 29	23 24 24 26 26 26 27 28 29 29	24 24 25 26 27 27 28 29 29 31	24 25 26 27 27 28 29 29 29 31 32	25       2         26       2         27       2         28       2         29       3         31       3         33       3	26     2       27     2       28     2       29     2       30     2       33     2       34     2	27 28 29 29 30 31 32 33 34 34	28 29 30 31 32 33 34 34 34	29 29 30 31 32 33 34 34 34 36 37	29 30 31 32 33 34 34 34 36 37 38	30 31 32 33 34 34 34 36 37 38 39	31 32 33 34 34 36 37 38 39 40	32 33 34 34 36 37 38 39 40 41	33 34 34 36 37 38 39 40 41 42	34 36 37 38 39 40 41 42 42	30 37 38 39 40 41 42 43			
	6'3" 6'2" 6'1" 6'0" 5'11" 5'10" 5'9" 5'8" 5'7" 5'6" 5'5"	190 187.5 185 182.5 180 177.5 175 172.5 170 167.5 165	12 13 13 14 14 14 15 15 16 16	13 13 14 14 15 15 15 16 16 17 17	14 14 15 15 15 16 16 16 16 17 17 17 18	15 15 16 16 17 17 17 18 18 18 19 19	16 16 17 17 18 18 19 19 20 21	16 17 18 18 19 19 20 20 20 21 22	17 18 19 19 20 20 21 21 21 22 23	18 18 19 20 21 21 21 22 22 23 23	19 19 20 21 22 22 23 23 24 24 24 24	20 20 21 21 22 23 23 23 24 24 24 25 26	20       2         21       2         22       2         23       2         24       2         26       2         27       2	21     2       22     2       22     2       23     2       24     2       25     2       26     2       27     2       28     2	22 23 24 24 24 25 26 27 28 29 29	23 24 24 26 26 27 28 29 29 30	24 24 25 26 27 27 28 29 29 31 32	24 25 26 27 27 28 29 29 31 32 33	25       2         26       2         27       2         28       2         29       3         31       3         32       3         33       3	26     2       27     2       28     2       29     2       29     2       30     2       31     2       33     2       34     2	27 28 29 29 30 31 32 33 34 34 34	28 29 30 31 32 33 34 34 34 34 34 37	29 29 30 31 32 33 34 34 34 36 37 38	29 30 31 32 33 34 34 34 34 36 37 38 39	30 31 32 33 34 34 34 36 37 38 39 40	31 32 33 34 34 36 37 38 39 40 42	32 33 34 34 36 37 38 39 40 41 43	33 34 34 36 37 38 39 40 41 42 44	34 36 37 38 39 40 41 42 43 45	36         37         38         39         40         41         42         43         45         46			
	6'3" 6'2" 6'1" 6'0" 5'11" 5'10" 5'9" 5'8" 5'8" 5'7" 5'6" 5'5" 5'4"	190 187.5 185 182.5 180 177.5 175 175 172.5 170 167.5 165 162.5	12 13 13 14 14 14 15 15 16 16 16	13 13 14 14 15 15 15 16 16 16 17 17 17	14       14       15       15       16       16       17       17       18       18       19	15 15 16 16 17 17 17 18 18 18 19 19 20	16 16 17 17 18 18 18 19 19 20 21 21	16 17 18 18 19 19 20 20 20 21 22 22	17 18 19 19 20 20 21 21 21 22 23 23	18         18         19         20         21         21         22         23         24	19         20         20         21         22         23         24         24         24         24         24         24         24         24	20 20 21 21 22 23 23 23 24 24 24 25 26 27	20     2       21     2       22     2       23     2       23     2       24     2       26     2       27     2	21     2       22     2       22     2       23     2       24     2       25     2       26     2       27     2       28     2       29     3	222 233 223 224 224 225 225 226 227 228 229 229 229 230	23 24 24 26 26 27 28 29 29 29 30 31	24 24 25 26 27 27 28 29 29 31 32 33	24 25 26 27 27 28 29 29 31 32 33 34	25       2         26       2         27       2         28       2         29       3         30       3         32       3         33       3         34       3	16     1       17     1       18     1       19     1       10     1       11     1       12     1       13     1       14     1       14     1	27 28 29 29 30 31 32 33 34 34 34 36 37	28 29 30 31 32 33 34 34 34 34 34 34 34 34 34 34 34 34	29 29 30 31 32 33 34 34 34 34 34 34 34 34 34 34 34 34	29 30 31 32 33 34 34 34 36 37 38 39 41	30 31 32 33 34 34 36 37 38 39 40 42	31 32 33 34 34 36 37 38 39 40 42 43	32 33 34 34 36 37 38 39 40 41 43 44	33 34 34 36 37 38 39 40 41 42 44 45	34 36 37 38 39 40 41 42 43 45 45	36           37           38           39           40           41           42           43           45           46           47			
	6'3" 6'2" 6'1" 6'0" 5'11" 5'10" 5'9" 5'8" 5'7" 5'6" 5'5" 5'4" 5'3"	190 190 187.5 185 182.5 180 177.5 175 172.5 170 167.5 165 162.5 160	12 13 13 14 14 14 15 15 15 16 16 17 17	13 13 14 14 15 15 15 16 16 16 17 17 17 18 18	14       14       15       15       16       16       17       18       18       19       20	15 15 15 16 16 17 17 18 18 19 19 20 21	16 16 17 17 18 18 18 19 19 20 21 21 21 22	16 17 17 18 18 19 20 20 20 21 22 22 22 23	17 18 19 19 20 20 21 21 21 22 23 23 23 24	18         18         19         20         21         21         22         23         24         25	19         19         20         21         22         23         24         24         24         24         24         25         27	20 20 21 21 22 23 23 23 24 24 24 24 25 26 27 28	20       2         21       2         22       2         23       2         23       2         24       2         26       2         27       2         28       2	21       2         22       2         23       2         24       2         25       2         26       2         27       2         28       2         29       3         30       3	222 223 223 223 223 224 224 224 225 225 226 227 228 229 229 229 229 229 229 231 225 225 225 225 225 225 225 225 225 22	23 24 24 26 26 27 28 29 29 30 31 32	24 24 25 26 27 27 27 28 29 29 31 32 33 34	24 25 26 27 27 28 29 29 31 32 33 33 34 34	25       2         26       2         27       2         28       2         29       3         30       3         31       3         33       3         34       3         36       3	26     2       27     2       28     2       29     2       29     2       30     3       31     3       33     3       33     3       344     3       360     3       360     3	27 28 29 29 30 31 32 33 34 34 34 36 37 38	28 29 29 30 31 32 33 34 34 34 36 37 38 39	29 29 30 31 32 33 34 34 34 34 34 34 36 37 38 39 41	29 30 31 32 33 34 34 34 36 37 38 39 41 42	30 31 32 33 34 34 36 37 38 39 40 42 43	31 32 33 34 34 36 37 38 39 40 42 43 44	32 33 34 36 37 38 39 40 41 43 44 45	33 34 34 36 37 38 39 40 41 42 44 45 46	34 36 37 38 39 40 41 42 43 45 46 48	38         37           38         39           40         41           42         43           45         46           47         49			
	6'3" 6'2" 6'1" 5'11" 5'10" 5'9" 5'8" 5'7" 5'6" 5'5" 5'4" 5'3" 5'2"	190 190 187.5 185 182.5 180 177.5 175 172.5 170 167.5 165 165 162.5 160 157.5	12 13 13 14 14 14 15 15 16 16 16 17 17 18	13         14         14         15         15         15         16         17         18         18         19	14       14       15       15       16       16       17       18       18       19       20       20	15 15 15 16 16 17 17 18 18 18 19 20 21 21	16         16         16         17         17         18         19         20         21         22         23	16         17         18         18         19         20         21         22         23         24	17 18 19 19 20 20 21 21 22 23 23 23 23 24 24	18 18 19 20 21 21 22 22 23 24 24 24 24 25 26	19         19         20         21         22         23         24         24         24         24         24         25         27         23         24         25         26         27         27         27	20 20 21 21 22 23 23 24 24 24 25 26 27 28 29	20     2       21     2       22     2       23     2       23     2       24     2       26     2       27     2       28     2       29     2	21       2         22       2         23       2         24       2         25       2         26       2         27       2         28       2         29       3         30       3         31       3	222 23 23 23 24 24 25 26 27 28 28 29 29 29 30 31 32	23 24 24 26 26 27 28 29 29 29 30 31 32 33	24 24 25 26 27 27 27 28 29 29 31 32 33 34 33	24 25 26 27 27 28 29 29 31 32 33 34 34 34 36	25       2         26       2         27       2         28       2         29       3         31       3         32       3         33       3         34       3         36       3	26       2         27       2         28       2         29       2         29       2         30       2         33       2         33       2         34       2         44       2         44       2         45       2         38       4	27 28 29 29 30 31 33 33 33 34 33 34 33 34 33 33 34 34	28 29 29 30 31 32 33 34 34 34 36 37 38 39 41	29 29 30 31 32 33 34 34 34 34 34 34 34 34 34 34 34 37 38 37 41 42	29 30 31 32 33 34 34 34 34 34 34 34 37 38 39 41 42 43	30 31 32 33 34 34 36 37 38 39 40 42 43 44	31 32 33 34 34 36 37 38 37 38 39 40 42 43 44 44	32 33 34 34 36 37 38 39 40 41 43 44 45 47	33 34 34 36 37 38 39 40 41 42 44 45 46 48	34 36 37 38 39 40 41 42 43 45 45 46 48 49	36           37           38           39           40           41           42           43           45           46           47           49           50			
	6'3" 6'2" 6'1" 6'0" 5'11" 5'10" 5'9" 5'8" 5'7" 5'6" 5'5" 5'4" 5'3" 5'2" 5'1"	1900 1900 187.5 185 182.5 1800 177.5 172.5 1700 167.5 165 165 162.5 160 157.5 155	12 13 13 14 14 14 15 15 16 16 16 17 17 17 18 18	13 13 14 15 15 15 16 16 16 17 17 18 18 18 19 20	14       14       15       15       16       17       18       19       20       21	15 15 15 16 16 17 17 17 17 18 18 19 20 21 21 21 22	16         16         17         17         18         19         20         21         21         22         23	16         17         18         18         19         20         21         22         23         24	17 18 19 19 20 20 21 21 21 21 22 23 23 23 24 24 24 26	18 18 19 20 21 21 21 22 23 23 24 24 25 26 27	19       19       20       21       22       23       24       24       24       24       24       24       25       27       28	20 20 21 21 22 23 23 23 24 24 25 26 27 28 29 29	20       2         21       2         22       2         23       2         23       2         24       2         26       2         27       2         28       2         29       2         31       3	21       2         22       2         23       2         24       2         25       2         26       2         27       2         28       2         29       3         30       3         31       3	222 23 23 23 23 24 24 24 24 25 25 26 27 28 29 29 29 29 29 29 30 31 32 33 2	23 24 24 24 26 26 27 28 29 29 29 30 31 32 33 33	24 24 25 26 27 27 27 28 29 29 31 32 33 33 34 34 34 36	24 25 26 27 27 28 29 29 29 31 32 33 34 34 34 33 34 33	25       2         26       2         27       2         28       2         29       3         31       3         32       3         33       3         34       3         36       3         37       3	26       2         27       2         28       2         29       2         20       2         31       2         32       2         33       2         44       2         44       2         44       2         46       2         38       4         40       2         43       2         44       2         44       2         46       2         47       2         48       4	27 28 29 29 30 31 33 33 33 33 33 33 33 33 33 33 33 33	28 29 29 30 31 32 33 34 34 34 36 37 38 39 41 42	29 29 30 31 32 33 34 34 34 34 34 36 37 38 37 41 42 43	29 30 31 32 33 34 34 34 34 34 34 34 38 39 41 42 42 43	<ul> <li>30</li> <li>31</li> <li>32</li> <li>33</li> <li>34</li> <li>34</li> <li>36</li> <li>37</li> <li>38</li> <li>39</li> <li>40</li> <li>42</li> <li>43</li> <li>44</li> <li>46</li> </ul>	31 32 33 34 34 36 37 38 39 40 42 43 44 46 47	32 33 34 34 36 37 38 37 38 39 40 41 43 44 45 47 48	33 34 34 36 37 38 39 40 41 42 44 45 46 48 50	34 36 37 38 39 40 41 42 43 45 46 48 49 51	36 37 38 39 40 41 42 43 45 46 47 49 50 52			
	6'3" 6'2" 6'1" 6'0" 5'11" 5'10" 5'9" 5'8" 5'7" 5'8" 5'5" 5'4" 5'3" 5'3" 5'2" 5'1" 5'0"	190 190 187.5 185 182.5 180 177.5 175 175 172.5 170 167.5 165 165 162.5 160 157.5 155 152.5	12 13 13 14 14 14 15 15 16 16 16 17 17 17 18 18 19	13 13 14 14 15 15 15 16 16 17 17 17 18 18 18 19 20 20	14       14       15       15       16       16       17       18       19       20       20       21	15 15 15 16 16 17 17 18 18 19 19 20 21 21 21 22 23	16         16         17         17         18         19         20         21         21         22         23         24	16         17         18         18         19         20         21         22         22         23         24         25	17 18 19 19 20 20 21 21 22 23 23 23 24 24 24 26 27	18           18           19           20           21           22           23           24           25           26           27           28	19       19       20       21       22       23       24       24       24       26       27       28       29	20 20 21 21 22 23 23 23 24 24 25 26 27 28 29 29 29 31	20       2         21       2         22       2         23       2         23       2         23       2         23       2         24       2         26       2         26       2         27       2         28       2         29       2         31       3	21         2           22         2           22         2           23         2           24         2           24         2           25         2           26         2           27         2           28         2           27         2           28         2           29         3           30         3           31         3           32         3	222 23 23 24 24 24 25 26 27 28 27 28 29 29 29 30 31 32 33 34	23 24 24 24 26 26 27 28 29 29 30 31 31 32 33 34 36	24 24 25 26 27 27 27 28 29 29 29 31 32 33 34 34 34 34 33	24 25 26 27 27 28 29 29 31 32 33 34 34 34 34 33 33 34 33 33 34 33 33	25       2         26       2         27       2         28       2         28       2         29       3         30       3         31       3         32       3         33       3         34       3         36       3         37       3         38       4         40       4	27       2         27       2         28       2         29       2         30       2         31       2         33       2         33       2         44       2         44       2         43       2         44       2         45       2         46       2         47       2         48       4         49       2         40       4	27 28 29 29 30 31 32 33 34 33 34 33 34 33 34 33 34 40 41 42	28 29 30 31 32 33 34 34 34 34 34 37 38 37 41 42 43	29 29 30 31 32 33 34 34 34 34 34 34 37 38 39 41 42 43 45	29 30 31 32 33 34 34 34 36 37 38 39 41 42 43 45 46	30 31 32 33 34 34 34 34 34 34 37 38 39 40 42 43 44 46 47	31 32 33 34 34 36 37 38 37 38 39 40 42 43 40 42 43 44 44 46 47 49	32 33 34 34 36 37 38 39 40 41 43 44 45 47 48 50	33 34 34 36 37 38 39 40 41 42 44 45 46 48 50 51	34 36 37 38 39 40 41 42 43 45 45 46 48 49 51 52	36 37 38 39 40 41 42 43 45 45 46 47 49 50 52 52 54			
	6'3" 6'2" 6'1" 5'11" 5'10" 5'9" 5'8" 5'7" 5'8" 5'5" 5'4" 5'3" 5'2" 5'1" 5'0" 4'11"	190 190 187.5 185 182.5 180 177.5 175 175 175 167.5 165 162.5 160 157.5 155 152.5 150	12 13 13 14 14 14 15 15 16 16 17 17 17 18 18 18 19 20	13 13 14 14 15 15 15 16 16 17 17 17 18 18 18 19 20 20 21	14       14       15       15       16       17       18       19       20       21       21       22	15 15 15 16 17 17 17 18 18 19 20 21 21 22 23 24	16         16         17         18         19         20         21         22         23         23         24	16         17         18         18         19         20         21         22         23         24         25         26	17 18 19 19 20 20 21 21 23 23 23 23 24 24 24 26 27 28	18 18 19 20 21 21 22 23 24 23 24 24 25 26 27 28 29	19       19       20       21       22       23       24       24       24       24       24       25       27       28       29       30	20 20 21 21 22 23 23 24 24 25 26 27 28 29 29 29 31 32	20         2           21         2           22         2           23         2           23         2           23         2           24         2           24         2           26         2           26         2           27         2           28         2           29         2           31         3           33         2	21       2         22       2         22       2         23       2         24       2         25       2         26       2         27       2         28       2         27       2         28       2         29       3         30       3         31       2         33       3         33       3         334       3	222 23 23 223 223 223 224 224 225 226 227 228 229 229 229 229 230 231 232 233 233 234 236 235 235 235 235 235 235 235 235 235 235	23       24       24       24       24       26       27       28       29       20       31       32       33       34       36       37	24 24 25 26 27 27 27 28 29 29 29 31 32 33 34 34 34 36 37 38 38	24       25       26       27       28       29       21       32       33       34       36       37       38       40	25       2         26       2         27       2         28       2         28       2         30       3         31       3         32       3         33       3         34       3         37       3         38       4         40       4	26       2         27       2         28       2         29       2         30       2         31       2         32       2         33       2         34       2         38       4         44       2         38       4         38       4         39       4         30       4         38       4         39       4         44       1         45       1         46       1         47       1         40       1         41       1         42       2	27 28 29 29 30 31 32 33 34 34 34 34 34 34 34 34 34 40 41 42 44	28         29         30         31         32         33         34         36         37         38         39         41         42         43	29         29         30         31         32         33         34         36         37         38         39         41         42         43         45	29 30 31 32 33 34 34 34 36 37 38 39 41 42 43 45 45 46 48	30 31 32 33 34 34 36 37 38 39 40 42 43 40 42 43 44 46 47 49	31 32 33 34 34 36 37 38 39 40 42 43 40 42 43 44 46 47 49 50	32 33 34 34 36 37 38 39 40 41 43 44 45 47 48 50 52	33           34           34           36           37           38           39           40           41           42           44           45           46           48           50           51           53	34           36           37           38           39           40           41           42           43           45           46           48           49           51           52           54	36 37 38 39 40 41 42 43 45 46 45 46 47 49 50 52 54 56			
	6'3" 6'2" 6'1" 5'11" 5'9" 5'8" 5'7" 5'6" 5'5" 5'4" 5'3" 5'2" 5'1" 5'0" 4'11" 4'10"	190 190 187.5 185 182.5 180 177.5 172.5 172.5 160 167.5 160 157.5 155 152.5 150 147.5	12 13 13 14 14 14 15 15 16 16 16 17 17 17 18 18 19 20 20	13         13         14         15         15         16         16         17         18         19         20         21         22	14         14         15         15         16         17         18         19         20         21         21         22         23	15 15 15 16 17 17 17 18 18 19 20 21 21 22 23 24 24 24	16         16         17         17         18         19         20         21         22         23         24         26	16         17         18         18         19         20         21         22         23         24         25         26         27	17 18 18 19 20 20 21 21 21 23 23 23 23 24 24 24 26 27 28 28	18         18         19         20         21         21         22         23         24         25         26         27         28         29         29	19       19       20       21       22       23       24       24       24       26       27       28       29       300       31	20 20 21 21 22 23 23 24 24 24 25 26 27 28 29 29 29 31 32 33	20         22           21         2           22         2           23         2           23         2           23         2           24         2           24         2           26         2           26         2           27         2           28         2           29         3           31         32           33         34	21         2           22         2           22         2           22         2           22         2           22         2           24         2           24         2           24         2           24         2           24         2           25         2           26         2           27         2           28         2           29         3           300         3           31         3           333         3           334         3           335         3	222 23 23 223 223 223 224 224 224 225 226 227 228 229 229 229 230 231 232 233 334 233 333 3	23       24       24       24       24       24       24       24       26       27       28       29       30       31       32       33       34       36       37       38	24 24 25 26 27 27 27 28 29 29 29 31 32 33 34 34 34 34 34 34 34 34 34 34 34 34	24 25 26 27 27 28 29 29 29 29 31 32 33 34 34 34 34 36 37 38 40 40 41	25       2         26       2         27       2         28       2         28       2         30       2         331       2         332       2         334       2         334       2         338       2         40       4         42       4	27       2         28       2         29       2         29       2         29       2         30       3         32       3         33       2         34       2         366       2         37       2         38       4         44       2         38       4         40       4         41       4         42       4	27 28 29 29 30 31 32 33 33 33 33 33 33 33 33 33 33 33 33	28         29         30         31         32         33         34         36         37         38         39         41         42         43         45         46	29       29       30       31       32       33       34       34       36       37       38       39       41       42       43       45       46       48	29 30 31 32 33 34 34 34 34 34 34 34 34 39 41 42 43 45 46 48 49	30 31 32 33 34 34 36 37 38 37 38 37 40 42 43 44 46 47 49 51	31 32 33 34 34 36 37 38 39 40 42 43 44 45 47 49 50 52	32 33 34 34 36 37 38 39 40 41 43 44 45 47 48 50 52 52 53	33           34           34           36           37           38           39           40           41           42           44           45           46           48           50           51           53           55	34           36           37           38           39           40           41           42           43           45           46           48           49           51           54           56	36 37 38 39 40 41 42 43 45 44 43 45 46 47 49 50 52 54 56 55			
	6'3" 6'2" 6'1" 5'11" 5'9" 5'8" 5'7" 5'8" 5'5" 5'4" 5'3" 5'4" 5'3" 5'2" 5'1" 5'0" 4'11" 4'10" 4'9"	190 190 187.5 185 182.5 180 177.5 172.5 172.5 170 167.5 162.5 155 155 155 150 147.5 150 147.5	12 13 13 14 14 14 15 15 16 16 17 17 17 18 18 18 19 20 20 21	13         13         14         15         15         16         16         17         18         19         20         21         22         22	14         14         15         15         15         16         17         18         19         20         21         22         23         24	15         15         16         17         17         18         19         20         21         22         23         24         25	16         16         16         17         18         18         19         20         21         22         23         24         24         26         27	16         17         18         18         19         20         21         22         23         24         25         26         27         28	17 18 18 19 20 20 21 21 22 23 23 24 24 24 24 24 26 27 28 28 28 29	18         18         19         20         21         22         23         24         25         26         27         28         29         31	19         19         20         21         22         23         24         24         24         26         27         28         29         300         31         32	20 20 21 21 22 23 23 24 24 24 24 25 26 27 28 29 29 31 32 33 34	20       22         21       2         22       2         23       2         23       2         24       2         24       2         26       2         27       2         28       2         29       2         31       3         32       33         34       35	21       2         22       2         22       2         22       2         22       2         22       2         24       2         24       2         24       2         24       2         25       2         26       2         27       2         28       2         29       2         30       3         31       2         33       3         33       3         34       3         35       3         37       2	222 23 23 22 23 22 22 23 22 22 22 22 22	23       24       24       24       24       24       24       24       24       24       26       27       28       29       29       30       31       32       33       34       36       37       38       39	24       24       25       26       27       28       29       29       31       32       33       34       36       37       38       40       41	24       25       26       27       28       29       21       32       33       34       36       37       38       40       41       42	25       2         26       2         27       2         28       2         28       2         29       2         30       2         33       3         34       2         36       3         37       3         38       4         40       4         42       4	27       2         27       2         28       2         29       2         29       2         30       2         33       2         34       2         44       2         44       2         44       2         44       2         44       2         40       4         41       4         42       4         44       4         44       4         44       4         44       4         44       4         44       4         44       4         44       4         44       4	27       28       29       29       30       31       32       33       34       36       37       38       40       41       42       44       45       47	28           29           30           31           32           33           34           34           34           34           34           34           34           34           35           37           38           39           41           42           43           45           46           48	29       29       30       31       32       33       34       34       36       37       38       39       41       42       43       45       46       48       49	29 30 31 32 33 34 34 34 36 37 38 39 41 42 43 45 46 48 49 51	30 31 32 33 34 34 36 37 38 37 38 39 40 42 43 44 45 47 49 51 52	31 32 33 34 34 36 37 38 39 40 42 43 40 42 43 44 46 47 49 50 52 52 54	32 33 34 34 36 37 38 39 40 41 43 44 45 47 48 50 52 53 55	33           34           36           37           38           39           40           41           42           44           45           46           48           50           51           52           57	34           36           37           38           39           40           41           42           43           45           46           48           49           51           52           54           55	36 37 38 39 40 41 42 43 45 45 45 45 50 52 54 55 57 59			
	6'3" 6'2" 6'1" 5'11" 5'10" 5'8" 5'7" 5'5" 5'5" 5'5" 5'4" 5'3" 5'2" 5'1" 5'2" 5'1" 5'2" 5'1" 5'2" 4'11" 4'10" 4'9" 4'8"	190 190 187.5 185 182.5 180 177.5 172.5 172.5 167.5 165 162.5 160 157.5 155 152.5 150 147.5 147.5 145 145	12 13 13 14 14 14 15 15 16 16 17 17 17 18 18 18 19 20 20 20 21 22	13         14         14         15         16         17         18         19         20         21         22         22         22         23	14         14         15         15         15         16         17         18         19         20         21         22         23         24	15 15 15 16 17 17 17 18 18 18 19 20 21 21 21 22 23 24 24 22 24 22 22	16         16         16         17         18         19         20         21         22         23         23         24         24         25         27         28	16         17         18         19         19         20         21         22         23         24         25         26         27         28         29	17 18 19 19 20 21 21 21 22 23 23 24 24 24 24 24 24 24 26 27 28 28 28 29 31	18         18         19         20         21         21         22         23         24         25         26         27         28         29         31         32	19         19         20         21         22         23         24         24         24         26         27         28         29         30         31         32         33	20 20 21 21 22 23 23 24 24 25 26 27 28 29 29 31 32 33 34 34	20       22         21       22         22       23         23       23         24       2         24       2         26       2         27       2         28       2         29       3         31       3         33       3         34       3         35       3         36       3	21       2         22       2         22       2         23       2         24       2         24       2         25       2         26       2         27       2         27       2         27       2         30       2         31       2         33       3         34       3         35       3         37       2         38       2	222 23 23 24 24 24 24 24 25 26 27 28 29 29 29 29 29 30 2331 2333 24 36 337 24 36 337 24 36 337 24 36 337 24 36 337 24 36 337 24 36 337 24 36 337 24 36 337 24 36 337 24 36 337 24 36 337 24 36 337 24 36 337 24 36 337 24 36 337 24 36 337 24 36 337 34 36 34 36 34 36 34 36 34 36 34 34 34 34 34 34 34 34 34 34 34 34 34	23       24       24       24       26       27       28       29       30       31       32       33       34       36       37       38       39       41	24     24       24     25       25     26       27     2       28     29       29     31       32     33       33     34       34     36       37     38       40     41       42     42	24       25       26       27       28       29       21       32       33       34       36       37       38       40       41       42       44	25       2         26       2         27       2         28       2         28       2         29       2         30       2         33       2         34       2         36       3         37       3         38       4         40       4         42       4         44       4	27       2         27       2         28       2         29       2         30       2         31       2         33       2         33       2         34       2         366       2         37       2         38       4         44       2         40       4         42       4         43       4         44       2         44       4         45       4	27 28 29 29 30 31 31 32 33 34 33 34 34 34 33 34 34 34 40 41 42 44 45 47 48	28 29 29 30 31 32 33 34 34 34 34 34 36 37 38 37 38 39 41 42 43 45 46 48 50	29       29       30       31       32       33       34       34       34       35       37       38       39       41       42       43       45       46       48       49       51	29 30 31 32 33 34 34 34 34 36 37 38 37 41 42 43 45 45 46 48 49 51 53	30 31 32 33 34 34 36 37 38 39 40 42 43 40 42 43 44 46 47 49 51 52 52 54	31 32 33 34 34 36 37 38 39 40 42 43 40 42 43 44 46 47 49 50 52 52 54 56	32 33 34 34 36 37 38 37 40 41 43 44 45 47 48 50 52 53 55 55 57	33           34           36           37           38           39           40           41           42           44           45           46           48           50           51           53           55           57           59	34           36           37           38           39           40           41           42           43           45           46           51           52           54           55           60	36         37         38         39         40         41         42         43         45         46         47         49         50         52         54         55         57         59         62			
	6'3" 6'2" 6'1" 5'11" 5'9" 5'8" 5'7" 5'6" 5'5" 5'4" 5'3" 5'2" 5'1" 5'0" 4'11" 4'10" 4'9" 4'8"	190 190 187.5 185 182.5 180 177.5 172.5 172.5 170 167.5 162.5 162.5 162.5 150 157.5 155 155 152.5 150 147.5 145 145 145 145	12 13 13 14 14 14 15 15 16 16 16 17 17 17 18 18 18 19 20 20 21 22 22 44	13         14         14         15         16         17         18         19         20         21         22         23         47	14         14         15         15         16         17         17         18         19         20         21         22         23         24         250	15         15         16         17         17         18         19         20         21         22         23         24         25         26         53	16         16         17         18         19         19         20         21         22         23         24         25         27         28         56	16         17         18         18         19         20         21         22         23         24         25         264         27         28         29         26         27         28         29         59	17 18 19 19 20 21 21 22 23 23 24 24 24 24 24 26 27 28 28 28 29 31	18         19         20         21         22         23         24         25         26         27         28         29         31         32         65	19         19         20         21         22         23         24         24         24         26         27         28         29         30         31         32         33	20         20         21         22         23         23         23         24         25         26         27         28         29         21         31         32         33         34         34         71	20       2         21       2         22       2         23       2         23       2         24       2         26       2         27       2         28       2         29       2         31       3         32       3         33       3         36       3         36       3         74       2	21         2           22         2           22         2           23         2           24         2           24         2           25         2           26         2           27         2           27         2           27         2           28         2           29         2           30         2           331         2           333         3           334         3           35         3           37         3           38         3           377         8	222 23 23 24 24 24 24 24 25 26 27 28 29 29 29 29 29 29 29 29 29 29 29 33 34 20 33 2 33 34 20 33 34 20 33 34 20 33 34 20 33 34 20 33 34 20 33 34 20 33 34 20 33 34 20 33 34 20 33 34 20 33 34 20 34 34 20 34 34 20 34 34 20 34 34 20 20 34 20 20 34 20 20 34 20 20 34 20 34 20 34 20 34 20 34 20 20 34	23       24       24       26       27       28       27       28       29       30       31       32       33       34       36       37       38       39       41       83	24       24         25       25         26       27         27       2         28       29         29       31         32       33         34       34         36       37         38       40         41       42         86	24       25       26       27       28       29       29       31       32       33       34       36       37       38       40       41       42       44       89	25     2       26     2       27     2       28     2       28     2       29     2       30     2       31     2       33     2       34     2       35     2       36     2       37     2       38     4       40     4       41     4       44     4       45     4       92     92	27     2       27     2       28     2       29     2       30     2       31     2       33     2       34     2       360     2       37     2       38     4       44     2       44     2       44     2       44     2       44     2       44     2       44     2       44     2       44     2       45     4       45     4       45     4       45     4	27 28 29 29 30 31 32 33 34 33 34 33 34 33 34 33 34 40 41 42 44 45 44 45 47 48 898	28           29           20           30           31           32           33           34           36           37           38           39           41           42           43           45           46           48           50           101	29           29           30           31           32           33           34           36           37           38           39           41           42           43           45           46           48           49           51           104	29 30 31 32 33 34 34 36 37 38 39 41 42 43 45 46 48 49 51 53	30 31 32 33 34 34 36 37 38 39 40 42 43 40 42 43 44 46 47 49 51 52 51 52 51	31 32 33 34 34 36 37 38 39 40 42 43 44 46 47 49 50 52 52 54 56 113	32 33 34 34 36 37 38 39 40 41 43 44 45 47 48 50 52 53 55 57 57	33 34 34 36 37 38 39 40 41 42 44 45 46 48 50 51 53 55 57 57 59	34           36           37           38           39           40           41           42           43           45           46           9           51           52           54           56           58           60           122	36         37         38         39         40         41         42         43         45         46         47         49         50         52         54         56         57         59         62         125			



	Then check the box that contains your measure	breath) and write your results	s on the line below.	Score
	then enced the box that contains your measure	ement. (Note: this is not the s	ame as the "waist size" on your pants).	
•	MEN – Waist circumference:	inches OR	cm	
	O Less than 94 cm or 37 inches		0 points	
	O Between 94-102 cm or 37-40 inches		4 points	
	Over 102 cm or 40 inches		6 points	
ķ	WOMEN - Waist circumference:	inches OR	cm	
	$\bigcirc$ Less than 80 cm or 31.5 inches		0 points	
	O Between 80-88 cm or 31.5-35 inches		4 points	
	Over 88 cm or 35 inches		6 points	·····
	YOUR LEVEL OF PHYSICAL ACTIVITY DEVELOPING DIABETES.	' AND WHAT YOU EAT	CAN AFFECT YOUR RISK OF	Score
	Do you usually do some physical activit	y such as brisk walking f	or at least 30 minutes each day?	
	This activity can be done while at work or at ho	ome.	-	
			0 points	
			1 point	
5.	How often do you eat vegetables or fr	uits?		
	V Every day		0 points 2 points	
			2 points	·····
<b>&gt;</b>				
	ARE ASSOCIATED WITH DIABETES.	JOD SUGAR, AND PRE	GNANCY-RELATED FACTORS	
·.	ARE ASSOCIATED WITH DIABETES. Have you ever been told by a doctor o	r nurse that you have hig	GNANCY-RELATED FACTORS	
•	ARE ASSOCIATED WITH DIABETES. Have you ever been told by a doctor o taken high blood pressure pills?	r nurse that you have hig	GNANCY-RELATED FACTORS	
•	ARE ASSOCIATED WITH DIABETES. Have you ever been told by a doctor o taken high blood pressure pills? Yes	r nurse that you have hig	GNANCY-RELATED FACTORS h blood pressure OR have you ever 4 points	
•	ARE ASSOCIATED WITH DIABETES. Have you ever been told by a doctor o taken high blood pressure pills? O Yes O No or don't know	r nurse that you have hig	GNANCY-RELATED FACTORS of blood pressure OR have you ever 4 points 0 points	
•	ARE ASSOCIATED WITH DIABETES. Have you ever been told by a doctor o taken high blood pressure pills? Ves No or don't know Have you ever been found to have a hi	r nurse that you have hig gh blood sugar either fro	GNANCY-RELATED FACTORS Ih blood pressure OR have you ever 4 points 0 points 5 points an illness,	
	HIGH BLOOD PRESSURE, HIGH BLC ARE ASSOCIATED WITH DIABETES. Have you ever been told by a doctor o taken high blood pressure pills? O Yes O Yes O No or don't know Have you ever been found to have a hi or during pregnancy?	r nurse that you have hig gh blood sugar either fro	GNANCY-RELATED FACTORS gh blood pressure OR have you ever 4 points 0 points om a blood test, during an illness,	
	ARE ASSOCIATED WITH DIABETES. Have you ever been told by a doctor o taken high blood pressure pills? O Yes O No or don't know Have you ever been found to have a hi or during pregnancy? O Yes	r nurse that you have hig gh blood sugar either fro	GNANCY-RELATED FACTORS yh blood pressure OR have you ever 4 points 0 points om a blood test, during an illness, 14 points	
•	HIGH BLOOD PRESSURE, HIGH BLC ARE ASSOCIATED WITH DIABETES. Have you ever been told by a doctor o taken high blood pressure pills? Yes No or don't know Have you ever been found to have a hi or during pregnancy? Yes No or don't know	r nurse that you have hig gh blood sugar either fro	GNANCY-RELATED FACTORS yh blood pressure OR have you ever 4 points 0 points 5 points 14 points 0 points 0 points	
•	ARE ASSOCIATED WITH DIABETES. Have you ever been told by a doctor o taken high blood pressure pills? Yes No or don't know Have you ever been found to have a hi or during pregnancy? Yes No or don't know Have you ever given birth to a large ba	r nurse that you have hig gh blood sugar either fro ıby weighing 9 pounds (4	GNANCY-RELATED FACTORS sh blood pressure OR have you ever 4 points 0 points 5 points 14 points 0 points 4.1 kg) or more?	
•	ARE ASSOCIATED WITH DIABETES. Have you ever been told by a doctor o taken high blood pressure pills? Yes No or don't know Have you ever been found to have a hi or during pregnancy? Yes No or don't know Have you ever given birth to a large ba Yes No don't know or not applies his	r nurse that you have hig gh blood sugar either fro ıby weighing 9 pounds (4	GNANCY-RELATED FACTORS In blood pressure OR have you ever 4 points 0 points om a blood test, during an illness, 14 points 0 points 4.1 kg) or more? 1 point 0 point	
•	<ul> <li>High BLOOD PRESSURE, High BLC</li> <li>ARE ASSOCIATED WITH DIABETES.</li> <li>Have you ever been told by a doctor o taken high blood pressure pills?</li> <li>Yes</li> <li>No or don't know</li> <li>Have you ever been found to have a hi or during pregnancy?</li> <li>Yes</li> <li>No or don't know</li> <li>Have you ever given birth to a large bate of Yes</li> <li>No, don't know, or not applicable</li> </ul>	r nurse that you have hig gh blood sugar either fro ıby weighing 9 pounds (4	GNANCY-RELATED FACTORS yh blood pressure OR have you ever 4 points 0 points om a blood test, during an illness, 14 points 0 points 4.1 kg) or more? 1 point 0 points	
•	HIGH BLOOD PRESSURE, HIGH BLC ARE ASSOCIATED WITH DIABETES. Have you ever been told by a doctor o taken high blood pressure pills? O Yes O No or don't know Have you ever been found to have a hi or during pregnancy? O Yes O No or don't know Have you ever given birth to a large ba O Yes O Yes O No, don't know, or not applicable SOME TYPES OF DIABETES RUN IN	r nurse that you have hig gh blood sugar either fro ıby weighing 9 pounds (4	GNANCY-RELATED FACTORS yh blood pressure OR have you ever 4 points 0 points om a blood test, during an illness, 14 points 0 points 4.1 kg) or more? 1 point 0 points	
·.	HIGH BLOOD PRESSURE, HIGH BLC ARE ASSOCIATED WITH DIABETES. Have you ever been told by a doctor o taken high blood pressure pills? O Yes O No or don't know Have you ever been found to have a hi or during pregnancy? O Yes O No or don't know Have you ever given birth to a large ba O Yes O No, don't know, or not applicable SOME TYPES OF DIABETES RUN IN Have any of your blood relatives ever b	r nurse that you have hig gh blood sugar either fro Iby weighing 9 pounds (4 FAMILIES.	GNANCY-RELATED FACTORS h blood pressure OR have you ever 4 points 0 points om a blood test, during an illness, 14 points 0 points 4.1 kg) or more? 1 point 0 points 1 point 0 points	
,. 3. >. }	<ul> <li>HIGH BLOOD PRESSURE, HIGH BLC ARE ASSOCIATED WITH DIABETES.</li> <li>Have you ever been told by a doctor o taken high blood pressure pills?</li> <li>Yes</li> <li>No or don't know</li> <li>Have you ever been found to have a hi or during pregnancy?</li> <li>Yes</li> <li>No or don't know</li> <li>Have you ever given birth to a large bas</li> <li>Yes</li> <li>No, don't know, or not applicable</li> <li>SOME TYPES OF DIABETES RUN IN</li> <li>Have any of your blood relatives ever b Check ALL that apply.</li> </ul>	r nurse that you have hig gh blood sugar either fro Iby weighing 9 pounds (4 FAMILIES. Heen diagnosed with dial	GNANCY-RELATED FACTORS yh blood pressure OR have you ever 4 points 0 points om a blood test, during an illness, 14 points 0 points 4.1 kg) or more? 1 point 0 points betes?	
· · · · · · · · · · · · · · · · · · ·	<ul> <li>HIGH BLOOD PRESSURE, HIGH BLC ARE ASSOCIATED WITH DIABETES.</li> <li>Have you ever been told by a doctor o taken high blood pressure pills?</li> <li>Yes</li> <li>No or don't know</li> <li>Have you ever been found to have a hi or during pregnancy?</li> <li>Yes</li> <li>No or don't know</li> <li>Have you ever given birth to a large bas</li> <li>Yes</li> <li>No, don't know, or not applicable</li> <li>SOME TYPES OF DIABETES RUN IN</li> <li>Have any of your blood relatives ever b Check ALL that apply.</li> <li>Mother</li> </ul>	r nurse that you have hig gh blood sugar either fro Iby weighing 9 pounds (4 FAMILIES. Deen diagnosed with dial	GNANCY-RELATED FACTORS h blood pressure OR have you ever 4 points 0 points om a blood test, during an illness, 14 points 0 points 4.1 kg) or more? 1 point 0 points betes? 2 points	
,. ,. ,.	<ul> <li>HIGH BLOOD PRESSURE, HIGH BLC</li> <li>ARE ASSOCIATED WITH DIABETES.</li> <li>Have you ever been told by a doctor o taken high blood pressure pills?</li> <li>Yes</li> <li>No or don't know</li> <li>Have you ever been found to have a hi or during pregnancy?</li> <li>Yes</li> <li>No or don't know</li> <li>Have you ever given birth to a large base</li> <li>Yes</li> <li>No, don't know, or not applicable</li> <li>SOME TYPES OF DIABETES RUN IN</li> <li>Have any of your blood relatives ever be Check ALL that apply.</li> <li>Mother</li> <li>Father</li> </ul>	r nurse that you have hig gh blood sugar either fro Iby weighing 9 pounds (4 FAMILIES. Seen diagnosed with dial	GNANCY-RELATED FACTORS yh blood pressure OR have you ever 4 points 0 points om a blood test, during an illness, 14 points 0 points 4.1 kg) or more? 1 point 0 points betes? 2 points 2 points	
,. 3. ). ).	HIGH BLOOD PRESSURE, HIGH BLC ARE ASSOCIATED WITH DIABETES. Have you ever been told by a doctor o taken high blood pressure pills? O Yes O No or don't know Have you ever been found to have a hi or during pregnancy? O Yes O No or don't know Have you ever given birth to a large ba O Yes O No, don't know, or not applicable SOME TYPES OF DIABETES RUN IN Have any of your blood relatives ever b Check ALL that apply. D Mother Father Brothers/Sisters	r nurse that you have hig gh blood sugar either fro Iby weighing 9 pounds (4 FAMILIES. Seen diagnosed with dial	GNANCY-RELATED FACTORS yh blood pressure OR have you ever 4 points 0 points om a blood test, during an illness, 14 points 0 points 4.1 kg) or more? 1 point 0 points 2 points 2 points 2 points 2 points 2 points	
	<ul> <li>HIGH BLOOD PRESSURE, HIGH BLC</li> <li>ARE ASSOCIATED WITH DIABETES.</li> <li>Have you ever been told by a doctor o taken high blood pressure pills?</li> <li>Yes</li> <li>No or don't know</li> <li>Have you ever been found to have a hi or during pregnancy?</li> <li>Yes</li> <li>No or don't know</li> <li>Have you ever given birth to a large base</li> <li>Yes</li> <li>No, don't know, or not applicable</li> <li>SOME TYPES OF DIABETES RUN IN</li> <li>Have any of your blood relatives ever be Check ALL that apply.</li> <li>Mother</li> <li>Father</li> <li>Brothers/Sisters</li> <li>Children</li> </ul>	r nurse that you have hig gh blood sugar either fro ıby weighing 9 pounds (4 FAMILIES. seen diagnosed with dial	GNANCY-RELATED FACTORS yh blood pressure OR have you ever 4 points 0 points om a blood test, during an illness, 14 points 0 points 4.1 kg) or more? 1 point 0 points 2 points	
0.	HIGH BLOOD PRESSURE, HIGH BLC ARE ASSOCIATED WITH DIABETES. Have you ever been told by a doctor o taken high blood pressure pills? Ves No or don't know Have you ever been found to have a hi or during pregnancy? Yes No or don't know Have you ever given birth to a large ba Ves No, don't know, or not applicable SOME TYPES OF DIABETES RUN IN Have any of your blood relatives ever b Check ALL that apply. Hother Father Father Children	r nurse that you have hig gh blood sugar either fro aby weighing 9 pounds (4 FAMILIES. Seen diagnosed with dial	GNANCY-RELATED FACTORS yh blood pressure OR have you ever 4 points 0 points om a blood test, during an illness, 14 points 0 points 4.1 kg) or more? 1 point 0 points 2 points 3 points 3 points 3 points 4	
D.	HIGH BLOOD PRESSURE, HIGH BLC ARE ASSOCIATED WITH DIABETES. Have you ever been told by a doctor o taken high blood pressure pills? Yes No or don't know Have you ever been found to have a hi or during pregnancy? Yes No or don't know Have you ever given birth to a large ba Yes No, don't know, or not applicable SOME TYPES OF DIABETES RUN IN Have any of your blood relatives ever b Check ALL that apply. Hother Father Children Other	r nurse that you have hig gh blood sugar either fro aby weighing 9 pounds (4 FAMILIES. Seen diagnosed with dial	GNANCY-RELATED FACTORS yh blood pressure OR have you ever 4 points 0 points om a blood test, during an illness, 14 points 0 points 4.1 kg) or more? 1 point 0 points 2 points 0 points	
·. ·.	HIGH BLOOD PRESSURE, HIGH BLC ARE ASSOCIATED WITH DIABETES. Have you ever been told by a doctor o taken high blood pressure pills? Yes No or don't know Have you ever been found to have a hi or during pregnancy? Yes No or don't know Have you ever given birth to a large ba Yes No, don't know, or not applicable SOME TYPES OF DIABETES RUN IN Have any of your blood relatives ever b Check ALL that apply. Hother Father Father Other No/don't know	r nurse that you have hig gh blood sugar either fro aby weighing 9 pounds (4 FAMILIES. Seen diagnosed with dial	GNANCY-RELATED FACTORS yh blood pressure OR have you ever 4 points 0 points om a blood test, during an illness, 14 points 0 points 4.1 kg) or more? 1 point 0 points 4.1 kg) or more? 2 points 2 points 2 points 2 points 2 points 2 points 0 points 4 dd your score.	
0.	High BLOOD PRESSURE, High BLC ARE ASSOCIATED WITH DIABETES. Have you ever been told by a doctor o taken high blood pressure pills? Yes No or don't know Have you ever been found to have a hi or during pregnancy? Yes No or don't know Have you ever given birth to a large ba Yes No, don't know, or not applicable SOME TYPES OF DIABETES RUN IN Have any of your blood relatives ever be Check ALL that apply. Mother Father Brothers/Sisters Children Other No/don't know	r nurse that you have hig gh blood sugar either fro aby weighing 9 pounds (4 FAMILIES. Seen diagnosed with diak	GNANCY-RELATED FACTORS yh blood pressure OR have you ever 4 points 0 points om a blood test, during an illness, 14 points 0 points 4.1 kg) or more? 1 point 0 points 4.1 kg) or more? 2 points 2 points 2 points 2 points 2 points 2 points 2 points 0 points 0 points 0 points 1 documents 1 point 1 points 2 points 2 points 2 points 1 points 1 points 1 points 1 points 1 points 1 points 1 points 1 points 2 points 1	



These risk scores are in no way a substitute for actual clinical diagnosis. If you have any concerns, please consider discussing your results with a health care practitioner (eg. family doctor, nurse practitioner, pharmacist).

#### Lower than 21 $\rightarrow$ low risk Your risk of having pre-diabetes or type 2 diabetes is fairly low, though it always pays to maintain a healthy lifestyle.

#### 21-32 $\rightarrow$ moderate risk

Based on your identified risk factors, your risk of having pre-diabetes or type 2 diabetes is moderate. You may wish to consult with a health care practitioner about your risk of developing diabetes.

#### 33 and over $\rightarrow$ high risk

Based on your identified risk factors, your risk of having pre-diabetes or type 2 diabetes is high. You may wish to consult with a health care practitioner to discuss getting your blood sugar tested.

Diabetes is a serious chronic disease and uncontrolled diabetes can lead to heart disease, kidney disease and other conditions.

While you can't change some factors such as, age, gender, family history, and ethno-cultural background, other risk factors for diabetes may respond to lifestyle changes. These include weight, physical activity, diet, and smoking.

If your BMI is 25 or higher, lowering your weight may help you reduce your risk of developing type 2 diabetes. Even a small change in body weight or physical activity can reduce your risk. Embrace a healthy balanced diet which emphasizes vegetables, fruit, and whole grains. Consult Canada's Food Guide for helpful suggestions. If you are not active, begin slowly and increase your activity gradually. Check with your doctor before beginning any exercise program.

If you smoke, it's never too late to quit. Every step you take to improve your health counts!

Thank you for completing the Canadian Diabetes Risk Questionnaire.

Public Health Agency of Canada, 2011

# If you have some of the following symptoms, you may be living with depression:

- Persistent sad, anxious, numb, "empty" mood
- Feelings of worthlessness, helplessness, or guilt
- Feelings of hopelessness or pessimism
- Loss of interest or pleasure in hobbies and activities that were once enjoyed
- Insomnia, early-morning awakening, or oversleeping
- Decreased energy, fatigue, being 'slowed down' or feeling sluggish
- Increased appetite with weight gain or decreased appetite with weight loss
- Thoughts of self-injury or attempts at self-injury
- Thoughts of death or suicide or suicide attempts
- Restlessness, irritability, or nervousness
- Difficulty concentrating, remembering things, or making decisions
- Persistent physical symptoms that do not respond to treatment such as headaches, backaches, etc.

If the diagnosis of diabetes overwhelms you, it is time to share your emotions with someone else. Try any of the following:

- Join support groups for people living with diabetes. You realize you are not alone and you can learn new ideas about coping with stress of diabetes.
- Talking to people about your problems can help.
- Meet and talk with Elders in your community. They can give ideas on how to take things easy and provide insightful perspective to your unique situation and health.

HANDOUT (3) REFLECTING ON YOUR EATING HABITS

From Health Canada's site re: new CFG and resources https://food-guide.canada.ca

#### Benefits of being mindful of your eating habits

Being mindful of your eating habits means being aware of:

- how you eat
- why you eat
- what you eat
- when you eat
- where you eat
- how much you eat

Being mindful can help you:

- make healthier choices more often
- make positive changes to routine eating behaviours
- be more conscious of the food you eat and your eating habits
- create a sense of awareness around your everyday eating decisions
- reconnect to the eating experience by creating an awareness of your:
   feelings
  - thoughts
  - emotions
  - behaviours

#### How to be mindful of your eating habits

Use these ideas to help you be mindful of your eating habits.

#### Create a healthy eating environment

Your eating environment changes depending on where you live, learn, work and play. Focus your attention on eating and your eating environment.

Regardless of where you are, try to make changes to your surroundings so that the healthy choice is the easy choice.

#### Use your senses

Being mindful of the foods you eat encourages you to pay attention to the aromas, textures, flavours and taste of food. Pay attention to your likes and dislikes using these senses. This may help connect you to your eating experience and be more conscious of the food you are eating.

# **Consider your eating habits**

Think about the last meal or snack that you had. Can you describe:

- how you ate?
  - did you eat slowly?
  - were you distracted?
  - did you eat with others?
- why you ate?
  - were you hungry?
  - was it offered to you?
- what you ate?
  - what food and drink did you have?
- when you ate?
  - what time was it?
  - how long had it been since the last time you ate?
- where you ate?
  - were you in a space meant for eating?
- how much you ate?
  - how much food and drink did you have?

Being able to recall and describe answers to these questions means you were likely being mindful of your eating habits.

# How to enjoy your food

There are many ways to enjoy your food and make healthy choices. Try these ideas to add enjoyment to healthy eating.

Enjoy your food by making choices that reflect:

- taste
  - enjoying your food should be about choosing a variety of healthy foods and flavours that you like
- culture
  - culture and food traditions can be a great way to add to the enjoyment of your food
- budget
  - there are many ways to enjoy your food while eating on a budget
- lifestyle
  - there is no one right way to enjoy your food. You can enjoy your food no matter what your lifestyle.

# Try new foods

Try a variety of healthy foods to help you find new foods to enjoy. Trying new foods can appeal to a sense of wonder and even adventure.

# Create a positive eating environment

Part of enjoying your food can be enjoying the atmosphere around it. The setting around you can contribute to making meal times more satisfying. Creating a positive eating environment can include:

- eating with others
- making your eating area attractive
- turning on some of your favorite music in the background

# Benefits of taking time to eat

Taking time to eat can help you:

- enjoy your food
- focus on your food
- prevent overeating
- enjoy eating with others
- make healthier food choices
- be mindful of your eating habits and choices

With busy lifestyles, it is common:

- to eat quickly
- to eat while distracted or doing other things
- not to set aside time to eat and plan meals

Eating quickly can prevent you from knowing when you are full. Eating while distracted or doing other things, such as watching TV, can increase how much you eat and drink. When distracted, people may eat larger portions or lose track of how much they have already eaten. These can lead to eating more than you need.

Healthy eating habits include taking the time to make food an important part of your life.

# How to take time to eat

There are different ways you can take time to eat.

# HANDOUT 3

# Eat slowly and thoughtfully

Focus on your food while you are eating. To do this:

- notice when you feel full
- don't rush when eating out
- put your knife and fork down between bites
- eat with others and enjoy the conversation with friends and family
- slow down and allow yourself time to enjoy your food
- chew your food thoroughly to experience all of the:
  - aromas
  - textures
  - flavours and taste

# **Eat without distractions**

Pay attention when you are eating:

- computers, cell phones and other electronics distract from eating. Make mealtimes "electronic free."
- sit down at the table instead of in front of a TV. Focus meals around the food.
- At work, step away from your workstation and eat lunch in the cafeteria or outside with coworkers.

Think about your portions when eating. Eating when you are distracted may increase the likelihood of you eating too much:

- of what you are currently eating
- in future meals and snacks

# Set aside time

Plan to make eating an important part of your life. You can do this by:

- setting aside time to focus on your meals and snacks whether you are:
   at work
  - at work • at home
  - •on the go

# Benefits of eating with others

Enjoying healthy foods with family, friends, neighbours or co-workers is a great way to connect and add enjoyment to your life. It can provide many benefits and contribute to a healthy lifestyle.

By eating with others you can:

- enjoy quality time together
- share food traditions, across generations and cultures
- explore new healthy foods that you might not normally try

Food is often a main part of celebrations and special events. However, eating with others doesn't have to be saved for special events.

#### How to eat with others more often

Making time to enjoy meals with others doesn't just happen. With busy schedules at work, school and home, making time to enjoy your meals with others can often get pushed aside.

The key to making it happen often starts with a plan. You could:

- plan a breakfast date with friends
- participate in community celebrations and feasts
- start a regular community meal with your neighbours
- have lunch with a co-worker at work or friend at school
- ask your local community centre about groups you could join
- plan a weekly dinner with extended family members or friends
- eat dinner with:
  - roommates
  - a neighbour
  - family members
- start a dinner party amongst your friends where everyone takes a turn hosting

When you eat with others, it's important to remember to:

- Take your time. Don't feel the need to rush. Enjoy your food and the social aspect of being together.
- Put away distractions like the TV or electronics. This can help you be mindful of your food choices.
- Use it as a chance to connect. Talk to those around you and share what is going on in everyone's life.

# More information for families

Mealtime is a great opportunity to bring the family together. Eating together as a family benefits everyone. It can help the whole family:

- share and connect with one another
- take time to enjoy and relax over a meal
- talk about events that occurred during their day

Kids especially can benefit from regular family meals as they are starting to develop their eating habits and behaviours. Eating together as a family can help kids:

- explore new healthy foods
- establish healthy eating routines
- improve their overall eating pattern
- explore cultural and traditional foods

As a parent or caregiver you can be a positive role model. By practicing healthy eating habits, you can help create a positive relationship with food and the foods kids will eat.

# More information for seniors

Seniors often tend to eat alone. This can result in a sense of isolation and feelings of loneliness, especially at meal times.

These feelings, along with other changes you may experience as you age, can result in a loss of appetite. Eating less can impact your intake of important nutrients.

By eating with others more often, you can:

- make mealtime more sociable
- spend more time eating and enjoying a meal
- increase the amount of food you eat which can help you get more of the important nutrients you need for health

Having a meal with friends or neighbours or participating in a community meal program are great ways to eat with others.



#### Why healthy eating matters

Whether you have young children or teens, as a parent, you play an important role in:

- developing your family's food skills
- creating a healthy food environment
- supporting your child's interest in healthy food
- shaping your child's eating habits and behaviours

How you choose and prepare your food will shape your family's attitude, skills and eating behaviours.

As children grow, their peers may become more of an influence. Children, however, still look to their parents and other adults around them for guidance.

# Healthy eating habits for your family

You can help your children develop healthy eating habits by using these ideas.

#### **Eating together**

Follow the healthy eating recommendation to help you eat together.

Try to have meals together as a family as often as possible.

Getting everyone together for mealtime can be a challenge. There are many reasons why everyone might not be able to come together at mealtimes. This could include conflicting work schedules or after school activities. Even if some family members are not available, there are still benefits to eating with those who are.

Make time for healthy eating so that you and your kids are not rushed.

Enjoy 'family-style' meals. In 'family-style' meals, food is put into larger bowls or serving dishes on the table. Family members then serve themselves based on their:

- hunger cues
- food preferences

This style of meal allows everyone:

- to be involved
- see everything that has been prepared
- select what and how much they want. This may encourage kids to try new foods that they otherwise would have pushed aside.

# Making healthy foods the routine

Offer your kids healthy meals and snacks at regular times throughout the day. Have a conversation about all of the components that go into a healthy meal.

Replace sugary drinks with water.

Limit the amount of highly processed foods you offer. Prepare meals and snacks with little to no added:

- sodium
- sugars
- saturated fat

Think about the kind of food you buy and have in your home. What you have in your home is what you and your kids will eat.

# Making mealtime the focus

Focus on spending time together.

Try not to focus on how much your kids are eating. Let your kids decide how much they eat.

Put away toys and screens during mealtime. Without these distractions, you and your family can enjoy eating and talking with each other. Ask each family member about their day.

You can also use food as a conversation starter. You can talk about:

- how food is grown
- how foods can impact your overall health
- the role food plays in culture and food traditions

# Leading by example

Prepare and eat healthy foods with your kids to set a good example.

Enjoy a variety of healthy foods. Kids are more likely to make healthy eating choices if you are.

# Getting them involved and share the tasks

Teach your kids about making healthy food choices.

Plan out your meals and snacks with your kids to have the healthy foods they like in the home.

Get your kids cooking. Support them, regardless of age, by helping them with simple food-related tasks.

HANDOUT 3

# Parents of young children

Young children can have small appetites, which can sometimes make mealtime a challenge. Try to:

- encourage a variety of healthy foods
- offer small meals and snacks at regular times throughout the day
- let your children decide how much food they want to eat. It is normal for kids to eat more at some meals and less at others depending on things like:
  - activity level
  - growth spurts
  - emotions like excitement or sadness

# **Picky eating**

Picky eating can be a challenge for parents in establishing healthy eating habits in young children. Some children hesitate to try new foods. Children are more likely to accept a new food the more often they are exposed to it. An unfamiliar food can be offered again later if it is rejected the first time.

You can help overcome picky eating by:

- making routines
- offering foods more than once
- planning your meals and snacks
- involving your kids in meal preparation

- Try and have foods that change into your blood sugars with foods that don't.
- Mix these foods together to slow how quickly the sugar goes into your system.

# Here we have listed foods that change into blood sugars and foods that don't.



#### **CHANGE INTO BLOOD SUGAR**

#### CARBOHYDRATE

#### STARCH

Flour foods Bannock Bread Crackers Macaroni/Spaghetti Perogies Cereal Rice Kidney, black and brown beans Potatoes, Potato chips Tortillas, Taco chips

#### **MILK GROUP**

Skim 1%, 2%, whole Powdered milk Evaporated Soy or Rice milk Yogurt

#### **FRUITS AND CERTAIN VEGETABLES**

All fruit and fruit juices Corn Potato and Sweet Potato

#### SWEETS

Jam, Jelly,Sugar, Brown Sugar Candy, Pie, Cake, Donuts, Danish, pastry, Pop, Slurpees, Iced tea, Drink crystals, Chocolate bar



#### **CHANGE INTO BLOOD SUGAR**

FAT Butter Margarine Lard Sour Cream Oil Fat on Meat

#### PROTEIN

Meat, Wild Meat Cheese Eggs Peanut Butter, Nuts Chicken Turkey Fish Kidney, black and brown beans

#### VEGETABLES

Peas, Cauliflower, Green beans, Carrots, Broccoli, Yellow beans, Lettuce, Tomato, Peppers, Cucumber, Onion, Garlic, Spaghetti Squash, Zucchini, There are different types of fats in foods. Some we want to eat more often and others less often

# **Choose less often:**

**Trans fats** are in processed foods and help them stay moist and "fresh." They are in foods such as crackers, margarine, pastries, and doughnuts. The food industry created these because they wanted to be able to have foods stay on the store shelves longer without spoiling. If a food package ingredient list has "partially hydrogenated" or "hydrogenated" oil on it, it contains trans fats.

In Sept. 2018 the Canadian government banned trans fats in foods, however there is a 2 year wash out period where some foods that have already been produced, can be sold. So, try and avoid these.

**Saturated fats** are in meat and dairy products. Eating too much saturated fat is linked to increasing our risk for heart disease. Saturated fats are found mostly in store-bought animal products, such as:

- Butter
- Cream
- Cheeses
- Milks
- The fat in and on meats
- The skin of chicken

Wild meat is healthier and a better choice then store bought meat. It still has saturated fat but much less because it is leaner.

Easy way to remember which foods have saturated fats:

#### Anything that comes from something that has a mother (except fish)

#### **Choose more often:**

**Unsaturated fats** are healthier than other kinds of fat (these include mono and polyunsaturated fats). Examples of unsaturated fats are:

- Vegetable oils (such as canola, olive, sunflower, soybean, corn and peanut)
- Soft, non-hydrogenated margarine
- Salad dressing made with non-hydrogenated oils (canola, soybean)
- Traditional fats that are liquid at room temperature, such as seal and whale oil, or oolichan grease
- Fish
- Nuts and seeds

An easy way to remember which fats to eat more often is:

#### If it grows out of the ground or swims, its good!

# The recommendations for sodium intake are no more than 2000 mg/day. This is just under a teaspoon of salt daily.

Salt is the main source of sodium in our diet. There is a lot of hidden salt in our foods:

- Processed meats like bacon, bologna, sausage, hot dogs, and salami have a lot of salt.
- Canned soups and stews, cheeses, sauces, pickles, rice, or pasta mixes are also high in salt.
- Restaurant meals, especially fast foods are usually very high in salt.

#### The following table shows how much salt is in certain foods.

BIG MAC	950mg
MEDIUM FRIES	260mg
27 POTATO CHIPS	360mg
SIDEKICKS 1/2 CUP PREPARED	330mg
1 CAN HEALTHY REQUEST SOUP	800mg
1 CAN CREAM OF MUSHROOM SOUP	1700mg
410g CAN PURITAN STEW	1900mg

- Read labels to see how much sodium is in the food you are eating
- Try not to salt your foods at the table, use pepper or other spices instead.

If you are reading the ingredient list, the following have sodium in them:

- Anything with salt in it, like celery salt, garlic salt, sea salt etc.
- Anything with sodium in it, like MSG (monosodium glutamate) etc
- Baking soda (sodium bicarbonate).

**QUICK TIP:** Brown (whole wheat or whole grain) is always better than white when choosing grains or starches (bread, macaroni, rice etc.) because it has more fibre

Fiber can be listed in the following ways:

SOURCE - which means it contains two grams or more of fibre per serving

HIGH SOURCE - which means the food contains four grams or more of fibre per serving

VERY HIGH SOURCE - which means the food contains six grams or more of fibre per serving

- Slowly increase the amount of fibre you eat. Start small by switching white bread for whole grain bread one week. Then make another high fibre choice the next week. This will lessen bloating and gas.
- Drink more water with a higher fibre diet (6-8 cups/d). This helps fibre work best in your body.
- Exercise daily. This helps keep you regular and lessens bloating and gas.
- Eat the skin of vegetables and fruits.
   Example: 1 medium apple with the skin has about 4.4 grams of fibre while a medium apple without the skin has just 2.1 grams of fibre.
- Choose whole grain or bran breakfast cereals.
   Example: A serving of Corn Flakes has about 1 gram of fibre while a serving of All-Bran Original has about 10 grams of fibre. Want to start mixing in high fibre cereals but not sure about the taste? Add a scoop of high fibre cereal to your favorite breakfast cereal!
- Add barley, beans, legumes, and lentils to soups and salads.
   Example: 1 cup of chicken noodle soup has about 0.5 g of fibre vs. split pea soup which has about 4.5 g of fibre per cup. Black beans (1/2 cup) have about 7 grams of fibre!
- Add ground flaxseed to baked goods, yogurt, and oatmeal.
   Example: At breakfast, sprinkle your bowl of cooked oatmeal with 1 tbsp. ground flaxseed. This adds about 2 grams of fibre to your meal.
- Add almonds and other nuts to salads, yogurt, etc. **Example:** <sup>1</sup>/<sub>4</sub> cup of almonds has about 4 g of fibre.
- Choose whole grain pastas, breads, and flours when shopping or baking at home.
   Example: 1 cup of whole-wheat spaghetti has about 9 g of fibre vs. 1 cup of regular spaghetti which has about 3 g of fibre. One slice of whole grain bread has about 3 g of fibre.
   White bread has only about 1 gram of fibre per slice.
- Using wild or brown rice instead of white rice also increases your fibre

**NOTE:** The amount of fibre may change depending on the product you buy.

#### Here are some ideas on getting active:

- Bowling
- Canoeing
- Chopping wood
- Dancing
- Fishing
- Gardening
- Hiking
- Household chores
- Hunting
- Jogging
- Playing sports
- Playing with children
- Raking leaves
- Snow shoveling
- Snow shoeing
- Stretching
- Swimming
- Walking
- Others:

Think about your own lifestyle, activities that you enjoy doing, and how you can incorporate more physical activity. **Can you:** 

- Walk or bike to work
- Park father away in the grocery lot
- Take the stairs instead of the elevator
- Walk to the water cooler or printer rather than have it right by your desk
- Break up long periods of sitting by setting a timer and standing up every 20 to 30 minutes
- Go for a walk on your lunch break
- Plant a small garden
- Play outside or go for a walk with your family



# Tips before engaging in physical activity

- Stretch before and after exercise helps prevent injuries
- Plan to exercise after a meal or snack
- Carry water and a source of sugar in case it is needed
- Wear comfortable clothing with well fitted shoes and have fun
- If you have diabetes, test blood sugar levels before you exercise and after you are done, record in your log book

# What are some traditional activities you can do in your community?

www.nada.ca H.21

# There are ways to lower stress levels.

Here are a few ideas that may help:

- Relaxation therapy
- Change the situation; fix or get rid of the stress
- Breathing exercises or yoga
- Exercise and physical activity
- Think of happy moments, proud times, favourite memories
- Add positive things to your life
- Join support groups
- Talk with a counsellor or therapist
- Talk with friends or family
- Accept your diabetes
- Respect your body
- Make healthy choices
- Get 7 to 8 hours of sleep
- Find time for leisure activities
- Spend time with friends and family
- Take part in community activities to promote a sense of belonging
- Meditate or practice yoga
- Help others
- Say no to things you don't enjoy
- When feeling overwhelmed by emotions seek outside help from an Elder, counsellor, spiritual healer, traditional healer, or from a nurse practitioner or doctor.

Work with health care professionals in your community to create a plan that helps you with healthy eating, how much moving you should do, medications you need, and when you should check your blood sugars.

# Find out who is part of your team.

The following is a general list of who can provide support to you:

- Family and friends
- Family doctor
- Community health nurse
- Primary care nurse
- Home care nurse
- Optometrist Family eye doctor
- Obstetrician Doctor for pregnant women
- Dentist Tooth and gum doctor
- Ophthalmologist Eye specialist
- Cardiologist Heart doctor
- Endocrinologist Diabetes doctor
- Neurologist Nervous system doctor
- Nephrologists Kidney doctor
- Chiropodist Foot doctor
- Podiatrist Foot doctor

# Use the Medicine Wheel as a guide:

- 1. Make a list of the healthcare team members in your community.
- 2. How does each person fit into the four parts of the Medicine Wheel?

- Pharmacist
- Registered Dietitian
- Nutritionist
- Diabetes Educator
- Diabetes worker
- Community health representative
- Support worker
- Home maker
- Spiritual healer
- Elder
- Traditional Healer
- Priest
- Minister
- Midwife?

- 1. Attach pen needle to pen cartridge
- 2. If using cloudy insulin (N, NPH, 30/70 etc), gently roll your insulin 10x, tip it back and
- 3. forth 10x. Make sure that your insulin is mixed and there are no clear spots (so it is all white)
- 4. Do an air shot with 2 units of insulin or until a drop of insulin appears at the tip of the needle.
- 5. Dial the number of units of insulin needed.
- 6. Inject into the stomach area and rotate your sites staying 2 inches away from the belly button and away from scar tissue.
- 7. Inject at a 90 degree angle, looking down at your insulin pen
- 8. Once the insulin is injected and the pen displays "0", slowly count to 10 before removing the needle from your stomach
- 9. Unscrew the needle from the pen and throw it away in a sharps container
- 10. Recap the pen.

# Storage

- Keep the pen and its' opened cartridge of insulin at room temperature for up to 28 days: throw away after 28 days (42 days for Levemir)
- Store unopened insulin in the fridge until the expiry date
- Do not use insulin past its' expiry date or if it has frozen

**Adapted from:** The Community Diabetes Education Program of Ottawa handout, "Practical Insulin Injection Tips" and "FIT Technique Plus Technique for All" handout, Education tools based on FIT Canada Recommendations for best practice in Insulin Injection Technique.

- Keep blood glucose levels and blood pressure under control. These are the most important steps in diabetic eye care.
- Quit smoking. Smoking increases the risk of blindness from diabetes and various age-related eye diseases.
- For proper diabetic eye care, see an eye care professional every year for a dilated eye exam, or as often as they recommend.
   NOTE: Only optometrists and ophthalmologists can detect the signs of diabetic retinopathy
- Make an appointment to see an eye doctor when experiencing visual problems or noticing any symptoms or signs in vision, such as:
  - one or both eyes hurt
  - eyes get red and stay that way
  - seeing spots or floaters
  - blurred vision
  - black spots that are stationary
  - flashes of light
  - any other changes to vision

**NOTE:** Before being diagnosed with diabetes, people with type 2 diabetes usually have pre-diabetes. This is when blood glucose levels are higher than usual but not high enough to have diabetes. Like diabetes, having pre-diabetes can worsen vision from diabetic retinopathy. That is just one reason for annual visits to an eye care professional.

- Eat lots of fresh vegetables and fruits every day.
- Eat fish (salmon, herring, etc.) at least twice a week to increase omega-3s in the diet
- Avoid sugary foods and processed foods with chemicals and preservatives
- If you wear contact lenses, make sure you wash your hands before putting contacts in or removing them

When you have diabetes, your feet are more likely to become injured and infection and wounds take longer to heal. It is important to be aware of the importance of good foot care. You should inspect your feet daily. Follow this checklist to keep your feet healthy:

- Get an annual foot exam
- Have your feet checked at every visit with your health care professional if at high risk for developing neuropathy (nerve damage)
- Keep your blood sugar levels between 4 to 7 before meals and 5-10, 2 hours after a meal.
  - Protect the feet at all times from cuts, scrapes, frostbite, and/or sunburn
  - Inspect feet at least once a day for those with high risk and after each activity session.
  - Be sure to use a good light and mirror to see the bottom of the foot.
- Check for redness, cracked skin, dry skin, calluses, corns, black spots, or anything round or thick coming off of the foot.
- Never cut or break a blister, corn, or callous.
- If you have blurred vision, nerve damage, heart disease, or eye disease, you should not cut toenails, corns or calluses.
- Do not use any chemicals like iodine or rubbing alcohol on the feet.
- Contact a health care provider if minor scratches or scrapes are slow to heal.
- Select suitable and proper footwear to protect the feet and avoid injury.
- Check your shoes before putting them on to make sure nothing in them will hurt the feet.
- Have any infection treated immediately by a health care provider.
- You should see a health care provider right away if there is anything unusual.
- Wear comfortable, well-fitted shoes. You can order custom shoes.
- In the winter, wear warm boots to protect the feet from frostbite.
- Do not go bare foot indoors or outdoors. You should wear shoes inside and outside the home to prevent any foot injuries.
- Wash feet daily. Test the water with your hand or thermometer to make sure it is not too hot.
- Dry the feet very well including in between the toes.
- Use lotion on the feet (but not between the toes). This prevents dryness and cracking.
- Be careful when trimming toenails. Make sure to file rough edges away.
- If you don't know how to trim your toenails, ask a health care provider to help you.
- Stop smoking.

A sensory foot exam is an exam to test if your nerves are healthy and you still have feeling in your feet. You should have the test done:

- At every medical visit if you are at high risk for nerve damage in your feet
- At least once a year if you have a lower risk of nerve damage in your feet
- If you notice any changes to your feet

HANDOUT 14 WHEN TO SEE A HEALTH CARE PROFESSIONAL

# When you are feeling sick, refer to the following to determine whether you should seek medical attention:

- If you are not able to keep fluids or food down for more than six hours
- For type 1 diabetics: If you have mild to moderate ketones in your urine (> .6mmol/L)
- If you are showing signs of being dehydrated such as a very dry mouth, cracked lips, dry skin, sunken eyes, or very dark urine.
- If you have signs of DKA-sore stomach, throwing up, rapid breathing, fruity-smelling breath, and severely tired
- If you feel pressure in your chest
- If you are not able to care for yourself or you are worried about your condition
- If you are unsure about your medications and if they need to be adjusted
- If you have a fever (above 38.3 degrees C or above 100.9 degrees F) for more than 24 hours
- If your blood sugar stays below 4 for 2 readings and it will not come up even with proper treatment
- Your blood sugar has been higher than 15 for more than 12 hours
- If you have difficulty breathing

HANDOUT (15) FLOW CHART FOR MANAGING TYPE 2 DIABETES

#### **HEALTHY BEHAVIOUR INTERVENTIONS**


# Always test your blood sugar meter to make sure it is working properly and giving you accurate results!

You need to be checking your meter using control solution to make sure that it is working properly and that you are getting accurate results. Control solution is a sugar solution that the manufacture makes and it is used instead of your blood to see if your machine is working properly. Ask your pharmacist for control solution when you pick up your meter (control solution is usually not included in the box with your meter)

### Why do I need to test my meter?

If people aren't checking their machine regularly, things can go wrong and you won't be aware. If people are using the test results as a guide for how much insulin they need to take and the result is not accurate, this can cause a lot of problems. People might be under or over dosing their insulin and this can lead to actual blood sugars that are trending too high or too low. If a person's blood sugars are too low, they will know it fairly quickly, but if they are too high they might not realize it or become fully aware of it for quite a while. So, it is very important to be checking your meter and making sure it is working properly.

How you measure the accuracy of your meter is by using a small bottle filled with Control Solution. **Control Solution** has an expiration date and after it is opened, it only lasts for 3 months. It is very important that you ask your pharmacist to give you a bottle of Control Solution when you pick up your meter.

### How do you use the Control Solution?

In fact, very easily! You use the **Control Solution** the same way you would use your own drop of blood.

- 1. Shake your Control Solution.
- 2. Take a strip and insert it into your meter.
- 3. Remove the cap of the control solution and place it on the table.
- 4. Place a drop of the Control Solution on the top of the cap.
- 5. Line up the test strip with the drop of Control Solution the same way you would with your own drop of blood.
- 6. Allow the strip to take up the solution and wait for a test result.
- 7. Record the test result.
- 8. Look at the reference range on your container of strips, an example might be: 6.8-8.9.
- 9. This means that if your meter and strips are working properly and are accurate, your test result should be between 6.8-8.9 when using the Control Solution.
- 10. If your test result is either higher or lower then the range, you need to stop using your meter immediately as it is not giving you accurate results.
- 11. Check to make sure that your strips have not expired. If your strips are not outdated, then it could be the meter not working properly.
- 12. Phone the 1-800- number for the meter company, or take the machine and strips back to your pharmacist.



### How often should you be testing the accuracy of your meter?

- 1. As soon as you get your machine
- 2. When you use a new container of strips
- 3. When you change the battery
- 4. If the meter or test strips are not functioning properly
- 5. If you drop or damage the meter or if you leave it in the cold or heat
- 6. If you feel the numbers you are getting are not accurate and don't match how you feel and think something isn't right
- 7. You should check your meter against a laboratory blood test every year. Ex. If you are going to the lab to have blood work drawn first thing in the morning, take your blood sugar meter with you and test your blood sugar right before it is drawn. There should not be more than a 15% difference between the lab value and the value you got with your machine. Ex. If your doctor tells you your blood sugar result was 8.0 your meter should give you a number between 6.8-9.2 (15% on either side of 8).
- 8. If you have your blood taken at the lab and you find that your numbers don't match with the numbers your doctor told you.

## MY DIABETES CARE: Not just about blood sugars

 What is this form for?
 All members of your diabetes team need to be on the same page:

 SHARE TO IMPROVE YOUR CARE!

 How to use this form.
 Complete it with EACH member of your diabetes team (pharmacist,

nurse, dietitian, etc.). Keep one copy for yourself and have a copy faxed/scanned to your primary care provider. Your primary care provider can review it with you at your next visit, and make changes to your care if needed.

Patient Name:
Date:
DOB:

My diabetes Vital Signs: ABCDESSS	Current Status	Comments or Advice
A 1C 7% or less or personalized target of%		
B Blood pressure less than 130/80 mmHG		
C Choloesterol (LDL) less than 2.0 mmol/L		
<ul> <li>Drugs for decreasing heart disease risk (if applicable)</li> <li>ACEi/ARB:</li> <li>Statin:</li> <li>ASA:</li> <li>SGLT2i or GLP1ra:</li> </ul>	Prescribed Taking Recommended	
E Exercise goals and healthy eating		
<ul> <li>Self-management support</li> <li>Set a personalized goal</li> <li>Identify barriers to achieving goals (pain, stress, mental health, financial and/or other concerns)</li> </ul>		
<ul> <li>Screening or monitoring for complications</li> <li>Heart: ECG every 3-5 years if required</li> <li>Foot: Yearly exam or more if required</li> <li>Kidney: Yearly blood/urine tests or more if required</li> <li>Eye: Yearlly exam or more if required</li> </ul>	Date completed: Overdue	
S Smoking cessation (if applicable)		
Contact info/office stamp of health-care provider(s) completing this form.		diabetes.ca 1-800-BANTING (226-8464) info@diabetes.ca



If you are pregnant or have gestational diabetes

SHADED AREA: example of when to test
REMEMBER: feeling shaky/sweaty/light headed then TEST!!
IF BELOW 4: treat with 2/3 cup regular pop or juice
TARGET: not higher then 5.3 when you get up or before a meal, not higher then 6.7 two hours after a meal

DAV	FIRST MEAL		SECOND MEAL		THIRD MEAL		DEDTIME
DAT	Before	2hr After	Before	2hr After	Before	2hr After	BEDHME
Monday							
Tuesday							
Wednesday							
Thursday							
Friday							
Saturday							
Sunday							
Monday							
Tuesday							
Wednesday							
Thursday							
Friday							
Saturday							
Sunday							
Monday							
Tuesday							
Wednesday							
Thursday							
Friday							
Saturday							
Sunday							

If you just found out you have diabetes, if your blood sugars aren't at target or if you are taking glyburide, gliclazide, gliclazide MR or repaglinide

**SHADED AREA**: example of when to test

**REMEMBER**: feeling shaky/sweaty/light headed then **TEST!!** 

**IF BELOW 4**: treat with 2/3 cup regular pop or juice

**TARGET**: 4-7 before meals or bedtime, 5-10 two hours after a meal

DAV	FIRST MEAL		SECOND MEAL		THIRD MEAL		DEDTIME
DAT	Before	2hr After	Before	2hr After	Before	2hr After	BEDIIME
Monday							
Tuesday							
Wednesday							
Thursday							
Friday							
Saturday							
Sunday							
Monday							
Tuesday							
Wednesday							
Thursday							
Friday							
Saturday							
Sunday							
Monday							
Tuesday							
Wednesday							
Thursday							
Friday							
Saturday							
Sunday							



### If you are taking insulin at bedtime

SHADED AREA: example of when to testREMEMBER: feeling shaky/sweaty/light headed then TEST!!IF BELOW 4: treat with 2/3 cup regular pop or juiceTARGET: 4-7 before meals or bedtime, 5-10 two hours after a meal

DAY	FIRST MEAL		SECOND MEAL		THIRD MEAL		DEDTIME
	Before	2hr After	Before	2hr After	Before	2hr After	BEDIIME
Monday							
Tuesday							
Wednesday							
Thursday							
Friday							
Saturday							
Sunday							
Monday							
Tuesday							
Wednesday							
Thursday							
Friday							
Saturday							
Sunday							
Monday							
Tuesday							
Wednesday							
Thursday							
Friday							
Saturday							
Sunday							

If you are taking rapid insulin with meals and long acting insulin at bedtime

SHADED AREA: example of when to testREMEMBER: feeling shaky/sweaty/light headed then TEST!!IF BELOW 4: treat with 2/3 cup regular pop or juiceTARGET: 4-7 before meals or bedtime, 5-10 two hours after a meal

DAY	FIRST MEAL		SECOND MEAL		THIRD MEAL		
	Before	2hr After	Before	2hr After	Before	2hr After	BEDIIME
Monday							
Tuesday							
Wednesday							
Thursday							
Friday							
Saturday							
Sunday							
Monday							
Tuesday							
Wednesday							
Thursday							
Friday							
Saturday							
Sunday							
Monday							
Tuesday							
Wednesday							
Thursday							
Friday							
Saturday							
Sunday							

If you are taking N (cloudy insulin) or 30/70 insulin or mix25 insulin

**TEST:** at 1st meal and 3rd meal

SHADED AREA: example of when to test

**REMEMBER**: feeling shaky/sweaty/light headed then **TEST!!** 

IF BELOW 4: treat with 2/3 cup regular pop or juice

TARGET: 4-7 before meals or bedtime, 5-10 two hours after a meal

DAV	FIRST MEAL		SECOND MEAL		THIRD MEAL		DEDTIME
DAf	Before	2hr After	Before	2hr After	Before	2hr After	DEDIIME
Monday							
Tuesday							
Wednesday							
Thursday							
Friday							
Saturday							
Sunday							
Monday							
Tuesday							
Wednesday							
Thursday							
Friday							
Saturday							
Sunday							
Monday							
Tuesday							
Wednesday							
Thursday							
Friday							
Saturday							
Sunday							

No pills/\*pills that <u>DON'T</u> cause your blood sugars to go too low\*(see below)

TEST: 3-4x/wk

SHADED AREA: example of when to test

TARGET: 4-7 before meals or bedtime, 5-10 two hours after a meal

#### NAME:

DAY	FIRST MEAL		SECOND MEAL		THIRD MEAL		
	Before	2hr After	Before	2hr After	Before	2hr After	BEDIIME
Monday							
Tuesday							
Wednesday							
Thursday							
Friday							
Saturday							
Sunday							
Monday							
Tuesday							
Wednesday							
Thursday							
Friday							
Saturday							
Sunday							
Monday							
Tuesday							
Wednesday							
Thursday							
Friday							
Saturday							
Sunday							

\*The only pills that can cause blood sugars to go too low (below 4) are glyburide, gliclazide, gliclazide MR and repaglinide.

### The National Indigenous Diabetes Association (NIDA) envisions diabetes-free communities.

Our mission is to lead the promotion of healthy environments, and to prevent and manage diabetes by working together with people, communities, and organizations.