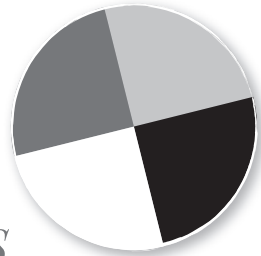


Pathway to Wellness

*A Handbook for
Aboriginal People
Living with Diabetes*



**National Aboriginal
Diabetes Association**

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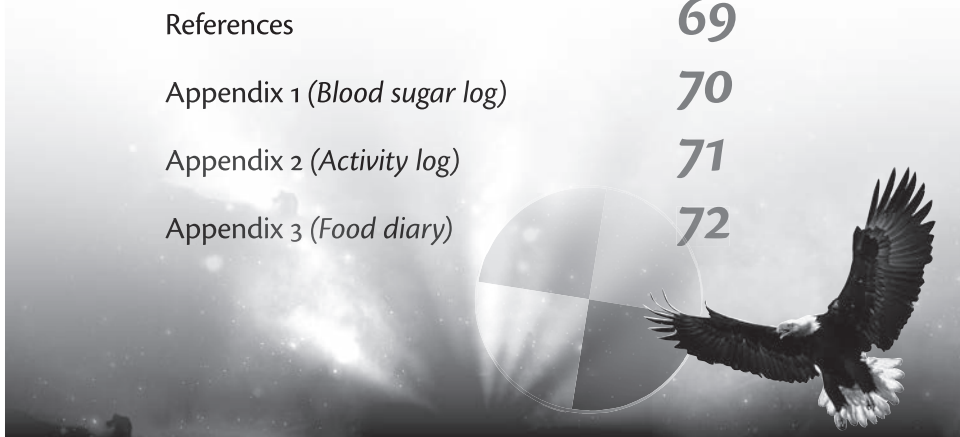
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Chapter 1

Acknowledgements

The original *Pathway to Wellness* series was a joint initiative with the National Aboriginal Diabetes Association and the Aboriginal Nurses Association of Canada.

The adaptation of the *Pathway to Wellness* series was developed under the guidance of the Diabetes Integration Project in the Province of Manitoba. The National Aboriginal Diabetes Association and the Diabetes Integration Project acknowledge and graciously thank all the people who contributed their time and expertise in updating Pathways.

Introduction

The National Aboriginal Diabetes Association (NADA) offers this handbook as a guide to help you understand what you need to know about diabetes. This handbook is based on information provided in the Canadian Diabetes Association's 2008 Clinical Practice Guidelines for the Prevention and Management of Diabetes in Canada. This book should be used in conjunction with proper medical advice and guidance of your healthcare professionals.

Many Aboriginal people are affected by diabetes. People living with diabetes must take a proactive approach to manage this condition by eating healthy, increasing physical activity, maintaining

optimal blood sugar levels as well as scheduling and attending regular medical appointments, tests and examinations.

Many people with diabetes manage their condition and live happy, healthy lives. Some of these people have shared what they have learned about living with diabetes. The following are a few of their suggestions:

- 1. Accept that you have diabetes—a disease that must be managed.**
- 2. Take responsibility for your health.** Learn about diabetes, and how obesity, lack of exercise, smoking, high sugar and fatty foods increase your risk of developing complications.
- 3. Take diabetes seriously and learn how to manage it through:**
 - a. Eating a well balanced diet with lots of vegetables and fruit.
 - b. Increasing physical activity.
 - c. Regular testing of blood sugar levels.
- 4. Care for yourself emotionally and spiritually by learning to cope with and manage stress.**



Diabetes

Diabetes is a disease that happens when your body does not make or use insulin the right way. Insulin is important for your body to turn sugar from food into energy. There are three types of diabetes:

Type 1 diabetes happens when the body doesn't make insulin at all.

Type 2 diabetes happens when the body produces not enough insulin or has trouble using the insulin it makes

Gestational diabetes happens when the body can't use insulin during pregnancy.

Who is at risk of getting type 2 diabetes?

Aboriginal people are more susceptible to getting type 2 diabetes than other Canadians. Younger Aboriginal people are also developing type 2 diabetes more often than before. Diabetes was not always a health issue for Aboriginal people. When Aboriginal people led a traditional lifestyle with lots of physical activity and traditional foods, fewer had diabetes.

Aboriginal People have a higher chance of getting type 2 diabetes. Before, older people used to get diabetes, but now, Aboriginal people are getting it at a lot younger age because their traditional lifestyle has changed so fast.

The following are risk factors for diabetes:

- ▲ Getting older
- ▲ Overweight (especially in the stomach)
- ▲ Blood relative with diabetes or your mother had gestational diabetes
- ▲ Have had a baby over 4 kg (9lbs)
- ▲ Had gestational diabetes
- ▲ High cholesterol and/or high blood pressure
- ▲ Higher blood sugar than normal

- ▲ Darker patches of skin around your neck

These are risk factors, even if you answered yes to any of these, it does not mean that you have diabetes, but you should see a healthcare professional and get tested.

Signs and symptoms of diabetes include:

- ▲ Being thirsty often
- ▲ Having to pee often
- ▲ Unusual weight gain or loss
- ▲ Getting tired often
- ▲ Blurry vision
- ▲ Getting infections often
- ▲ Cuts and bruises that won't heal
- ▲ Tingly or numb hands and feet
- ▲ Problems with erections.



Pre-Diabetes

Pre-diabetes occurs when a person has abnormally high blood sugar levels. Impaired fasting glucose (IFG) or impaired glucose tolerance (IGT) are the two terms used to identify pre-diabetes. If the person does not make lifestyle changes, he or she might develop type 2 diabetes.

Prevention of diabetes complications

Preventing diabetes complications can be achieved by proper management of the disease through healthy living. By eating healthy, getting regular physical activity and taking prescribed medications, diabetes complications can be prevented. High stress levels tend to raise blood sugar levels so it is good to learn how to manage stress.

Care for diabetes depends on taking an active role in managing diabetes.

- ▲ A person's commitment to the challenge of living a balanced lifestyle;
- ▲ Level of responsibility taken for personal healthcare;
- ▲ Acceptance that one can live a healthy and happy life with diabetes;
- ▲ Commitment to regular physical activity;
- ▲ Willingness to choose and eat healthy foods;
- ▲ Taking prescribed medication;
- ▲ Belief that education is very important and can be used to change one's lifestyle;
- ▲ Ability to discuss lifestyle changes with friends and family members.

Blood sugar levels

By following a diabetes management plan, a person with type 2 diabetes can control their blood sugar levels. Speak with your healthcare professional about a diabetes management plan that

can help keep blood sugar levels within target range. A plan should include physical activity and healthy eating. Diabetes medications may also be needed. People with diabetes can work to manage or control the disease through a variety of methods such as:

- Eating a healthy, well balanced diet.
- Daily physical activity.
- Coping with and reducing stress.
- Testing blood sugar daily.
- Taking diabetes medications as prescribed by a doctor.

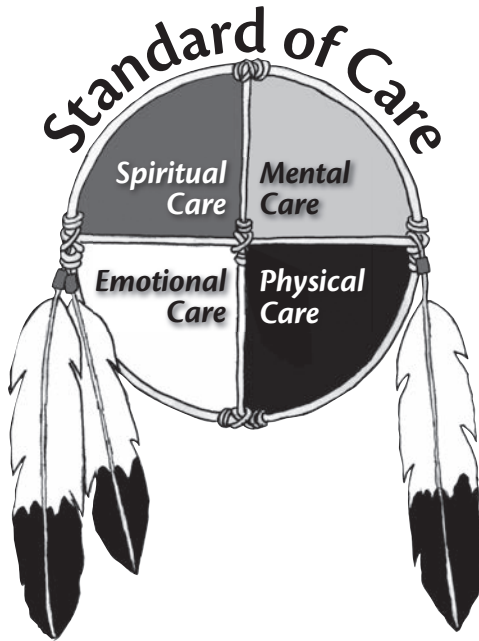


The purpose of managing diabetes is to maintain good health and wellness.

There are two types of sugar levels that you have to watch out for:

High blood sugar level and low blood sugar level. If there is a lot of sugar in the blood (higher than 10 mmol/L) it is called Hyperglycemia or high blood sugar. This may occur when diabetes medications are not taken properly; illness, infection or injuries; eating too much fatty, high sodium and sugar foods; not getting enough physical activity; and/or too much stress in your life.

If there is very little sugar in the blood (less than 4 mmol/L) it is called Hypoglycemia or low blood sugar. This may occur when: too much insulin is taken; physical activity before a meal; skipped meals or snacks; and/or by drinking alcohol.



Spiritual care
for a peaceful spirit

Mental care
for a healthy mind

Emotional care
for a healthy mind

Physical care
for a healthy body

Mental aspect

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 an individual's mental wellness and promoting resilience to handle life's stressors may not only reduce the risk of mental health conditions but also 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); or eating disorders (bulimia, anorexia nervosa). Although the exact cause of most mental disorders isn't known, it's becom-



ing clear that many of these conditions are caused by a combination of biological (heredity, illness, infections, prenatal exposures), psychological (early loss, grief, traumas, abuse) and environmental (dysfunctional family life, poverty, isolation, separation, family substance use) factors. 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 have impacted the mental health of First Nations. A research project commissioned by the Aboriginal Healing Foundation found that 75% of the case files for a sample of Aboriginal residential school survivors showed that mental health issues, with 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 as in the general population. Major depression is present in at least 15% of people with diabetes. Depression is also associated with higher

blood sugar levels, health complications and decreased quality of life.

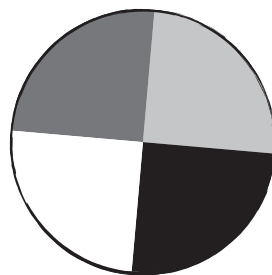
Symptoms of depression

- ▲ 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 over-sleeping.
- ▲ 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.



Spiritual aspect

Spirituality means different things to different people. The spiritual aspect focuses on healing through the use of 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 yourself 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.

Emotional aspect

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. For example, if the diagnosis of diabetes overwhelms you, it is time to share your emotions with someone else. Join support groups. Talking to people about your problems can help. For example, you can join support groups for people living with diabetes. You realize you are not alone and you can learn new ideas about coping with the stress of diabetes. Meet and talk with Elders in your community. They can give you ideas on how to take things easy and provide insightful perspective to your unique situation and health.

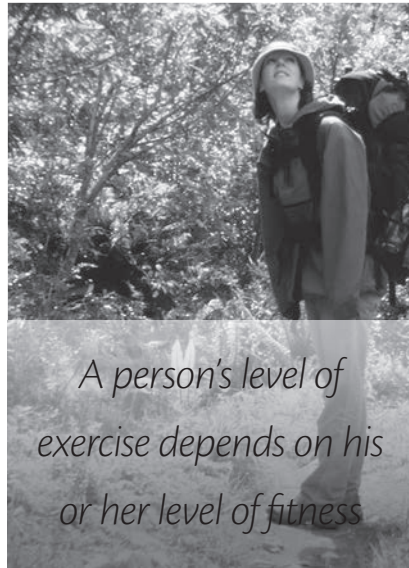
Physical aspect

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 by:

- Helping to lower blood sugar levels, blood pressure and cholesterol.
- Helping insulin work better.
- Using up extra fat in the body.
- Relieving tension and stress.

- Improving digestion.
- Improving circulation of blood.
- Helping to keep the heart in shape.
- Burning off calories and managing weight.
- Improving sleep and sexual energy.

There are many activities that can be done to increase physical activity. Be encouraged to do activities you enjoy. A person's level of exercise depends on his or her level of fitness. At the start, it is best to go slow, starting with 5 minutes a day and gradually increasing to 20 minutes or more a day.



A person's level of exercise depends on his or her level of fitness

General tips before engaging in physical activity:

- ▲ Stretching 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.
- ▲ Test blood sugar levels before you exercise and after you are done, record in your log book.

*Test blood sugar
levels before you
exercise and after you
are done, record in
your log book.*



Chapter 2

Managing Diabetes

A healthy eating plan, increased physical activity, blood glucose testing and diabetes medications are important parts of the holistic diabetes management. Working with healthcare professionals in your community to establish a healthy eating plan, physical activity routine, medications you need and blood sugar testing routine is the best way to go. But first identify who your diabetes health care team may be.

Diabetes Healthcare Team

A diabetes healthcare team is part of living a healthy and happy life. A diabetes healthcare team is a group of people that supports the person living with diabetes in the four parts of life: mental, physical, emotional and spiritual by helping to:

- Accept the diagnosis of diabetes.
- Adapt to the lifestyle changes.
- Increase commitment and participation in managing diabetes.

A diabetes healthcare team should include people who can help:

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

Care for diabetes depends on:

- ▲ Commitment to the challenge of living a balanced lifestyle.
- ▲ Level of personal responsibility one takes for their health.
- ▲ Acceptance that one can live a healthy and happy life with diabetes.
- ▲ Full active participation with diabetes healthcare team.
- ▲ Commitment to regular physical activity.
- ▲ Willingness to choose and eat healthy foods.
- ▲ Belief that education is very important and can be used to change lifestyle.
- ▲ Ability to discuss lifestyle changes with friends and family members.

Members of a diabetes team can be a physician, nurse practitioner, community health nurse, nutritionist or community health worker. The diabetes worker's job 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, and that you can live a long life if diabetes is properly managed.

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

- 
- ▲ Family & 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—Hormone & glands doctor
 - ▲ Neurologist—Nervous System doctor
 - ▲ Nephrologists—Kidney doctor
 - ▲ Chiropodist—Foot doctor
 - ▲ Podiatrist—Foot doctor
 - ▲ Pharmacist
 - ▲ Registered dietician
 - ▲ Nutritionist
 - ▲ Diabetes educator
 - ▲ Diabetes worker
 - ▲ Community health representative
 - ▲ Support worker
 - ▲ Support group
 - ▲ Home maker
 - ▲ Spiritual healer
 - ▲ Elder
 - ▲ Priest
 - ▲ Minister
 - ▲ Traditional healer

USE THE MEDICINE WHEEL as a guide and make a list of the healthcare team members in your community. How does each person fit into the four parts of the Medicine Wheel?



Clinical Testing

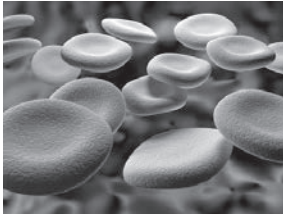
Clinical testing is fundamental to managing diabetes. People living with diabetes should get tested regularly to monitor the effects that diabetes is having on their bodies. Regular clinical testing of blood sugar levels, blood pressure, cholesterol, glycated hemoglobin and kidney function as well as eye exams are some tests required to determine how effective managing diabetes has been, and whether any changes need to be made.



During the first visit with the diabetes worker a health assessment should be done. Results should be recorded to assess what factors need special attention.

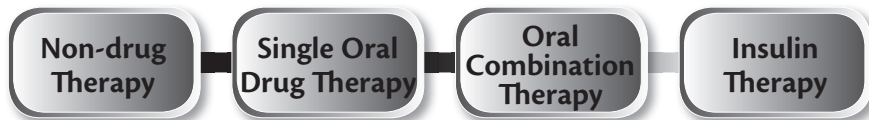
FACTORS	TARGET VALUE	RESULTS
Blood Pressure (BP)	< 130/80 mm Hg	
Body Mass Index (BMI)	18.5-24.9 kg/m2	
Waist Circumference (WC)	≤ 102 cm Men, ≤88cm Women*	
Glycated Hemoglobin A1c (HgBA1c)	≤ 7.0 %	
Total Cholesterol: High Density Lipoprotein Ratio (TC:HDL Ratio)	< 4.0	
Low Density Lipoprotein (LDL) “bad cholesterol”	≤ 2.0 mmol/L	
High Density Lipoprotein (HDL) “good cholesterol”	> 1.0 Men > 1.3 Women	
Total Cholesterol (TC)	< 5.18 mmol/L	
Triglycerides (TG)	< 1.7 mmol/L	
Albumin to Creatinine Ratio (ACR)	< 2.0 Men < 2.8 Women	

*Not used for pregnant women



The A1C test should be assessed every 3 – 4 months as it indicates the effectiveness of treatment and measures your average blood glucose level over a period of three months. If blood glucose levels are not within target range, diabetes therapy may need to be adjusted

Therapy Flowchart for Managing Type 2 Diabetes



Non-drug Therapy:

- ▲ Lifestyle: healthy eating and physical activity
- ▲ Self-monitoring of blood glucose levels
- ▲ If individualized goals for blood glucose levels are not met within 2 – 4 months, reassess action for lifestyle changes for further improvement
- ▲ Advancement to next level of therapy may be required



Single Oral Drug Therapy:

- ▲ One oral diabetes medication
- ▲ Lifestyle: healthy eating and physical activity
- ▲ Self-monitoring of blood glucose levels

- ▲ If individualized goals for blood glucose levels are not met within 2 – 4 months, reassess action for lifestyle changes for further improvement
- ▲ Advancement to next level of therapy may be necessary



Oral Combination Therapy:

- ▲ Combination of oral diabetes medications
- ▲ Lifestyle: healthy eating and physical activity
- ▲ Self-monitoring of blood glucose levels
- ▲ If individualized goals for blood glucose levels are not met within 2 – 4 months, reassess action for lifestyle changes for further improvement
- ▲ Advancement to next level of therapy may be necessary

Insulin Therapy:

- ▲ Either bedtime insulin with or without oral diabetes medications
- ▲ Insulin injections 1 – 4 times a day
- ▲ Lifestyle: healthy eating and physical activity



Healthy Eating

How does body weight affect risk of diabetes?

Too much body weight is a risk factor for developing diabetes. If a person is overweight, losing about 7% of their initial (starting) body weight can help them reduce the risk of developing type 2 diabetes. This weight loss can be achieved by changing eating habits and increasing physical activity.

It's important to focus on eating well and being active, not on weight loss. Improving eating habits and increasing physical activity not only affects body weight but also overall health!

Body size as a measure of health risk

Two tools used to assess the risk of health problems related to body weight are the body mass index (BMI) and waist circumference (WC).

In general, these tools are used with adults 18 years of age or older. They are not used with pregnant (or breastfeeding) women.

Body mass index

The BMI measures at weight for height. It is not a direct measure of body fat. Instead, it indicates health risk associated with being under and overweight.

BMIs are classified into four categories associated with health risk.

Body mass index

BMI	WEIGHT CATEGORY	LEVEL OF HEALTH RISK
less than 18.5	Underweight	High
between 18.5 and 24.9	Normal weight	Low
between 25 and 29.9	Overweight	High
30 and over	Obese	Highest

Note: The BMI can overestimate health risk in athletes and others who have a muscular build. It may also underestimate health risk in Elders and others who have lost muscle mass.

To calculate BMI, take a person's weight in **kilograms** and divide it by their height in **metres** squared (kg/m^2).

For example, for an adult weighing 70 kg who is 165 cm tall, their height would be 1.65 metres. A height of 1.65 metres squared = $1.65 \times 1.65 = 2.72$. To calculate their BMI, divide 70 by 2.72. This equals 25.7.

A BMI of 25.7 means that the person is “overweight” and at an increased health risk.

Waist circumference

The WC indicates health risk associated with abdominal obesity (fat around the organs in the stomach area). Too much fat around the waist and upper body (sometimes called an “apple” body shape) is associated with higher levels of health risk than if fat is found more in the hip and thigh areas (sometimes called a “pear” body shape).



A WC measurement of **102 cm** (40 in.) or more for men, and **88 cm** (35 in.) or more for women, is associated with an increased risk of developing health problems such as type 2 diabetes, heart disease, gall bladder disease and high blood pressure. In general, the risk of developing health problems increases as WC measurement increases above the cutoff points.

To calculate WC, have the person stand with their feet about 25 to 30 cm (10 to 12 ins.) apart. Place the measuring tape half way between the top of their hip bone and their lowest rib. This will be about 5 cm (1.5 in.) above their belly button. Wrap the tape measure around the person in a circle. Make sure the tape measure is level all the way around. The tape measure should not be too tight or push in the skin. Ask the person to breathe in and then out. At the end of the “out” breath, take the measurement.

Why healthy eating is important

Research shows healthy eating is one of the key actions to prevent and manage diabetes—of all types. It does this through providing key nutrients that keep you healthy and helping to achieve and maintain a healthy body weight. If people make healthy choices, such as:

- decreasing high sugar foods and drinks
- getting enough fiber
- drinking healthy beverages
- being physically active

they give their bodies the best possible chance for wellness.

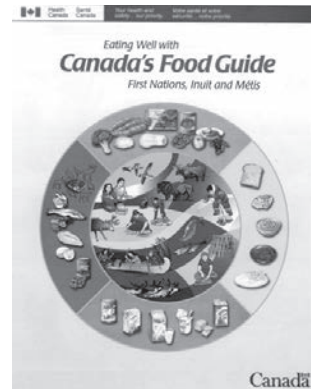
Canada's Food Guide was created to help people make healthy food choices. It shows Canadians how much food and what types of food to eat **each day** to get the nutrients needed for good health. This is called a healthy eating pattern.

Eating Well with Canada's Food Guide—First Nations, Inuit and Métis—reflects food choices and traditions of Aboriginal peoples. This food 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 ***Eating Well with Canada's Food Guide***. In this sec-

tion, information is used from Eating Well with Canada's Food Guide—First Nations, Inuit and Métis, which is sometimes called "Canada's Food Guide."

People who choose the amount and type of food recommended by Canada's Food Guide will get the nutrients they need to stay healthy. People who follow Canada's Food Guide will help lower the risk of obesity, type 2 diabetes, heart disease, certain types of cancer, and osteoporosis.

You can visit www.hc-sc.gc.ca to download a copy of *Eating Well with Canada's Food Guide—First Nations, Inuit and Métis*.



Reading food labels

The nutrition information on food labels can help people make informed choices. This information is found 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

Nutrition Facts	
Serving Size 1 bag 7 oz 198g (198 g)	
Amount Per Serving	
Calories 972	Calories from Fat 558
% Daily Value*	
Total Fat 64g	99%
Saturated Fat 16g	80%
Trans Fat	
Cholesterol 0mg	0%
Sodium 1485mg	62%
Total Carbohydrate 105g	35%
Dietary Fiber 9g	35%
Sugars	
Protein 15g	
Vitamin A	9% • Vitamin C 112%
Calcium	10% • Iron 21%
<small>*Percent Daily Values are based on a 2,000 calorie diet. Your daily values may be higher or lower depending on your calorie needs.</small>	
©www.NutritionData.com	

Ingredient list

The ingredient list lets people know all the ingredients they 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 will be the highest in the food. This will help people understand if a food is higher in fat or sugar.

Sources of Fat

Food labels also provide information about how much fat is in that item.

Some words that mean “fat” include:

- ▲ shortening
- ▲ oil
- ▲ glycerides

▲ glycerol

▲ esters

If you are concerned about blood cholesterol levels, for example, avoiding or limiting foods with the following saturated or trans fats is helpful:

▲ lard

▲ shortening

▲ hydrogenated or partially
hydrogenated oils (any type)

▲ tallow

▲ coconut, palm or palm kernel oil

▲ cocoa butter

▲ butter

▲ powdered whole milk solids

Healthier fats to look for include
canola oil, olive oil and peanut oil.



***Olive oil is a
healthier fat to
look for.***

Why is it important to limit trans and saturated fats and to choose healthier fats?

Trans fats are processed fats. Trans fats help processed foods stay moist and “fresh.” Trans fats can increase the risk of heart disease.

If a food package ingredient list has “partially hydrogenated” or “hydrogenated” oil on it, it contains trans fats.

Saturated fats are found mostly in store-bought animal products, such as: the fat in and on meats; the skin of chicken; butter; cream; cheeses; milks (particularly full-fat homogenized milk or evaporated whole milk)

Saturated fats are also found in tropical fats like coconut and palm kernel oils. Healthier alternatives to trans and saturated fats are omega-3 fats, such as those found in fish like salmon, sardines and herring; monounsaturated fats from plants (such as canola and olive oil); polyunsaturated vegetable oils such as corn, sunflower and safflower oils; non-hydrogenated margarines

Canada’s Food Guide also says that we need 2 to 3 tbsp. or about 30 to 45 mL, of unsaturated fat each day. Unsaturated fats are healthier than other kinds of fat. Some 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 ooligan grease

Sources of Sugar

“Sugar” may be listed as sugar, white sugar, brown sugar, icing sugar, or liquid sugar.

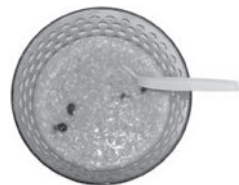
Words ending with “ose,” such as sucrose, fructose, glucose, and dextrose are also sugars. Honey and molasses contain sugar as well.



Sources of Sodium

Sodium can be found in many ingredients containing the word sodium such as sodium chloride and monosodium glutamate, and other ingredients ending with salt, such as garlic salt or celery salt.

Carbohydrates



Simple carbohydrates (including jam, raw sugar, jelly, soda pop, brown sugar, molasses, corn syrup and fruit sweeteners) break down quickly into sugar or glucose, but they lack bulk and do not signal our brains when we have had enough. This often leads to over-eating of these items and the production of too much sugar in the blood.

Complex carbohydrates (including vegetables, fruits, whole grains, beans and peas) are more health promoting and satisfying. Complex carbohydrates are bulky, fibrous and filling without being fattening. They also help to digest fats and proteins and are an excellent source of vitamins and minerals.

Nutrition Facts table

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

Nutrition claims

Two types of nutrition claims can be found on labels. One type, nutrient claims, tell you how much of a specific nutrient—like sugar, fat, fiber or sodium—can be found in the food. The second type, health claims, tell you how including this food in your diet can affect your health. Understanding health claims is a way of helping to choose healthy foods and promote healthy food choices.

Five main words used in nutrient content claims are:

- ▲ **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 **3** grams of fat or less per serving)
- ▲ **Reduced**—At least **25%** less of a nutrient when compared with a similar product (for example, reduced in calories means that there is at least **25%** fewer calories than the food it is being compared to)
- ▲ **Source**—A significant amount (for example, source of fiber means **2 or more** grams of fiber in a serving)

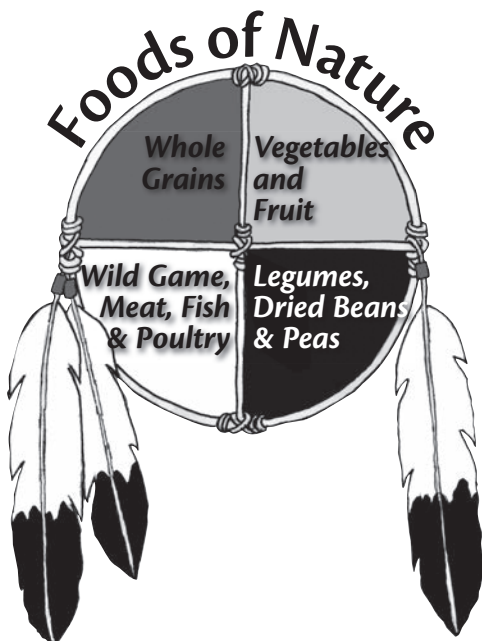
▲ **Light**—Reduced in fat (for example, light in fat), reduced in energy (for example, light in calories) or light in terms of a feature (for example, light in colour).

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.

Fiber—Why is it important to choose fiber-rich foods?

Fiber is another example of a nutrition claim. Fiber is important because it can help to reduce the risk of heart disease and lower blood cholesterol; reduce the risk of developing diabetes and manage blood sugars; and prevent and relieve constipation.

Fiber can be listed in the following ways:



Source—which means it contains **2 g** or more of fiber per serving

High source—which means the food contains **4 g** or more of fiber per serving

Very High Source—which means the food contains **6 g** or more of fiber per serving

Traditional foods

Benefits of traditional foods

Foods from the land, water and sky were once the only sources of food for First Nations people. Roots, berries, greens, teas, animal and fish innards and other body parts such as eyes, skin, fat and bones were 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
- ▲ **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**

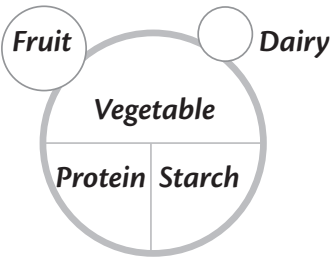


Food preparation and cooking tips:

Fruits and vegetables may be fresh, steamed, boiled, roasted, frozen or canned. Meats and alternatives should be lean. Skinless boneless chicken, ground lean meats, wild game meats and fish should be baked, broiled or boiled. Avoid frying foods in excessive amounts of oil, lard, shortening and hydrogenated margarine. Try to use as little fat or oil as possible. If you must use oil, use canola, olive, or soy oil.

How big is one serving?

When sitting down
to a well-balanced meal,
your plate should look like this:



Use household items to compare one serving size to

Fruits and Vegetables

Fresh,
Frozen,
Canned



*Light
bulb*

Protein

Fish,
Meat
Poultry



*Deck of
cards*

Starch

Rice, Pasta,
Bread,
Potato



*Hockey
puck*

Fat

Oil,
Salad Dressing,
Butter



*One
die*

Dairy

Milk,
Cheese,
Yogurt



$\frac{1}{2}$ Cup



*Three
dominoes*

Blood Glucose Testing

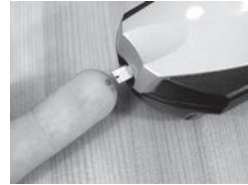
It is very important that blood sugar levels be monitored and kept within the target range of 4 to 7 mmol/L. A blood testing kit measures the amount of sugar in blood and is an important part of a good diabetes management plan. The blood testing kit includes:

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 given in blood testing kit. Blood glucose testing should be done at least three times a day—before a meal and two hours after the meal. Accurate monitoring is important for blood sugar control. Target optimal blood sugar levels are 4 – 7 mmol/L before a meal and 5 – 11 mmol/L after a meal.

It is important to understand and recognize the warning signs of high and low blood sugar levels. The quicker the signs can be spotted, the faster medical treatment can begin to prevent or stop severe situations.

Diabetes & 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
- ▲ Pancreas problems

People who take pills or insulin for their diabetes can have low blood sugar for up to 24 hours after drinking alcohol. To stay safe they should:

- Eat regular meals
- Take medication as prescribed by your doctor
- Check blood sugar often while drinking alcohol
- Have 5 or 6 hard candies or $\frac{3}{4}$ cup regular pop handy to treat 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

Diabetes & Sexual Dysfunction

Whether you are male or female, diabetes may cause some form of sexual dysfunction. Some symptoms of sexual dysfunction include: erectile dysfunction, lack of sexual desire, ejaculation troubles, relationship troubles, difficulty having an orgasm, genital stimulation difficulty, painful intercourse, or vaginal dryness.



Diabetes & Sleep Apnea

What is sleep apnea?

Sleep apnea is a disturbance in breathing during sleep. There are two kinds of sleep apnea. People with this disorder may stop breathing for one to two seconds for up to hundreds of times during the night. Symptoms of sleep apnea include:

- ▲ Snoring
- ▲ Interruption in breathing patterns during sleep
- ▲ A feeling of being tired and not getting enough sleep

Obstructive sleep apnea is the more common of the two kinds. Obstructive sleep apnea 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.

Researchers have documented that when a patient's airway is obstructed the body triggers the "fight or flight" response. This response produces high levels of cortisol, which is a hormone produced by the adrenal gland. Cortisol is referred to as the "stress hormone" as it is produced in response to stress and anxiety. It increases blood pressure, blood sugar levels, reduces immune responses and leads to insulin resistance and glucose intolerance.

Diabetes & Smoking

Smoking by itself has devastating effects on the body, adding diabetes to that is even more so. Smoking can cause a lot of health problems, but it's even worse if you have diabetes:

- 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.

Quitting smoking improves a person's health outlook immensely. A family doctor can help with different aides to help a person quit smoking.

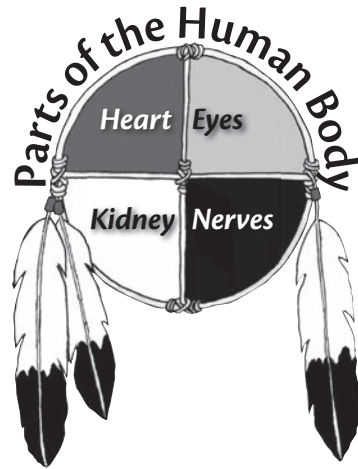


Chapter 3

Preventable diabetes complications

To understand diabetes and how it affects us, we need to know which part of our body is affected by diabetes.

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



1. **Make Insulin**—the pancreas makes a hormone called insulin. This hormone helps our cells (basic living unit of all plants and animals) take in sugar (glucose) from the blood to give us energy to keep our body working properly.
2. **Help Digest Food**—The second job for the pancreas is to make enzymes to help the body digest food. Enzymes break down the food we eat to use the nutrients we need to live.

When the pancreas does not produce enough insulin, the body does not absorb the sugar from the foods you eat and the sugar stays in the blood.

Uncontrolled diabetes may accelerate other health problems and lead to other serious health complications such as:

- ▲ Heart disease, strokes and heart attacks
- ▲ Eye damage and blindness
- ▲ Kidney disease, kidney failure and pelvic disease
- ▲ Poor circulation, numbness, cramping and pain
- ▲ Amputations
- ▲ Foot and skin infections
- ▲ Impotence and erectile dysfunction
- ▲ Recurring yeast infections and vaginal dryness
- ▲ Birth defects, stillbirths and miscarriages

These four specific areas of the body need to be cared for. These are the eyes, kidneys, nerves and heart.

Eyes

Retinopathy is the loss of vision because of blood vessel damage. The risk of developing retinopathy is higher when you have high blood sugar levels, high blood pressure or A1C or glycated hemoglobin greater than 7 mmol/L.

People with diabetes are also at a higher risk of developing cataracts. A cataract is the clouding of the lens of the eyes which results in blurred vision. There are different ways that eye problems can develop and there are many tests and treatments to prevent further damage. A patient needs to be referred to an eye specialist such as an ophthalmologist.



Other tips for eye care

- ▲ Keeping blood glucose levels and blood pressure under control 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 he or she recommends. Note that 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 or any other changes to vision.
- ▲ Before being diagnosed with type 2 diabetes, people 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 fruits and vegetables every day.

- ▲ Eat fish (salmon, herring, etc) at least twice a week to increase omega-3s in the diet and avoid sugary foods and processed foods with chemicals and preservatives.
- ▲ If contact lenses are worn, make sure hands are washed before putting contacts in or removing them.

Nerves–Neuropathy

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**—these help with movement and control muscles.
- ▲ **Sensory nerves**—these nerves are in the feet, arms, hands and legs as they help sense things such as hot or cold temperatures; touching rough or smooth objects; or tingling and numbness sensations.
- ▲ **Autonomic nerves**—these control the internal body functions, such as the heart, digestive system, sweat, sexual organs and bladder.

Detectable neuropathy may develop within 10 years of onset in 40–50% in people with diabetes. The following are some ways to prevent neuropathy:

- ▲ Annual screening to identify risk of developing foot ulcers. Screening can prevent amputations of the limbs.
- ▲ There is a test to check how much the feet can feel. Vibration, touch and temperature tests can show how sensitive feet are. This test should be 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 assessing how much feeling there is in the feet.

Managing neuropathy and proper footcare is very important and can prevent further pain and amputations. Maintain blood sugar levels to a healthy range of 4 – 7 mmols/L. By controlling blood sugars many diabetes related complications can be prevented.



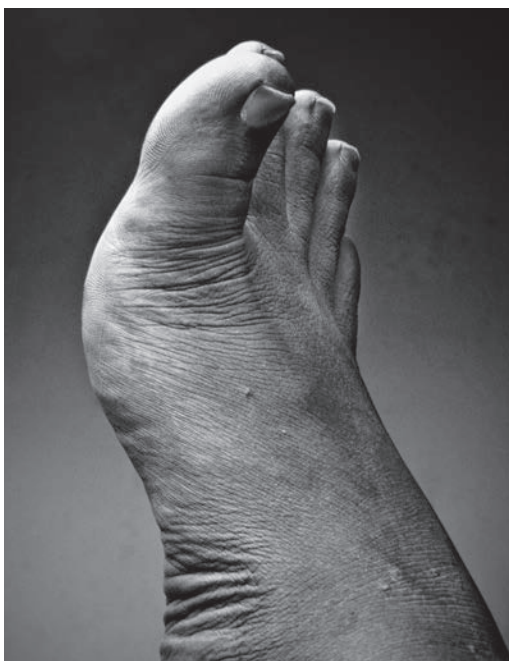
Foot problems for people with diabetes are the major cause of illness and injury. Lower limbs such as the legs and feet are at high risk for amputation if uncared for. Minor problems or infections can lead to gangrene if improperly cared for. Gangrene occurs when the tissue or part of the body does not get any blood and starts to die. The dying limb must be amputated.

Footcare

- 1. Preventive Care**—this is a checklist for you to follow:
 - ▲ Annual foot examination.
 - ▲ Have the feet checked at every visit with healthcare professional if at high risk for developing neuropathy.
 - ▲ Keep your blood sugar levels between 4 – 7 mmols/L.
 - ▲ Protect the feet at all times from cuts, scrapes, frostbite or sun-burn.
- 2. How to care for feet**—the feet are more susceptible to injury and infection and wounds take longer to heal for a person with

diabetes. Feet should be inspected daily. Here are a few points to follow:

- ▲ Examine the bottom of each foot with a mirror and 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.



Do not use any chemicals like iodine or rubbing alcohol on the feet. A healthcare professional should be seen immediately if there is anything unusual.

- ▲ Wear comfortable, well-fitted shoes. Custom shoes can be ordered. Winter boots should be worn during the cold winter months.
- ▲ Shoes should also be worn inside 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) as this prevents dryness and cracking.

- ▲ Be careful when trimming toe nails; make sure to file rough edges away.

- ▲ If you don't know how to trim your toenails, a healthcare professional can assist.

3. Sensory foot exam—this is an exam to test the sensory nerves.

The test should be done at every visit for patients with high risk for neuropathy. It should be done at least once a year for patients with lower risk. The test should also be done if the patient notices any changes to their feet.

4. Education—it is important to be aware of the importance of good footcare. Here are a few recommendations:

- ▲ Inspect feet at least once a day for those with high risk and after each exercise session. Be sure to use a good light and mirror to see the bottom of the foot.

- ▲ If you have blurred vision, neuropathy, vascular disease or eye disease you should not attempt to cut toe nails, corns or calluses.

- ▲ Stop smoking.

- ▲ Contact a healthcare professional or nurse if minor scratches or scrapes are slow to heal.

- ▲ Select suitable and proper footwear to protect the feet and avoid injury.

- ▲ Do not go bare foot indoors or outdoors.

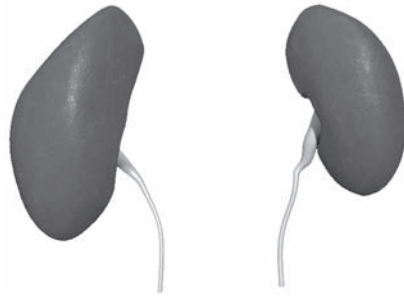
- ▲ Check your shoes before putting them on to make sure nothing in them will hurt the feet.

- ▲ In the winter, wear warm boots to protect the feet from frostbite.

- ▲ Any infection must be treated immediately by a healthcare professional.

Kidneys—Nephropathy

Kidney disease is called nephropathy. Kidneys act like filters for the body and when the blood vessels are damaged they can no longer filter out toxins which are poisonous to the body. The number one cause of kidney failure is diabetes. People with diabetes also have a higher rate of urinary tract infections. Too much sugar in the urine can result in the growth of bacteria in the urine that can lead to infections. Since the kidneys and bladder are connected, infections can cause kidney damage.



To prevent nephropathy:

1. Keep blood sugar levels within normal range of 4 – 7 mmol/L. Annual screening for kidney function should be done.
2. Lower blood pressure. There are treatments that lower blood pressure such as the ACE inhibitor therapy. By lowering blood pressure, it makes functioning of the kidneys easier.

Manage nephropathy by lowering blood pressure. Get blood pressure checked every six months.

High blood pressure or Hypertension means the pressure of the blood flowing from the heart into the body through the arteries is high. High blood pressure can be a result of blocked arteries. It complicates diabetes and worsens as we get older. Blood pressure can be lowered by losing weight, exercising, avoiding smoking, avoiding alcohol consumption, and avoiding excessive amounts

of salt (read food labels as many processed foods have high salt or sodium content). Take medications as prescribed. If the blood pressure remains high after lifestyle changes, other medication and therapy options should be considered with a doctor.

Heart—Cardiovascular



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, the red blood

cells harden and become brittle. 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 and is a major cause of illness and death in people with diabetes.
- ▲ Coronary Artery Disease (CAD) occurs when the arteries in the body become clogged. The arteries transport the blood to the heart, brain and other body parts.
- ▲ A stroke occurs when the blood supply cannot get through to the brain.

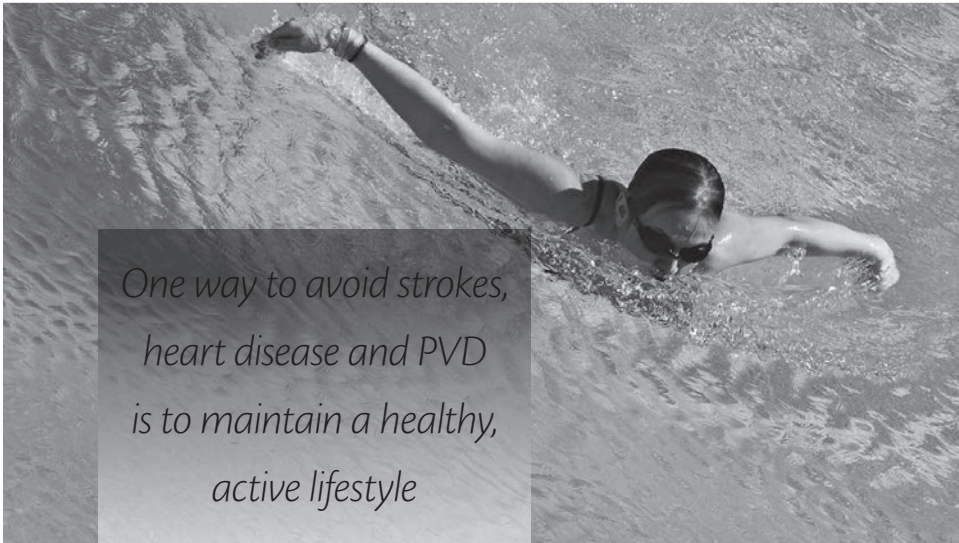
- ▲ People with diabetes may have arteries and veins that are clogged thus making it difficult for blood to flow through them. A heart attack occurs when there is a little or no blood supply to the heart.

Bad cholesterol is the factor for heart health. Cholesterol is a wax-like fat that is produced in small amounts by the body. We can also get it from fatty foods. It can cause a build-up in the walls of the arteries. This can make the blood slow down and even stop flowing leading to a heart attack. By eating non-fat foods, exercising and losing weight, high cholesterol levels in the blood can be lowered.

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 (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.

There is a higher chance of getting Peripheral Vascular Disease (PVD). PVD results from circulation problems in the veins. The veins become blocked and 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 method to prevent strokes, heart disease and PVD is to live a healthy active lifestyle. Here are a few suggestions:

- ▲ Keep blood sugars between 4 – 7 mmols/L.
- ▲ Eat healthy foods low in fat, sugar and salt.
- ▲ Lose weight.
- ▲ Maintain an active lifestyle.
- ▲ Reduce stress.
- ▲ Avoid alcohol.
- ▲ Quit smoking.



Insulin

Insulin is the hormone created by the pancreas. This hormone helps our cells take in sugar from the blood to give us energy to keep our body working properly. If the pancreas does not make any insulin of its own, we can give it to ourselves with an injection.

The different types of insulin available are: rapid-acting insulin, short-acting insulin, intermediate-acting insulin, long-acting insulin and very long-acting insulin. There are different ways to inject insulin. As insulin is a liquid, it may be injected with a



With an insulin pen, the insulin is already in a cartridge ready for use.



syringe or with an insulin pen into the body. With an insulin pen, the insulin is already in a cartridge ready for usage. Insulin can be prescribed one to four times daily, usually at mealtime. Sometimes insulin is added at bedtime as this can result in better blood sugar control and less weight gain. Intermediate insulin given at bedtime helps to keep the blood sugar level from being too high during the night. It starts to work in 1 – 3 hours after injection, peaks usually in 5 – 8 hours and continues to work for 18 hours. A breakfast blood sugar test shows how well the intermediate acting insulin is working. The body will prevent the blood sugar level from dropping too low by releasing a hormone called glucagons, to make the liver start converting stored glycogen into glucose. This may cause an increase in the blood glucose level and give a high reading in the morning. If blood sugar is too low, an “insulin reaction” may have occurred in the night/early morning and signs

are bad dreams, damp bed sheets, morning grumpiness and/or headache. The amount of the intermediate acting insulin may need to be changed. Because it is so hard to balance blood sugar levels you should talk to your doctor about what is best for your situation.

Oral diabetes medications

If blood sugar levels are not within the normal range of 4 – 7 mmols/L, your healthcare professional may prescribe one or several pills with or without insulin. There are many possible combinations of pills and/or insulin and it takes some time to find out what works for you. Working closely with your healthcare professional in determining what medication is right for you is key.

Oral medication is used in combination with insulin and leading healthy lifestyles to:

- Control blood sugar levels
- Help pancreas produce more insulin
- Help your body use insulin better
- Help your liver reduce the release of sugar
- Move your sugar into your body cells more effectively

There are many different types of oral medication. These medications are usually taken at mealtime but be advised to read labels and follow directions carefully and take your pills as prescribed by your healthcare professional.

Chapter 4

Emotional Wellness

It is normal to have different feelings when you first learn you have diabetes. People may feel scared, worried, confused, shocked, depressed, alone, sad, anxious and angry. It is important you speak with someone who will listen. It is common to be in denial or disbelief when first diagnosed with diabetes. Trouble begins when one denies that he or she has diabetes. Long term denial prevents you from learning what you need to know to stay healthy. Once you understand diabetes treatment, and how the whole body is affected, living with diabetes will become easier.

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

Stress Management

Stress is a normal part of life. Stress results when something makes the body act like it is being attacked. The body reacts and



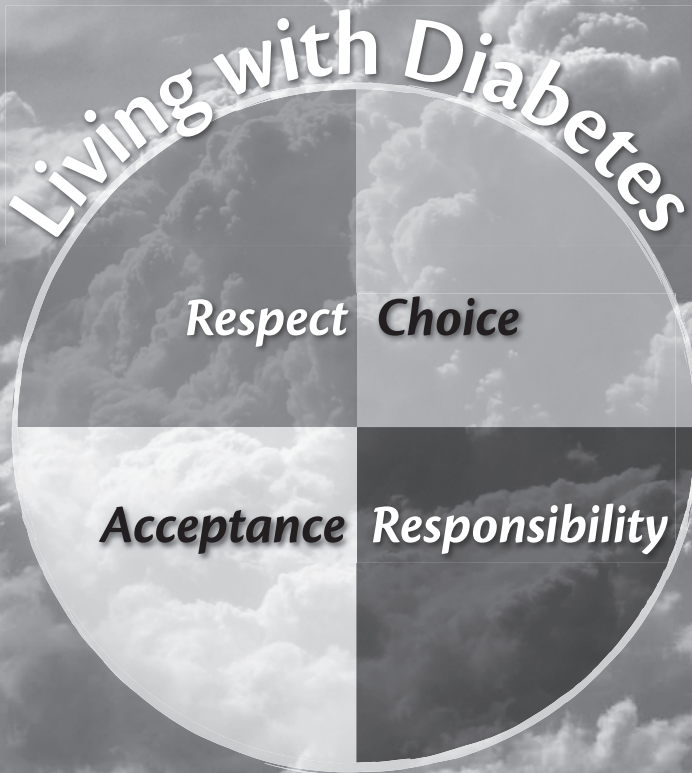
gets ready to deal with the problem. This reaction is called the “fight or flight response”. The body signals to the liver to add more sugar to the blood so it is ready to be used. If there is no insulin to take up the sugar, the blood sugar level goes high.

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, favorite memories
- ▲ Add positive things to your life
- ▲ Join support groups; talk with counselor or Elder
- ▲ Talk with friends or family



Accept your diabetes
Respect your body
Make healthy ***choices***
It is your ***responsibility***



Chapter 5

Cultural Aspects

Historically, Aboriginal People lived a traditional lifestyle and diabetes was not a concern. Aboriginal People passed their

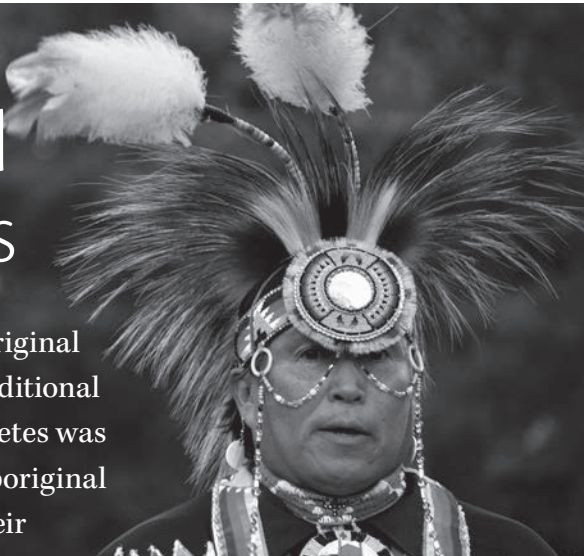
values, beliefs, customs and traditions from generation to generation by word of mouth and through story telling. “Aboriginal people were not sedentary people”. Living active lives and eating foods from the land was their way of life and survival. Many people believe that the change from this traditional 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. The main risk factors for developing diabetes are connected to:

1. Family background
2. Personal health
3. Lifestyle

Family Background

Your family history is a fact of life that cannot be changed but it gives us an insight into our personal health concerns and what we should be aware of



for the future. The following are risk factors for people who could have a higher chance of developing diabetes:

- ▲ **Family history**—diabetes has a genetic link and can be passed down from generation to generation.
- ▲ **History of Gestational diabetes**—often leads to diabetes later in life.
- ▲ **Aboriginal Ancestry**—being of First Nation, Métis or Inuit ancestry increases the risk of developing type 2 diabetes.
- ▲ **History of high cholesterol in your family**—fatty substances such as cholesterol circulating in the blood can clog up the arteries and limit blood flow in the body. Cholesterol and clogged arteries can cause heart disease and heart attacks.
- ▲ **History of Impaired Glucose Tolerance (IGT)**—when the pancreas reacts only to a very high level of sugar in the blood before releasing insulin. IGT is considered to be a very high risk factor for diabetes.
- ▲ **History of Impaired Fasting Glucose (IFG)**—when the pancreas releases insulin too soon, the sugar levels in the blood are very low.

Personal Health and Physical Activity

Our personal health is something we have the power to change. It is the condition we keep our bodies in, and results directly from what we eat and how active we are. Here are the risk factors that are related to developing diabetes:

- ▲ **Overweight People**—have a higher risk of developing diabetes.
- ▲ **High Blood Pressure**—association with obesity, heart disease and diabetes.
- ▲ **Giving birth to a baby weighing over 4kg or 9 lbs**—often leads to diabetes later in life.

You have the power to improve your personal health by eating healthy and increasing physical activity. 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, and improves the overall health of our bodies.

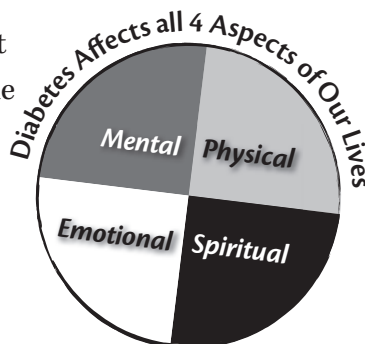
The Canadian Society for Exercise Physiology recommends that adults accumulate 150 minutes of aerobic activity each week. You don't have to join a gym. Just think about various activities you can do in your community such as swimming, walking, fishing, canoeing, dancing, tobogganing, stretching, bowling, gardening,



playing with children, chopping wood, doing household chores, hunting, jogging, hiking, snow shovelling, snow shoeing, raking leaves and playing sports.

Medicine Wheel

Aboriginal cultures have a symbol that represents a balanced way of living. The symbols are different for each group and have been seen in the form of the medicine wheel, sweat lodge, church, 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. The medicine wheel 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 is affecting all parts of our lives. The medicine wheel encourages taking a holistic approach to the treatment and management of diabetes. It is divided into four parts, each representing a part of our life: the physical, emotional, spiritual and mental. When all four parts of the medicine wheel are kept in balance, we have a healthy life.

This handbook uses the medicine wheel as a way to identify a path to reach well being, mentally, physically, emotionally and spiritually.

- ▲ 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 life the Creator has given you.
- ▲ Live in harmony with others by involving family, friends and community.

Diabetes affects all four aspects of life: mental, physical, emotional and spiritual. With proper understanding of what diabetes is and what symptoms we need to watch for, we are caring for the mental aspects of ourselves. When we eat healthy foods and are physi-



cally active we are caring for our bodies or the physical aspects 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 get over 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.

Traditional Story Telling

For Aboriginal people, storytelling is both a gift, and a very old custom, sanctioned by the people. It has a place, and it has those who are recognized by the community as translators of this custom. In Aboriginal 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 Aboriginal culture. Stories of this nature are used not as entertainment, but as messengers. These stories may not be as entertaining to those unaccustomed 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 Aboriginal people. Let's use the gift of traditional story-telling to receive knowledge and to educate future generations about the risk of diabetes.



Conclusion

Our bodies are nourished with the flow of our blood. We have seen how our lives are affected by what we eat and how important it is to keep our bodies healthy. Our bodies suffer once our blood becomes unbalanced. In the case of diabetes, our blood has too much sugar.

GLOSSARY

This list contains some terms that are used throughout the handbook, along with a brief explanation of what these terms mean.

ACE INHIBITORS or angiotensin-converting enzyme inhibitors are oral medications to lower your blood pressure.

AEROBIC ACTIVITY is an activity that makes the heart pump harder and faster, making the person breath faster, increasing the amount of oxygen in the blood.

ALPHA-GLUCOSIDASE INHIBITORS delay breakdown of sugar in meal and slows absorption of starch and sucrose in the body reducing blood sugar levels after the meal. Examples include acarbose and prandase.

ARRHYTHMIA is abnormal heart rhythm.

ARTERIES are large blood vessels that 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 the beta cells are accidentally killed

by our immune system. Once the beta cells die, the body can no longer make insulin.

CAPILLARIES are the smallest blood vessels with walls so thin that oxygen and glucose can pass through them and enter the cells. People who have had diabetes for a long time have capillaries that become weak, especially in the eye and kidney.

CARBOHYDRATES such as sugar and starch in food breaks down into glucose, the main source of fuel for muscles and affect blood sugar more than any other nutrient. There are simple carbohydrates and complex carbohydrates.

CARDIOLOGIST is a medical doctor who is a heart specialist.

BODY MASS INDEX (BMI) refers to a relationship between weight and height. It is a mathematical formula that classifies a person's level of health. For diabetes the BMI is 20 – 25 for a healthy range and for those at risk it is 25 – 27+.

CHOLESTEROL is a whitish, waxy fat-like substance 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. Butter and eggs have a lot of cholesterol.

CONGESTIVE HEART FAILURE is when the quantity of blood pumped by the heart each minute is not enough to meet the body's normal re-

quirements for oxygen and nutrients. Signs include tiredness, shortness of breath, engorgement of neck veins that feel rigid and show exaggerated pulses, enlarged liver, rapid breathing, racing of heart, unexplained steady weight gain, nausea, chest tightness, slowed mental response, loss of appetite, sweating, little urine output, swelling with indentation that remains for a short period after pressing with a finger on area.

DIABETES is caused when the pancreas does not make the right amount of insulin and your body does not use up enough sugar. Classic symptoms include fatigue, frequent urination, excessive thirst, blurred vision and unexplained weight loss.

DIASTOLIC PRESSURE refers to the pressure of blood against the inside wall of the artery that occurs when the heart rests between beats. It is one (bottom) of the readings in a blood pressure measurement.

END-STAGE KIDNEY DISEASE is a term used to describe kidney failure.

ENDOCRINOLOGIST is a medical doctor who specializes in treating people who have problems with endocrine glands. The pancreas is an endocrine gland.

FATS one of the food categories and a source of energy for the body that helps the body use some vitamins and keep the skin healthy. The body stores energy in this form. Fat is made up of two types of compounds: glycerol and fatty acids. There are four types of fats: saturated, unsaturated, trans and polyunsaturated.

FATTY ACIDS the basic units of fat are fatty acids. These are burned for energy when insulin levels are too low or there is not enough sugar to use for energy.

GESTATIONAL DIABETES MELLITUS (GDM) is a type of diabetes, similar to type 2, diagnosed during pregnancy. GDM occurs between 24th and 28th week and is caused by hormones produced during pregnancy. The body cannot use insulin properly. Sugar is not taken to the cells and builds up at a higher than normal level in the bloodstream. It may be controlled with a healthy way of eating and sometimes with insulin. The blood sugar levels return to normal in about 95% of all cases.

GLUCAGON is a hormone, made by the alpha cells in the islet of Langerhans of the pancreas, which acts primarily on the liver to release glucose into the bloodstream.

GLUCOSE is a simple sugar found in the blood that comes from food eaten and is the body's main source of energy.

HDL is high-density lipoprotein and is known as healthy cholesterol.

HYPERGLYCAEMIA refers to high blood sugar and is defined by higher than 10 mmol/L. Symptoms may not start to become noticeable until even higher values such as 15-20 mmol/L. However, if left untreated, chronic levels exceeding 10 mmol/L can produce organ damage over time.

HYPOGLYCAEMIA refers to low blood sugar and is defined by a 4

mmol/L or less blood sugar level any time. This may occur when a person living with diabetes has injected too much insulin; or medication such as Glyburide; has not understood onset, peak, duration; eaten too little food, skipping or delaying a meal or snacks; drinking alcohol; has done some extra activity or exercise without extra food. Symptoms include feeling nervous, shaky, hungry, weak, dizzy, sweaty, numb, tingling in tongue or lips, mood changes, blurred vision, and may have a headache. For treatment, test blood sugar. Eat or drink small amounts of sugar, juice or food containing fast acting sugar such as: 4 oz. (½ cup) of juice; 2 – 3 teaspoons of sugar; 3 glucose tablets; 1 package of glucose gel; or 8 oz. (1 cup) of milk. This will help the person feel better within 10 – 15 minutes. Repeat blood sugar test after 15 minutes; repeat treatment if necessary. For prevention, follow plan; understand medication, do not drink alcohol, check blood sugar before and after exercise.

IMPAIRED FASTING GLUCOSE (IFG) a term established to identify an in between stage of a steady state of abnormal blood sugar using levels of 6.1 – 6.9 mmol/L.

IMPAIRED GLUCOSE TOLERANCE (IGT) refers to high glucose levels 2 hours after a 75g oral glucose tolerance test.

INJECTION SITES are places on the body where people living with diabetes can inject insulin most easily. These include: the outer area of the upper arm; the area just above and below the waist except a 2 inch circle area around the navel; the upper area of the buttock just behind the hipbone; the front of the thigh, midway below the top of the thigh to 4 inches above the knee.

INSULIN is a hormone produced by the pancreas which regulates blood sugar levels.

INSULIN LISPRO is synthetically made insulin that is very short acting.

INSULIN DEFICIENCY is when the pancreas does not produce enough insulin.

INSULIN RESISTANCE is when insulin cannot open the door to the cell, and the body is unable to use the insulin. This leads to a condition where the pancreas becomes overworked, making too much insulin and eventually may not make enough or any insulin. The body becomes more resistant to the insulin the pancreas is making.

INSULIN SHOCK is a severe condition when the blood sugar level drops too quickly. This may happen if too much insulin has been injected, too little food eaten, or exercised without extra food. Signs are shaking, sweating, dizziness, double vision, convulsions and collapsing.

INTENSIVE INSULIN THERAPY includes administering multiple daily insulin injections (3 or 4 per day) to achieve target glucose levels.

LDL is low-density lipoprotein 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 down the lipids into fatty acids and burns them like sugar.

MACROVASCULAR COMPLICATIONS take place when damage to the large blood vessels occurs throughout the body.

METABOLISM is a term used to describe the way the cells change food so that 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 and refers to a measurement that measures the amount of sugar that contains a specific amount of atoms (Avagadro's number). In diabetes, we use it to count how much sugar there is in a specific amount of blood.

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

OBESITY is when body weight is 20% over the ideal body weight for age and height.

OPHTHALMOLOGIST is a medical doctor who is an eye specialist.

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

PEAK ACTION refers to the time period when the most effect of insulin on sugar in the blood is as strong as it can be.

PERIPHERAL VASCULAR DISEASE (PVD) refers to body wide circulation problems—blood flow to arms, legs and feet are blocked, creating cramping, pains or numbness.

PODIATRIST is a medical doctor who specializes in footcare.

POLYDIPSIA is unusual thirst lasting for long periods of time.

POLYPHAGIA is unusual hunger.

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

PREMIXED INSULIN is a mixture of short acting and long acting insulin.

PROTEINS are made up of amino acids, which 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 refers to impairment or loss of vision due to blood vessel damage in the eyes.

SATURATED FATS are solid at room temperature and come from animal food products. They raise the level of cholesterol in the blood.

SUBOPTIMAL level refers to the glucose level that may be the best that can be safely attainable. The range may be between 7.1 and 10 mmols/L before a meal and between 11.1 and 14 mmols/L after a meal.

SYSTOLIC PRESSURE is the pressure against the inside wall of the arteries when the heart pumps out blood. It is the top number in a blood pressure measurement.

TYPE 1 DIABETES is an autoimmune disease, and is primarily 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 everyday to stay alive. Young adults and children usually develop this type of diabetes. The cause of this diabetes is unknown.

TYPE 2 DIABETES is a genetic disease, triggered by environmental factors such as substance abuse, inactive lifestyle and obesity. The body cells become insulin resistant and the pancreas does not make enough insulin.

UNSATURATED FAT also called monounsaturated fat and are neutral as they do not raise or lower blood cholesterol. Two examples are olive oil and peanut oil.

UROLOGIST is a medical doctor who specializes in urinary and genital

conditions.

VEIN is a blood vessel that 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.

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Blood Sugar Log

Date	Day	Breakfast	Lunch	Dinner	Bedtime
	Monday				
	Tuesday				
	Wednesday				
	Thursday				
	Friday				
	Saturday				
	Sunday				
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Activity Log			
Day	Time	Activity	Minutes
Monday			
		Monday total	
Tuesday			
		Tuesday total	
Wednesday			
		Wednesday total	
Thursday			
		Thursday total	
Friday			
		Friday total	
Saturday			
		Saturday total	
Sunday			
		Weekly total	

Food Diary

[illegible]