

Pathway to Wellness

A HANDBOOK FOR PEOPLE LIVING WITH DIABETES



National Aboriginal
Diabetes Association

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CONTENTS

pg	1	INTRODUCTION
	6	Your Diabetes Health Care Team
	6	Role of Diabetes Health Care Team
	7	Mental or Intellectual Care – For Gaining Wisdom
	8	Physical Care – For Taking Care of the Body
	8	Emotional Care – For Dealing with Feelings and Releasing Stress
	9	Spiritual Care – For Learning to Respect and Heal Yourself
	11	DIABETES -What is diabetes?
		TYPES OF DIABETES
	12	Type 1 diabetes Type 2 diabetes Gestational
		YOUR BODY
	13	DIABETES IN ABORIGINAL POPULATION/ COMMUNITIES
	14	WHO IS AT RISK?
		Family Background
		Personal Health
	15	Lifestyle or the way you live
		TYPES OF DIABETES
	18	TYPE 1 DIABETES -Diabetes Care
	21	Your Health Care Provider
	24	How Do People Feel?
	26	Blood Sugar Levels
	30	Insulin
	31	Physical Activity
	35	Nutrition and Diet
	40	Stress in Life
	42	Care for specific conditions
	43	Prevention for Retinopathy
	44	Prevention of Nephropathy
	47	Prevention of Neuropathy
	52	Prevention and managing strokes and heart attacks
	53	Managing illness
	53	Skin Care for Infections

pg	54	TYPE 2 DIABETES -Diabetes Care
	57	Your Health Care Provider
	61	How Do People Feel?
	63	Blood Sugar Levels
	68	Medication and Insulin
	72	Physical Activity
	74	Nutrition and Diet
	80	Stress in Life
	82	Care for specific conditions
	83	Prevention for Retinopathy
	84	Prevention of Nephropathy
	87	Prevention of Neuropathy
	93	Prevention and managing strokes and heart attacks
	93	Managing illness
	94	Skin Care for Infections
	94	Type 2 Diabetes And Pregnancy
	95	Management for Specific Groups
	97	GESTATIONAL DIABETES
	97	How does it affect my baby?
	98	Screening For Gestational Diabetes
	99	What are the risk factors for pregnant women?
	99	Family Background
	100	Personal Health
	100	Lifestyle or the way you live
	100	Managing gestational diabetes
	102	CONCLUSIONS
	103	Daily Tasks
	104	GLOSSARY
	114	REFERENCES

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INTRODUCTION

The National Aboriginal Diabetes Association (NADA) offers you this handbook as a tool to help you understand what you need to know about and do to live with diabetes successfully. This handbook is based on information provided in the 1998 Clinical Practice Guidelines for the Management of Diabetes in Canada.

Hundreds of thousands of Aboriginal people are affected by diabetes. Many of these people successfully manage their diabetes and live happy, healthy lives. Some of these people have offered to share with you what they have learned about living with diabetes. The following points are a few of their suggestions:

- 1) Get over the negative feelings of anger and denial
- 2) Accept that you have diabetes - a disease that must be controlled
- 3) Assume responsibility for your health and your family's health.
Learn about diabetes and how obesity, lack of exercise, smoking and high sugar and fat foods put you at risk
- 4) Take diabetes seriously and learn how to manage it through:
 - Eating a balanced diet of low fat and low sugar food
 - Exercising regularly and staying active
 - Testing your blood sugar regularly
- 5) Remember that diabetes can be prevented through proper education in the community and at home
- 6) Care for yourself emotionally and spiritually by learning to cope with and manage stress
- 7) Find out how traditional healing practices and spirituality might benefit you.

Do you have any personal experiences to add to the list?

The most important lessons that I've learned about living with diabetes are:

-
-
-
-

COMMON THEMES

You may notice that there are a few concepts or themes that appear repeatedly throughout this handbook. These themes act as threads that weave together the different ideas and information that is presented in this book. Each of these themes is explained below.

LIVING WITH DIABETES

Throughout this handbook, you will see the phrase "living with diabetes" often. We use the words "living with diabetes" to describe:

- People who accept that they have diabetes and work to manage it as part of their lives
- People who are affected by diabetes in some way but don't actually have diabetes themselves, like the son or daughter of someone diagnosed with diabetes

- People who care for someone who has diabetes
The idea of "living with diabetes" instead of just "having diabetes" means that you:
- Accept that you or your loved one has a life threatening disease called diabetes
- Understand that you can control and manage the disease through proper diet, regular exercise and proper medical treatment
- Take the right steps needed to control and manage the disease so you can live a healthy happy life despite diabetes.
Let this handbook help you become someone who is living with diabetes, instead of being just someone who has diabetes.

A Medicine Man once said that a person experiences most of their healing just by seeking help. The healer's teachings will heal only a small part of their problem. The person themselves completes their healing once they put the healer's teachings into practice.

MEDICINE WHEEL

Many of our cultures, whether we come from the North, South, East or West, 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 medicine. The common theme between all these symbols is that life needs a balance of all parts of our life that fit together for one result, healthy living.

This handbook uses the Medicine Wheel to represent a complete and 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 spirituality. 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 might not see or understand
- Show how things are connected within our selves and with the rest of creation
- Provide us with a way to understand life and the world around us
- Provide us with a wholistic way of looking at life.

This handbook uses the Medicine Wheel as a way to help you:

- 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
- Understand how you can help yourself
- 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 and community

The circle and the four directions of the Medicine Wheel also teach us balance. The number four is an important part of the balance that is found throughout creation.

There are different ways the concept of the medicine wheel is expressed:

1. Seasons: spring, summer, fall and winter
2. Directions: east, south, west and north
3. Life: growth, nourishment, protection, and wholeness
4. Elements: air, earth, water and fire
5. Races: black, yellow, red, and white

In this handbook we will focus on the directions. Each human being also has four sides: physical, emotional, mental and spiritual. Some of our cultures use the four directions to describe and explain the different aspects of our nature.

1/ The East represents our physical nature. East gives the world light and is the source of rebirth. Our life's journey begins here in the East with our physical self. Our will and commitment to learn and understand how diabetes affects us begins here. We complete physical tasks that awaken our senses and give ourselves to the goals we want to reach.

2/ The South represents our emotional nature. South is a place of fullness where the sun is at its highest. We need to take time to look at and try to understand our feelings and emotions. Exploring and honoring our emotional selves requires us to release negative feelings, and to express ourselves openly and freely. When our emotional selves are healthy, we can be clear thinking, effective and honest to ourselves, and others.

3/ The West represents our spiritual nature. West gives us darkness as a quiet place for reflection and ceremony. Although the West represents the unknown, it allows us to face ourselves and to learn to respect ourselves so we can have the strength to follow our will and our path. Here in the West we find the connection between the human spirit and the creator. Here we can feel whole and be accepting of ourselves and of the world around us.

4/ The North represents our mental or intellectual selves. North is the place of winter, the final season. North is a place of completion and fulfillment. The North tells us that as long as we are willing, all wisdom can be learned. Our mental selves allow us to balance of all. Our wisdom and reason shows us how things fit together.

From the North we can look to the South to see that knowledge and understanding are found in both the mind and the heart. When we look to the East we know another journey will begin. We have the strength to believe in our new journey because we respect the abilities we have learned in the West.

The circle of the Medicine Wheel continually ends in a new beginning. Balance and wisdom are endless as long as we keep the medicine wheel unbroken. We risk breaking the circle each time we neglect or abuse one of the four parts of ourselves.

Walking a balanced path requires you to have the will and determination to equally develop and care for your physical, spiritual, mental and emotional selves. We all have the ability to live a balanced life, we just need to be willing to take that journey and commit to developing ourselves.

The Medicine Wheel Helps Us Live With Diabetes

For the purpose of this manual the Medicine Wheel is divided by each of the four directions: North, South, East and West. Each of the four directions stands for a different part of our life:

- 1/** East is for our Physical needs
- 2/** South is for our Emotional needs
- 3/** West is for our Spiritual needs
- 4/** North is for our Mental needs

According to the teachings of the Medicine Wheel, we must meet our needs in all four parts of our lives for us to walk in balance. When all four parts of the wheel are kept in balance, we have a healthy life.

The Medicine Wheel appears throughout the handbook to:

- Remind you to think about how diabetes is affecting all parts of your life
- Organize the information presented
- Help you apply the information to different parts of your life



WHOLISTIC APPROACH TO DIABETES TREATMENT

This handbook encourages you to take a wholistic approach to the treatment and management of your diabetes. Taking a wholistic approach to dealing with diabetes means that you care for your whole self, instead of just the parts of you that are being affected by diabetes directly.

Diabetes affects your whole life, not just your body. It affects:

- The way your body works inside and outside
- The way you feel mentally, physically and emotionally
- Your daily life; what you can eat and what you can do
- Your relationships with those around you like friends and family.

The best treatments and management plans include things that help you have a healthy body, mind, heart and spirit.

The Medicine Wheel idea can be used to help you build a wholistic treatment and management plan with your health care provider and diabetes support team.

DIABETES MANAGEMENT

People that live with diabetes work to manage or control the disease through a variety of methods such as:

- Eating a healthy, well balanced diet that is low in fat, sugar and carbohydrates
- Exercising and staying active
- Coping with and reducing stress
- Testing their blood sugar regularly

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

"Health is the power, the energy to exist in balance of body, mind and spirit, and the function in harmony with the environment and with other people"

Dr. Frank Clarke

Your Diabetes Health Care Team

As a person living with diabetes, part of living a healthy and happy life means having a Diabetes Health Care Team. Your Diabetes Health Care Team is a group of people that can support you in the four areas of your life: mental, physical, emotional and spiritual.

Role of Diabetes Health Care Team

The role of the diabetes health care team is to support you and those around you to:

- Accept your diagnosis
- Adapt to the changes in your lifestyle and health care
- Live a healthy and happy life
- Help increase your commitment and participation in managing diabetes

Your team should have people who can:

- Care for your body and your health (Physical)
- Help you cope with stress and support you in your personal life (Emotional)
- Help you find understanding, peace and contentment in your life (Spiritual)
- Help you learn about diabetes and its effects on your body (Mental)

You, the person living with diabetes, your family and your caregivers are at the centre of the team.

Your team may be large or small, but it should include a diabetes worker. Your diabetes worker might be a nurse, a community health care worker, or a doctor. The worker's job is to give you the information you need about diabetes and how it is affecting your health.

Possible Team Members

All communities are different and the number of possible health care team members will also be different. To help you find balance and understanding in all parts of your life, we have created lists of possible health team members that you can talk to. There are four different lists, one for each of the directions of the medicine wheel. You will notice that some of the people listed can provide information and ideas on many areas of living with diabetes and there are others that are more specialized.

Your health care team may have five members or twenty members, but you, the person living with diabetes, must search for the information you need to find balance and health in your life. For example, in smaller communities, there may be a person living with diabetes in your health care team that can give you information on food and cooking as well as physical activities. An elder and your family can provide spiritual and emotional guidance and a family doctor that can give you general health information and medicinal treatments.

The following are general lists that are meant to provide you with information on who you can talk with.

1/ Mental or Intellectual Care – For Gaining Wisdom

Information about general health

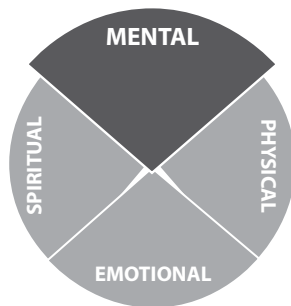
General Practitioner - Family Doctor
Nurse Practitioner / Community Health Nurse - Primary Care Nurse
Long Term Care Case Manager - Nurse
Home Care Nurse - Nurse that does home visits
Optometrist - Family Eye Doctor
Obstetrician – Doctor for Pregnant Women
Dentist – Tooth and Gum Doctor

Information about specialists

Ophthalmologist - Eye Specialist
Cardiologist - Heart Doctor
Endocrinologist - Hormone and Gland Doctor
Neurologist - Nervous System Doctor
Nephrologist - Kidney Doctor
Chiroprapist / Podiatrist – Foot Doctor

Information about living with diabetes

Person in your community living with diabetes
Family members i.e. spouse, children, relatives
Registered Dietician / Community Nutritionist
Diabetes Educator / Diabetes Worker



Community Health Representative / Personal Support Worker
/ Home Maker / Spiritual Healer / Elder / Priest / Minister / Medicine Man
Pharmacists

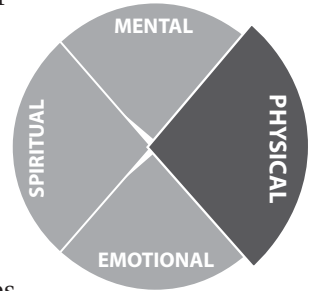
2/ Physical Care – For Taking Care of the Body

Information about general health

General Practitioner - Family Doctor
Nurse Practitioner / Community Health Nurse - Primary Care Nurse
Home Care Nurse - Nurse that does home visits
Long Term Care Case Manager – Nurse
Obstetrician – Doctor for Pregnant Women

Information about specialists

Endocrinologist - Hormone and Gland Doctor
Nephrologist - Kidney Doctor
Ophthalmologist - Eye Specialist
Cardiologist - Heart Doctor
Neurologist - Nervous System Doctor
Chiropracist / Podiatrist – Foot Doctor



Information about living with diabetes

Person in your community living with diabetes
Family members i.e. spouse, children, relatives
Registered Dietician / Community Nutritionist
Diabetes Educator / Diabetes Worker
Community Health Representative / Personal Support Worker / Home
Maker

3/ Emotional Care – For Dealing with Feelings and Releasing Stress

Information about general health

General Practitioner - Family Doctor
Nurse Practitioner / Community Health Nurse - Primary Care Nurse
Long Term Care Case Manager - Nurse
Home Care Nurse - Nurse that does home visits

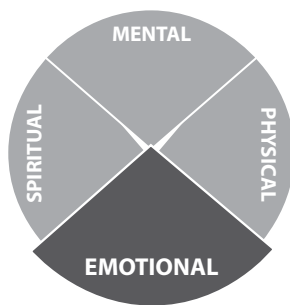
Information about specialists

Psychologist - a doctor trained to help people understand and deal
with their emotions

Mental Health Worker
National Alcohol and Drug Awareness Program
(NADAP) worker

Information about living with diabetes

Spiritual Healer / Elder / Medicine Man
Priest / Minister / Deacon
Person in your community living with diabetes
Family members i.e. spouse, children, relatives
Diabetes Educator / Diabetes Worker
Community Health Representative / Personal Support Worker / Home
Maker



4/ Spiritual Care – For Learning to Respect and Heal Yourself

Information about general health

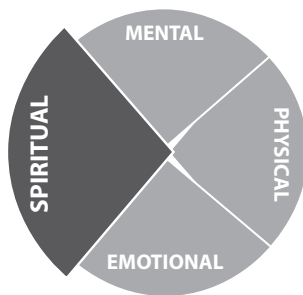
General Practitioner - Family Doctor
Nurse Practitioner / Community Health Nurse - Primary Care Nurse
Long Term Care Case Manager - Nurse
Home Care Nurse - Nurse that does home visits

Information about specialists

Spiritual Healer / Elder / Medicine Man
Priest / Minister / Deacon
Social Worker – can help set goals

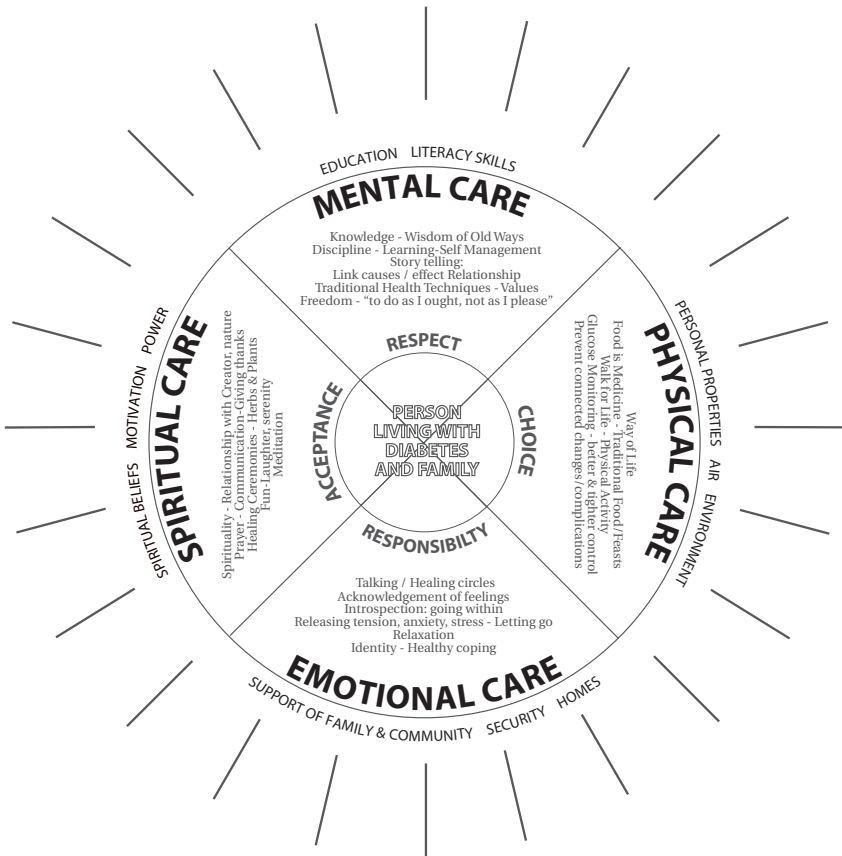
Information about living with diabetes

Person in your community living with diabetes
Family members i.e. spouse, children, relatives
Elder/Spiritual Healer
Diabetes Educator / Diabetes Worker
Community Health Representative / Personal Support Worker / Home
Maker



a ACTIVITY

Use the Medicine Wheel below as a guide for yourself. Make a list of the Health Care Team members in your community. How does each person fit into the directions of the Medicine Wheel? Place the name of each person into the places they fit in the Medicine Wheel. You can use this worksheet for your own team in the future.



DIABETES-What is diabetes?

Diabetes is a disease that affects the energy of the body. It is necessary for the body to digest food to give you the energy you need to live. To digest food your organs have to be able to break down food so that your body can take in the nutrients it needs. Sugar (or glucose) is the basic fuel that gives your body energy.

Your body relies on the pancreas to make sure that it can absorb the nutrients you need. The pancreas is the organ that produces the hormone called insulin. Insulin helps your cells to absorb sugar.

Diabetes is caused when the pancreas doesn't make the right amount of insulin, and your body doesn't use up enough sugar.

When the pancreas doesn't produce enough insulin, the body doesn't absorb the sugar from the foods you eat. If there is too much sugar in the body it can lead to life-threatening problems, such as the following:

- Kidneys – disease or failure
- Eyes - blindness
- Nerves – numbness in the limbs
- Heart – disease or failure
- Blood Vessels – damage, hardening of the arteries



These specific areas of the body that need to be cared for will be discussed further in this handbook.

Although there is no cure for diabetes right now, the disease can be managed, and people can live long, healthy, happy lives.

Diabetes is the inability to process the sweetness of life. Traditional Healer/Medicine Man

TYPES OF DIABETES

There are three types of diabetes that will be discussed in this handbook.

- Type 1 diabetes
- Type 2 diabetes
- Gestational diabetes

TYPE 1 DIABETES

Type 1 diabetes is usually diagnosed in children and young adults. With Type 1 diabetes, the pancreas makes little or no insulin, so you need insulin injections everyday and a carefully planned healthy way of eating.

Type 1 diabetes is also referred to as "Insulin-dependent diabetes". Type 1 diabetes accounts for about 10-15% of all diabetes.

TYPE 2 DIABETES

Type 2 diabetes is the most common form of diabetes.

In Type 2 diabetes, the pancreas is not releasing enough insulin or the insulin is not working as it should.

About 85-90% of all diabetes cases are Type 2 and are diagnosed in adults. Type 2 is sometimes called the “Non-insulin-dependent diabetes”.

The only treatment for Type 2 diabetes is developing and managing a healthy way of eating and exercise. If healthy blood sugar levels are not stable then oral medication and / or insulin are needed.

GESTATIONAL DIABETES

Gestational diabetes is a type of diabetes that happens during pregnancy between the 24th and 28th week. There are too many hormones made during the pregnancy and the body cannot use the insulin properly. Sugar is not taken to the cells so there is a high level of sugar in the bloodstream. It can be controlled 95% of the time just by eating in a healthy way and if needed, with insulin.

Your blood sugar usually returns to normal after your baby is born but you have a 50% chance of developing type 2 diabetes later on.

YOUR BODY

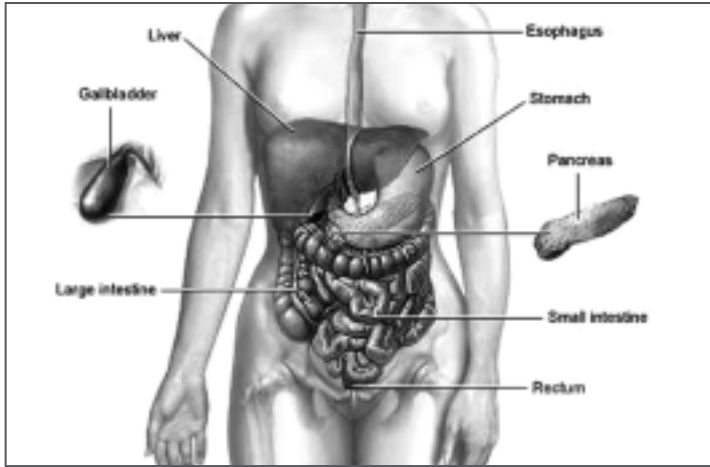
To understand diabetes and how it affects us, we need to know which part of our body affects diabetes. The main part of our body that is involved with diabetes is the pancreas. The pancreas is an organ located behind the stomach. It is about the same size as a hand. The pancreas has two jobs to do in the body, these are:

1/ Make Insulin

It makes a hormone called insulin. This hormone helps our cells (basic living unit of all plants and animals) take in sugar (which is also called 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 breakdown the food we eat to take out and use the nutrients we need to live.



Diabetes in Aboriginal Population/Communities

The following diabetes statistics are based on a 1991 Aboriginal Peoples Survey completed by Health Canada. These results were published in 1998.

- Diabetes rates are very high among First Nations people, at least 3-5 times that of the national population. It was found that 6.5 percent of First Nations people over the age of 15 have been diagnosed with Type 2 diabetes.
- Diabetes is an epidemic (widespread and the numbers are growing) in Aboriginal communities.
- Type 2 Diabetes is found most often in people in the age range of 30-39 and increases with age.
- Rates in First Nation communities are well above the national average. 8.4 percent of people on reserves have diabetes, while only 5.7 percent of people off the reserve have it.
- Much less is known about diabetes among the Métis people. Approximately 5.5 percent of Métis people have diabetes.
- Only 1.9% of Inuit people have diabetes, which is well below the national average. The Inuit have noticed that diabetes is increasing in their communities. It is feared that over time the diabetes rates will be as high among Inuit people as it is within other Aboriginal groups.

One Elder speaks of diabetes as a killer because the disease is killing our people and destroying our communities.

WHO IS AT RISK ?

When our people lived the traditional lifestyle, they weren't concerned about diabetes. Living active lives and eating traditional foods was the way of life, the way to survive. Some people believe that the move away from this traditional lifestyle has caused our people to be less active and to eat different, less healthy foods. This change in lifestyle may have put Aboriginal people at a greater risk of developing diabetes than non-Aboriginal people.

The main risk factors for developing diabetes are connected to:

- Family background
- Personal health
- Lifestyle

Family Background

Your family history is a fact of life that cannot be changed but it gives us 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 diabetes during pregnancy - often leads to diabetes later in life.
- Ethnic Ancestry - being of Aboriginal, African, Latin American or Asian ancestry increases the risk of developing diabetes.
- History of high cholesterol in your family - fatty substances, such as cholesterol, that circulate in the blood can clog up the arteries and limit blood flow in the body. Cholesterol can also cause heart disease.
- 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

Our personal health is something we can change and be aware of. It is the condition we keep our bodies 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
- People who carry most of their weight above their hips, have a 'pear shape', or are seriously overweight.
- High blood pressure, also connected with heart disease
- Experience giving birth to a baby weighing over 4 kg (9 lbs)
- Experienced symptoms of diabetes during your pregnancy

Lifestyle or the way you live

How we keep ourselves healthy relates directly to our personal health. All of the following points will increase the risk for developing diabetes but these are things we can control and change.

- Little or no exercise
- High levels of stress
- Poor eating habits - high sugar, high fat diet
- Smoking



ACTIVITY

Am I at risk?

Please answer the following questions.

- YES NO 1/ Are you 40 years of age or older?
- YES NO 2/ Are you related to someone with diabetes?
A parent, a grandparent, a brother or a sister?
- YES NO 3/ Has your health care provider suggested you lose weight?
- YES NO 4/ Are you generally an inactive person, low levels of exercise or active living?
- YES NO 5/ Are you of Aboriginal, African, Hispanic or Asian descent?
- YES NO 6/ Are you the mother of a child that was over 4 kg (9 lbs) at birth?
- YES NO 7/ Were you a large baby at birth 4 kg (9 lbs)?
- YES NO 8/ Are you often very thirsty?
- YES NO 9/ Do you urinate a lot?
- YES NO 10/ Do your cuts and bruises heal slowly?
- YES NO 11/ Do you feel tingling in your hands and feet? Any numbness?
- YES NO 12/ Do you get a lot of skin infections, such as rashes, cuts and sores?
- YES NO 13/ Is your skin very dry and itchy?
- YES NO 14/ Do you have little or no energy? Tired all the time?

If you have answered yes to any of these questions, you are at risk for diabetes and you should talk to your health care provider.

If you are at risk but do not show the signs of diabetes, a change in lifestyle can prevent the start of diabetes. Early diagnosis or discovery of diabetes is key in preventing serious complications. Your health care provider can help you set goals to lower your chances of developing diabetes.

How serious is diabetes? What are the complications?

Diabetes seems to speed up other health problems. Diabetes itself can lead to serious health complications. Some of these are:

- Heart disease or strokes, increased chance of heart attacks
- Problems with the eyes, poor eyesight, blindness
- Kidney (and Pelvic) disease or kidney failure
- Poor circulation in the body, numbness, cramping or pains
- Decreased feeling in the lower body, could lead to amputations (removal of limbs)
- Foot and skin infections
- Impotence – erectile dysfunction
- Sexual dysfunctions in women such as yeast infections and dryness
- Difficulties with pregnancy such as birth defects, stillbirths, or miscarriages

TYPES OF DIABETES

There are three types of diabetes that will be discussed in this handbook.

- 1/ Type 1 diabetes**
- 2/ Type 2 diabetes**
- 3/ Gestational diabetes**

Type 1 diabetes

Type 1 diabetes is usually diagnosed in children and young adults.

Your body relies on the pancreas to make sure that it can absorb the nutrients you need. The pancreas is the organ that produces the hormone called insulin. Insulin helps your cells to absorb sugar.

Diabetes is caused when the pancreas doesn't make the right amount of insulin, and your body doesn't use up enough sugar. With Type 1 diabetes, the pancreas makes little or no insulin, so you need insulin injections everyday and a carefully planned healthy way of eating.

Type 1 diabetes is also referred to as "Insulin-dependent diabetes". Type 1 diabetes accounts for about 10-15 % of all diabetes.

Why does my body not produce insulin?

The pancreas organ is made up of a mixture of cells. One type are called Beta cells. These are the cells that produce insulin in the pancreas. In most cases of Type 1, these beta cells are accidentally killed by our immune system. Once the beta cells die, your body can no longer make insulin so there is a build up of sugar in your body and that condition is called diabetes.

Prevention of Type 1 diabetes

- Cannot be prevented

Symptoms of Type 1 diabetes

If you have the following symptoms, it is critical that you see your health care provider.

- Nausea – feel dizzy and sick to your stomach
- Vomiting or throwing up
- Abdominal pain - pain at and below your waist
- Unconsciousness – fall asleep and cannot wake up but are still breathing
- Become ill and very weak

People with Type 1 diabetes need insulin to live. Without it they will die within days.

DIABETES CARE

Care for diabetes depends on:

- Your commitment to the challenge of a balanced lifestyle; which includes personal health and responsibility in taking prescribed treatment of medicine
- Level of responsibility you take for your personal health care
- Acceptance that you can live a healthy and happy life with diabetes
- Respect of life, yours and the people around you who care
- Full and active participation in healthy living with your Diabetes Health Care 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 your lifestyle
- Ability to discuss you lifestyle changes with your family members and be a good role model

Taking an active role in managing your diabetes will help you feel proud of yourself and confident to develop the will to change.

ACTIVITY

Diabetes affects all aspects of life: the physical, emotional, spiritual and mental. It also affects families, friends and caregivers. To achieve balance you must:

- Learn skills necessary to manage your diabetes.
- Use your support team, your Diabetes Health Care team wheel that you created in the introduction. Make sure all directions of the circle are being cared for. A balanced approach is the best path to live successfully with diabetes.
- Remember you are the Key member of Diabetes Health Care team.

Take a few moments to think about how diabetes affects your life. On the Medicine Wheel below, record how diabetes affects you physically, mentally, emotionally and spiritually.



Mental Care

Physical Care

Emotional Care

Spiritual Care

Taking care of your diabetes

1/ Your Health Care Provider

Your health care provider can be one of the following:

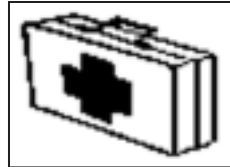
- A Physician
- A Nurse Practitioner
- A Community Health Nurse
- A Nutritionist/Diabetes Worker

On your first visit with your health care provider, he or she will do a health examination and assessment. He or she will look at four main areas and will ask you many questions to get a good picture of your level of health.

A/ Medical Interview

You will be asked questions about:

- What symptoms are present
- How you are feeling
- How long the symptoms have been present



B/ Health History

- Look at your risk factors for future problems

C/ Physical Examination

- Look at your body systems that are affected by diabetes

D/ Nutritional and Physical Counselling

Work out a management plan that best suits you. This plan will be different for each person. In general this plan will include:

- Eating a balanced healthy diet – what types of food are best to eat
- Become more active in your life, how to increase the amount of physical activity you do and give examples of how to live an active life
- Doing things that help you relax, feel good and increase your well-being – these will be specific to your personal interests and what you enjoy doing

CLINICAL TESTING

Clinical testing and care will be determined during your follow-up visits with your health care provider. Here are some general guidelines to give you an idea of how often you should have tests done.

- Routine Clinical Care (2-4 months)
- Routine visit every 2-4 months with your health care provider
- Blood pressure and foot examination at each visit
- Changing of treatment plans, trying to find balance in all the parts of treatment
- Blood Sugar Control
- Test the level of fat in the blood - Glycated hemoglobin, every 3 months

Hemoglobin carries oxygen within the blood stream to the different parts of the body. If there is too much fat in the blood, it will stick to the Hemoglobin and make blood flow difficult.

- Check meter glucose measurements, blood sugar, with a laboratory once a year to make sure they are the same and your glucose meter is working well

General Health Check

- Once a year get a full cholesterol test to see how healthy your heart is
- Get a complete urine analysis test to test the health of your kidneys every 6 months
- Visit your dentist two times a year - diabetes can affect your teeth and gums
- Have regular eye exams once a year - high sugar levels can cause blurriness or even blindness

ACTIVITY

What to ask your Health Care Provider.

It is very important that you understand what it means to have diabetes, then, you can learn to live with it.

Any question you have is a good question. Every question deserves an answer. We hope you can find all these answers in this book but it is good to talk with your health care provider for more information.

- Is there a cure? Will it ever go away?
- Is my family at risk? How can I prevent them from getting diabetes?
- What happens if I ignore it?
- What does smoking do to diabetes?
- What does alcohol do to diabetes?
- Do I need to take medication? Can I manage it with medication?
- Are there different types of medication? Which ones do I need?
- What is Medic alert?
- When I am sick what do I do?
- What do I do if there are infections?
- What is my blood sugar right now and how will this change during the day?
- What do I have to be most careful about when I exercise or perform any physical activity?
- What in my eating do I have to change?
- What support does the health care provider have or suggest? Who else can I talk to?
- If I am pregnant, what does it mean for my baby?
- Do they have more information so I can learn more about diabetes and how to live with it?
- Are there groups right now that share ideas or recipes for eating better?
- Are there emergency telephone numbers I can call if I have an emergency or a question?
- Should I eat before my next appointment with you?
Are we doing any tests?
- Do you have any questions of your own?
-
-
-
-
-
-
-

2/ How Do People Feel?

It is normal for people to have different feelings about themselves when they first learn they have diabetes. They may feel:

- Scared
- Worried
- Angry
- Shocked
- Depressed
- Alone
- Sad
- Anxious
- Confused

It is important to speak to someone you know who will listen. The good news about diabetes is that all the things you must do to manage your health are also good for everyone around you to stay well and possibly prevent diabetes in someone else.

DENIAL

It is very common to be in denial or disbelief when you first learn you have diabetes. Everyone says “not me”, and this is a way of coping with bad news. When you are ready, you will accept the fact that you have to care for yourself to live successfully with diabetes.

Dangers of Denial

The trouble begins when you keep on denying your diabetes. Long term denial stops you from learning what you need to know to keep you healthy.

- 1/ Diabetes is serious and you must care for yourself
- 2/ Pretending nothing is wrong hurts you and everyone around you
- 3/ Accept that it will take time to reach your health care goals
- 4/ Once you understand all areas of diabetes treatment and how your whole body is connected, living with diabetes will become easier. For example, you will see that eating healthy foods will make your body feel better, your mind will be at ease because your blood sugar will be in a healthy range, you will feel good about yourself and more positive about life.

What can I do?

- Support groups

Talking with people about yourself and diabetes can help. For example, there are many support groups for people living with diabetes. You realize you are not alone and you can learn new ideas about living with diabetes.

Talk to your family, get them involved and educated in how you care for yourself, they can help you set goals, provide care for you as well as care for themselves.

- Talk to your health care provider

It is always good to let your health care provider know how 'all of you' is feeling: mental, physical, emotional and spiritual.

- Talk with a therapist or Psychologist about how you are feeling

You may learn new ways to cope with your feelings and gain a new view of life.

- Writing in a diary or journal

This is one way of releasing your feelings, writing them down and leaving them there in the book. You can also come back to them when you can be open and objective, searching for answers inside yourself to make you stronger.

ACTIVITY

Find the diagram of your personal health care team that you created in the first activity. Who in your health care team can listen to you? Other people living with diabetes feel or felt the same as you do, could you share with them?

Make contacts with elders, family or friends and set up times to meet and share your feelings and experiences.

Personal Experience Story

(Canadian Diabetes Association, Winter Issue 1997)

The Silence Within

Somedays everything could seem so bright and alive, the sun would shine just as radiant as ever and Mother Nature never looked so magnificent in all her natural beauty. Catching those rare moments when you could just push everything out of your mind and not only watch nature but become a part of it, if only it could always be like that but, reality is always only a breath away. Reality that someday I might only be able to remember what all this looked like. Reality that my eyesight is getting worse with each new day and reality that some morning when I wake up, it will just be gone. To have one of the great joys of my life snatched away is bad enough but to now know that I might've been able to prevent it, is agony!

The doctors told me years ago how important it was to keep my sugars under control but I never ever got really sick or sometimes I wouldn't even know when my sugars were really high, I always thought I was doing alright. My diabetes just never seemed to be an issue. It was almost like I didn't even have it. Now when its too late I find out that all those years when I should've been taking better care of my diabetes, all this damage its been doing to my eyes. They say diabetes is a silent killer, a silent enemy that bides it's time and slowly cripples you from within, well I know my enemy now, its finally showed itself to me. I can only pray that other people will know this enemy before it's too late.

3/ Blood Sugar Levels

Many people with Type 1 diabetes live long, healthy lives. It is very important that you monitor your blood sugar levels. Your blood sugar levels must be kept within your target range (4 to 7 mmols) which can be done with proper meal planning, physical activity and insulin.

Testing Blood Sugar Levels

Your health care team will teach you about the instruments used for testing glucose or sugar levels in your blood. Here we will give a general overview.

A blood testing kit will include:

- Blood testing strips - paper strips to place a drop of your blood on
- Needle - to poke your finger
- Poker or needle casing - this is where you put the needle before you poke your finger
- Glucose meter - the machine that reads your sugar levels
- Log book - to write down the meters results, this is very important to keep a record of the meter readings. You may have to buy or make your own log book.

How to do the test:

- Follow the directions for your blood testing equipment

Blood testing usually occurs four times on the test days, and the number of times you test a week is something you should decide with your health care provider.

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

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

1. High blood sugar levels
2. Low blood sugar levels

1. High blood sugar levels

If there is a lot of sugar in the blood it is called Hyperglycemia or high blood sugars. This condition means the level of sugar in your blood is over 11 mmols.

Why does this happen?

- Not taking your medications right
- Illness, infection or injuries
- Eating too much, especially fatty and sweet foods
- Not getting enough physical activity
- Too much stress in your life, your liver releases sugar to your blood to help your body move quickly (fight or flight reaction) or to give you strength. Low stress levels are very important.
- Are there any physical symptoms? Can we see this before we test blood sugar?

Early Symptoms are:

- Thirsty and dehydrated, cannot quench thirst
- Feel weak, tired and drowsy
- Go to the bathroom often

Severe Symptoms are:

- Slow healing of wounds or infections
- A feeling of numbness in hands or feet
- Vision is blurred or distorted
- Possible sexual dysfunction
- If left too long, you may have a seizure, fall unconscious, or go into a coma or die.

What can I do when I have high blood sugar levels?

- Check your blood sugar levels to see if they are higher than the 4-7 mmol range
- Call and see your health care provider. Ask them about what steps you should take if your blood sugar is high again.
- Think about the reason why it happened. There may be a need to change something in your food or eating patterns, your exercise or activity patterns, your medication or even stress management
- Be sure to record when it happened and what symptoms you experienced
- Teaching your family about high blood sugar so they can help

We know the cells of the body need sugar for energy. If there is no sugar coming into the cells because there is no insulin, then in time the body will use fat to get energy. The fat is broken down into ketones which are toxic to your cells so they act like a poison to the body. This condition of using fat for energy is called Ketoacidosis and occurs mostly in Type 1 diabetes. In this situation, immediate medical attention is necessary.

Symptoms are:

- Fruity smell to the person's breath
- They may feel nauseous
- Vomiting
- Cramps
- Difficulty breathing
- Possibly in a coma, may be unconscious

2. Low blood sugar levels

If there is very little sugar in the blood it is called Hypoglycemia or low blood sugars. This condition means the level of sugar in your blood is under 4 mmols.

Why does this happen?

- Taking too much insulin, or the dose is too high
- Unplanned and unprepared physical activity before a meal
- Skipped meals or snacks, or eating late
- Drinking alcohol

Early Symptoms are:

There are visible physical symptoms that we can see before we test the blood sugar.

- Feelings of hunger
- Feel nervous
- Shaking
- Sweating
- Fast heart rate
- Headaches

Severe Symptoms are:

- Experiencing of slurred speech
- Confusion
- Lack of balance, feel dizzy
- If left for too long, may fall unconscious, go into a coma or die.

What can I do?

- Check your blood sugar levels to see if they are in the healthy range of 4-7 mmols
- Call and see your health care provider, there may be a need to change something in your food or eating patterns, your exercise patterns, and/or your medication
- Be sure to record when it happened and what symptoms you experienced
- Teaching your family about low blood sugar so they can help you notice any of the physical symptoms

It is best to meet with your health care provider to discuss the answers to the following questions and any other questions you may have.

ACTIVITY

1. High blood sugar levels
2. Low blood sugar levels

1. High blood sugar levels

Here are a few questions you can ask your health care provider so that you are prepared if you should have high blood sugar levels.

How should I react if I have high blood sugar levels?

What can my family do if I have symptoms of high blood sugar?

If I seizure, what should my family or friends do?

Can drinking water bring the sugar levels down to normal? Can I do this at home?

If I have high blood sugar levels what does alcohol do to my body?

2. Low blood sugar levels

Talk with your health care provider about what you can do if you have low blood sugar levels.

Here are a few questions to ask:

Will drinking a half cup of unsweetened fruit juice or regular pop drink bring my sugar levels up to normal?

Are there other sources of sugar that I could take if I have low blood sugar levels?

For example: sugar cubes, honey or lifesavers.

How do I balance my sugars with the four food groups? For example, how do foods like cheese and crackers or a peanut butter sandwich help balance my sugars?

How can I teach my family about low blood sugar symptoms so they can help?

Should I eat extra sugar when I exercise? What foods should I take?

How much should I take and when should I take it?

4/ Insulin

If you remember the introduction, we discussed that insulin is a hormone produced by the pancreas. This hormone helps our cells (basic living unit of all plants and animals) take in sugar from the blood to give us energy to keep our body working properly. Insulin acts to lower blood sugar levels. If the pancreas does not make any insulin of its own, we can give it to ourselves with an injection. There are a few different ways to inject insulin:

- Syringes and vials of insulin



Insulin is a liquid and you use the syringe to get insulin out of the bottle. You then use the syringe to inject the insulin into your body.

- Insulin pens

In an insulin pen, the insulin is already in a cartridge ready for you to use. The cartridge is changed each time you need an insulin injection. In general, insulin can be prescribed one to four times daily, usually at mealtime. Your Health Care provider will provide you with the type of insulin best for you and the directions for the injections.

Be sure to always follow the directions and keep your meal routine. It is very important to eat at regular times of the day.

Medical Alert Jewellery

Medical Alert jewellery can be a bracelet or necklace that should be worn by people with diabetes in case there is an emergency and you are not conscious (awake). All medical people check for these when an emergency patient comes in for treatment. Ask your health care provider for more information.



5/ Physical Activity

- Physical activity is very important because it:

- a) Lowers blood sugar levels
- b) Helps insulin to work better
- c) Uses up extra fat in the body to a healthy state
- d) Improves the health of our bodies

- Relieves tension and stress
- Improves digestion
- Improves circulation of blood
- Gives you more energy
- Generally feel better

e) Keeps our hearts in shape

- Lowers high blood pressure
- Lowers high cholesterol

f) Burns off calories (energy from food) and helps to manage body weight

- Decreases excessive appetites

g) Improves sleep and sexual energy

Make changes on how you live, bring more activities into your life:

Swimming, Walking, Fishing, Canoeing, Dancing, Stretching, Bowling, Gardening

House hold jobs – washing floors and vacuuming, shovelling snow or raking leaves, soccer, jogging, hiking, skiing, snow shoeing, Pow Wow, hunting



How do I plan for physical activity? What do I need?

- At the start, it is best to go slow. Start with 5 minutes a day and gradually increase to 20 minutes or more a day
- Your level of exercise will depend on your level of fitness, talk to your health care provider about which forms of exercise are best for you
- Ask your health care provider if you should be eating more for more energetic activities
- Stretch your body (arms and legs) before and after you exercise. This will prevent injuries.
- Plan to exercise after a meal or snack time
- Bring water and a sugar source with you – lifesavers, sugar cubes, unsweetened juice
- Check your blood sugar levels before you exercise and once you are done, be sure to write these in your log book
- Wear comfortable clothing and shoes, this is to be enjoyed

- Try to pick an activity that is fun for you and ask a friend or family member to do it with you. It is always nice to have someone who helps keep your routine going
 - Set goals for yourself. If needed, ask your health care provider for assistance to ensure the activity is good for you and help you set positive goals.
- a) Set a time of day for physical activity
 - b) Choose an activity
 - c) Try new activities
 - d) Slowly increase the amount of time at an activity
 - e) Exercise with a partner, friend or family member. Who will you ask?
 - f) Keep a record of the activities you do and the length of time you spend doing them

ACTIVITY

You can make or buy a logbook for exercise planning. Each time you exercise you should record the following:

- What stretches you did before you started
- Start time
- Length of time you were active
- What activity you were doing
- What you ate before you exercised
- How you feel after one day, one week, two weeks

Activity	Start Time	Stretches	Type of Meal Before Activity	Total Activity Time	Soreness Duration

Notes:

Notes:

6/ Nutrition and Diet

Meet and talk with a Dietician or Nutritionist in your community for information on Nutrition and a balanced meal plan.

Your health care provider should give you some information on what foods to eat and how to best prepare your food.

- A healthy balanced way of eating leads to a healthy body. It is healthy for you, your family and relatives.

- You can help your body use insulin easier if you:

- a) Lose weight
- b) Exercise
- c) Stop eating foods that raise blood sugar, such as simple carbohydrates.

Some examples of simple carbohydrates are:

- Jam
- Raw sugar
- Jelly
- Soda pop
- Brown sugar
- Molasses
- Corn syrup
- Fruit sweeteners

Simple carbohydrates break down quickly into sugar or glucose, but they lack bulk and do not signal our brains when we have had enough. This leads to over eating of these items and the production of too much sugar in our blood.

Complex carbohydrates are more health promoting and satisfying. Because they are bulky and fibrous, complex carbohydrates are filling without being fattening and have proven to be important in the digestion of fats and proteins. They are also an excellent source of vitamins and minerals.

Some examples of complex carbohydrates are:

- Vegetables
- Fruits
- Grains
- Beans
- Potatoes
- Rice
- Whole wheat bread
- Split peas



- Lower blood pressure

High blood pressure or Hypertension - is the pressure of the blood flowing from the heart into the body through the arteries. "Hyper" means "too much pressure".

Here are a few ways to lower blood pressure:

- a) Weight loss
- b) Exercise
- c) Stop smoking
- d) Stop drinking alcohol
- e) Stop eating lots of salt

- Lower Cholesterol levels

Cholesterol is a wax like fat that is produced in small amounts by our body. We can also get it from fatty foods. It can cause a build-up on the walls of the arteries. This can make the blood slow down and even stop flowing causing a heart attack. The following are a few suggestions to lowering Cholesterol levels in the blood:

- a) Eat foods with low levels of fat
- b) Exercise
- c) Weight loss

Is there special diet food I have to eat? There is no need to buy or cook special diet food. A healthy balanced way of eating is the same for people without diabetes.

Choose foods from the four food groups.

- 1) Vegetables
- 2) Fruits
- 3) Meats and Alternatives
- 4) Grains or Cereals

It is a healthier lifestyle for everyone in your family.

What types of food are best for me?

1) Vegetables - Fresh, Frozen or Canned

- a) Carrots
- b) Turnips
- c) Tomatoes
- d) Broccoli
- e) Spinach
- f) Beans
- g) Peas
- h) Unsweetened vegetable juices
- i) Lettuce or any leafy green vegetable

2) Fruits - Fresh, Frozen or Canned

- a) Apples
- b) Oranges
- c) Grapefruit
- d) Berries; raspberries, strawberries, blueberries, cranberries
- e) Fruits in unsweetened juice
- f) Unsweetened fruit juices

3) Meats and Alternatives – lean meat

If lean meat is hard to find then after cooking, rinse your meat with boiling water and it should remove a lot of the fat.

- a) Skinless boneless chicken
- b) Ground lean meats
- c) Game meat
- d) Fish – fresh, or canned fish in water
- e) Skim milk and skim milk cheeses

4) Grains or Cereals

- a) Whole wheat flour or breads
- b) Oats
- c) Porridge
- d) Bran
- e) Barley
- f) Lentils

What types of food are bad or unhealthy for me?

- Potato chips
- Cheezies the snack food
- Bologna
- Hotdogs
- Butter or margarine
- Lard and oil
- Chocolate bars
- Desserts

What are the best ways to cook food?

Try to use as little fat or oil as possible

- Steam your vegetables - cook in a pot above boiling water until tender
- Boil your vegetables - cook in the boiling water until soft
- Roast your vegetables or meat - cook vegetables inside the oven or wrapped in aluminum foil over a fire or barbeque. If you are roasting meat or fish, have a pan under the meat to catch the fat, do not let the meat cook in the fat of the animal.
- Barbeque
- Poached - cooked in water, for example: eggs, vegetables
- Broiled - very hot and quick way to melt cheese, open sandwiches, fish or meat





ACTIVITY

Do you have any healthy recipes that you could share with a friend? Maybe you could start a recipe exchange group in your community. Another great way to share different recipes is to have a potluck meal where everyone who comes brings a dish for the meal. Create a menu for your household that is balanced by including all food groups. Make the menu for one week, use any recipes you have collected or have been given to you by your health care provider.

You and your family will feel better and have a lot more energy.

Here is an example of a balanced life – An Inuit Story

Inuit, “people who are alive at this time,” have traditionally passed their values from generation to generation by word of mouth and through story telling.

In the Inuit culture, family and family relationships are of great importance as is their strong link to their environment and the land.

Guidance for balance with mental health, emotional and spiritual wellness is provided by respected elders and shamans.

Inuit try very hard to maintain traditional ways.

They eat food from the land such as:

- a) Fresh Caribou
- b) Raw arctic char
- c) Muqtuq and clams

They are active in traditional ways like:

- a) Seal hunting
- b) Clam digging
- c) Cleaning of hides
- d) Drum dancing

They use old time medicines like algae, different kinds of plants and mosses. They use heated rocks for healing.

At the beginning of each day they pray and sing. It is important and healthy to look to traditional ways and they will give us the way to live in healthy balanced life.

“The path toward healing must start in the past if is to lead to wellness in the future.”
- Gail Gray

7/ Stress in Life

Stress is a normal part of life. It can be harder on you because you are living with diabetes. Stress can affect your blood sugar levels.

Stress results when something makes your body act like it is being attacked. Your body reacts and gets ready to deal with the problem. This reaction is called the “fight or flight response”. Your body signals your liver to add more sugar to your blood so it is ready to be used. If there is no insulin to take up the sugar, you will have high blood sugar levels.



Why do we have stress?

- Physical stress - injury or illness
- Mental or Emotional stress - problems with work, money or family

Why do I have to worry about stress and high blood sugar levels?

Because:

- Stress hormones stay turned on for a long time, so your body responds by producing extra sugar so you will have the energy to deal with your situation.
- Short term stresses can result in high blood sugar levels.
- Long term stresses means that high blood sugar levels will last a long time. This can lead to life-threatening complications such as loss of limbs, blindness or even death.

What can I do about stress?

There are many things you can do to lower stress levels. Here are a few ideas that can help:

- Relaxation therapy

Tighten your muscles, hold like that and relax them. There are many audio and video tapes with different types of relaxation methods.

- Change the situation; fix or get rid of the stress

Try to avoid the things that upset you. For example, if traffic is upsetting, find a new route. If you have an argument with a friend, you can make the first move to patch things up.

▼ - Don't let small things upset you

- Breathing exercises

Sit or lie down, uncross your legs and arms. Take in a deep breath, hold it and breath out. You can do this for 5 to 20 minutes at a time.

- Exercise or Physical Activity

Walking, shopping, fishing, cloud watching, biking, stretching, yoga are a few examples.

- Think of happier thoughts when you notice a bad thought

Think of things that make you happy, proud, a favorite memory or place.

- Practice whichever method of relaxation you choose, at least once a day.

- Join support groups

Talking to people about your problems can help. For example, support groups for people living with diabetes. You realize you are not alone and you can learn new ideas about coping with stress.

Meet and talk with elders in your community. They can give you ideas on how to relax and maybe help with some solutions.

- Add new positive things to your life

You can join a sports team, take dance lessons, learn a new craft, volunteer at a hospital or charity.

- Talk with a therapist or Psychologist about your situation

You may learn new ways to of coping with your stress and new ways of changing your behavior.

When you record your blood sugar levels, also record how you are feeling and what is on your mind at the time. After a week, compare these notes.

In the second week, plan to try some relaxation methods before you record your blood sugar levels, at least once a day at the same time each day. This will give a good comparison to last week and you will be able to see how much stress is affecting your life.

If in fact you have experienced stressful situations, you should be able to see how stress affects your blood sugar levels and how important it is to manage stress.

8/ Care for specific conditions

This section will look at the care for specific parts of the body that are affected by diabetes. The conditions that need special care are related to:

- a) Eyes
- b) Kidneys
- c) Nerves
- d) Heart Disease and Blood Pressure
- e) Illness and Infections



8a/ Your Eyes - Retinopathy

Retinopathy is the loss of vision because of blood vessel damage feeding the retina of the eyes. Blood vessels are like tubes that run throughout your body to transport blood and oxygen.

What do we know about retinopathy?

- Diabetes is the major cause of adult blindness
- Not all people with diabetes will develop retinopathy
- The development of retinopathy is expected when:

- a) You have had diabetes for a long time
- b) You have a high level of fat in the blood (glycated hemoglobin)
- c) You have high blood pressure

People with diabetes are at a higher risk of developing cataracts. Cataracts is the clouding of the lens of the eye which results in blurred vision. Cataracts develops five times more often in younger people who have diabetes than in the general population.

See an eye doctor once a year to check your eyes.

Prevention for Retinopathy

To stop retinopathy from developing too far and from getting worse:

- Keep blood sugar levels normal (4-7 mmols)
- Treat elevated blood pressure or blood fat (lipid) levels by:

- a) Physical activity and diet
- b) Discuss medication options that are best for you with your health care provider

There are different ways that eye problems can develop and there are many tests and treatments to prevent further damage. It is best to meet and discuss your own situation with your doctor and eye specialist, such as:

- a) Retinal specialist
- b) Ophthalmologist - eye specialist
- c) Doctor experienced with noticing changes related to diabetes, through dilated pupils

Personal Story: Gilbert's Story

Gilbert Chief is 52 years old. He was diagnosed with type 2 diabetes 20 years ago. Without knowing why, Gilbert took the medication his doctor gave him daily for 16 years. Gilbert didn't know much about diabetes. He thought that he would be fine if he took that pill everyday. So, Gilbert ate the same foods, drank the same amount of alcohol, worked the same long hours as a truck driver, and didn't test his blood sugar. Gilbert had no idea that his blood sugar levels were often over 20.

It wasn't until he lost his eyesight four years ago, that Gilbert realized there was more to living with diabetes than taking a pill everyday. Gilbert began learning about diabetes, with the help of his sister, a health care worker. He learned the importance of eating proper meals, testing blood sugar, and avoiding smoking and alcohol. Above all, Gilbert learned the importance of exercise. Even though Gilbert is legally blind, he jogs between one and an half and three and a half miles everyday with his guide dog.

Loosing his eyesight motivated Gilbert to start a journey that he never imagined. Gilbert found himself at a Seeing Eye Dog Training School in San Raphael California. At the school, Gilbert learned how to work with his new dog Casius to find his way around on his own. Gilbert started a support group called Disabled Helping Disabled for people with disabilities. Recently, Gilbert bought a computer and taught himself to type. Now, he's writing a book about his life. He's even been interviewed on APTN. Instead of becoming a victim of diabetes, Gilbert has chosen to take control of his life with diabetes. He has created new opportunities for himself, instead of troubles. Accepting your diabetes is hard, but you can't let it beat you.

8b/ Your Kidneys - Nephropathy



Kidney disease is called Nephropathy. You can develop nephropathy when there is blood vessel damage to the kidneys. Kidneys act like filters for the body and when the blood vessels are damaged they can no longer filter out toxins (poison to your body).

- The number one cause of kidney failure is diabetes
- Blocked blood vessels can stop the flow of oxygen and nutrients to the kidneys which keeps them working properly
- People with diabetes have a higher chance 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 damage to the kidneys.

Prevention of Nephropathy

- Keep blood sugar levels normal (4-7 mmols)
- Screening every six months for kidney function with your health care provider

These tests are called microalbumin urine tests, which measure protein in the urine. If protein levels are high then it shows kidney damage

- Lower blood pressure

There are treatments that lower blood pressure such as the ACE inhibitor therapy. By lowering your blood pressure, it makes the functioning of the kidneys easier.

- Once kidney damage begins

- a) See a specialist in dialysis. You should ask your health care provider for a referral to a specialist.
- b) Ask your health care provider or kidney specialist about kidney transplant centers and if you should be on a donor list.

Managing of Nephropathy

- Lower blood pressure

Get your blood pressure checked by your health care provider every six months. If your blood pressure remains high after changes to your lifestyle, then you should discuss with your health care provider other options such as medications or other therapies.

- Take any medications as prescribed
- Find better ways of coping with stress
- Improve way of eating and physical activity

a) Choosing healthy foods

- b) Little to no protein in your diet such as: meats, fish and dairy products
- c) Limit the amount of salt eaten
- d) Reduce the amount of fat to as little as possible

- Monitor Blood Sugar levels and keep them in the normal range (4-7 mmols)

- Stop smoking – smoking tightens arteries and slows the flow of blood. The tightening of arteries also limits the body of oxygen, which it needs to be healthy.

- Stop drinking alcohol - alcohol harms the body including the kidneys, pancreas, and liver. Your body will use alcohol for energy or store it as fat. This can increase your blood sugar levels. If you limit or avoid alcohol, you will lose body weight and lower your blood pressure as well as keeping your liver healthy.

Personal Story: Rheal Boudrais

Admirable. Inspiring. Remarkable. Each of these words describes Rheal Boudrais, a 60 year old man living with diabetes. Although Rheal was diagnosed with diabetes when he was 20 years old, he suspects he actually developed diabetes in his late teens.

For almost 20 years, Rheal lived his life as usual. He didn't know anything about diabetes - what it was, how it could affect him, or how to take care of himself with diabetes. It wasn't until Rheal was in his forties that he began to look after himself, was forced to look after himself. By then, diabetes had already damaged his body. He lost the sight in one eye and most of it in the other. His kidneys began to fail requiring him to have a kidney transplant. Eventually, he even had to have both legs amputated. But this hasn't stopped Rheal.

Rheal proudly explains that he'll be celebrating his 10th anniversary as a transplant survivor. Instead of blaming the Creator for taking away his life, Rheal thanks the Creator for leaving him a life to live. Rheal is filling that life up to the top. He is the director of a community centre

and goes to work everyday. With the help of his friends and family, he continues to hunt and fish regularly. According to Rheal, you can have a full and productive life with diabetes if you just take care of yourself.

On diabetes, Rheal says:

- Awareness is the name of the game! Learn everything you can about diabetes, how it can affect you and what you need to do to take care of yourself.
- Diabetes is an invisible disease - for a while. Don't wait until you start to see the affects of diabetes to begin dealing with it. Proper exercise, proper diet and proper care can help stop diabetes from damaging your body.
- Know that you can live with diabetes. Diabetes doesn't have to be the end.
- The main thing is to not lose morale. Accept the help of your family and friends and of the Creator.
- Young people need to realize that they might feel bullet proof, but they're not. Learn about diabetes and how to prevent it.

8c/ Your Nerves - Neuropathy



Neuropathy is nerve damage caused by too much blood sugar being stored by the nerves, creating a build up of poisons. 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, they help sense things
 - a) Feeling temperatures - hot, burning, cold
 - b) Touching objects - rough, smooth
 - c) Sensations - tingling and numbness
- Autonomic nerves – these control the internal body functions, such as:
 - a) Heart
 - b) Digestive system
 - c) Sweating
 - d) Sexual organs
 - e) Bladder

▼ Detectable neuropathy will develop within 10 years of onset in 40-50% in people with both Type 1 and 2 Diabetes.

Type 1 Diabetes usually begins to detect Neuropathy after 5 years.

Prevention of Neuropathy

The following are some ways to prevent neuropathy:

- Screening with your health care provider to identify if you are at risk of developing foot ulcers once a year. Screening can prevent amputations (removal) of limbs.
- There is a test to check how much you can feel in your feet – vibration, touch and temperature tests can show how sensitive your feet are. This is a test your health care provider does with you. You should make sure this testing is completed once a year.



This test is done by pricking different part of the bottom of your foot with a tiny little wire and assessing how much feeling you have in your feet. We will discuss this test later in this section.

- Lower blood sugar levels to a healthy range (4-7 mmols). By just controlling your blood sugars you can slow down the disease and possibly stop it from further damage.
- You should discuss further evaluations of your nerves with your health care provider. Have them assess what state your nerves are in and discuss the need for you to see a specialist. Your health care provider can recommend specialists if you require special care.
- Discuss with your health care provider about non-addictive pain medication if you are in pain.

Managing Neuropathy

Proper foot care is very important and can prevent further pain for you.

Foot problems for people with diabetes are the major cause of illness and injury. Lower limbs, such as the feet and legs, are at high risk for amputation (removal) if uncared for.

Minor problems or infections can lead to Gangrene. When the tissue or part of the body does not get any blood, it starts to die. This is called Gangrene. The dieing limb must be amputated or removed.

We will outline four areas to effectively care for your feet:

a) Preventative Care

This is a checklist for you to follow:

- Have a yearly foot examination completed with your health care provider.
- Have your feet checked at every visit with your health care provider if you are a high risk for developing neuropathy. Take your shoes and socks off so they can assess your feet.
- Learn how to care for your feet yourself on a daily basis.
- Keep your blood sugar between 4-7 mmols.
- Protect your feet at all times from cuts, scraps and frostbite or sun-burn.

b) How to care for your feet

When you have diabetes, your feet can be injured and infected easily. As a result of diabetes, they take longer to heal. You should inspect your feet every day and here are a few points to follow:

- Look at the bottom of your feet with a mirror and check for:
 - a) Redness
 - b) Cracked or dry skin
 - c) Calluses or corns, anything round or thick coming off your foot
 - d) Black spots
- Never cut or break a blister, corn or callous. Do not use any chemicals like iodine or rubbing alcohol on your feet. See your health care provider immediately if you see anything strange on your feet.
- Wear comfortable, well-fitted shoes. Custom shoes can be ordered and winter boots should be worn in the cold.
- Shoes should be worn both outside and inside your home to prevent any injuries.
- Wash your feet daily, test the water to make sure it is not too hot with your hand or a thermometer.
- Dry your feet very well, between your toes too.

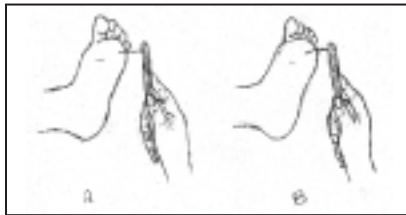
- Use lotion on your feet but not between your toes, this prevents dryness and cracking
- Be careful when cutting your nails, make sure you file the rough edges away.

c) Sensory foot exam

This is an exam that you do with your health care provider to test your sensory nerves. If you are at high risk for neuropathy then the test will be done at every visit with your health care provider. If you are at low risk then once a year is fine unless you notice any changes in your feet.

The test is outlined on the next page:

- The tiny wire used is called a monofilament
- The monofilament is attached to a stick (Picture A)
- This tiny wire is used to test feeling in your feet (Picture B)



- You will be asked to say when you feel the wire on your feet. Your health care provider will place the wire all over your foot randomly. This will tell them how well your sensory nerves are responding.
- If you felt the wire touch you at all sites you are a low risk for foot problems. If you did not feel the wire, then you are a high risk person for foot problems.

d) Education

It is important to be aware of the importance of good foot care. Here are a few recommendations:

- Inspect your feet at least once a day for those with high risk feet and after each exercise session . Be sure to use a good light and mirror to see the bottom of feet.
- Do not attempt to cut own toe nails if you have blurred vision, neuropathy, vascular disease, or eye disease. Get a friend or family member to help you. They can also help you with your daily foot care and examination.
- Stop smoking.

- Contact the health care provider or nurse if problems (cut, bruise, blister) do not heal after one day.
- Select suitable and proper footwear to protect the feet so as to 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 your feet.
- In the winter wear warm boots to protect from frostbite.
- Any infection must be treated aggressively and immediately by your health care provider.
- Blood vessel surgery is possible. If it is necessary, your health care provider will discuss these treatments with you and refer you to a foot care specialist.

Personal Story – LIKE ME

Provided by the Canadian Diabetes Association, Volume 1, number 1.

It feels strange to be in this place. These people here, they don't feed you much and they don't talk to you much. I don't like this place.

At night it's almost as noisy as in the day time. I felt better before I came here to this hospital. My family is far away. My daughter would be here but her man drinks too much and she can't leave her little ones in his care for too long. The doctor, he told me my diabetes was in a bad way and that was why I had to be here. He told me I wasn't taking care of my diabetes by eating the way he told me so now my foot is no good and he has to take it off.

If I had known that I would've tried harder to learn to understand his way of eating. I am a big woman, I like to cook and I like to see people eat and be full. I remember many times in my life when there was no food in our house. When I cook and feed everyone it makes me glad in my heart.

This diabetes, it's a bad thing, the doctor, he told me I had it many years ago. My man, he died from this diabetes. I am an old woman, I thought I would just die like he did. Instead I must lose my foot. I think death would be kinder. The good Lord, he must have a reason for keeping me on this earth. I can only think it is to tell people about this diabetes so maybe they won't have to lose their feet or be sick all the time like me.

8d/ Heart Disease and High Blood Pressure

When blood sugars are high for long periods of time, such as 5, 10 or 15 years, damage to blood vessels and nerves can develop. In the previous section, 8c, we discussed how the nerves in your body can be affected by diabetes. We will now look at the larger blood vessels in the body, those that affect the heart, brain, and limbs.



In our blood there are many different parts. One of these are the red blood cells which carry oxygen to all parts of the body. When the amount of sugar in the blood is too high, then the red blood cells harden and become weak or 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 is 2 to 4 times higher in people with diabetes than people without it. Heart disease is also a major cause of illness and death in people with Type 1 and Type 2 of diabetes.
- Coronary Artery Disease (CAD) happens when the arteries in the body become clogged. The arteries transport the blood to the heart, brain and other body parts.

Problems with clogged arteries occur twice as much in men with diabetes, 3-4 times more in women with diabetes.

- A stroke is when the blood supply cannot get through to the brain. This condition happens twice as much in men with diabetes, 3-4 times more in women with diabetes.
- People with diabetes have stiffer arteries and veins. These are clogged and it is difficult for blood to flow through them. A heart attack occurs when there is a little or no blood supply to the heart.

After a heart attack (acute myocardial infarction)

- Both men and women with diabetes are at greater risk for heart failure.
- Risk of another heart attack is 4 times greater for people with diabetes than those without it.
- People with diabetes are twice as much at risk to develop heart arrhythmias; which means your heart beats randomly (not in rhythm).

When your heart beats it pushes the blood through the body. So if your heart beats randomly, then the blood is moving at different speeds to your brain and body. Your body may not be getting all the oxygen or nutrients it needs.

d) Mortality or death rate is much higher in people with diabetes

- 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 and numbness.

If you have PVD, you are at high risk for gangrene (death of the limbs) and the treatment is amputation or removal of limbs, such as the feet and legs.

- High blood pressure is a result of blocked arteries. It complicates diabetes and gets worse as we get older. High blood pressure is closely related with obesity and decreased physical activity.

As you can see, the circulation of blood affects the whole body.

Prevention and managing strokes and heart attacks

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
- Eat healthy foods
- Lose weight
- Eat less fats
- Have an active lifestyle - lowers blood pressure, lowers fat levels
- Reduce stress in your life
- Limit or avoid alcohol, you will lose weight and lower your blood pressure
- Quit smoking - smoking tightens your arteries and slows your blood flow, it increases your blood pressure and prevents insulin from working



e) Illness and Infections

When you are sick:

- Your blood sugar levels will be higher than normal
- Don't eat fat and proteins, just have starch, milk, fruits and vegetables
- Follow a plan set out with your health care provider, we offer a few suggestions:

Take one of the following every hour during the day.

- a) Thick soups (1cup)
- b) Porridge (1/2 cup)
- c) Regular soft drinks (1/2 cup)
- d) 6 soda crackers
- e) Milk (1 cup)
- f) Apple juice (1/2 cup)
- g) Arrowroot cookies (3)
- h) Regular Jello (1/2 cup)

Managing Illness

When you are ill, there are a few things you must do to take care of your diabetes as well as your body, these are:

- Take your insulin.
- Test your blood sugar before breakfast and before supper every day you are sick.
- Drink extra fluids like water, tea and sugar free soft drinks.
- Ask your doctor, nurse or pharmacist about which cold remedies you can use.
- Call your health care provider if:
 - a) Your blood sugar levels go over 11 mmols or under 4.0 mmols
 - b) You vomit (throw up) more than once in 4 hours
 - c) You cannot eat or drink
 - d) You start feeling sicker
 - e) You feel sick for more than 24 hours

Skin Care for Infections

People with diabetes often have dry and itchy skin. To prevent dry skin:

- Check your skin regularly.
- Talk to your health care provider if you see a rash, cuts or sores.
- Keep your skin clean and well dried.
- Ask your health care provider to recommend cream for your body; usually low perfumed creams such as Lubriderm or Keri-lotion.
- Use powder between folds of skin.
- Be careful when shaving.
- Keep nails short to prevent scratching the skin.
- Use sunscreen to prevent burning and blistering of skin from the sun or wind.

Type 2 Diabetes

Type 2 diabetes is the most common form of diabetes.

In Type 2 diabetes, the pancreas is not releasing enough insulin or the insulin is not working as it should. Type 2 is sometimes called the “Non-insulin-dependent diabetes”.

About 90% of all diabetes cases are Type 2 and are diagnosed mostly in adults. Type 2 diabetes rates are very high among First Nations people, at least 3-5 times that of the national population.

Type 2 diabetes is an epidemic (widespread and the numbers are growing) in Aboriginal communities.

The only treatment for Type 2 diabetes is developing and managing a healthy way of eating and exercise. If healthy blood sugar levels are not stable then oral medication and /or insulin are needed.

In some communities Type 2 diabetes has been referred to as the “sugar” illness or disease. If there is too much sugar in your blood, it can make your body sick. Over time, high sugar levels will hurt and damage your eyes, kidneys, nerves and heart.

Type 2 diabetes is a lifelong condition where the effects of this disease are long term but very serious.

Diabetes can be managed and in the case of Type 2 diabetes, it can be prevented.

In this handbook we use the medicine wheel as a tool to live by. With proper understanding of what diabetes is and what symptoms we need to watch for, then we are caring for our mental or knowledge part of the wheel. When we eat healthy foods and are physically active we are caring for our bodies or the physical part of the wheel. 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 and the world around us.

Prevention of Type 2 Diabetes

Prevention of Type 2 diabetes can be achieved by using the medicine wheel to find balance all areas of your life.

Prevention of diabetes results mainly from healthy living, by:

- Managing your body weight through a balanced meal plan and healthy way of eating with regular physical activity / exercise.
- Learning to manage your stress because it can cause your blood sugar to rise.
- Lose weight if you are overweight.

The more you weigh, the more insulin your body needs to produce. Discuss your body weight with your health care provider before you try to lose weight.

- Good management of blood sugar levels

- a) Keep yourself feeling well
- b) Free from sleepiness, have lots of energy
- c) Free from infections

- Accept that you have diabetes or that you are at risk. Also accept that you do have some control over your future.

You can continue to enjoy all aspects of life and still live life to its fullest.

Diabetes care

Care for diabetes depends on:

- Your commitment to the challenge of a balanced lifestyle; which includes personal health and responsibility in taking prescribed treatment of medicine.
- Level of responsibility you take for your personal health care.
- Acceptance that you can live a healthy and happy life with diabetes.
- Respect of life, yours and the people around you who care.
- Full and active participation in healthy living with your Diabetes Health Care 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 your lifestyle.
- Ability to discuss you lifestyle changes with your family members and be a good role model.

Taking an active role in managing your diabetes will help you feel proud of yourself and confident to develop the will to change.

ACTIVITY

Diabetes affects all aspects of life: the physical, emotional, spiritual and mental. It also affects families, friends and caregivers. To achieve balance you must:

- Learn skills necessary to manage your diabetes.
- Use your support team, your Diabetes Health Care team wheel that you created in the introduction. Make sure all directions of the circle are being cared for. A balanced approach is the best path to live successfully with diabetes.
- Remember you are the Key member of Diabetes Health Care team.

Take a few moments to think about how diabetes affects your life. On the Medicine Wheel below, record how diabetes affects you physically, mentally, emotionally and spiritually.



Mental Care

Physical Care

Emotional Care

Spiritual Care

Taking care of your diabetes

1/ Your Health Care Provider

Your health care provider can be one of the following:

- A Physician
- A Nurse Practitioner
- A Community Health Nurse
- A Nutritionist/Diabetes Worker

On your first visit with your health care provider, he or she will do a health examination and assessment. He or she will look at four main areas and will ask you many questions to get a good picture of your level of health.

a) Medical Interview

You will be asked questions about:

- What symptoms are present
- How you are feeling
- How long the symptoms have been present

b) Health History

- Look at your risk factors for future problems.

c) Physical Examination

- Look at your body systems that are affected by diabetes.

d) Nutritional and Physical Counselling

Work out a management plan that best suits you. This plan will be different for each person. In general this plan will include:

- Eating a balanced healthy diet – what types of food are best to eat.
- Become more active in your life, how to increase the amount of physical activity you do and give examples of how to live an active life.
- Doing things that help you relax, feel good and increase your well-being – these will be specific to your personal interests and what you enjoy doing.

Clinical Testing

Clinical testing and care will be determined during your follow-up visits with your health care provider. Here are some general guidelines to give you an idea of how often you should have tests done.

Routine Clinical Care (2-4 months)

- Routine visit every 2-4 months with your health care provider
- Blood pressure and foot examination at each visit
- Changing of treatment plans, trying to find balance in all the parts of treatment

Blood Sugar Control

- Test the level of fat in the blood - Glycated hemoglobin, every 3 months.

Hemoglobin carries oxygen within the blood stream to the different parts of the body. If there is too much fat in the blood, it will stick to the Hemoglobin and make blood flow difficult.

- Check meter glucose measurements, blood sugar, with a laboratory once a year to make sure they are the same and your glucose meter is working well.

General Health Check

- Once a year get a full cholesterol test to see how healthy your heart is.
- Get a complete urine analysis test to test the health of your kidneys every 6 months.
- Visit your dentist two times a year - diabetes can affect your teeth and gums.
- Have regular eye exams once a year - high sugar levels can cause blurriness or even blindness.

ACTIVITY

What to ask your Health Care Provider?

It is very important that you understand what it means to have diabetes, then, you can learn to live with it.

Any question you have is a good question. Every question deserves an answer. We hope you can find all these answers in this book but it is good to talk with your health care provider for more information.

Questions:

- Is there a cure? Will it ever go away?
- Is my family at risk? How can I prevent them from getting diabetes?
- What happens if I ignore it?
- What does smoking do to diabetes?
- What does alcohol do to diabetes?
- Do I need to take medication?
- Can I manage it with medication?
- Are there different types of medication? Which ones do I need?
- What is Medic alert?
- When I am sick what do I do?
- What do I do if there are infections?

- What is my blood sugar right now and how will this change during the day?
- What do I have to be most careful about when I exercise or perform any physical activity?
- What in my eating do I have to change?
- What support does the health care provider have or suggest? Who else can I talk to?
- If I am pregnant, what does it mean for my baby?
- Do they have more information so I can learn more about diabetes and how to live with it?
- Are there groups right now that share ideas or recipes for eating better?
- Are there emergency telephone numbers I can call if I have an emergency or a question?
- Should I eat before my next appointment with you? Are we doing any tests?

Do you have any questions of your own?

2/ How do people feel?

It is normal for people to have different feelings about themselves when they first learn they have diabetes. They may feel:

- Scared
- Worried
- Angry
- Shocked
- Depressed
- Alone
- Sad
- Anxious
- Confused

It is important to speak to someone you know who will listen. The good news about diabetes is all the things you must do to manage your health are also good for everyone around you to stay well and possibly prevent diabetes in someone else.

DENIAL

It is very common to be in denial or disbelief when you first learn you have diabetes. Everyone says “not me”, and this is a way of coping with bad news. When you are ready, you will accept the fact that you have to care for yourself to live successfully with diabetes.

Dangers of Denial

The trouble begins when you keep on denying your diabetes. Long term denial stops you from learning what you need to know to keep you healthy.

- 1/** Diabetes is serious and you must care for yourself.
- 2/** Pretending nothing is wrong hurts you and everyone around you.
- 3/** Accept that it will take time to reach your health care goals.
- 4/** Once you understand all areas of diabetes treatment and how your whole body is connected, living with diabetes will become easier. For example, you will see that eating healthy foods will make your body feel better, your mind will be at ease because your blood sugar will be in a healthy range, you will feel good about yourself and more positive about life.

What can I do?

- Support groups

Talking with people about yourself and diabetes can help. For example, there are many support groups for people living with diabetes. You realize you are not alone and you can learn new ideas about living with diabetes.

Talk to your family, get them involved and educated in how you care for yourself, they can help you set goals, provide care for you as well as care for themselves.

- Talk to your health care provider

It is always good to let your health care provider know how 'all of you' is feeling: mental, physical, emotional and spiritual.

- Talk with a therapist or Psychologist about how you are feeling

You may learn new ways to cope with your feelings and gain a new view of life.

- Writing in a diary or journal

This is one way of releasing your feelings, writing them down and leaving them there in the book. You can also come back to them when you can be open and objective, searching for answers inside yourself to make you stronger.

This is one way of releasing your feelings, writing them down and leaving them there in the book. You can also come back to them when you can be open and objective, searching for answers inside yourself to make you stronger.

ACTIVITY

Find the diagram of your personal health care team that you created in the first activity. Who in your health care team can listen to you? Other people living with diabetes feel or felt the same as you do, could you share with them?

Make contacts with elders, family or friends and set up times to meet and share your feelings and experiences.

Personal Experience Story

(Provided by the Canadian Diabetes Association, Winter Issue 1997)

The Silence Within

Somedays everything could seem so bright and alive, the sun would shine just as radiant as ever and Mother Nature never looked so magnificent in all her natural beauty. Catching those rare moments when you could just push everything out of your mind and not only watch nature but become a part of it, if only it could always be like that but, reality is always only a breath away. Reality that someday I might only be able to remember what all this looked like. Reality that my eyesight is getting worse with each new day and reality that some morning when I wake up, it will just be gone. To have one of the great joys of my life snatched away is bad enough but to now know that I might've been able to prevent it, is agony!

The doctors told me years ago how important it was to keep my sugars under control but I never ever got really sick or sometimes I wouldn't even know when my sugars were really high, I always thought I was doing alright. My diabetes just never seemed to be an issue. It was almost like I didn't even have it. Now when its too late I find out that all those years when I should've been taking better care of my diabetes, all this damage its been doing to my eyes. They say diabetes is a silent killer, a silent enemy that bides it's time and slowly cripples you from within, well I know my enemy now, its finally showed itself to me. I can only pray that other people will know this enemy before it's too late.

3/ Blood Sugar Levels

Many people with Type 2 diabetes live long, healthy lives. It is very important that you monitor your blood sugar levels. Your blood sugar levels must be kept within your target range (4 to 7 mmols) which can be done with proper meal planning, physical activity and insulin.

Testing Blood Sugar Levels

Your health care team will teach you about the instruments used for testing glucose or sugar levels in your blood. Here we will give a general overview.

A blood testing kit will include:

- Blood testing strips - paper strips to place a drop of your blood on
- Needle - to poke your finger
- Poker or needle casing - this is where you put the needle before you poke your finger
- Glucose meter - the machine that reads your sugar levels
- Log book - to write down the meters results, this is very important to keep a record of the meter readings. You may have to buy or make your own log book.

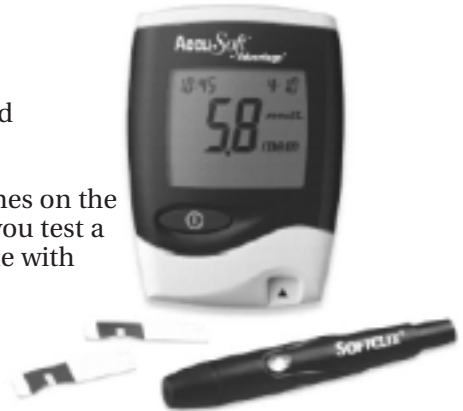
How to do the test:

- Follow the directions for your blood testing equipment

Blood testing usually occurs four times on the test days, and the number of times you test a week is something you should decide with your health care provider.

It is important to understand and recognize the warning signs of High and Low blood sugar levels.

The quicker they can be spotted, the quicker treatment can begin to prevent or stop severe situations.



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

1. High blood sugar levels
2. Low blood sugar levels

1. High blood sugar levels

If there is a lot of sugar in the blood it is called Hyperglycemia or high blood sugars. This condition means the level of sugar in your blood is over 11 mmols.

Why does this happen?

- Not taking your medications right
- Illness, infection or injuries
- Eating too much, especially fatty and sweet foods
- Not getting enough physical activity
- Too much stress in your life, your liver releases sugar to your blood to help your body move quickly (fight or flight reaction) or to give you strength. Low stress levels are very important.
- Are there any physical symptoms? Can we see this before we test blood sugar?

Early Symptoms are:

- Thirsty and dehydrated, cannot quench thirst
- Feel weak, tired and drowsy
- Go to the bathroom often

Severe Symptoms are:

- Slow healing of wounds or infections
- A feeling of numbness in hands or feet
- Vision is blurred or distorted
- Possible sexual dysfunction

If left too long, you may have a seizure, fall unconscious, or go into a coma or die.

What can I do when I have high blood sugar levels?

- Check your blood sugar levels to see if they are higher than the 4-7 mmol range
- Call and see your health care provider. Ask them about what steps you should take if your blood sugar is high again.
- Think about the reason why it happened. There may be a need to change something in your food or eating patterns, your exercise or activity patterns, your medication or even stress management
- Be sure to record when it happened and what symptoms you experienced
- Teach your family about high blood sugar so they can help

Most often people with Type 2 diabetes suffer from Hyperosmolar Hyperglycemia. This is a condition of high blood sugar and dehydration. When you have hyperosmolar hyperglycemia you may experience symptoms like:

- Feeling of dehydration in the body
- Sudden loss of weight
- Feelings of confusion
- May fall into a coma (become unconscious)

If you experience any of these symptoms, seek immediate medical attention immediately.

We know the cells of the body need sugar for energy. If there is no sugar coming into the cells because there is no insulin, then in time the body will use fat to get energy. The fat is broken down into ketones which are toxic to your cells so they act like a poison to the body. This condition of using fat for energy is called Ketoacidosis and occurs mostly in Type 1 diabetes but can occur in Type 2 diabetes. In this situation, immediate medical attention is necessary.

Symptoms are:

- Fruity smell to the person's breath
- They may feel nauseous
- Vomiting
- Cramps
- Difficulty breathing
- Possibly in a coma, may be unconscious

2. Low blood sugar levels

If there is very little sugar in the blood it is called Hypoglycemia or low blood sugars. This condition means the level of sugar in your blood is under 4 mmols.

Why does this happen?

- Taking too much insulin, or the dose is too high
- Unplanned and unprepared physical activity before a meal
- Skipped meals or snacks, or eating late
- Drinking alcohol

Early Symptoms are:

There are visible physical symptoms that we can see before we test the blood sugar.

- Feelings of hunger
- Feel nervous
- Shaking
- Sweating
- Fast heart rate
- Headaches

Severe Symptoms are:

- Experiencing of slurred speech
- Confusion
- Lack of balance, feel dizzy
- If left for too long, may fall unconscious, go into a coma or die.

What can I do?

- Check your blood sugar levels to see if they are in the healthy range of 4-7 mmols.
- Call and see your health care provider, there may be a need to change something in your food or eating patterns, your exercise patterns, and/or your medication.
- Be sure to record when it happened and what symptoms you experienced.
- Teaching your family about low blood sugar so they can help you notice any of the physical symptoms.

ACTIVITY

It is best to meet with your health care provider to discuss the answers to the following questions and any other questions you may have.

There are two parts to this activity.

- 1. High blood sugar levels**
- 2. Low blood sugar levels**

1. High blood sugar levels

Here are a few questions you can ask your health care provider so that you are prepared if you should have high blood sugar levels.

How should I react if I have high blood sugar levels?

What can my family do if I have symptoms of high blood sugar?

If I seizure, what should my family or friends do?

Can drinking water bring the sugar levels down to normal? Can I do this at home?

If I have high blood sugar levels what does alcohol do to my body?

2. Low blood sugar levels

Talk with your health care provider about what you can do if you have low blood sugar levels. Here are a few questions to ask:

Will drinking a half cup of unsweetened fruit juice or regular pop drink bring my sugar levels up to normal?

Are there other sources of sugar that I could take if I have low blood sugar levels? For example: sugar cubes, honey or lifesavers.

How do I balance my sugars with the four food groups? For example, how do foods like cheese and crackers or a peanut butter sandwich help balance my sugars?

How can I teach my family about low blood sugar symptoms so they can help?

Should I eat extra sugar when I exercise? What foods should I take? How much should I take and when should I take it?

4/ Medication and Insulin

Insulin is a hormone produced by the pancreas, an organ in your body. Insulin brings the sugar in the blood into the cells of your body. We need the sugar in our cells to give us energy to keep our bodies working properly.

If our bodies do not produce enough insulin then we need to give ourselves insulin through medication. There are two methods:

- a) Oral Medication**
- b) Insulin**

a) Oral Diabetes Medications

If your blood sugars are not within the normal range of 4-7 mmols, then your health care provider may prescribe diabetes pills.

Here are a few points to describe what diabetes medication is and what it can do for your body:

- Medications are used when your healthy lifestyle does not control your blood sugar levels well enough.
- Oral medications are not insulin.
- Oral medications do not cure diabetes.
- Oral medications help to control blood sugar levels, they help make your body's insulin work better.
- Oral medications make your pancreas produce more insulin.
- Oral medications can help your body use insulin.

- Oral medications do not work alone, you must also eat healthy foods, do physical activities and balance all areas of your life: intellectual, physical, emotional and spiritual.
- Sometimes your body gets used to the pills and they stop working. Usually after 10 years, people need to go on insulin.
- There are many different types of pills, you need to talk with your health care team to find out which one is best for you.
- Pills should be taken as directed. They are usually taken at mealtime but be sure to read the label carefully.
- If you forget to take your pill at a meal do not take two at your next meal, this can make your blood sugar levels too low and you will feel sick and possibly become very ill.
- You may see some skin rashes or have an upset stomach because of the diabetes pills, record when you felt ill or noticed a change in your body and talk with your health care provider. There may be a reason to change medications.

Here is a list of oral medications, what the starting dose is and the possible effects of the drugs. Be sure to discuss with your health care provider what pills would be the best for you.

Name	How it works	Dosage	Possible Effects
Acarbose	Minimizes the breakdown of carbohydrates	Start with 25 mg	Bloating/Gas
Actos	Makes the cells take in insulin more readily	15-45 mg	Headaches Respiratory tract infections
Avandia	Makes the cells take in insulin more readily	4 mg	Weight gain
Gliclazide/ Diamicron	Causes the pancreas to produce insulin	80 mg	Expensive but less likely to cause hypoglycemia Recommended for seniors
Gluconorm	Causes the pancreas to produce insulin	0.5-16 mg	Short acting meal dependant agent, taken with meals only
Glyburide /Diabeta	Causes the pancreas to produce insulin	2.5-5 mg	Weight gain May cause hypoglycemia
Metformin	Reduces the sugar release from the liver	Start with 250-500 mg	Nausea, Bloating Diarrhea
Repaglinide Rosiglitazone	Causes the pancreas to produce insulin Makes the cells take in insulin more readily	Start with 0.5 mg 4-8 mg	May cause hypoglycemia Drug is still under study for liver dysfunction, no signs as of yet
Troglitazone	Makes the cells take in insulin more readily	Start with 200 mg with meal and insulin	Headache, Nausea, Diarrhea, May cause liver dysfunctions

4/ Insulin

If you remember the introduction, we discussed that insulin is a hormone produced by the pancreas. This hormone helps our cells (basic living unit of all plants and animals) take in sugar from the blood to give us energy to keep our body working properly. Insulin acts to lower blood sugar levels. If the pancreas does not make any insulin of its own, we can give it to ourselves with an injection. There are a few different ways to inject insulin:

- Syringes and vials of insulin



Insulin is a liquid and you use the syringe to get insulin out of the bottle. You then use the syringe to inject the insulin into your body.

- Insulin pens

In an insulin pen, the insulin is already in a cartridge ready for you to use. The cartridge is changed each time you need an insulin injection.

In general, insulin can be prescribed one to four times daily, usually at mealtime. Your Health Care provider will provide you with the type of insulin best for you and the directions for the injections.

Be sure to always follow the directions and keep your meal routine. It is very important to eat at regular times of the day.

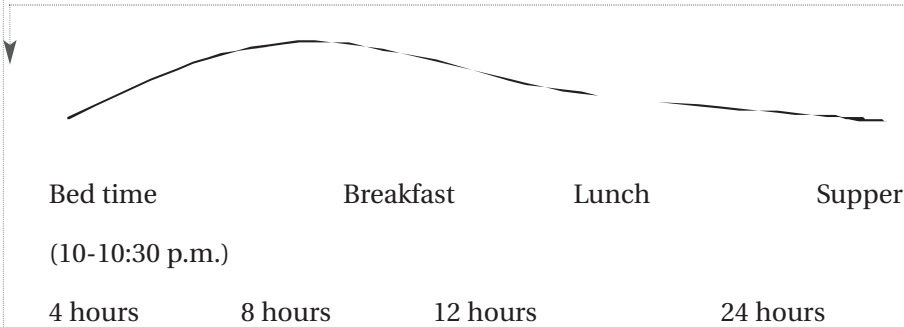
Insulin treatment for Type 2 Diabetes :

- May be used for a short time when you are ill or under stress.
- Can be used to control blood sugar levels when eating and pills are not working.
- Sometimes insulin is needed together with oral medications at bedtime. This can result in better blood sugar control and less weight gain.

Intermediate Insulin

Intermediate Insulin given at bedtime helps to keep the blood sugar level from being too high during the night.

It starts to work in 1.5-2 hours after injection, peaks usually around 8 hours or less, and continues to work for 18-24 hours.



- A breakfast blood sugar test shows how well the intermediate acting insulin is working.
- Your body will prevent the blood sugar level from dropping too low. Your body will release a hormone called glucagons, to make the liver start converting stored sugar (glycogen) into sugar (glucose). This may cause an increase in the blood glucose level and give a high reading in the morning.
- If your blood sugar is too low, an “insulin reaction” may have occurred in the night/early morning and clues are – bad dreams, damp bed sheets, morning grumpiness, and /or headache.
- A blood glucose test should be done at this time and may need to be done over a few early mornings. You may have to change the amount of the intermediate acting insulin.
- Because it is hard to balance blood sugar levels you should talk to your health care provider about what is best for you. They will help you find the best mix of pills and insulin if needed.

Medical Alert Jewellery

Medical Alert jewellery can be a bracelet or necklace that should be worn by people with diabetes in case there is an emergency and you are not conscious (awake). All medical people check for these when an emergency patient comes in for treatment. Ask your health care provider for more information.



5/ Physical Activity

- Physical activity is very important because it:

- a) Lowers blood sugar levels
- b) Helps insulin to work better
- c) Uses up extra fat in the body to a healthy state
- d) Improves the health of our bodies

- Relieves tension and stress
- Improves digestion
- Improves circulation of blood
- Gives you more energy
- Generally feel better



e) Keeps our hearts in shape

- Lowers high blood pressure
- Lowers high cholesterol

f) Burns off calories (energy from food) and helps to manage body weight

- Decreases excessive appetites

g) Improves sleep and sexual energy

- Make changes on how you live, bring more activities into your life, such as:

Swimming, Walking , Fishing, Canoeing, Dancing, Stretching, Bowling, Gardening, Household jobs – washing floors and vacuuming, Shovelling snow or raking leaves, Soccer, Jogging, Hiking, Skiing, Snowshoeing, Pow Wow, Hunting

How do I plan for physical activity? What do I need?

- At the start, it is best to go slow. Start with 5 minutes a day and gradually increase to 20 minutes or more a day.
- Your level of exercise will depend on your level of fitness, talk to your health care provider about which forms of exercise are best for you.
- Ask your health care provider if you should be eating more for more energetic activities.

- Stretch your body (arms and legs) before and after you exercise. This will prevent injuries.
 - Plan to exercise after a meal or snack time.
 - Bring water and a sugar source with you – lifesavers, sugar cubes, unsweetened juice.
 - Check your blood sugar levels before you exercise and once you are done, be sure to write these in your log book.
 - Wear comfortable clothing and shoes, this is to be enjoyed.
 - Try to pick an activity that is fun for you and ask a friend or family member to do it with you. It is always nice to have someone who helps keep your routine going.
 - Set goals for yourself. If needed, ask your health care provider for assistance to ensure the activity is good for you and help you set positive goals.
- a) Set a time of day for physical activity
 - b) Choose an activity
 - c) Try new activities
 - d) Slowly increase the amount of time at an activity
 - e) Exercise with a partner, friend or family member. Who will you ask?
 - f) Keep a record of the activities you do and the length of time you spend doing them

ACTIVITY

You can make or buy a logbook for exercise planning. Each time you exercise you should record the following:

- What stretches you did before you started
- Start time
- Length of time you were active
- What activity you were doing
- What you ate before you exercised
- How you feel after one day, one week, two weeks

Activity	Start Time	Stretches	Type of Meal Before Activity	Total Activity Time	Soreness Duration

6/ Nutrition and Diet

Meet and talk with a Dietician or Nutritionist in your community for information on Nutrition and a balanced meal plan.

Your health care provider should give you some information on what foods to eat and how to best prepare your food.

- A healthy balanced way of eating leads to a healthy body. It is healthy for you, your family and relatives.

- You can help your body use insulin easier if you:

- a) Lose weight
- b) Exercise
- c) Stop eating foods that raise blood sugar, such as simple carbohydrates.

Some examples of simple carbohydrates are:

- Jam
- Raw sugar
- Jelly
- Soda pop
- Brown sugar
- Molasses
- Corn syrup
- Fruit sweeteners

Simple carbohydrates break down quickly into sugar or glucose, but have they lack bulk and do not signal our brains when we have had enough. This leads to over eating of these items and the production of too much sugar in our blood.

Complex carbohydrates are more health promoting and satisfying. Because they are bulky and fibrous, complex carbohydrates are filling without being fattening and have proven to be important in the digestion of fats and proteins. They are also an excellent source of vitamins and minerals.

Some examples of complex carbohydrates are:

- Vegetables
- Fruits
- Grains
- Beans
- Potatoes
- Rice
- Whole wheat bread
- Split peas



- Lower blood pressure

High blood pressure or Hypertension - is the pressure of the blood flowing from the heart into the body through the arteries. "Hyper" means "too much pressure".

Here are a few ways to lower blood pressure:

- a) Weight loss
- b) Exercise
- c) Stop smoking
- d) Stop drinking alcohol
- e) Stop eating lots of salt

- Lower Cholesterol levels

Cholesterol is a wax like fat that is produced in small amounts by our body. We can also get it from fatty foods. It can cause a build-up on the walls of the arteries. This can make the blood slow down and even stop flowing causing a heart attack. The following are a few suggestions to lowering Cholesterol levels in the blood:

- Eat foods with low levels of fat
- Exercise
- Weight loss

Is there special diet food I have to eat?

There is no need to buy or cook special food. A healthy balanced way of eating is the same for people without diabetes.

Choose foods from the four food groups.

- 1) Vegetables
- 2) Fruits
- 3) Meats and Alternatives
- 4) Grains or Cereals

It is a healthier lifestyle for everyone in your family. Use the resource guide from NADA for healthier recipes.

What types of food are best for me?

1) Vegetables - Fresh, Frozen or Canned

- a) Carrots
- b) Turnips
- c) Tomatoes
- d) Broccoli
- e) Spinach
- f) Beans
- g) Peas
- h) Unsweetened vegetable juices
- i) Lettuce or any leafy green vegetable

2) Fruits - Fresh, Frozen or Canned

- a) Apples
- b) Oranges
- c) Grapefruit
- d) Berries; raspberries, strawberries, blueberries, cranberries
- e) Fruits in unsweetened juice
- f) Unsweetened fruit juices

3) Meats and Alternatives – lean meat

If lean meat is hard to find then after cooking, rinse your meat with boiling water and it should remove a lot of the fat.

- a) Skinless, boneless chicken
- b) Ground lean meats
- c) Game meat
- d) Fish – fresh, or canned fish in water
- e) Skim milk and skim milk cheeses

4) Grains or Cereals

- a) Whole wheat flour or breads
- b) Oats
- c) Porridge
- d) Bran
- e) Barley
- f) Lentils



What types of food are bad or unhealthy for me?

- Potato chips
- Cheezies the snack food
- Bologna
- Hotdogs
- Butter or margarine
- Lard and oil
- Chocolate bars
- Desserts

What are the best ways to cook food?

Try to use as little fat or oil as possible

- Steam your vegetables - cook in a pot above boiling water until tender
- Boil your vegetables - cook in the boiling water until soft
- Roast your vegetables or meat - cook vegetables inside the oven or wrapped in aluminum foil over a fire or barbeque. If you are roasting meat or fish, have a pan under the meat to catch the fat, do not let the meat cook in the fat of the animal.
- Barbeque
- Poached - cooked in water, for example: eggs, vegetables
- Broiled - very hot and quick way to melt cheese, open sandwiches, fish or meat

ACTIVITY

Do you have any healthy recipes that you could share with a friend? Maybe you could start a recipe exchange group in your community. Another great way to share different recipes is to have a potluck meal where everyone who comes brings a dish for the meal.

Create a menu for your household that is balanced by including all food groups. Make the menu for one week, use any recipes you have collected or have been given to you by your health care provider.

You and your family will feel better and have a lot more energy.

Here is an example of a balanced life – An Inuit Story

Inuit, “people who are alive at this time,” have traditionally passed their values from generation to generation by word of mouth and through story telling.

In the Inuit culture, family and family relationships are of great importance as is their strong link to their environment and the land.

Guidance for balance with mental health, emotional and spiritual wellness is provided by respected elders and shamans.

Inuit try very hard to maintain traditional ways.

They eat food from the land such as:

- a) Fresh Caribou
- b) Raw arctic char
- c) Muqtuq and clams

They are active in traditional ways like:

- a) Seal hunting
- b) Clam digging
- c) Cleaning of hides
- d) Drum dancing

They use old time medicines like algae, different kinds of plants and mosses. They use heated rocks for healing.

At the beginning of each day they pray and sing. It is important and healthy to look to traditional ways and they will give us the way to live in healthy balanced life.

**“The path toward healing must start in the past if is to lead to wellness in the future.”
- Gail Gray**

7/ Stress in Life

Stress is a normal part of life. It can be harder on you because you are living with diabetes. Stress can affect your blood sugar levels.

Stress results when something makes your body act like it is being attacked. Your body reacts and gets ready to deal with the problem. This reaction is called the “fight or flight response”. Your body signals your liver to add more sugar to your blood so it is ready to be used. If there is no insulin to take up the sugar, you will have high blood sugar levels.



Why do we have stress?

- Physical stress - injury or illness
- Mental or Emotional stress - problems with work, money or family

Why do I have to worry about stress and high blood sugar levels?

Because:

- Stress hormones stay turned on for a long time, so your body responds by producing extra sugar so you will have the energy to deal with your situation.
- Short term stresses can result in high blood sugar levels.
- Long term stresses means that high blood sugar levels will last a long time. This can lead to life-threatening complications such as loss of limbs, blindness or even death.

What can I do about stress?

There are many things you can do to lower stress levels. Here are a few ideas that can help:

- Relaxation therapy

Tighten your muscles, hold like that and relax them. There are many audio and video tapes with different types of relaxation methods.

- Change the situation; fix or get rid of the stress

Try to avoid the things that upset you. For example, if traffic is upsetting, find a new route. If you have an argument with a friend, you can make the first move to patch things up.

- Don't let small things upset you
- Breathing exercises

Sit or lie down, uncross your legs and arms. Take in a deep breath, hold it and breath out. You can do this for 5 to 20 minutes at a time.

- Exercise or Physical Activity

Walking, shopping, fishing, cloud watching, biking, stretching, yoga are a few examples.

- Think of happier thoughts when you notice a bad thought

Think of things that make you happy, proud, a favorite memory or place.

- Practice whichever method of relaxation you choose, at least once a day.

- Join support groups

Talking to people about your problems can help. For example, support groups for people living with diabetes. You realize you are not alone and you can learn new ideas about coping with stress.

Meet and talk with elders in your community. They can give you ideas on how to relax and maybe help with some solutions.

- Add new positive things to your life

You can join a sports team, take dance lessons, learn a new craft, volunteer at a hospital or charity.

- Talk with a therapist or Psychologist about your situation

You may learn new ways to of coping with your stress and new ways of changing your behavior.

ACTIVITY

When you record your blood sugar levels, also record how you are feeling and what is on your mind at the time. After a week, compare these notes.

In the second week, plan to try some relaxation methods before you record your blood sugar levels, at least once a day at the same time each day. This will give a good comparison to last week and you will be able to see how much stress is affecting your life.

If in fact you have experienced stressful situations, you should be able to see how stress affects your blood sugar levels and how important it is to manage stress.

8/ Care for specific conditions

This section will look at the care for specific parts of the body that are affected by diabetes. The conditions that need special care are related to:

- a) Eyes
- b) Kidneys
- c) Nerves
- d) Heart Disease and Blood Pressure
- e) Illness and Infections



8a/ Your Eyes - Retinopathy

Retinopathy is the loss of vision because of blood vessel damage feeding the retina of the eyes. Blood vessels are like tubes that run throughout your body to transport blood and oxygen.

What do we know about retinopathy?

- Diabetes is the major cause of adult blindness
- Not all people with diabetes will develop retinopathy
- The development of retinopathy is expected when:

- a) You have had diabetes for a long time
- b) You have a high level of fat in the blood (glycated hemoglobin)
- c) You have high blood pressure

People with diabetes are at a higher risk of developing cataracts. Cataracts is the clouding of the lens of the eye which results in blurred vision. Cataracts develops five times more often in younger people who have diabetes than in the general population.

See an eye doctor once a year to check your eyes.

Prevention for Retinopathy

To stop retinopathy from developing too far and from getting worse:

- Keep blood sugar levels normal (4-7 mmols)
- Treat elevated blood pressure or blood fat (lipid) levels by:
 - a) Physical activity and diet
 - b) Discuss medication options that are best for you with your health care provider

There are different ways that eye problems can develop and there are many tests and treatments to prevent further damage. It is best to meet and discuss your own situation with your doctor and eye specialist, such as:

- a) Retinal specialist
- b) Ophthalmologist - eye specialist
- c) Doctor experienced with noticing changes related to diabetes, through dilated pupils

Personal Story: Gilbert's Story

Gilbert Chief is 52 years old. He was diagnosed with type 2 diabetes 20 years ago. Without knowing why, Gilbert took the medication his doctor gave him daily for 16 years. Gilbert didn't know much about diabetes. He thought that he would be fine if he took that pill everyday. So, Gilbert ate the same foods, drank the same amount of alcohol, worked the same long hours as a truck driver, and didn't test his blood sugar. Gilbert had no idea that his blood sugar levels were often over 20.

It wasn't until he lost his eyesight four years ago, that Gilbert realized there was more to living with diabetes than taking a pill everyday. Gilbert began learning about diabetes, with the help of his sister, a health care worker. He learned the importance of eating proper meals, testing blood sugar, and avoiding smoking and alcohol. Above all, Gilbert learned the importance of exercise. Even though Gilbert is legally blind, he jogs between one and an half and three and an half miles everyday with his guide dog.

Loosing his eyesight motivated Gilbert to start a journey that he never imagined. Gilbert found himself at a Seeing Eye Dog Training School in San Raphael California. At the school, Gilbert learned how to work with his new dog Casius to find his way around on his own. Gilbert started a support group called Disabled Helping Disabled for people with dis-

abilities. Recently, Gilbert bought a computer and taught himself to type. Now, he's writing a book about his life. He's even been interviewed on APTN. Instead of becoming a victim of diabetes, Gilbert has chosen to take control of his life with diabetes. He has created new opportunities for himself, instead of troubles. Accepting your diabetes is hard, but you can't let it beat you.

8b/ Your Kidneys - Nephropathy



Kidney disease is called Nephropathy. You can develop nephropathy when there is blood vessel damage to the kidneys. Kidneys act like filters for the body and when the blood vessels are damaged they can no longer filter out toxins (poison to your body).

- The number one cause of kidney failure is diabetes.
- Blocked blood vessels can stop the flow of oxygen and nutrients, which are needed to keep the kidneys working properly.
- People with diabetes have a higher chance 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 damage to the kidneys.

Prevention of Nephropathy

- Keep blood sugar levels normal (4-7 mmols)
- Screening every six months for kidney function with your health care provider

These tests are called microalbumin urine tests, which measure protein in the urine. If protein levels are high then it shows kidney damage:

- Lower blood pressure

There are treatments that lower blood pressure such as the ACE inhibitor therapy. By lowering your blood pressure, it makes the functioning of the kidneys easier.

- Once kidney damage begins

a) See a specialist in dialysis. You should ask your health care provider for a referral to a specialist.

b) Ask your health care provider or kidney specialist about kidney transplant centers and if you should be on a donor list.

Managing of Nephropathy

- Lower blood pressure

Get your blood pressure checked by your health care provider every six months. If your blood pressure remains high after changes to your lifestyle, then you should discuss with your health care provider other options such as medications or other therapies.

- Take any medications as prescribed

- Find better ways of coping with stress

- Improve way of eating and physical activity

a) Choosing healthy foods

b) Little to no protein in your diet such as: meats, fish and dairy products

c) Limit the amount of salt eaten

d) Reduce the amount of fat to as little as possible

- Monitor Blood Sugar levels and keep them in the normal range (4-7 mmols).

- Stop smoking – smoking tightens arteries and slows the flow of blood. The tightening of arteries also limits the body of oxygen, which it needs to be healthy.

- Stop drinking alcohol - alcohol harms the body including the kidneys, pancreas, and liver. Your body will use alcohol for energy or store it as fat. This can increase your blood sugar levels. If you limit or avoid alcohol, you will lose body weight and lower your blood pressure as well as keeping your liver healthy.

Personal Story: Rheal Boudrais

Admirable. Inspiring. Remarkable. Each of these words describes Rheal Boudrais, a 60 years old man living with diabetes. Although Rheal was diagnosed with diabetes when he was 20 years old, he suspects he actually developed diabetes in his late teens.

For almost 20 years, Rheal lived his life as usual .He didn't know anything about diabetes what it was, how it could affect him, or how to take care of himself with diabetes. It wasn't until Rheal was in his forties that he began to look after himself, was forced to look after himself. By then, diabetes had already damaged his body. He lost the sight in one eye and most of it in the other. His kidneys began to fail requiring him to have a kidney. Eventually, he even had to have both legs amputated.

But this hasn't stopped Rheal.

Rheal proudly explains that he'll be celebrating his 10th anniversary as a transplant survivor. Instead of blaming the Creator for taking away his life, Rheal thanks the Creator for leaving him a life to live. Rheal is filling that life up to the top. He is the director of a community centre and goes to work everyday. With the help of his friends and family, he continues to hunt and fish regularly. According to Rheal, you can have a full and productive life with diabetes if you just take care of yourself.

On diabetes, Rheal says:

- Awareness is the name of the game! Learn everything you can about diabetes, how it can affect you and what you need to do to take care of yourself.
- Diabetes is an invisible disease - for a while. Don't wait until you start to see the affects of diabetes to begin dealing with it. Proper exercise, proper diet and proper care can help stop diabetes from damaging your body.
- Know that you can live with diabetes. Diabetes doesn't have to be the end.
- The main thing is to not lose morale. Accept the help of your family and friends and of the Creator.
- Young people need to realize that they might feel bullet proof, but they're not. Learn about diabetes and how to prevent it.

8c) Your Nerves - Neuropathy



Neuropathy is nerve damage caused by too much blood sugar being stored by the nerves, creating a build up of poisons. 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, they help sense things
 - a) Feeling temperatures - hot, burning, cold
 - b) Touching objects - rough, smooth
 - c) Sensations - tingling and numbness
- Autonomic nerves – these control the internal body functions, such as:
 - a) Heart
 - b) Digestive system
 - c) Sweating
 - d) Sexual organs
 - e) Bladder

Detectable neuropathy will develop within 10 years of onset in 40-50% in people with both Type 1 and 2 Diabetes.

Type 1 Diabetes usually begins to detect Neuropathy after 5 years.

Prevention of Neuropathy

The following are some ways to prevent neuropathy:

- Screening with your health care provider to identify if you are at risk of developing foot ulcers once a year. Screening can prevent amputations (removal) of limbs
- There is a test to check how much you can feel in your feet – vibration, touch and temperature tests can show how sensitive your feet are. This is a test your health care provide does with you. You should make sure this testing is completed once a year.

This test is done by pricking different part of the bottom of your foot with a tiny little wire and assessing how much feeling you have in your feet. We will discuss this test later in this section.

- Lower blood sugar levels to a healthy range (4-7 mmols). By just controlling your blood sugars you can slow down the disease and possibly stop it from further damage.
- You should discuss further evaluations of your nerves with your health care provider. Have them assess what state your nerves are in your foot and discuss the need for you to see a specialist. Your health care provider can recommend specialists if you require special care.
- Discuss with your health care provider about non-addictive pain medication if you are in pain.

Managing Neuropathy

Proper foot care is very important and can prevent further pain for you.

Foot problems for people with diabetes are the major cause of illness and injury. Lower limbs, such as the feet and legs, are at high risk for amputation (removal) if uncared for.

Minor problems or infections can lead to Gangrene. When the tissue or part of the body does not get any blood, it starts to die. This is called Gangrene. The dying limb must be amputated or removed.

We will outline four areas to effectively care for your feet:

a/ Preventative Care

This is a checklist for you to follow:

- Have a yearly foot examination completed with your health care provider.
- Have your feet checked at every visit with your health care provider if you are a high risk for developing neuropathy. Take your shoes and socks off so they can assess your feet.
- Learn how to care for your feet yourself on a daily basis.
- Keep your blood sugar between 4-7 mmols.
- Protect your feet at all times from cuts, scraps and frostbite or sunburn.

b/ How to care for your feet

When you have diabetes, your feet can be injured and infected easily. As a result of diabetes, they take longer to heal. You should inspect your feet every day and here are a few points to follow:

Look at the bottom of your feet with a mirror and check for:

- a) Redness
- b) Cracked or dry skin
- c) Calluses or corns, anything round or thick coming off your foot
- d) Black spots



- Never cut or break a blister, corn or callous. Do not use any chemicals like iodine or rubbing alcohol on your feet. See your health care provider immediately if you see anything strange on your feet.
- Wear comfortable, well-fitted shoes. Custom shoes can be ordered and winter boots should be worn in the cold.

Shoes should be worn both outside and inside your home to prevent any injuries.

- Wash your feet daily, test the water to make sure it is not too hot with your hand or a thermometer
- Dry your feet very well, between your toes too
- Use lotion on your feet but not between your toes, this prevents dryness and cracking
- Be careful when cutting your nails, make sure you file the rough edges away

c/ Sensory foot exam

This is an exam that you do with your health care provider to test your sensory nerves. If you are a high risk for neuropathy then the test will be done at every visit with your health care provider. If you are at low risk then once a year is fine unless you notice any changes in your feet.



The test is outlined below:

- The tiny wire used is called a monofilament
- The monofilament is attached to a stick (Picture A)
- This tiny wire is used to test feeling in your feet (Picture B)
- You will be asked to say when you feel the wire on your feet. Your health care provider will place the wire all over your foot randomly. This will tell them how well your sensory nerves are responding.
- If you felt the wire touch you at all sites you are a low risk for foot problems. If you did not feel the wire, then you are a high risk person for foot problems.

d/ Education

It is important to be aware of the importance of good foot care. Here are a few recommendations:

- Inspect your feet at least once a day for those with high risk feet and after each exercise session . Be sure to use a good light and mirror to see bottom of feet.
- Do not attempt to cut own toe nails if you have blurred vision, neuropathy, vascular disease, or eye disease. Get a friend or family member to help you. They can also help you with your daily foot care and examination.
- Stop smoking
- Contact the health care provider or nurse if problems (cut, bruise, blister) do not heal after one day
- Select suitable and proper footwear to protect the feet so as to 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 your feet
- In the winter wear warm boots to protect from frostbite
- Any infection must be treated aggressively and immediately by your health care provider
- Blood vessel surgery is possible. If it is necessary, your health care provider will discuss these treatments with you and refer you to a foot care specialist.

Personal Story – LIKE ME

Provided by the Canadian Diabetes Association, Volume 1, number 1.

It feels strange to be in this place. These people here, they don't feed you much and they don't talk to you much. I don't like this place.

At night it's almost as noisy as in the day time. I felt better before I came here to this hospital. My family is far away. My daughter would be here but her man drinks too much and she can't leave her little ones in his care for too long. The doctor, he told me my diabetes was in a bad way and that was why I had to be here. He told me I wasn't taking care of my diabetes by eating the way he told me so now my foot is no good and he has to take it off.

If I had known that I would've tried harder to learn to understand his way of eating. I am a big woman, I like to cook and I like to see people eat and by full. I remember many times in my life when there was no food in our house. When I cook and feed everyone it makes me glad in my heart.

This diabetes, it's a bad thing, the doctor, he told me I had it many years ago. My man, he died from this diabetes. I am an old woman, I thought I would just die like he did. Instead I must lose my foot. I think death would be kinder. The good Lord, he must have a reason for keeping me on this earth. I can only think it is to tell people about this diabetes so maybe they won't have to lose their feet or be sick all the time like me.

8d/ Heart Disease and High Blood Pressure

When blood sugars are high for long periods of time, such as 5, 10 or 15 years, damage to blood vessels and nerves can develop. In the previous section, 8c, we discussed how the nerves in your body can be affected by diabetes. We will now look at the larger blood vessels in the body, those that affect the heart, brain, and limbs.

In our blood there are many different parts. One of these are the red blood cells which carry oxygen to all parts of the body. When the amount of sugar in the blood is too high, then the red blood cells harden and become weak or 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 is 2 to 4 times higher in people with diabetes than people without it. Heart disease is also a major cause of illness and death in people with Type 1 and Type 2 of diabetes.

- Coronary Artery Disease (CAD) happens when the arteries in the body become clogged. The arteries transport the blood to the heart, brain and other body parts.

Problems with clogged arteries occur twice as much in men with diabetes, 3-4 times more in women with diabetes.

- A stroke is when the blood supply cannot get through to the brain. This condition happens twice as much in men with diabetes, 3-4 times more in women with diabetes.

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

After a heart attack (acute myocardial infarction)

- a) Both men and women with diabetes are at greater risk for heart failure.
- b) Risk of another heart attack is 4 times greater for people with diabetes than those without it.
- c) People with diabetes are twice as much at risk to develop heart arrhythmias; which means your heart beats randomly (not in rhythm).

When your heart beats it pushes the blood through the body. So if your heart beats randomly, then the blood is moving at different speeds to your brain and body. Your body may not be getting all the oxygen or nutrients it needs.

d) Mortality or death rate is much higher in people with diabetes

- 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 and numbness.

If you have PVD, you are at high risk for gangrene (death of the limbs) and the treatment is amputation or removal of limbs, such as the feet and legs.

- High blood pressure is a result of blocked arteries. It complicates diabetes and gets worse as we get older. High blood pressure is closely related with obesity and decreased physical activity.

As you can see, the circulation of blood affects the whole body.

Prevention and managing strokes and heart attacks

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
- Eat healthy foods
- Lose weight
- Eat less fats
- Have an active lifestyle - lowers blood pressure, lowers fat levels
- Reduce stress in your life
- Limit or avoid alcohol, you will lose weight and lower your blood pressure
- Quit smoking - smoking tightens your arteries and slows your blood flow, it increases your blood pressure and prevents insulin from working

e/ Illness and Infections

When you are sick:

- Your blood sugar levels will be higher than normal
- Don't eat fat and proteins, just have starch, milk, fruits and vegetables
- Follow a plan set out with your health care provider, we offer a few suggestions:

Take one of the following every hour during the day:

- a) Thick soups (1cup)
- b) Porridge (1/2 cup)
- c) Regular soft drinks (1/2 cup)
- d) 6 soda crackers
- e) Milk (1 cup)
- f) Apple juice (1/2 cup)
- g) Arrowroot cookies (3)
- h) Regular Jello (1/2 cup)

Managing illness

When you are ill, there are a few things you must do to take care of your diabetes as well as your body, these are:

- Take your insulin.
- Test your blood sugar before breakfast and before supper everyday you are sick.
- Drink extra fluids like water, tea and sugar free soft drinks
- Ask your doctor, nurse or pharmacist about which cold remedies you can use.

Call your health care provider if:

- a) Your blood sugar levels go over 11 mmols or under 4.0 mmols
- b) You vomit (throw up) more than once in 4 hours
- c) You cannot eat or drink
- d) You start feeling sicker
- e) You feel sick for more than 24 hours

Skin Care for Infections

People with diabetes often have dry and itchy skin. To prevent dry skin:

- Check your skin regularly.
- Talk to your health care provider if you see a rash, cuts or sores.
- Keep your skin clean and well dried.
- Ask your health care provider to recommend cream for your body; usually low perfumed creams such as Lubriderm or Keri-lotion.
- Use powder between folds of skin.
- Be careful when shaving.
- Keep nails short to prevent scratching the skin.
- Use sunscreen to prevent burning and blistering of skin from the sun or wind.

9/ Type 2 Diabetes And Pregnancy

If it is not cared for then it may be harmful for the baby

- Birth defects
- Stillbirths
- Miscarriages

Things to consider when planning for a pregnancy:

- Counselling to plan your pregnancy carefully, with a high risk “prepregnancy” clinic or your health care provider.
- Aim for perfect blood sugar control for a minimum of three months before becoming pregnant.

- Avoid high fat levels (or glycated hemoglobin levels), talk to your health care provider about your levels. These are a risk factor for miscarriage and/or birth defects.
- Be sure to have any eye and kidney changes checked and followed carefully, pregnancy can cause things to develop quicker.

Things to aim for and avoid during pregnancy:

- Aim for regular, healthy blood sugar levels
- Oral medications are not recommended during pregnancy and so insulin is used for women with Type 2 diabetes.
- Drink lots of water to avoid ketosis; which is a build up of acid in your tissues and body fluid.
- Watch weight gain with your goal being normal weight gain. Avoid “diets” to lose weight.

A weight gain of 28 to 40 pounds for underweight women or 15 to 25 pounds for heavier women is best.

- Get a regular eye examination by an eye specialist - once in first 3 months of pregnancy and as needed if you notice any changes.
- Women should go for Nephropathy screening or urine test at the beginning of pregnancy.
- It is important that a Diabetes team with experience in dealing with diabetes and pregnancy is there to support you.

10/ Management for Specific Groups

a) Diabetes In Children And Adolescents

Type 2 diabetes, in children and adolescents, is not easy to detect, but it is the best time to start living a healthy life to prevent diabetes from developing.

Managing and Prevention

To prevent and/or manage diabetes, you need encourage positive lifestyle choices and watch out for symptoms of diabetes. The following are a few suggestions:

- Watch for complications like obesity, being tired or always thirsty.
- Screening tests with your health care team, blood sugar monitoring.
- Increase physical activities
- Encourage a healthy way of eating, at home and within the community.

Education

Young people can make positive lifestyle changes if they are informed about diabetes and what can happen to them in the future. They need to have the proper information as well as positive role models to follow. Here are a few ideas that you can begin with:

- Teach children about diabetes and that it can be prevented
- Teach children to be self aware
- Encourage participation in school and community activities, sports and trips
- Give information on smoking, alcohol and drug abuse
- Teach them to eat regular healthy meals
- Try to be sensitive to the stresses of children and adolescents

b) Diabetes In The Elderly

Elderly people do not always have the classic symptoms of high blood sugar like going to the bathroom a lot or very thirsty. These happen only when the blood sugar levels are very high.

- a) Overly tired or always feeling sleepy
- b) Depressed, feeling down about life or themselves
- c) No interest in life, extremely inactive and negative about life

Things that may affect your ability to follow treatment schedules include the following:

- a) Limited abilities due to some disability
- b) Lack of money, no transportation
- c) someone to drive you, translator, escort
- d) someone to accompany you for appointments
- e) Low motivation
- f) Other diseases like arthritis or asthma

Managing

The following are a few suggestions to managing diabetes in the elderly:

- Monitor blood sugar levels the same as younger people.
- Talk with your Diabetes Health Care team - educator, doctor, nurses, elders.

- Try some mild to moderate physical activity such as walking or stretching.
- Risk of high blood sugar increases with age so some medications may be needed.
- Pre-mixed insulin is recommended as an alternative to mixing insulin to minimize dosage errors.
- High blood pressure treatment goals should be made with your health care team.
- Foot care

It is good to have a partner or family member help you with foot care. You can help each other with:

- a) Reminding each other to care properly for your feet.
- b) Any sight difficulties. It can become difficult to see clearly as we get older, so the other person can help us with our foot examinations.
- c) Foot examinations. We may have some joint problems so it is not as easy to bend to see the bottom of the feet.
- d) Recording all the changes in your feet so you can discuss any changes with your health care provider.

Gestational Diabetes

Gestational diabetes is a type of diabetes that occurs during pregnancy between the 24th and 28th weeks. There are so many hormones being made during the pregnancy and our bodies become resistant to insulin. Simply, our body stops using insulin, and sugar is not taken into the cells. High levels of sugar in the bloodstream is what happens. It can be controlled 95% of the time just by eating in a healthy way and if needed, with insulin.

Your blood sugar usually returns to normal after your baby is born but you have a 50% chance of developing Type 2 diabetes later on.

How does it affect my baby?

Diabetes and pregnancy (Type 1, Type 2 and gestational diabetes) may be associated with an increased risk of:

- Increased growth of the baby

Your baby will have high blood sugar because you have high blood sugar. As a result, your baby's pancreas makes more insulin. This can cause your baby to grow very large and make the pregnancy difficult. This is called Fetal Macrosomia.

-Low blood sugar after birth

The baby gets used to making extra insulin while inside its mother so when the baby is born it keeps producing the same amount of insulin. When a newborn produces too much insulin it is called Neonatal Hypoglycemia.

- Jaundice or Hyperbilirubinemia

Your baby can have a yellowish colour to its skin, this means there could be some damage to the baby's liver.

- Breathing difficulties

- Lower calcium levels: Hypocalcemia

- Higher chances of developing Type 2 diabetes in the future

If your blood sugar is controlled, you can have a healthy baby.



Screening For Gestational Diabetes

There are ways to check to see if you have Gestational Diabetes. This is done so that you can care for the health of your baby and yourself.

This is done with your health care provider by taking blood and getting it tested at a laboratory. This is different from capillary blood sugar testing which is done with a blood glucose meter.

There are three tests:

- Fasting blood glucose

This is tested early in the morning, when your blood sugar is the lowest. This test is usually done at the beginning of the pregnancy.

- Glucose challenge test

A blood test is done on the mother one hour after drinking a 50g (50 grams) glucose drink. This test is done monthly in the 5th to 7th months of pregnancy.

- Glucose tolerance test

This test measures blood sugar levels at different times after a glucose rich meal (75 grams) is taken. There are usually three blood tests. This shows how the insulin in your body is working.

What are the risk factors for pregnant women?

Family Background

Your family history is a fact of life that cannot be changed but it gives us 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 diabetes during pregnancy - often leads to diabetes later in life.
- Ethnic Ancestry - being of Aboriginal, African, Latin American or Asian ancestry increases the risk of developing diabetes.
- History of high cholesterol in your family - fatty substances, such as cholesterol, that circulate in the blood can clog up the arteries and limit blood flow in the body. Cholesterol can also cause heart disease.
- 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

Our personal health is something we can change and be aware of. It is the condition we keep our bodies 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
- People who carry most of their weight above their hips, have a ‘pear shape’, or are seriously overweight.
- High blood pressure, also connected with heart disease
- Experience giving birth to a baby weighing over 4 kg (9 lbs)
- Experienced symptoms of diabetes during your pregnancy

Lifestyle or the way you live

How we keep ourselves healthy relates directly to our personal health. All of the following points will increase the risk for developing diabetes but these are things we can control and change.

- Little or no exercise
- High levels of stress
- Poor eating habits - high sugar, high fat diet
- Smoking



Managing gestational diabetes

To manage gestational diabetes, it is recommended that you be physically active and eat healthy foods. The only difference between managing gestational diabetes and other forms of diabetes is that you should eat many small meals instead of three big meals in a day. The types of food you should eat and how they are cooked are the same as for people with Type 2 diabetes. Here are a few suggestions to get you started:

- Discuss your lifestyle with your health care provider and be sure to ask for information for managing gestational diabetes.

- Eat a small breakfast such as:

- a) A boiled egg
- b) Oatmeal
- c) Whole wheat toast

- Eat protein at every snack or meal, for example:

- a) Meat
- b) Eggs
- c) Beans
- d) Nuts

Eat high fiber foods such as:

- a) Whole wheat bread
- b) Oatmeal
- c) Fruits
- d) Vegetables

Avoid eating sugar or sweets; soft drinks, cookies and fruit juices

Monitor your weight gain

- a) 28 to 40 pounds for underweight women
- b) 15 to 25 pounds for overweight women

Be physically active during pregnancy

You may prevent using insulin by exercising 20 minutes a day, three times a week. Later in your pregnancy, it may be more difficult for you stand or walk for long periods of time, so arm exercises will help reduce gestational diabetes.

- Keep your blood sugar levels stable (3.8 to 7 mmols)
- The use insulin if healthy blood sugar levels are not maintained

After your baby is born, you can prevent yourself from developing Type 2 diabetes by:

- Keeping active
- Losing weight to a healthy body weight after the birth of your baby. Discuss with your health care provider what a healthy weight for you is.
- Get a blood test 6 months after the birth with your health care provider. A glucose tolerance test checks to see if you have diabetes.
- Breastfeeding can prevent child obesity (becoming overweight) and diabetes in your child's future.
- Get checked for diabetes every year if you have had gestational diabetes.

CONCLUSIONS

From this handbook, we understand that our body is nourished with the flow of our blood. We have also seen that our lives are affected by what we eat and how healthy we keep our bodies. Reflection on Mother Earth and how she is nourished with the rivers that feed her can be compared to the blood that runs through our bodies. If the rivers are healthy, then so is Mother Earth. Once the rivers become polluted, she begins to suffer. Our bodies suffer once our blood becomes unbalanced, or in the case of diabetes, has too much sugar.

Once we decide to live healthy lives, our ability to develop the skills we need never ends. In the end, we always find a new beginning. We control how we develop to our own potential to grow and succeed in life. There will always be guidance for those that follow this path. Guidance comes in different ways, sometimes through prayer, dreams, the words and deeds of elders, friends, family and our communities. It is for the seeker of wholeness, of balance, to step through the gate and begin the journey.

The medicine wheel turns forever and with it does our ability to live a healthy, full life. To show how all parts of care for yourself are connected, we have created some checklists that you can use.

We have summarized the tests you need into checklists that you can use as a reminder. How often you meet with your health care provider may be different for each person. Medical tests that should be completed with your health care provider are listed in the following table.

Test	Health Care Provider	Date of Appointment
Eye Test (once a year)		
Microalbumin Urine Test (every 6 months)		
Sensory Foot Exam (once a year) Blood Sugar Meter Calibration: have a lab check your results to make sure your meter is working well (once a year)		
Blood Pressure (2 or 3 times a year)		
Hemoglobin Test (2 times a year)		
Dental Checkups (1 to 2 times a year)		
Blood Fat Levels (once a year)		

This is a checklist for daily care. It can help you plan your meals, physical activity, watch out for stress and remind you to check your blood sugar levels. You can use this table or make one of your own. Be sure to look back into the handbook for more detailed information and suggestions.

You should meet with your health care provider to discuss the best meal plans for you. A dietician can also help you plan meals.

Daily Tasks	How Often	When
Blood Sugar Testing (use a log book to record all your readings)	Three days a week, record all the meter readings and take them to your health care provider	Before Breakfast Before Lunch (noon meal) Before Supper Before Bedtime Snack
Physical Activity (be sure to stretch before you start an activity, record your activity in a log book)	Every Day Grains 5-12 servings a day	At least 10 minutes; this time will depend on you and how you feel but you want to work up to 30 minutes a day or more
Meals You should meet with your health care provider to discuss the best meal plans for you. A dietician can also help you plan meals.	Vegetables and Fruit 5-10 servings a day Meat and Alternatives 2-3 servings a day	Milk Products Adults 2-4 servings a day Pregnant Women 3-4 servings Children (4-9 years) 2-3 servings Youth (10-16 years) 3-4 servings
Foot Care	Every Day	After washing your feet
Insulin	Daily or as instructed by your health care provider	15-30 minutes before a meal
Oral Medicine	As your health care provider tells you	It is different for the different types of pills
Stress	Every Day	Take at least 10 minutes a day to do something that relaxes you

GLOSSARY

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

ADDISONS DISEASE

Low functioning of Adrenal gland. The Adrenal glands (2) are located one on top of each kidney, each having an inner part and an outer part that secrete hormones. When there is an under production of the hormone from the outer part, it can lead to serious illness.

AEROBIC ACTIVITY

An activity that makes the heart pump harder and faster, make the person breathe 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 gut reducing blood sugar levels after the meal.

Examples: Acarbose, Prandase

ARTERY

Large blood vessels that carry blood from the heart to all parts of the body. The walls of arteries are thicker, stronger and more elastic than walls of veins.

AUTOIMMUNE DISEASE

An 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.

BIGUANIDES

Biguanides are made by the body to help insulin to work better. It stops the liver from producing glucose, which helps to lower blood sugar levels and increase glucose (sugar) uptake in muscle tissue. This helps the tissues to respond better to insulin made by the body.

Biguanides are associated with less weight gain and lower frequency of low blood sugar) than sulfonylurea, but gastrointestinal side effects may be a side effect.

If there is kidney or liver failure biguanides are not used (may cause lactic acidosis)

Example: metformin.

CAPILLARY

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.

CARBOHYDRATE

Sugar and starch in food breaks down into glucose (sugar), the main source of fuel for muscles and affect blood sugar more than any other nutrient.

Simple carbohydrates brake down quickly into sugar or glucose, but have they lack bulk and do not signal our brains when we have had enough. This leads to over eating of these items and the production of too much sugar in our blood. Complex carbohydrates are more health promoting and satisfying. Because they are bulky and fibrous, complex carbohydrates are filling without being fattening and have proven to be important in the digestion of fats and proteins. They are also an excellent source of vitamins and minerals.

CARDIOLOGIST

A medical doctor who is a heart specialist.

CASUAL

Refers to any time of day, without regard to the interval, since the last meal eaten.

BODY MASS INDEX (BMI)

The body mass index 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 between 25-27+

CELIAC DISEASE

Celiac disease is found when there is poor food absorption into the body and an intolerance to gluten. It is seen more in children with poor growth, and poor blood sugar control or unpredictable frequent low blood sugar

CHOLESTEROL

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. Examples: Butter and eggs have a lot of cholesterol.

CONGESTIVE HEART FAILURE

The quantity of blood pumped by the heart each minute is not enough to meet the body's normal requirements for oxygen and nutrients. Signs: 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.

CREATININE

A metabolic waste product produced by the muscles and secreted by the kidneys.

DIABETES

Your body relies on the pancreas to make sure that it can absorb the nutrients you need. The pancreas is the organ that produces the hormone called insulin. Insulin helps your cells to absorb sugar. Diabetes is caused when the pancreas doesn't make the right amount of insulin, and your body doesn't use up enough sugar.

Classic symptoms: fatigue, frequent urination, excessive thirst, blurred vision, unexplained weight loss

DIABETIC KETOACIDOSIS (DKA)

Refers to a build up of ketones in the body as a result of faulty carbohydrate metabolism or high blood sugar. This is an emergency condition that may lead to death.

Signs are: frequent urination, excessive thirst, excessive hunger, and a fruity smell to breath.

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

A term used to describe kidney failure.

ENDOCRINOLOGIST

A medical doctor who specializes in treating people who have problems with endocrine glands. Example: the pancreas is an endocrine gland.

FASTING

To have some blood tests done, no food must be eaten for at least 8 hours

FATS

One of the main classes of foods and a source of energy for the body that help the body use some vitamins and keep the skin healthy. The body stores this energy in this form. Fat is made up of two types of compounds: glycerol and fatty acids. There are three types of fats in foods: saturated, unsaturated 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)

A type of diabetes, similar to type 2, found 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

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 (sugar) into the bloodstream.

Glucagon, a preparation, is used as an injection for severe low blood sugar (insulin shock), to raise the level of sugar in the blood. The cells react by using what insulin is available to make energy from the higher amount of sugar in the blood.

GLUCOSE

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

HDL

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

HYPERGYCEMIA

Hyper=high; glyc=glucose; emia=blood.

A condition where blood sugar levels are too high as defined by a fasting blood sugar level of over 7.0 mmol/l, signifying that the blood sugar is out of control.

Classic Symptoms: dehydration, confusion, sudden weight loss, or a coma.

HYPERTENSION

High blood pressure

HYPERTENSIVE MEDICATION

Medication used to lower blood pressure.

HYPOGLYCEMIA

Refers to low blood sugar and is defined by a blood sugar level less than 4 mmol/l, 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: This person may feel: nervous, shaky, hungry, weak, dizzy, sweaty, numb, have tingling in tongue or lips, mood changes, blurred vision, and may have a headache.

Treatment: Test blood sugar. Eat or drink small amounts of sugar, juice, or food containing fast acting sugar: 4 oz. (1/2 cup) of juice; 2-3 teaspoons of sugar; 3 glucose tablets or one package of glucose gel; 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.

Prevention: follow plan; understand medication, not drinking alcohol, check blood sugar before and after exercise

HYPOTHYROIDISM

Low levels of thyroid hormone

IMPAIRED FASTING GLUCOSE (IFG)

A condition for when the sugar levels are too low for what the body needs.

A new term established to identify an in between stage of a steady state of abnormal blood sugar (glucose) using levels of 6.1-6.9 mmol/L

IMPAIRED GLUCOSE TOLERANCE (IGT)

A condition when the blood sugar levels become too high for the body.

Ranges most frequently from insulin resistance with relative insulin deficiency to most frequently a defect in secretion with insulin resistance. Depends on measurement of plasma glucose 2 hours after drinking 75-g glucose.

INJECTION SITES

These are places on the body where persons living with diabetes can inject insulin most easily. These are:

- 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

A hormone produced by the pancreas which regulates blood sugar levels.

INSULIN LISPRO

Synthetically made insulin, that is very short acting.

INSULIN DEFICIENCY

The pancreas does not produce enough insulin.

INSULIN RESISTANCE

This 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 insulin or any insulin. The body becomes more resistant to the insulin the pancreas is making.

INSULIN REACTION

When the level of sugar in the blood becomes too low, because too much insulin has been injected, not enough food has been eaten, or the body was exercised without extra food. The person may feel hungry, nauseated, weak, nervous, shaky, confused and sweaty. Taking small amounts of sugar will help the person feel better within 10-15 minutes.

INSULIN SHOCK

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 collapse.

INTENSIVE INSULIN THERAPY

The use of insulin in multiple daily injections (3 or 4 per day) or by a pump to achieve target glucose levels.

ISLETS OF LANGERHANS

A group of cells in the pancreas that are the source for glucagon and insulin.

KETONURIA

Ketones present in the urine, a warning sign of diabetic ketoacidosis (DKA)

LDL

Low-density lipoprotein, abnormal or “bad” cholesterol.

LIPID

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.

MACROSOMIA

This condition happens in gestational diabetes when high blood sugar levels cross the placenta and feed the unborn baby too much blood sugar, causing it to grow too fat and large for its gestational age.

MACROVASCULAR COMPLICATIONS

Damage body-wide (systemic) to large blood vessels.

METABOLIC DECOMPENSATION

Results from metabolism failure with symptomatic hyperglycemia: symptoms of high blood sugar levels; and ketosis: abnormal build up of ketones in the body due to inadequate use of carbohydrates; fatty acids are metabolized instead.

METABOLISM

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
- Anabolism – the body uses food to build or mend cells.

MICROVASCULAR DISEASE

Damage to smaller blood vessels (capillaries) that connect to various parts of the body.

MINERALS

Sodium, potassium, calcium, phosphorus, magnesium, iron, are important for regulating many body functions.

Sources: table salt, milk, meat, cheese, eggs.

MMOL

Millimole or mmol refers to a measurement that measures the amount of sugar that contains a specific amount of atoms (Avagadro's number). For diabetes, we use it to count how much sugar there is in a specific amount of blood.

NEPHROPATHY

Kidney disease due to blood vessel damage to the kidneys, the body's filtering system.

NEUROPATHY

Neuropathy is nerve damage caused by too much blood sugar being stored by the nerves, creating a build up of poisons.

OBESITY

When body weight is over by 20% of ideal body weight for age and height.

OPHTHALMOLOGIST

A medical doctor who is an eye specialist.

OPTIMAL

Most favourable or the best. Optimal levels refers to those glucose levels that approach the normal range and are associated with a low risk of developing chronic complications of diabetes.

PANCREAS

A bird-beaked shaped gland that lies just behind the stomach. It secretes insulin and glucagons produced by the islets of Langerhans.

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)

Body wide circulation problems – blood flow to limbs (arms, legs, feet) is blocked, creating cramping, pains, or numbness.

PODIATRIST

A doctor who treats specializes in foot care.

POLYDIPSIA

Unusual thirst lasting for long periods of time.

POLYPHAGIA

Unusual hunger.

POLYUNSATURATED FAT

These fats are liquid at room temperature and come from vegetable oils, tend to lower the level of cholesterol in the blood. Examples are corn, cottonseed, sunflower, safflower, and soybean.

POLYURIA

Frequent urination.

PREMIXED INSULIN

When both a short acting and long acting insulin are mixed together.

PRIMARY CARE DOCTOR

One who is the first patient contact, one who usually takes care of person for care of a given health problem.

PROTEIN

These 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, milk.

RETINOPATHY

Refers to impairment or loss of vision due to blood vessel damage in the eyes.

SATURATED FAT

Are solid at room temperature and come mainly from animal food products.

They raise the level of cholesterol in the blood. Examples: butter, lard, and meat fat.

SUBOPTIMAL

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

SUPHONYLUREAS

Stimulate the pancreas to release more insulin. Makes insulin producing cells more sensitive to sugar and stimulates them to secrete more insulin to lower blood sugar.

Examples are: Acetohexamide, chlorpropamide, glyburide, gliclazide, tolbutamide, tolazamide.

SYSTOLIC PRESSURE

This is pressure against the inside wall of the arteries when the heart (contracts) pumps out blood. It is one of the readings (top) in a blood pressure measurement.

TYPE 1 DIABETES

Type 1 diabetes, an autoimmune disease, 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 needle every day to stay alive. Young adults and children usually develop this type of diabetes. The cause of this diabetes is unknown.

TYPE 2 DIABETES

A genetic disease, triggered by environmental factors: stressors (substance abuse), inactive lifestyle, or obesity. The body cells do not let the sugar inside (insulin resistance) and the pancreas does not make enough insulin (relative insulin deficiency).

UNSATURATED FAT

Also called monounsaturated fat and are neutral as they do not raise or lower blood cholesterol. Examples are: olive oil and peanut oil.

UROLOGIST

A medical doctor who specializes in urinary and genital conditions.

VEIN

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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