

Management Strategies for Patients/Clients

What is Diabetes?

Diabetes is a chronic condition whereby the body cannot properly utilize carbohydrates (glucose) from the foods that are eaten. Insulin is needed to help the body use sugar for energy. When an individual develops diabetes, the pancreas either does not produce insulin or produces very little insulin (resulting in type

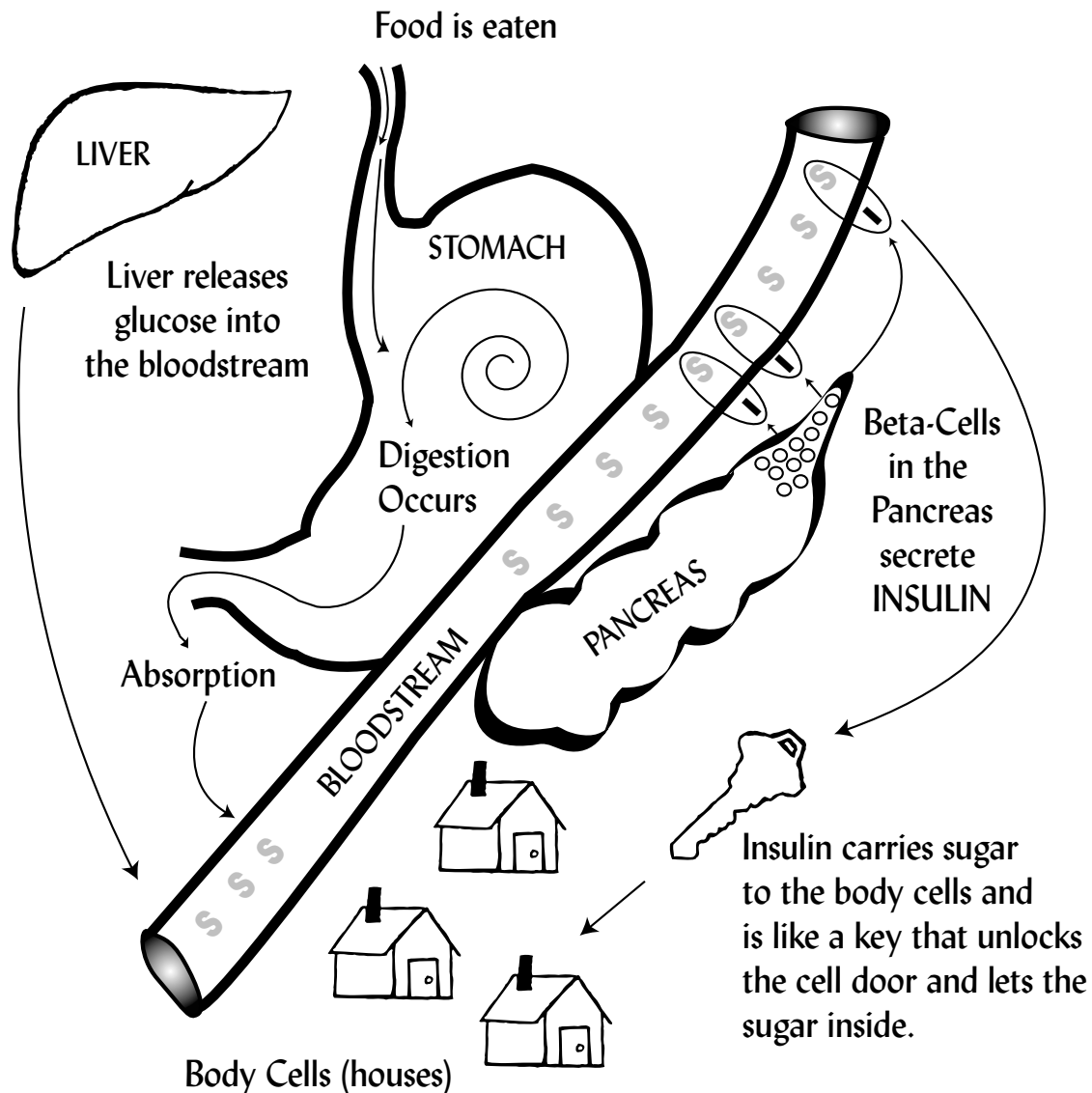
1 diabetes), or the body cannot properly use the insulin that is produced (causing or resulting in type 2 diabetes). When insulin is not available, the sugar from food stays in the bloodstream causing blood glucose levels to rise. A third type of diabetes, Gestational Diabetes, is a temporary condition that occurs during pregnancy.

What is Diabetes?

SUGAR = GLUCOSE
(fuel)

Carbohydrates = Foods that turn to sugar

1. Starch: breads, potatoes, pasta, rice, cereal, corn, bannock
2. Fruit and sweet vegetables: peas, carrots, beets, parsnips, turnips
3. Milk
4. Sugary foods



Symptoms

Type 1 Diabetes: symptoms progress quickly and are dramatic.

Type 2 Diabetes: symptoms are slower to progress and often more subtle. Therefore, it is possible to have no apparent symptoms and be diagnosed at a non-related medical examination.

The classic symptoms of diabetes are:

- Polyuria (increased urination)
- Polydipsia (increased thirst)
- Polyphagia (excessive hunger)

However, it is possible to have any combination of the following symptoms or no symptoms at all (especially with Type 2 diabetes).

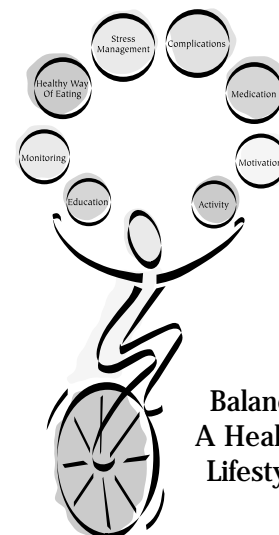
1. **Polyuria (increased urination)** – When blood glucose is high, the kidneys will filter out excessive glucose into the urine. During this process, additional water is drawn from the tissues, resulting in large volumes of urine.
2. **Polydipsia (increased thirst)** - Increased thirst is caused by the body's need to replace the fluids that are lost through increased urination, thus trying to prevent dehydration.
3. **Polyphagia (excessive hunger)** – Due to lack or inefficient insulin, or the body's inability to use insulin (insulin resistance), the body cannot utilize its available glucose. Therefore, the body's need for energy (or rather more glucose) causes increased hunger.
4. **Fatigue/Weakness** – When glucose is unable to access the body's cells, there is no fuel source for energy, which can lead to the sensation of fatigue and weakness.
5. **Weight loss** – When the body is unable to utilize glucose as a fuel source for energy, the “starving” body cells convert fat stores to glucose. This “burning up” of fat stores results in weight loss.
6. **Blurred Vision** – High blood glucose can lead to a build up of glucose in the fluid of the eye. The excessive glucose draws in extra fluid, causing the eye's outer lens to change shape, thus distorting vision. This is a temporary change that usually improves after 6 - 8 weeks of improved blood glucose control.
7. **Impaired Healing of Wounds, Cuts and Infections** – In the presence of high blood glucose levels, the immune system is less effective, resulting in a perfect medium for the growth of

bacteria and yeast. As a result, wounds, cuts and infections take longer to heal and women may be more prone to vaginal infections.

8. **Pain, Numbness or Tingling** – A build up of glucose on the lining of nerves and small blood vessels in the body's extremities can attribute to the sensations of pain, numbness and/or tingling. Most commonly, these sensations are felt in the hands and/or feet and may decrease with improved blood glucose control.
9. **Itchy skin** – High blood glucose leads to deposits of sugar crystals just beneath the skin's surface causing itchiness.
10. **Nausea, Vomiting, Abdominal Pain, Fruity Odor to the Breath and Coma** – are all the later signs and symptoms of high blood glucose that can occur when the body uses stored fat instead of glucose as an alternative source of energy. This use of fat produces an acid substance called ketones, which can build up in the blood and may lead to a diabetic ketoacidosis (DKA).

Diabetes Management

Individuals with diabetes can expect to live active, independent and vital lives if they make a lifelong commitment to careful management of the disease. As depicted in the image to the left, diabetes management may seem like a balancing act.



In order to “balance a healthy lifestyle”, an individual may require ongoing motivation, education, dedication and support. The following components of diabetes management contribute to a healthy lifestyle:

Education – ongoing diabetes education is the key to understanding and successfully managing diabetes. All individuals who have diabetes should be given the opportunity to learn more about the condition in order to successfully manage diabetes and make healthy lifestyle choices.

Monitoring – self-monitoring of blood glucose levels is an essential component of diabetes management and is recommended for all individuals who have diabetes. Monitoring also includes monitoring for ketones when indicated and regular glycosylated hemoglobin (A1C) monitoring.

Healthy Way of Eating – what, when and how much an individual eats plays an important role in regulating blood glucose levels and promoting a healthy body weight. General guidelines for healthy eating may be adequate for individuals with Type 2 diabetes who do not require insulin therapy. However, a calculated meal plan or carbohydrate counting may be an option for individuals who require insulin or for women with diabetes during pregnancy.

Stress Management – both physical and/or mental stress may cause an increase in blood glucose levels. Acquiring and practicing effective stress management skills can not only bring an increased sense of calm and order to day to day life, but also helps individuals with diabetes to better manage their condition.

Complications – the onset of complications due to diabetes (increased risk of cardiovascular disease and stroke, retinopathy, nephropathy and neuropathy) may be delayed and even prevented through effective diabetes management. Early detection of complications may be achieved through regular screening of the eyes, heart, kidneys and feet and by monitoring blood pressure.

Medication – individuals who have Type 1 diabetes will always require daily injections of insulin. Multiple daily injections (3 - 4 per day) or the use of continuous subcutaneous insulin infusion (insulin pump), are usually required to achieve target blood glucose levels.

For many individuals, Type 2 diabetes may initially be controlled by following healthy eating guidelines and keeping active. Over time, however, due to the progressive nature of diabetes, oral antihyperglycemic agents and/or insulin therapy will most likely be required to achieve optimal blood glucose control.

Motivation – controlling diabetes requires an “around the clock” commitment from the individual with diabetes. The support of family and health professionals may help keep the individual motivated. Joining support groups or going to educational programs for diabetes may also help facilitate continued motivation.

Activity – regular physical activity helps control glucose levels, provides cardiovascular benefits, promotes healthy weight and facilitates general overall health and well-being.

Healthy Eating for People with Diabetes

When we eat, food breaks down into sugar (glucose) and goes into the blood stream. When you have diabetes, the body does not have enough insulin to move the sugar from your blood stream to your cells. The sugar stays in your blood and cannot be used by your body for energy.

Manage diabetes by balancing the kinds and the amounts of foods eaten.

Some foods raise blood sugar:

- **Carbohydrates** (sugar and starches): breads, cereals, fruits, vegetables and milk.

Some foods slow down how fast sugar goes into the bloodstream:

- **Protein foods:** meat, fish, poultry, cheese, eggs, tofu and peanut butter
- **Fats and oils:** butter, margarine, gravy, oil and salad dressings
- **Dietary Fiber:** whole grain breads and cereals, fresh

fruits, vegetables, dried peas, beans and lentils

Other factors can lower your blood sugar such as:

- **Activity**
- **Diabetes pills and insulin**

General Guidelines

1. **Eat three meals each day (and snacks if recommended).** Work towards eating at least 3 of the 4 main food groups at each meal. Be sure to add a protein food. If you are overweight, choose smaller servings at your meals. **DO NOT** skip meals.

The food groups are:

- Starch (grain products)
 - Fruits and Vegetables
 - Protein (meat and alternatives)
 - Milk products
2. **Eat at regular times.** The spacing and timing of meals is very important. Allow 4 - 6 hours between main meals. Eat snacks (if recommended) at least 2 hours before the next meal.
 3. **Eat foods high in fibre.** These are whole grains breads and cereals, fruits, vegetables and legumes (dried peas, beans, lentils).
 4. **Choose lower fat foods.** Limit the amount of fat you add to food, such as butter, margarine, gravy, cream, oil, mayonnaise and salad dressings. Test your culinary skills by baking, barbecuing, boiling, roasting and broiling more often. Limit fried, creamed, breaded or scalloped dishes.
 5. **Limit sugars and sweets.** Read labels carefully! Look for words that mean sugar, such as glucose, fructose, lactose, corn syrup, corn sweeteners, dextrose, sucrose and invert sugar. If sugar is in the first 3 ingredients, then the product or item is high in sugar.
 6. **Limit dietetic foods.** This includes diet candy, diet cookies, diet chocolate, etc. Discuss the use of these foods with your dietitian.
 7. **Limit salt and salty foods.** Eat fewer processed foods, condiments and snack foods. This may help control blood pressure. Try herbs and spices instead of salt. (e.g. Mrs. Dash™, Lawry's Natural Seasoning™, etc). Do not use No-Salt™, Half Salt™, or Co-Salt™ until you have discussed it with your dietitian.
 8. **Keep active every day!** Walk, swim, stationary bike, etc.

Client Checklist for Diabetes



What to expect at each office visit with your family physician:

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| | Review blood sugar results |
| | HgbA1C |
| | Check blood pressure |
| | Measure weight |
| | Measure waist circumference |
| | Check feet/lower legs |
| | Review nutrition |
| | Discuss activity |
| | Review medications |
| | Discuss tobacco use |
| | Discuss alcohol use |



Tests & Measurements that should be done or discussed on a yearly basis, or as recommended by your health care team:

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| | Cholesterol levels monitored (you must fast for 12-14 hours) |
| | Kidney screen (MAUR & MDRD) |
| | Urinalysis |
| | Dilation of eyes |
| | Monofilament foot assessment |
| | Support systems discussed |
| | Vaccinations Pneumococcal (once in a lifetime) Annual influenza vaccine |
| | Referral for further education (BHL) |