Diabetes Essay, Research Paper

Diabetes

Diabetes, Diabetes Mellitus, is a chronic illness this means that it has no cure and the symptoms persist over a long period of time. This illness is a result of an imbalance of hormones, insulin, produced in the pancreas. Insulin plays an important role in how the body uses food. Insulin enables the cells in the bloodstream to absorb and use glucose for fuel. If the pancreas produces too little or no insulin or if the insulin doesn?t work properly the person may become diabetic. Therefore, diabetics are not able to properly convert food into fuels needed by the body to function, which can seriously lead to physical consequences.

The pancreas, located behind the stomach, is a long, thin organ about the length of the hand. It is the organ that is responsible for the development of diabetes. The pancreas has two different types of cells, called alpha and beta cells, which produce insulin. Insulin is responsible for breaking down food that enters the body, turning into fuel that can be used by the body, and distributing it to the various parts of the body. The fuels needed for the body to function are known as glucose.

Glucose is sugar manufactured when the carbohydrates we eat are digested. Carbohydrates are foods that contain a large amount of sugar or starch. Bread, fruit, ice cream, and cereal are good examples of foods that are high in carbohydrates. Glucose is the main provider of energy for the majority of bodily functions. The glucose level in the blood changes in response to a person?s a daily activity, from eating a meal, to stressful situations.

Attempts to transplant part of a normal pancreas into a diabetic have not been very successful. The operation is a difficult one and only about 40 percent of the transplanted organs are still working. One major problem is that some way has to be found to stop the digestive juices leaking out and digesting the insulin. Pancreatic transplants have mainly been attempted in patients who have kidney failure due to the diabetes. Since the pancreas lies up against one of the kidneys, it is technically possible to transplant the two organs together, simultaneously. But, this operation has only ever been attempted a few times.

A possibly more promising hope for the future is transplanting just the islet cells. They could be injected into the abdomen without any surgery. The problem is how to stop the body from recognizing them as foreign cells and trying to destroy them. Tiny jelly-like beads have been developed to protect the islet cells from white blood cells, which would otherwise attack the islet cells and gobble them up. But, the insulin can still seep out through the beads.

Normally the level of glucose in the body rises after a person eats a meal. This rise in blood glucose stimulates the beta cells to release insulin. Insulin then either helps body cells take up glucose to use as energy or promotes the conversation of glucose to fat, which are used by the cells later. Some glucose maybe stored in the liver this is called glycogen. Then the level of glucose drops (usually several hours after the meal has been eaten), other cells in the pancreas stimulate the conversion of glycogen to glucose and its release into the bloodstream. In this way, the level of glucose in the bloodstream stays relatively constant until the next meal is eaten.

The body tends to deal with this imbalance by filtering out excess glucose throughout the kidneys, resulting in high levels of sugar in the urine. As glucose level rises the kidneys over-whelmed and don?t function normally. They lose their ability to absorb much water the result is frequent urination. This is commonly the earliest sign of diabetes. It is often followed by unquenchable thirst as the body tries to regain the lost fluids. It often seems that more fluid comes out than went in.

The name ?diabetes mellitus? describes two striking symptoms of disease. The first part of the name, meaning a siphon or drain, seems quite appropriate. The urine of a person with diabetes contains sugar, which is the reason for the ?mellitus? part, from the Latin word for honey. Most people just talk about ?diabetes?, but physicians prefer to use its more precise, full name, diabetes mellitus. In this way they avoid confusion with another much rarer disease called diabetes insipidus, in which great qualities of urine are also produced, but it does not contain sugar.

Although it is still unclear exactly what causes diabetes, doctors and scientists believe that there are a number of possible causes:

The body?s immune system plays an important role in the development of diabetes. The immune system protects us from foreign substances that may enter our bodies, such as viruses and bacteria. For some reason that scientists have yet to understand, the immune system of people with diabetes seeks out the cells that produce insulin and destroys them. This causes people with diabetes to stop producing insulin partially or completely. Without the presence of insulin, diabetes develops. Scientists are still trying to discover what causes the immune system to attack these cells. Heredity plays a role in determining who will develop diabetes.

Diabetes-especially Type II diabetes-tends to develop in people with a family history of the disorder. Along with other traits, such as eye color and height, parents can also pass on certain characteristics that may predispose their children to develop diabetes. In the case of Type I diabetes, scientists believe that if a father has diabetes, his children have a 5 to 10 percent chance of developing the disorder before the age of twenty. If a mother has Type I diabetes the children have half the risk, a 2 to 5 percent chance of developing the illness. In addition, the risk of developing Type I diabetes increases with the number of relatives affected. For example, if one sibling has Type I diabetes, there is only a small risk that a brother or sister will have it, too. However, if two siblings have Type I diabetes, the risk of third sibling developing the disease rises to 10 percent. For Type II diabetes, the genetic ling is even stronger. If one parent has this condition, his or her child has as much as a 25 to 30 percent chance of developing the disease. If both parents have Type II, the risk of inheriting the illness rises to nearly 75 percent.

Scientists strongly believe that one or many forms of stress in the body may trigger the onset of diabetes. For example, these can include surgical operations, a serious accident or injury, and even emotional trauma, such as a divorce or a death in the family. Also the results of extensive research show that certain viruses (disease causing microorganisms) may infect the pancreas, reducing or destroying its ability to produce insulin.

One of the first steps diabetics have to control is their blood pressure. Two-thirds of adults with diabetes have high blood pressure, or hypertension. This condition is serious because it leads to an increased risk of stroke, heart disease, and kidney and eye problems. Hypertension does not, or rarely has symptoms, so it is important to have your blood pressure checked regularly. Though blood pressures do vary, if it is 140/90 or higher you should consult your doctor for the best treatment. In addition to medication blood pressure can be regulated through exercise and a healthy meal plan low in fat and salt-actions that also limit the risk of other complications associated with diabetes.

Diabetes does not cause cavities, nor does it increase the chances of having cavities. But people with diabetes are more prone to gum disease or periodontal disease if their glucose levels are not relatively stable. High glucose levels make it more difficult for the body to fight infection. Periodontal disease can cause gum loss and eventually tooth loss. Smoking also increases the risk of periodontal disease. Tooth loss makes it difficult to chew food and thus may discourage proper nutrition. Teeth that come out as a result of periodontal disease cannot be replaced. Because periodontal disease damages the gums, dentures will not be able to fit properly, and again this will discourage proper dietary habits. It is very important to maintain good dental hygiene at home by brushing and flossing daily and to have regular dental checkups at least every six months.

Diabetes may cause similar changes in the blood vessels of the kidneys. This condition, called diabetic nephropathy, may lead to kidney failure. The nerves may also be affected by diabetes. This complication, known as diabetic neuropathy, can result in loss of felling or abnormal sensations in different parts of the body. Various treatments can control many cases of diabetic retinopathy, diabetic nephropathy, and diabetic neuropathy. Diabetes can also lead to atherosclerosis, a form of arteriosclerosis, hardening of the arteries, that may cause a stroke, heart failure, or gangrene.

Diabetic neuropathy can occur with long-term diabetes, usually after several years of uncontrolled high blood glucose. Glucose proteins, called glycoproteins, form in the nerves, primarily those of the leg and feet. When the nerves in the feet are damaged, the brain can not recognize pain in that area. Nerve damage from diabetic neuropathy can lead to weakness in the muscles of the leg and feet. Because there muscles work as a system, neuropathy can lead to other foot problems, such as hammer toes, calluses, bunions, and other foot deformities. These deformities are dangerous because of their risk of infection. A simple blister from tight shoes can spell disaster for diabetics. When diabetes is out of control (the blood glucose is consistently high) the risk of infection is always present. A foot infection can begin after a minor injury because the high blood glucose impairs the white cells? ability to correct the problem. Left untreated, infections can be life threatening.

Diabetic foot ulcers are crater-like depressions caused by neuropathy, poor circulation, or both. If bacteria are present, infection can develop. When not treated properly, such ulcers can lead to diabetic gangrene or death of the tissue. In gangrene, the tissue is black, and this alone should cause immediate concern. The black tissue can be dry or wet and must be given immediate attention. Many times, amputation is necessary when gangrene is present.

All bruises, scratches, nicks, abrasions, cuts, swelling, or any change in the condition of diabetic?s feet must be taken seriously. This does not mean they should panic over one scratch on the foot, but not to take it lightly either. Wash the scratch with a mild antibacterial soap and apply an antibacterial ointment such as bacitracin. Then watch that this scratch heals properly and does not become infected. Some people might be tempted to soak their feet in warm water, maybe even with Epsom salts, to soothe their feet or get rid of dead skin. But soaking actually dries out the skin, which then leads to cracking and peeling. That opens the door to bacteria and infections.

In addition to nerves, diabetes affects blood vessels. It is among the top four risk factors for premature hardening of the arteries, or atherosclerosis and arteriosclerosis. Cigarette smoking decreases peripheral vascular blood flow (circulation in the extremities). Diabetes also peripheral vascular blood flow. Diabetics are particularly prone to this narrowing of the arteries in the legs and feet. If they have poor circulation they may notice a lack of hair growth on the tops of their feet and nails may look deformed and unhealthy.

Neuropathy can also affect sexual functioning. Until now it was thought that sexual dysfunction was only limited to men, but it has been found that women also develop this with long-term diabetes. Impotence in the diabetic man has long been recognized. It is now more fully understood. In men, damage to the pelvic autonomic nerves can lead to a complication called retrograde ejaculation. Instead of moving forward, semen is propelled backward into the bladder. Problems of fertility and sterility must be considered if retrograde ejaculation is diagnosed in the diabetic male.

Diabetic men have a 50 to 60 percent incidence of impotence, much higher than among men in the general population. Impotence may occur any time after adolescence. If the nerves that stimulate erection are damaged, there will be no erection. Other causes of impotence include hormone imbalances, blood vessel and heart diseases, and some medications. Men and women are at equal risk of neuropathic damage to the pelvic autonomic nerves. For women, difficulty with lubrication or difficulty reaching orgasm may be caused by decreased nerve sensitivity.

According to the American Diabetes Association, diabetics spend a total of more than 24 million days in the hospitals each year in the US. Nearly 6000 people lose their eyesight annually because of diabetes, making it the most common cause of adult blindness. People with diabetes are at least twice as likely to develop heart disease and suffer heart attacks and strokes. They have kidney problems 17 times more frequently than people without diabetes undergo 40 times as many amputations. Diabetes is the direct cause of more than 40000 deaths a year and an indirect cause of more than 300000 deaths a year, counting patients who die of diabetes-related kidneys, heart, and circulatory problems. Diabetes is the third most common cause of death in the US today, after heart disease and cancer. Although these statistics can be frightening, most people are able to live normal lives. This requires keeping blood sugar levels under control. For some diabetics, daily injections are necessary. For most people with diabetes, however, a proper diet and regular exercise are sufficient. Recognizing the early signs of diabetes is crucial to finding out the risk of getting this disease. Unfortunately, as many as 5 million people in the US have diabetes and do not know it.

Diabetes is divided into two main types: insulin dependent and non-insulin dependent. They are sometimes mistakenly called ?sugar diabetes?.

Insulin-dependent diabetes or Insulin Dependent Diabetes Mellitus (IDDM) is called Type I diabetes. In the past it was called juvenile-onset diabetes because it seemed to appear only during childhood or adolescence. Now doctors know that it can appear at any time in life. It is an auto immune disorder that stems from the destruction of the insulin-producing cells in the pancreas. The body produces little or no insulin, and is unable to lower the level of glucagon. The glucagon accumulates in the blood, raising a person?s blood sugar level. This is called hyperglycemia or high blood sugar. When the blood sugar level gets too high, glucose is removed from the body in urine as waste. Because most waste is removed from the body in urine, a person with high blood sugar may go to the bathroom as often as his or her body gets rid of the extra glucose. Frequent urination can result in loss of water, because water is the main component of urine. This may cause a person to feel very thirsty or experience a dry mouth. Dehydration can cause dry skin and blurry vision.

Also if the cells cannot get the glucose they need, they ?starve?. This may make a person feel very hungry even when he or she has just finished eating. Diabetics do not get the fuel that their body needs. That person may often feel weak and tired. Weight loss may also occur as the body?s demand for fuel force the breakdown of fat cells. High glucose levels also damage nerves, which may result a tingling feeling in the feet or leg cramps at night. High glucose levels make it easier for bacteria to grow and may result in various skin infections.

If hyperglycemia is not treated, the result can be diabetic ketoacidosis (DKA) coma. When there is a lack of insulin, the body looks for alternative fuel. That alternative fuel is fat. When fat is broken down into energy, it produces a poisonous waste called ketones. Ketones will accumulate in the blood and eventually the urine. Eventually if the condition is not treated, the person will lose consciousness and possibly die. Insulin-dependent diabetes affects males and females equally. Treatment for Type I diabetes includes daily injections of insulin to help the body use the glucose it needs. Insulin treatment is often balanced with diet and exercise.

Most people with Type I diabetes must take insulin on a daily basis. The insulin is injected beneath the skin into the body?s subcutaneous tissue. If it were taken orally in pill form, the stomach?s digestive juices would destroy the hormone before it worked. The symptoms of Type I often seem to come on suddenly and in some crisis situations the person?s life may even be at risk unless immediate medical attention is sought. Unlike people with Type II diabetes, who tend to be overweight, those with Type I are frequently lean. There are key signs in Type I diabetes which are a significant weight loss in a short period of time by someone who hasn?t been dieting, excessive urination and drinking, irritability, and nausea and vomiting.

Effectively controlling Type I diabetes largely depends on achieving a correct balance of food, exercise, and insulin. While hyperglycemia may result when a person with diabetes? blood sugar level soars, another dangerous condition can occur when the opposite is true. Hypoglycemia, also known as low blood sugar or an insulin reaction, appears when the blood sugar level drops. In a person with Type I diabetes it is often the result of too little food, too much exercise, or too much insulin.

The physical symptoms of hypoglycemia include irritability, headache, nausea, hunger, weakness, and confusion. Insulin reactions often come on suddenly and are dangerous, since an individual in this condition can slip into unconsciousness. To counteract hypoglycemia the person should take some milk, orange juice, about two packets of sugar, honey, or a sugared soft drink.

In some cases after beginning insulin shots, a person with Type I diabetes will go out into remission. During this period, the individual?s pancreas once again secretes insulin and the patient?s need for the daily shots disappear. In these instances, the blood sugar level (the amount of sugar in the person?s bloodstream) stays with in the normal range. Such individuals may feel as though they no longer have the disease, but this isn?t so. In fact, this stage of Type I diabetes is sometimes referred to as the ?honeymoon period, ? because it doesn?t last. At any time, without warning, the individual?s blood sugar level may rise, leaving the person in dire need of insulin.

People who have Type I diabetes must also monitor their blood sugar, or glucose levels. This is necessary since the outside factors such as excitement, infection, growth periods, hormonal changes, fatigue, and alcohol and other drugs can upset the necessary balance. Without monitoring, the individual will not know there?s a problem before physical symptoms appear.

In recent years, easy-to-use test have been developed to enable people with diabetes to monitor their own blood sugar at home or anywhere else they happen to be. Self blood-glucose monitoring is an extremely valuable tool for those with diabetes since their blood sugar levels often quickly change. Many teenagers with diabetes find it especially helpful as it allows them to continue their activities uninterrupted. Prior to going to a fast-food restaurant with non-diabetic friends, they can quickly take a blood glucose reading to determine precisely what they can eat.

Even though a finger capillary blood sample is not as accurate as a venous blood sample for determining blood glucose. I recommend having a routine blood chemistry test with fasting blood glucose, triglycerides, and both high-and low-density lipoprotein measurements every four months or, at the very least, every six months. Another important test measures the average blood glucose level during a certain amount of time. Glycosylated hemoglobin (hemoglobin A1c) tests show how much glucose has become attached to hemoglobin, a part of the red blood cells that carries oxygen. The diabetic should check with their doctors, or whatever is best for them.

Regular testing accomplishes two very important things. First, it provides the diabetic and the doctor with the vital information on the real status of their diabetes and their health in general. Second, it prompts you to see their doctor regularly. The best diabetes management program always includes good communication with the diabetics? doctor and diabetes team. It is especially important with today?s high-tech medicine to use the team-management approach. But you have a responsibility to evaluate advice, practice good diabetes techniques, and become better educated in this complex subject.

Knowing their blood sugar levels also helps people with Type I diabetes determine how much insulin they need. Previously, insulin was generally injected into the body with a syringe, but more recently new methods of delivery have been devised.

Today the available options include the following:

Jet Injections, these needle-less injections pressurized jet injectors send insulin through the person?s skin in a tiny stream. Some of the new injectors work quite quickly, taking less time to administer insulin than with a standard hypodermic needle.

Insulin Pens, the insulin pen looks like a fountain pen. It is ideal diabetics who needs insulin while away from home but does not want to take insulin vials and syringes along. The small pen contains everything necessary for an insulin injection.

Insulin Pumps, the insulin pump, which is worn by the person, sends insulin from a storage container through a plastic tube attached to a needle in his or her skin. These devices send a slow trickle of insulin into the body 24 hours a day in an attempt to imitate the action of a well functioning pancreas. Insulin pumps first became available in the late 1970s. However, today?s models are lighter and more compact. They also deliver the insulin more precisely, affording a greater degree of control.

Infuser Methods, these entail planting a needle within the skin that serves as a gateway for the insulin shots.

Even though people with Type I diabetes may learn to advantageously use insulin, they still must choose their foods wisely. In the past, people with diabetes were encouraged to eat high-protein, meat-based meals. Bread, potatoes and other starches were only permitted in small portions. Although they could still vegetables, at the time these foods were not considered to be particularly useful in lowering blood sugar levels. However, following much research, these thoughts have changed.

Today the American Diabetes Association (ADA) recommends a diet that is low in fat and high in fiber and complex carbohydrates, such as peas, brown rice, and cereals, act to raise sugar levels gradually and are often nutritional. Complex carbohydrates differ from less desirable food such as cakes, danishes and candy, which contain simple carbohydrates that rapidly raise blood glucose levels and aren?t rich in vitamins and nutrients.

All insulin produced in the US was at one time made from insulin that had been taken from the pancreases of cattle and pigs. Unfortunately, this insulin was filled with impurities that sometimes upset the systems of those who injected it. Today, insulin is available in two forms-a semisynthetic from made by converting pork insulin and recombinant insulin, a form that is also basically identical to human insulin made through genetic engineering (genetic engineering is the manipulation of genes from animals or plants in a laboratory.) A doctor decides which form of insulin is the best for the diabetic.

Although there are two ways of manufacturing it, there are three types of insulin that serve for different purposes in the body, these are:

Rapid or regular-acting insulin, this type of insulin reaches the bloodstream and begins lowering blood sugar within thirty minutes after injected, which is commonly known as ?time of onset.? Rapid or regular-acting insulin reaches its maximum strength, or ?peaks? about two to five hours later. It remains in the bloodstream for an additional eight to sixteen hours. This type of insulin is often used when a person?s diabetes goes out of control, such as after hormonal shifts, changes in diet or exercise, an accident, minor surgery, or an illness.

Intermediate-acting insulin, there are two types of intermediate-acting insulin: Lente (called L) and NPH (called N). This intermediate- or slow-acting insulin reaches the bloodstream about ninety minutes after injection and peak anywhere between four and twelve hours later. They remain in the bloodstream for about twenty-fours.

Long-acting insulin or Ultralente (called U), long-acting insulin usually takes about four to six hours to reach the bloodstream, but its effects last for about thirty-six hours. It tends to reach its maximum strength about fourteen to twenty-four hours after it has been injected. Often, people will require a combination of different types of insulin, depending on their individual needs, eating habits, activity schedules, and particular course of disease.

Type II diabetes, or Non-Insulin Dependent Diabetes Mellitus (NIDDM), usually, but not always, occurs in people who are overweight. This is also called insulin resistance. It used to be called adult-onset diabetes because it normally occurred in adults over the age of forty. But as with Type I diabetes, doctors realized that Type II diabetes could appear at any time as well. Type II diabetes often strikes those who are overweight or obese.

In Type II diabetes, the body doesn?t produce enough insulin, or it produces enough but the body does not use the insulin properly or the body resists it. When Type II is diagnosed in young people, it is called Maturity Onset Diabetes in the Young or MODY. Type II diabetes affects mostly females, but it affects males as well. If there is a diabetic with Type II diabetes in someone?s family and they are overweight, they are at higher risk for developing Type II diabetes. This type of diabetes is usually treated with a combination of diet and exercise. Some people with Type II diabetes are also treated with insulin. Weight loss will help the body use the insulin better.

While Type I diabetes tend to strike younger individuals, people who have Type II are generally more than 30 years of age. Everyone metabolizes (uses) sugar less effectively as they grow older and this can sometimes trigger an inherited tendency toward the illness. The majority of these people are also overweight. Type II diabetes tends to come on slowly and many of its victims may not even realize that they have the illness.

Sex and race influence the probability of getting Type II diabetes. Until the age of 30, men have just as great a chance of getting the disease, as do women. Beyond 30, however, women make up a larger and larger proportion of the people with this disease. For people 45 and over, women are twice as likely to get the disease as men are. The incidence of diabetes also varies among racial and ethnic groups. Some American Indian tribes have a much higher rate of Type II diabetes than the general population. It is also known that black Americans are nearly twice as likely to die from diabetes as are white Americans.

There has been many debates concerning this matter. Some researchers feel the higher incidence of diabetes among black s is due more to economic and obesity factors than to race. Unfortunately, many black people still occupy lower income groups, and poor people tend to eat poorer-quality food, with a higher content of fat. They also do not receive the same quality in medical care. Poor people seem to be more obese more frequently than the general population and to be less informed about health matters. But it seems that blacks will get diabetes more frequently than whites regardless of weight or diet. The genetic link, however, is unproved.

Unfortunately, older individuals frequently mistake the early effects of Type II diabetes for the beginning signs of aging, and therefore fail to seek medical attention. Although at times the symptoms of Type II diabetes are so mild they go undetected. The most common signs of the illness include: increase thirst and urination, exhaustion, nausea, blurred vision, dry flaky skin, skin wounds that are slow to heal, tingling or loss of sensation in the hands or feet.

Even though it is essential for Type I diabetics to monitor their blood sugar levels. It is also essential for Type II diabetics to check their blood sugar also because it allows them to see how different eating patterns affect their blood sugar and overall control of the disease. Another extremely important element in controlling Type II diabetes is exercise. Exercise is especially important for people with Type II diabetes since their bodies are often unable to effectively use insulin. In addition, exercise burns off excess calories, which assists these individuals with weight control.

Wearing a medical identification bracelet or necklace and/or carrying an identification card can also help in case of an emergency. Information on the illness and what to do in case of insulin reaction or ketoacidosis, as well as the name of the diabetic and the name of someone to contact this may mean the difference between life and death if the diabetic is found unconscious. A nonprofit organization, Medic-Alert Foundation, can provide diabetics with an identification card or tag and maintains a central file containing vital information on every case registered with it. This information can be obtained twenty-four hours a day by a collect telephone call.

While doctors routinely encourage exercise to help control Type II diabetes, scientists have recently found that physical exercise may even be useful in preventing the disease entirely in some patients. Harvard University researchers who followed more than 22000 male physicians for a five-year period found that those who exercised vigorously at least once a week were 36 percent less likely to develop diabetes. The study further showed that the more individual exercised the risk of developing Type II diabetes lowered.

Some doctors say that diabetics should not have alcohol. Others permit a drink or two. But drinking has some special pitfalls for someone with diabetes. First of all, alcohol has calories, and they count in the diet. In addition, alcohol lowers blood sugar at first. Alcohol also impairs a person?s judgment. Dr. Raymond Herskowitz at the Joslin Diabetes Center in Boston points out that teens are more likely to have a serious insulin reaction when they?ve been drinking. A person who is ?high? may not be alert to the warning signs, and other people might mistake the effects of low blood sugar for drunken behavior.

Marijuana, like alcohol, can dull diabetics? judgements and make them forget about eating a meal or taking an insulin injection. Or it may make them so hungry that they?ll even forget to stick to their diet. Cigarettes have been linked with so many damaging effects on the heart, lungs, and other body systems that smoking is not a very good idea for anyone. It is an even worse idea for people with diabetes, who are already at risk for heart disease.

Some doctors feel that people with diabetes shouldn?t use sugar substitutes because they simply maintain their ?sweet tooth.? If the patients tried eating a more sensible diet, these doctors say, they would soon lose their rich taste for rich, sweet foods, and that would be a good thing. But some people feel that life just wouldn?t be worth living if they couldn?t have candy, a soft drink, or some other sweet tasting treat at least occasionally. And some doctors feel that sugar substitutes are good because they permit people with diabetes, especially young ones, to enjoy some of the same treats as their friends, which can help then feel less ?different.?

Nutritive sweeteners contain calories, and are usually carbohydrates that end in ?ose, such as glucose, fructose, dextrose, and sucrose (sugars), or ?ol, such as sorbitol and mannitol (sugar alcohols). They each contain four calories per gram. Non-nutritive sweeteners provide almost no calories and do not affect blood glucose levels. Saccharin and aspartame (sold under the brand name NutraSweet) are the two major sugar substitutes. Aspartame actually contains the same four calories per gram as do the nutritive sweeteners; however, because it is 180 times sweeter than table sugar, much less has to be used. Saccharin is 300 times sweeter than sucrose and has no calories at all.

Gestational Diabetes is another form of diabetes that occurs only in pregnant woman. About 3 percent of all pregnant women develop this form of diabetes. If a woman has been diagnosed with diabetes before the pregnancy she has pregestational diabetes. So far no one knows what causes gestational diabetes, but scientists have some ideas. Hormones from the placenta that help the baby grow also inhibit the mother?s ability to absorb glucose. This causes insulin resistance. This can lead to high levels of glucose in the blood or hyperglycemia.

The treatment for gestational diabetes is a combination of careful diet, exercise, and sometimes insulin injections. The American Diabetes Association (ADA) believes that all women should be tested for gestational diabetes when they are about six months pregnant, which is when insulin requirements for the mother rise. After the mother gives birth, her insulin resistance usually disappears. Women who have had gestational diabetes frequently develop it again during subsequent pregnancies. Many of them also develop Type II diabetes later in life. Insulin resistance also causes Type II diabetes. Proper diet and exercise are important tools in a healthy lifestyle and will help prevent or delay the onset of Type II diabetes and its many complications.

Brittle diabetes occurs when a person?s blood sugar level goes from one extreme to the other for no apparent reason this rising and falling cannot be predicted and may not be preceded by any symptoms. Sometimes people confuse brittle diabetes with Type I diabetes. This is because of the fluctuations in blood glucose levels that occur during puberty. This is not brittle diabetes. The blood sugar of people with brittle diabetes is out of control. Brittle diabetes is also called unstable diabetes or labile diabetes.

There is another disease with the name ?diabetes? Diabetes Insipidus. Diabetes Insipidus is NOT diabetes. It is a disease caused by a lack of hormone produced in the pituitary gland, which is in the brain, and not the lack of insulin, which is produced in the pancreas.

The percentage of people to have Type I diabetes to Type II is 10 to 15 percent Type I and 85 to 90 percent Type II. The age when usually diagnosed is usually under 30 Type I and usually over 40 Type II. Usual weight of patient Type I is often thin or normal weight, Type II is often overweight. The General treatments are insulin injections, diet, and exercise in Type I, and diet exercise and if needed, oral agents or insulin in Type II. The onsets or the symptoms are usually sudden, very apparent in Type I, and in Type II it is usually gradual and often subtle.

Diabetics live a social world of family, friends and other relationships. These relationships are important in terms or practical and emotional support and may help a diabetic adjust to leading a normal and enjoyable life. There is no reason why a healthy man or woman with diabetes should not have children. It a woman is going to have a baby there is no reason why she should not be able to care for the child until it is grown up, in the same way as other mothers who do not have diabetes. Once pregnancy is confirmed a woman must maintain, however, good control over diabetes. During the pregnancy it will probably be necessary to visit a doctor every 2 to 4 weeks so that diabetic control can be monitored as carefully as possible. The insulin requirement is likely to increase during pregnancy, especially during the second half.

Sport is for everybody. As exercise decreases the blood glucose levels reduces the need for insulin, taking up a sport as a hobby is important for us all, but especially for people with diabetes. Summer camps for diabetics provide an opportunity for people with diabetes to try a variety of sports and activities, such as canoeing, skiing and sailing. Training staff teaches the children how to cope with tests, injections, hypoglycemic attacks and the routine of daily living with diabetes. This helps children how to look after themselves and become more independent. Children can enjoy a vacation in a situation where they are the same as everyone else.

About 1 in every 20 Americans has diabetes, a disease today that has no cure. Diabetics must learn to control their diabetes through special diets, regular self-testing of blood glucose levels, and insulin injections. It takes a lot of self-discipline to change old habits and stick to new ones for the rest of your life. But diabetics who have this self-discipline find that they are able to control their disease. Many successful and well-known people have diabetes, but it does not control their lives. By researching all the diabetics can about diabetes, taking charge of their healthy and getting support from friends and family, diabetics can live with their disease-not spite of it.

Although the research only involved those who had Type I diabetes, doctors feel the results may be useful for individuals with Type II as well. That?s because complications in both forms of the illness often develop for the same reasons. Undoubtedly, the outlook for curing diabetes has brightened and physicians remain optimistic about the future. Technological and medical advances have helped make life better for many diabetics. Better awareness of methods of prevention has also helped many who are at high risk for diabetes to avoid developing the disease. In the years to come, many more advances will be made. This will make it sill easier for people with diabetes to lead healthy, normal lives. And there is hope that those with diabetes today may live to see their disease completely cured.