Chapter 1: Diabetes

**Overview of Diabetes**

Diabetes is a disease that affects many people all over the world. Because it cannot be physically seen, many people do not realize the seriousness of effects diabetes can have on an individual. Diabetes is a disease which disables the body to stop producing insulin and responding to the production of insulin. There are two major types of diabetes, Type one diabetes and Type two diabetes. Each type will present different symptoms and effects to the individual, meaning there are a lot of different factors that can have a role in the process of becoming a diabetic. Studies show that there is a dramatic increase in the number of individuals throughout the world that are being diagnosed with type two diabetes. The problem Americans face is the lack of knowledge. This chapter will explain the different types of diabetes, varying symptoms, different treatments, and ways to prevent diabetes.

**The Two Major Factors that Contribute to Diabetes**

To know the full aspects of diabetes, it is important to know the key players in the cause of diabetes. The main organ that diabetes is concerned with is the pancreas. The pancreas plays a huge role in metabolism and the regulating of hormones. A very important hormone that is associated with diabetes is insulin. Insulin is a very important component of the digestive system, specifically in the break down and processing of sugar. Without insulin, this will cause blood glucose levels to rise in the body to a dangerous number. This is essentially what happens in people with diabetes. The other contributing factor to diabetes is glucose. It has been previously stated that if insulin is not produced, then the amount of glucose in the blood will rise to dangerous levels. It is also seen in many diabetics where the person with diabetes may over compensate when giving themselves insulin. This will then allow the blood glucose level to drop below that is normal, meaning the person will need to consume some kind of food or beverage with sugar. The liver also stores and makes glucose, meaning that is the blood glucose level was to drop too low, then the liver would start to release the stored glucose into the bloodstream.

**Types of Diabetes**

There are two main types of diabetes that many people are diagnosed with. The first, and most prevalent type, is type two diabetes. Type two diabetes is more commonly found than type one diabetes. Type two diabetes will start to develop in a person due to the body becoming resistant to insulin, or due to the pancreas not producing enough insulin. If an insufficient amount of insulin is being produced, this then will lead to a rise in blood glucose levels. Type two diabetes can commonly be associated with people who are overweight, and in general, have an unhealthy lifestyle. The risk of type two diabetes has shown to be somewhat hereditary, meaning that if someone in a family has type two diabetes, then their children are more at risk to someday develop type two diabetes. The risk of type two diabetes increases as a person becomes older. This can be due the lowering of the metabolism as people age, which then could possibly lead to weight gain. There are many symptoms to look for if someone feels they may be developing type two diabetes. Some include increased thirst, frequent urination, increased hunger, blurred vision, slow healing sores, and many more. There are also many risk factors when it comes to people that could possibly develop type two diabetes. Being overweight is the number one risk factor. However, a person does not have to be overweight to develop type two diabetes, it is just common in many of the people who have developed the disease. Studies have also shown that people who store weight mainly in the abdomen, are more at risk for developing type two diabetes. Inactivity is another risk factor for type two diabetes. Being active helps with weight loss, the boosting of the metabolism, and can even make cells more sensitive to insulin, therefore inactivity can be a major factor in type two diabetes. As stated before, family history also plays a major role in whether a person will develop type two diabetes. This can both mean it can be hereditary or it can be environmental. If a child grows up in a home where both parents are type two diabetics, in which they never exercise and eat a lot of unhealthy foods, then this can lead to the child developing type two diabetes due to the environment he/she grew up in. This leads to the next risk factor which is the diet of the individual. Many foods will not affect whether a person will become a type two diabetic if consumed in proportion, but studies show that many type two diabetics are not consuming foods that are nutritionally helping the body, or they are over-consuming foods. If someone is diagnosed with type two diabetes, there are many complications that can arise if they are not being treated properly. Some of these complications include heart and blood vessel disease, nerve damage, kidney disease, eye damage, skin conditions, sleep apnea, Alzheimer’s disease, and many more. Something many people do not know about type two diabetes is that with certain lifestyle changes and by taking care of one’s self, then a person can actually reverse the effects of type two diabetes and no longer need treatment or medication for diabetes. This goes to show how making healthy lifestyle choices can greatly increase the quality of life for an individual.

Type one diabetes varies from type two diabetes in certain aspects. Type one diabetes is completely hereditary and usually onset in many people in childhood. Of the people who have been currently diagnosed with diabetes, only about 5% of the US population has type one diabetes. Type one diabetes differs from type two in which the immune system of the individual sees the persons insulin cells as a foreign invader. The immune system will then attack and kill off all of all of the insulin cells, leaving the body with no insulin. Due to the body killing off all off the insulin cells, this will classify type one diabetes as an autoimmune disease. The symptoms of type one diabetes are very similar to type two diabetes, but it is also common to see weight loss associated with type one diabetes. There are many treatment options that are available for type one diabetics, but there is no sure available at this time. Some of the treatment options available to type one diabetics is to retrieve inulin through multiple daily injections or through an insulin pump. Both ways are adequate in insulin retrieval and depends on the personal preference of the patient. Many of the complications that can arise from being a type one diabetic are typically the same as the complications that can occur from being a type two diabetic. A question that is studied widely by scientists is what the onset of type one diabetes is and whether there is a common factor between those diagnosed with type one diabetes. This question still remains unknown. Scientists are working hard daily on a cure for diabetes and are very close to finding one. Type one diabetes may not have a cure, but it can be very manageable if the person has a well-balanced diet, exercises, and takes their insulin adequately and at the appropriate times.

**Prevention of Diabetes**

As stated above, when talking about type two diabetes, there are many steps that can be taken when trying to prevent type two diabetes. Unfortunately, there is no current treatment or mechanism to prevent the onset of type one diabetes. People who have family members that are type two diabetic are susceptible to becoming pre-diabetic. This means that although they are not experiencing the full effects of type tow diabetes, their blood glucose levels may be slightly raised, and they may be experiencing some symptoms of type two diabetes. The same prevention applies to those with pre-diabetes as those who have type two diabetes. By exercising thirty minutes a day, eating a healthy balanced diet, and taking good care of blood glucose levels and medication, then type two diabetes and pre-diabetes are almost completely preventable.

**Other Problems Associated with Diabetes**

As stated previously, there can be many problems or risks associated with diabetes if the proper treatment is not sought. Many of the following risks can be associated with both type one and type two diabetes. Kidney Damage is a long-term complication that is associated with diabetes. In cases where a diabetic does not take care of themselves, there can be so much strain on their kidneys that they will have to go through dialysis or have a kidney transplant. Another common risk that is associated with diabetes is slow healing of even the smallest wounds. This can be extremely dangerous to those individuals who do not take care of their diabetes and can even lead to the amputation of the limb or part of the body where the wound is located. Another common problem that is associated with diabetes is Diabetic Ketoacidosis or DKA. This occurs commonly in type one diabetics but can also occur in type two diabetics. DKA is when the body the body cannot break down glucose for fuel (due to no insulin or lack thereof), it then will start breaking down fat cells, which then there is a release of ketones. The buildup of glucose and ketones in the blood will lead to ketoacidosis and can be extremely life-threatening if not immediately treated.

**Summary of Diabetes**

All in all, diabetes is a disease that many people are familiar with and have heard about it. What most people do not know is how serious this condition can be if left untreated. Although diabetes most of the time cannot be seen from the outside, it is still detrimental to many of the bodies organs. Because it is usually not visible from the outside, many people do not associate diabetes with being life threatening, but that is simply not the case. If someone with diabetes changes their lifestyle and starts to make healthier choices, then diabetes is a completely manageable disease they just have to take a few extra measures and precautions.

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