

Genetic Factors in Obesity

What does it mean to be obese or overweight?

To be obese or overweight is: a condition characterized by excessive body fat. Another definition of overweight or obese is weighing more than is normal, necessary, or allowed, especially having more body weight than is considered normal or healthy. To be overweight or obese also means to be unhealthy. And being overweight is a health hazard. If you are overweight you are more likely to develop health problems such as, heart disease, stroke, diabetes, and other types of cancer. To put in a summary being overweight or obese is to have more body fat than what is necessary and to be at a state of unhealthiness and to be limited to your physical abilities.

What may cause some one to be obese?

Causes

Nutrition

Nutrition can cause a person to be obese. The meaning of nutrition is the process by which a living organism assimilates food and uses it for growth and replacement of tissues. The source of nutrients or nutrition is located in food. An example of a nutrient is, glucose. Glucose is a type of sugar. Glucose is the nutrient that supplies the body with energy. When the human body consumes this nutrient and does not metabolize it, the body will take the energy and store it as fat. Fat is a soft greasy like substance occurring in organic tissue and consisting of a mixture of lipids. All fat is energy that has not been used. So to conclude if glucose is being consumed in large amounts and not being metabolized the body will store it as fat. And as fat accumulates more and more, it can make a person obese.

Metabolism

The metabolism can cause a person to be obese. The metabolism is the process by which the body breaks down food in order to live. The metabolism consists of two phases, anabolic and catabolic. Catabolic deals with the physical phase of the metabolism process which is the secretion and breaking down of food material. Anabolic deals with the chemical phase of the metabolism process which is the actual absorption of nutrients. During the metabolism process energy is released in the form of heat. The

metabolism can be increased by exercise. A person with a fast metabolism metabolizes their food fast, and will not accumulate lots of fat. A person with a slow metabolism metabolizes their food slowly and will not completely metabolize their food, leaving left over energy, and that energy will be stored as fat.

Appetite

Appetite can cause a person to be obese. The appetite is a psychological process. Appetite can be an emotional need or habit to eat, not dependent on nutritional needs. Appetite is a self protection mechanism, a detection and response system designed to protect the body. Unlike hunger which deals with the need of nutrition, appetite deals with a want or desire of food, never a need. It is also stimulated by sight, thought or smell. Appetite can make a person eat, even if there are no hunger signals stimulated by the stomach. If a person with a “large appetite” or consumes large amounts of food, and does no type activity or exercise to use that food, the person will become obese.

Exercise

A lack Exercise can cause a person to be obese. Exercise is the physical activity that trains or improves the body. Exercise increases the speed of the metabolism, and with a fast metabolism you can lose weight. And exercise enables the body to use or metabolize the food or nutrition that has been consumed, there for leaving almost no energy left, and when there is not energy left the body does not have much to store.

Genetics/DNA

It is possible that your DNA or genetic code can cause you to be obese. It is your DNA from your biological parents that you may inherit this situation from. To fully understand this you must know a little about DNA.

DNA?

The scientific name for DNA is deoxyribonucleic acid. DNA molecules carry the genetic information necessary for the organization and functioning of most living cells and control the inheritance of characteristics. It is the biochemical molecule that makes chromosomes and genes. Specifically it is

a molecule found in the nucleus of cells that encodes genetic information. The particular sequence of 4 chemical building blocks (nucleotides) determines an individual's unique genetic code. The 4 base pairs are Adenine (A), Thymine (T), Guanine (G) and Cytosine(C).

DNA carries hereditary information from parent to child and determines the exact structure of all protein produced by cells.

Genetic Factor in Obesity

The genetic factor that can cause a person to be obese is the faulty gene ENNP1. This faulty gene causes insulin resistance. Insulin is a polypeptide hormone secreted by the islets of langerhans and functioning in the regulations of glucose to glycogen, which lowers the blood glucose level. Insulin regulates the conversion of glucose glycogen. Your body naturally produces insulin and insulin controls the sugar level in your body. The faulty version of the gene ENNP1 disrupts the way the body stores energy and handles sugar by blocking the insulin hormone.

ENNP1 gene not only can cause obesity but it can also cause type II diabetes. So, basically the faulty gene causes you to have a big sugar handling problem.

An institute In France did research on this topic. What they did was, they look date the genes of 1225 children from ages 5-11 of obese kids. Then they looked at the genes of 1205 regular weighted students. The obese kids were most likely to have that faulty copy of the gene. The researchers also looked at the children's parents and grandparents genes also and found out that there were similar risks for obesity and for diabetes in the parents and grandparents. It was said by a doctor who was apart of this research study that said "Our study shows that insulin resistant might be a cause and not just a consequence of obesity."

Other studies show that in the United States that only 3 to 7 percent of parents with normal weight have obese children. But in a family in which one parent was obese there is a 40% chance that there children will be obese. And if both parents are obese then there is an 80% chance that the child is obese. This is only true with natural children not adopted or fosters children. Not only can obesity be inherited, but also body type endomorphic and geomorphic. Body type can influence the chance of obesity.

Summary

With all of that said, you already know the other causes of obesity. You know that nutrients can definitely contribute to a person to be obese. You also know that appetite can also contribute to obesity. And know you know depending on the metabolism that a slow metabolism can cause a person to be obese. And lastly, your genetic code or DNA can determine whether you will be obese or not. Although it is true that you're DNA can cause you to be obese but it doesn't mean that you cant control it.