Toxicity of Sugar

Note: This was actually taken from a video I found called the "Toxicology of Sugar." If you Google it, you will find an hour and a half YouTube video by A Dr. Robert H. Lustig on how sugar is a poison to the human body. Below is a summary of the video. It is divided into two parts. Happy reading ☺

Politics/Trends

A look at the trends in the American diet is the best way to lead into why sugar is such a problem now. Prior to the mid 1940s, sugar intake was around 16 grams a day per person. In the mid 1970s, it was up to 37 grams and in 1994 it was about 55 grams. Today, it is 73 grams of sugar on a daily basis. Where is all this sugar coming from? In 1966, Japanese scientists invented high fructose corn syrup (Please note: HFC (high fructose corn syrup) is just the same as sugar. The body digests it the same way). HFC was introduced in America in 1977. It helped stabilize the sugar industry's finances, and also helped rest of the food industry in the U.S. Due to the subsidies that the government gives to corn companies (Watch the documentary "King Corn" … it's good!), HFC is cheap so it made its way into many different foods. In fact, the average American consumes 63 lbs of HFC a year. Now your question should be, "if HFC was used to replace sugar and HFC is the same as sugar, then there shouldn't be a big deal, right?" If that was true, yes, but trends indicate that sugar addition to foods has gone down a bit but with the addition of HFC, the total amount of sugar in foods has increased substantially. So how did the American public allow this to happen?

In the mid 1970s, a study showed that out of the seven countries that were examined, the country that showed the most heart disease was the country largest increase in fat consumption. But in all actuality, it was the sugar. It just so happens that this particular country (Guess who it was? ☺) that showed the largest bump in fat consumption was a place where foods high in fat were also high in sugar, like doughnuts and other sugary foods.

So where is the sugar consumption showing up in our diet? Is it in the fats, right? Actually, it's in the carbohydrates. In regards to food, companies took fiber out so it would last longer and take less time to cook. Not a good combination! Most of the extra sugar calories consumed are actually through drinks. An average of 275 more calories per person is consumed through drinks. Go to the gas station and pick out a nonalcoholic drink and see how much sugar it has. Soda obviously does (and remember, soda contains sodium to make you thirsty and sugar to hide the salt, so you eventually want to make you drink more of it) but so does Gatorade and other drinks like that (Do you really think that top endurance athletes drink that stuff?). To

show why soda can lead to weight gain, note this: 3,500 unused calories is 1 lb of fat. One can of soda is about 150 calories. Multiply that by 365 and that's almost 16 lbs of fat gain a year.

I bet I know what you're thinking though, that the soda will make up for some other calories that you won't consume that day, right? Unfortunately, it's not that simple. The plot thickens….

Science

Now we are getting into the real problems of sugar. There is a receptor in your body called Leptin. It tells your brain that you're full. If this generation is eating an average of 275 MORE calories per day than the last generation (according to Dr. Lustig), there is obviously something wrong with the Leptin. In fact, sugar screws up the Leptin in your body so that you eat more calories because you do not feel full.

How does all of this relate to heart disease? It has to do with High Density Lipoprotein type of cholesterol (HDL) and the Low Density Lipoprotein type of cholesterol (LDL). HDL is the good type of cholesterol; LDL is the bad type of cholesterol. LDL can get caught up in the blood veins and start plague. The way to see if you have a high LDL, you look at the triglyceride level. A high triglyceride level means high LDL. LDL is linked to processed carbs due to the fructose that is added through sugar or HFC. This is why fructose is 7 times more likely than glucose to form plague in the arteries.

To put things in perspective, let's look at how the human body digests two slices of white bread (120 calories). 80% goes to all organs of the body because it is in the form of glucose. The rest goes into your liver. As the liver processes the fructose, insulin is produced to transport fructose to your cells. As this happens, very little LDL is made. However, this constant addition of fructose into the liver will add up to more and more LDL, making it a future problem of plague in your arteries. Compared to alcohol, fructose is digested the same way. The only difference is that fructose is not processed by the brain so there is no acute exposure. Basically, fructose is alcohol without the buzz. What side effects are similar? How about: Hypertension, Myocardial infarction, Dyslipidemia, Pancreatitis, Obesity, Hepatic Dysfunction (NASH), fetal insulin resistance, habituation/addiction.

So if you eat sugar, what should you do? Nature has a way of having the antidote to a poison within its foods. Fiber is naturally in sugar. Fruits have fiber in them to limit the amount of fructose you get. It reduces insulin response and tells your brain you are full. This blog will give you more information on making good decisions on your diet to help with limiting sugar from your body.