

# Cause of Obesity and Treatment of Obesity

What is the cause of obesity?

With 70% of Americans overweight, any treatment of obesity that does not address the cause of obesity will fail. Doctors and pharmaceutical companies are often content to treat symptoms.

Dr. Jason Fung presents six talks that help you understand what science has discovered about the real cause of obesity and the successful treatment of obesity.

Welcome to the lecture. This is called the etiology of obesity and this is the first part of my six-part series looking at, basically, what the cause of obesity is. And then later on we'll get into what a successful treatment of obesity looks like.

## First Record of the Cause of Obesity

So let me start with a story. This is William Banting. He was a London Undertaker and he lived in the 1796 to 1878 and basically he had become very obese through the years starting in his mid 30s. He had started to gain a few pounds every year until by age 62, he had weighed about 202 pounds which was really quite obese for that time. And not being too happy with that whole situation, he decided that he would do something about it.

So what he did was he went to see some physicians and they gave him some various advice such as increasing the exercise. So living near the Thames, he actually took up rowing. And he decided that he would row every day. The problem was that he said that he developed a very healthy appetite. But in the

end, he wasn't able to lose any weight. So he went to see some other esteemed doctor at the time, and he told him well all you need to do is decrease your caloric intake and you'll automatically lose weight. But what he found was that he was just tired and hungry. And he still wasn't able to lose weight.

## **The Cause of Obesity Found!**

So eventually he came to the attention of a French surgeon who told him about a specific diet which involved eating three meals a day of a meat, fish, or game with just very little stale toast or cooked fruit on the side. And what happened was that he avoided very strenuously these fattening carbohydrates which were sugar and starch, the bread, beer, sweet potatoes. And what he found was that he actually was able to lose a significant amount of weight very quickly.

So he published this in a letter called "Letter on Corpulence" published in 1863. And it actually quickly became one of the best-selling diet books of its time. And it's really considered one of the first diets.

This sort of idea about a treatment of obesity actually persisted for quite a few years.

## **Early Medicine Knew the Treatment of Obesity**

So William Osler who is considered the father of modern medicine. He authored the textbook "The Principles and Practice of Medicine" which was very influential. In it he discusses treatment of obesity. And much of his ideas are similar to Banting. They featured lean beef, veal, mutton, and eggs. That was his opinion. He actually had published a monograph himself on obesity and its treatment. His thought was that what needed to be eaten was fatty foods. Fats are crucial actually, because they increased the satiety and

therefore decrease fat accumulation. His idea, of course, was very similar to Banting, that one needed to strenuously avoid the fattening carbohydrate.

Up until the 1950s and 60s, this idea was fairly prevalent. It wasn't really a secret in any way. If you look at standard textbooks, or even for those addressed to the lay public at the time, such as Dr. Spock's "Baby and Child Care", things hadn't progressed much beyond that. What he noted was that rich desserts, the amount of plain starchy foods taken is what determines, in the case of most people, how much weight they gain or lose.

## **The Cause of Obesity Well Known**

In the British Journal of Nutrition in 1963, Dr. Passmore writes "every woman knows that the carbohydrate is fattening." That is, this cause of obesity was fairly common knowledge. That is, if you eat fattening carbohydrate, not all carbohydrates, but the starchy foods, the sugary foods, the sweets, they are going to lead you to obesity. That was pretty well the prevalent thinking at his time.

## **How We Lost the Cause of Obesity**

Things started to change in the 1950s and 1960s with the great so-called epidemic of coronary disease. And what this was, was as we industrialized, what we noted was that there was an increasing incidence of coronary disease. So in the 1950s dietary fat increasingly became vilified for its effect on LDL cholesterol. The so called diet heart hypothesis. And by the 1960s, the American Medical Association was insisting that the so called low carbohydrate diets were fad. Of course, they really were anything but a fad, having been used for close to 200 years.

The vitriol was so extreme that John Mayer, who is a prominent nutritionist of his time, actually said that these

carbohydrate restricted diets was the equivalent of mass murder. We're killing people with these, with these reducing diets. The problem was this, of course, that if fat was the problem then you necessarily had to eat a high carbohydrate diet if you're going to eat low fat. Because fat and protein tend to travel together. However, the fattening carbohydrate could not be healthy in that it's low fat and unhealthy at the same time. Because it causes obesity.

## **Now Fats are the Problem!**

So in order to resolve this cognitive dissonance, all of a sudden the fattening carbohydrate suddenly turned into the "healthy whole grain". The fat with its dense calories was simply assumed to cause obesity even though there was really no proof, anecdotal or otherwise. To sustain that the model that we think about obesity, instead of being the fattening carbohydrate model, all a sudden became this calories in calories out model. And that's where we were in the 1970s.

There was still a significant amount of debate of course, between the dietary fat proponents and the dietary carbohydrate refined carbohydrate camp. And this was settled not by scientific dispute, but really by dictum by government in 1977.

## **USDS Supports Agriculture with Dietary Guidelines**

The US Department of Agriculture published. for the first time. this Dietary Goals for the United States. This was the first time, really, that any government institution had told Americans that they could really improve their health by eliminating or reducing the fat in their diets. This is a copy of the USDA Dietary Guidelines and what you can see very prominently is that you should avoid too much fat, saturated fat, and cholesterol. And what you should eat is actually adequate starch. So instead of avoiding the fatty

carbohydrates, you should really eat more.

And this dietary fat controversy turned from a scientific controversy into a political one. It came down really on the side of eating more carbohydrates. This explicitly determined goal was to raise the consumption of carbohydrates until they constituted 55 to 60 percent of calories, and to decrease the fat consumption from approximately 40 percent to 30 percent.

This is what gives us the very familiar food pyramid which is meats at the top with poultry, fish, you know, weekly or even monthly. And at the bottom what you should be eating every single day is bread, pasta, rice, and whole grains.

## **Lack of Exercise as a Cause of Obesity**

Physical activity, of course, is very important. It got to the point in 1995 if you were to look at an American Heart Association diet. But this is what they wrote, "To control the amount and kind of fat diet, saturated fatty acids, and dietary cholesterol, you eat snacks from other food groups, such as low-fat cookies, low-fat crackers, unsalted pretzels, hard candy, gumdrops, sugar, syrup, honey, jam." In other words, it really didn't matter how much sugar was in your snack or in your diet. It only mattered how much fat there was.

So things like this, which is candy, is entirely fine to eat as long as you're cutting the fat. So how did we do? How did we do?

As a nation, well it turns out that we actually did pretty well. If you look at what happened, we made a very conscious effort to eat less fat, less red meat, fewer eggs. If you look at the average fat consumption of Americans, it decreased from about 45% of calories to about 35%. If you look at what else we told them to do, so you know, get your blood pressure checked, get your blood pressure treated, to stop smoking, to

treat your cholesterol, we did very well as well. So 40% decline in hypertension, 28 percent decline in hypercholesterolemia. So it turns out we did very well.

## **Public Followed Government's Advice**

So in fact, you can't really say that the public wasn't listening to us. In fact, they were had listened to the advice of the time and tried really their very best to comply. And they did.

We told them to eat less fat and eat more carbohydrates. And that is what they did. So if you look at the changes in the U.S. food availability, you can see that butter, eggs and animal protein, such as meat, significantly decreased from the 1960s to today. And what we ate instead was what we were told to eat: grains and sugars. If you look at the U.S. sugar consumption through the years you can see through the 1800's there's a steadily rising increase in the amount of sugar per capita that Americans were eating. This really reflects the increased availability of the sugar. As sugar plantations kind of spread throughout the Caribbean and the U.S. south. By the time you hit the 1920s you can see that there really is not that much more that we are going to eat. And we enter a sort of flat period from the 1920s to about 1977.

By the time they tell us that eating sugar is just fine, you can see that there's this secondary spike in the amount of sugar that we eat. If you look at grain which is the, the most important of which is wheat, we you can see that in 1950 the per capita consumption was approximately a hundred twenty-five pounds per year and in the 1960s it decreased slightly. In the 1970s, decreased down to a hundred and thirteen. But by 1980 had gone up to 122. By 1990 a hundred and forty one. And two thousand, a hundred and forty six total.

Grain products shows a very similar distribution. And what happened you can see that there had been a very slowly

increasing incidence of obesity over the previous years. But when you hit here if there's a clear tipping point right here in 1977 when they release the first Dietary Guidelines for Americans. You can see that the curve really changes, That is instead of a slowly rising increase in the prevalence of obesity, it takes a very sudden sharp turn for the worse.

## **Calories-In Calories-Out Cause of Obesity**

So this is the way that we understand obesity now. The reason we don't actually think about what causes obesity is because we actually think that we know what causes it.

And this is what we think: so this is caloric reduction as primary theory that is it's all about the calories. Sometimes called calories-in calories-out. And what causes obesity? Well it's clear that you either eat too much or you exercise too little. and really those are personal choices or behaviors. So that is the way that many of us think about obesity as it currently stands.

### **Assumptions**

And there's a few implicit assumptions in that theory that you may or may not realize. But a calorie, the calorie of sugar, is no different than a calorie of fat. The fat stores are essentially unregulated. That is, it's simply a dump for excess calories. Of if there's the imbalance here, it will be simply simply dumped into the body as as fact the intake and the expenditure of calories are under your conscious control. That is, we make all the decisions on how much we eat, how much we exercise. Which sort of ignores the effect of hunger as well as basal metabolic rate.

Dr. Jason Fung goes on to talk about what science shows to be the result of various studies trying to support the calories-in, calories-out hypothesis as well as the studies showing the real cause of obesity.

This is the first of a six-part series in which Dr. Fung describes how you can actually control your weight, lose excess fat and maintain a healthy weight. Watch all six lectures.

For more information see [Http://intensivedietarymanagement.com](http://intensivedietarymanagement.com)