

BODY FAT: THE GOOD, THE BAD AND THE UGLY TRUTH

(1) Do you ever wonder why different people have different body shapes? Skeletal structure determines height and overall frame, but beyond this, different body shapes have mainly to do with the distribution of muscle and fat on the body. Except for professional athletes and body builders, most people can thank their fat more than their muscles for their general shape. This becomes more apparent the more weight someone gains. In general, men and women develop two different patterns of fat distribution that create two different body shapes when they gain weight. Men tend to gain fat around their abdomen faster than in other areas. This gives them a characteristic “apple” shape that is seen when someone has a beer belly. Most women gain fat faster on their buttocks and hips causing them to have a characteristic “pear” shape when they gain weight.



(2) What difference does body shape make? It turns out it can make a big difference to your health. Most of the fat that causes the pear shape is called subcutaneous fat. This is fat that is found directly under the skin and over the muscles. This fat is used for energy storage, fuel, insulation and cushioning. For healthy people, around 80% of their body fat is this subcutaneous type. Unfortunately, the belly fat that causes the apple shape isn't only subcutaneous, it is also formed by visceral fat. Visceral fat is the fat that surrounds the internal organs (heart, lungs, stomach, intestines, liver, kidneys, etc.) within your peritoneal cavity. This fat is important in cushioning and insulating your organs, however, too much visceral fat is worrisome because it is linked to developing diabetes, heart disease, breast cancer and colorectal cancer.



(3) Besides subcutaneous fat (which is mostly white fat cells) and visceral fat, there is also a third type of fat cell that is called brown fat. We have very little of this in our body but it is powerful stuff. For example, the average healthy adult has only 50 grams of brown fat in their body, but this measly amount of brown fat can burn roughly 10 pounds of white fat a year! Some researchers are currently looking into brown fat as a potential hope for treating some metabolic conditions and obesity related diseases. Babies have a lot of brown fat and it helps them generate heat. We lose brown fat as we get older and as we gain more weight.

(4) Did you know that your fat cells need sleep to function properly? In a 2012 study, scientists recruited seven lean and healthy people to participate in a study to see the effect of sleep on body fat. For four consecutive days these people were made to sleep for 8.5 hours and then a month later they were made to sleep for 4.5 hours for another four consecutive days. In both cases, their diets were kept identical. After each four day sleep session, the participants' fat cells were retrieved for analysis. The effect of the lack of sleep was dramatic. The sleep deprived fat cells were 30% less sensitive to a hormone called insulin. Insulin enables your muscle, fat and liver cells to utilize glucose for energy. When your cells can't respond to insulin, you become at risk of developing diabetes.

(5) Fat cells are called adipocytes. People who become fat as adults experience a growth in the size of their adipocytes as these cells accumulate with fat. This cell growth is called hypertrophy. When a person becomes obese,

BODY FAT: THE GOOD, THE BAD AND THE UGLY TRUTH

7

they exceed the limit at which their adipocytes can hypertrophy, so the body creates more fat cells to hold more fat. If a person loses weight after becoming obese, their extra adipocytes remain. You can never lose fat cells; you can only gain them. It is harder for people to lose weight when they have more adipocytes versus when they just have larger ones. This has important implications for childhood obesity. Compared to an adult, a child more easily responds to weight gain with the creation of more adipocytes. When obese children reach adulthood, they will have more adipocytes than someone who never was obese as a child. This makes it harder for them to lose weight as an adult.

(6) There is another type of fat that is found in your bloodstream; it's called cholesterol. Often cholesterol is given a bad name because it is often associated with cardiovascular disease, but the truth is that it is also vital for life. It is so vital that your cells will produce cholesterol on their own. When your diet contains cholesterol, your cells will make less, and when your diet lacks cholesterol, your cells will make more. Cholesterol is needed to make cell membranes and to synthesize hormones like testosterone and estrogen. Cholesterol only becomes a problem when there is too much floating in the bloodstream which can cause cardiovascular disease. Excess cholesterol in the blood occurs due to a combination of genetics, diet and inactivity.

Article Questions

- 1) The scientific term for a fat cell is _____. Of the types of fat in your body, you have the least amount of _____ fat, but this fat is capable of helping you burn a lot of white fat. The fat floating in your blood is called _____.
- 2) In terms of their location, what is the difference between subcutaneous fat and visceral fat?
- 3) If you were overweight, what body shape would be worse for your health and why?
- 4) How is adequate sleep important for weight maintenance?
- 5) In terms of fat storage, what are the two ways that your body responds to increased fat in the body?
- 6) Why does getting fat when you're a child make it harder for you to lose weight as an adult when compared to someone who only started gaining weight in adulthood?