Does carbohydrate become body fat? [1]

Dear Alice,

Is carbohydrate transformed into fat in the body?

Answer

Dear Reader,

Ah, poor carbohydrates, maligned by diets such as Atkins’ [2] and the ketogenic diet. However, carbohydrates are your body’s main source of energy — in fact your muscles and brain cells prefer carbs more than other sources of energy (triglycerides and fat, for example). To answer your question: research completed over the last several decades suggests that if you are eating a diet that is appropriate for your levels of daily activity, little to no carbohydrate is converted to fat in your body. For most people (unless you have a metabolic disorder) when you eat carbs they are digested, broken down to glucose, and then transported to all the cells in your body. They are then metabolized and used to support cellular processes. If you’re active and eating appropriately for your activity level, most of the carbs you consume are more or less burned immediately.

There are two caveats here: first, if you’re eating a lot more calories per day than you are burning, then yes, your liver will convert excess calories from carbohydrate into fats; second, not all carbs are created equal. If you consume too many calories from simple sugars like sucrose and fructose (think sugary sodas sweetened by sugar and high fructose corn syrup) then your body will more readily take some of those sugars and turn them into triglycerides (fat) in your liver.
What happens to excess calories that come from carbs? The answer depends on several things: what kind of carbs you consumed, your genetics, as well as how many extra calories we’re talking about. For those who eat a well-balanced diet and have no metabolic disorders, excess dietary carbohydrates are converted by the liver into complex chains of glucose called glycogen. Glycogen is stored in liver and muscle cells and is a secondary source of energy to freely circulating blood glucose. When your body runs out of glucose in the blood stream, it will begin to break down and metabolize glycogen for energy. A body typically has blood glucose levels that can sustain all cellular processes for three to four hours — if you don’t eat in that time frame, your body will begin to break down the glycogen it has stored in order to keep you running.

Glycogen is one of the reasons why we don’t need to eat every fifteen to twenty minutes, and carbohydrates are easily converted to glycogen stores, then broken down and burned when you need more energy. If you saturate your body with an excessively high number of calories and the majority of these calories are from carbohydrates, then the excess carbs are converted into fat, or adipose tissue, for longer term storage. The process of conversion to fat occurs first in the liver and only after a significant period will your adipose tissue begin to expand.

Most dietitians recommend that about 50 percent of your daily calories come from carbohydrates, and many carbohydrate sources such as carrots, sweet potatoes, berries, and apples not only give your body and brain necessary fuel, but also deliver essential vitamins and nutrients.

So, although the media or diet companies claim that carbs are responsible for fat gain, the research doesn’t support this blanket statement. Carbs are an important foundation to a healthy and active lifestyle and can be quite nutritious!

Happy munching,

Alice!

Category:
Nutrition & Physical Activity
Optimal Nutrition
Nutrients

Related questions
Hunting for whole grains
Eating at night = weight gain: Myth or fact?
Is it better to eat before or after physical activity?
Confused about calories and fat grams!
Becoming a vegetarian — Resources?
Eliminate all body and dietary fat — Healthy?

Resources
Medical Services (Morningside)
Medical Services (CUIMC)
Published date: