

## **Sugar in Fruit versus Added Sugar**

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In 2014 the World Health Organization (WHO) released a recommendation that an individual's daily sugar intake should not exceed greater than 5% of their total daily caloric intake. This resulted in many Americans questioning if the natural sugar found in whole fruits counted in that recommended 5% total. The short answer is no; the natural sugar found in whole fruits does not count toward the 5% recommendation.

The natural sugar that is contained in whole fruits is bound to, and consumed in, the presence of fiber. And it is the presence of this fiber in whole natural foods like fruits that makes a critical difference in how your body reacts when they are eaten. When the natural sugar in fruits is bound to fiber it results in your body absorbing and processing the sugar much more slowly. This slowed breakdown of the food is different than what happens to the added sugars and sweeteners (e.g., honey, cane sugar, high-fructose corn syrup, agave, brown sugar, dextrose, confectioners glaze, et cetera) that are contained in many packaged and processed foods.

Whenever you consume a whole food, smoothie, or beverage that contains sugar, which is a form of carbohydrate, your digestive system breaks the sugar down into glucose. The glucose then enters the bloodstream, and your blood sugar levels rise. Your pancreas subsequently releases insulin, which is a hormonal signal to the cells in your body to remove the glucose from your bloodstream. Once the glucose is in your cells it can be utilized for all forms of movement, or stored in the skeletal muscles or liver for use at another time.

Highly processed and refined grain products like white bread, white pasta, and most packaged crackers are very low in fiber. Accordingly when these sorts of low fiber food products are consumed they deliver high levels of carbohydrates, which are broken down and digested very quickly. This rapid breakdown of the low fiber carbohydrate food products raises blood sugar and insulin levels quickly. Additionally, due to their liquid form, the sugars found in smoothies and sodas enter into the bloodstream especially rapidly.

Unfortunately, simply adding powdered fiber during the creation of a packaged and processed food does not create a product that is equal in any way to a natural whole food. The addition of powdered fiber to processed grain products does not solve the problem of the rapid rise in blood glucose. It is always best to favor whole natural fruits to smoothies or fruit juices. Smoothies with blended whole fruits do contain fiber, and some fruit juices may contain a small amount of fiber. However, a large amount of the natural unprocessed fiber from the whole fruit used to create the smoothie or juice has been broken down in the process of blending and juicing. Therefore, when compared with the digestion of whole natural fruits, the blending and juicing process results in a decreased amount of time for the sugar to enter the bloodstream.

It is literally the physical form and structure of the carbohydrates that matters. Simply put, a whole natural fruit is composed of unbroken cell walls that intertwine and bind the natural sugar to the natural fiber. When those cell walls, their physical structure, is not broken down in

processing it requires a greatly increased amount of time for your own digestive system to break them down and for the natural sugar to enter your bloodstream. This results in a much slower rise in your blood glucose. The intact cell wall structure is the key difference between a whole natural fruit and a smoothie or fruit juice.

For example, two whole apples may contain the same amount of sugar as 12 ounces of apple juice or a 12-ounce can of soda. However, the rates of digestion, absorption, and rise in blood glucose caused by the natural sugar found in the whole apples are significantly slower when compared with the added sugars found in the juice or soda.

In my opinion, the best approach for your lifestyle nutritional plan is to think about and evaluate your daily food choices in terms of whole natural foods, not simply in terms of nutrients.