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## **Juicing Pros and Cons**

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How to juice: Start with a fruit or vegetable, pull off the liquid and call that liquid a juice. It contains many of the food's soluble nutrients, like vitamin C, folate, flavonols and carotenoids. A blended juice, also known as a smoothie, is a juice that still has pulp and fiber in it.

Why juice? 1) It's trendy. 2) It raises blood sugar quickly, which results from liquids emptying more rapidly from the stomach than solids. 3) It may be the only way you can get yourself to eat fruits and veggies. 4) It's a snack or meal that can be drunk while driving. 5) You are supporting the economy by buying juicers.

Notice that I don't mention anything about it being healthier than eating food. Any combination of fruits, vegetables, spices, herbs, dairy and nuts you might use to make a juice can be consumed as a salad, stir fry, stew or separate foods on a plate. Juicing is only healthier if you would otherwise not eat those food.

Juicing advocates assert that nutrients are absorbed better from a juice than the whole food. They claim that removing or breaking up fiber in a food releases trapped nutrients from the fiber matrix, so they are more available for nutrient absorption. The few studies that have examined this subject show that a few water soluble nutrients like carotenoids are absorbed better from juice than from the fruit. This assumes that some other ingredient added to your juice doesn't block absorption.

The claim makes it sound like juicing is the only way to release nutrients for absorption. So does cooking, chewing and exposure to stomach acid and pancreatic enzymes. Nutrient availability involves a whole host of factors, described well at

www.eufic.org/article/en/artid/Nutrient-bioavailability-food/.

Though some micronutrients are absorbed better from juice, others are lost by discarding the pulp. For example, citrus pulp has more naringen and the section membranes have more flavonoids. In addition, the intestine may not break down and absorb fiber but we still need it for health. Undigested fiber passes through to the colon, where it feeds our bacteria. The spa-colonics-detox masochists may want to "cleanse" away their bacteria, but our body needs them to maintain a healthy intestine, immune system, and source of vitamin K and B12.

Juice's sugar might be absorbed more completely also. Juice empties more quickly from the stomach than food with fiber and fat, causing a sugar spike. Overweight people might not like the added calories and diabetics would do better without sugar spikes.

The pulp adds bulk that slows food's passage from the stomach to the intestine. In this way sugar is absorbed more slowly which is better for diabetics and those with reactive hypoglycemia. It alleviates hunger for a longer time, which is better for people watching their weight.

Juicers, extractors and blenders, marketed with claims to make you healthy but really just empty your pocketbook, differ only by the amount of pulp they allow into the final product. Some squeeze (masticating juicers) instead of grind (centrifugal juicers), claiming to destroy foods' enzymes less. I'm not sure how that helps, since stomach acid and digestive enzymes break down food proteins, including enzymes. Some come with books which purport to divulge secrets of proper juicing and assert that certain food combinations serve specific health goals. More malarkey. Combinations just increase food group diversity, which is always healthy.

You don't need a juicer if you have a standard blender. A blender makes a smoothie, which may be healthier because it leaves in the pulp. To turn it into a juice, strain the smoothie through a jelly strainer bag, cheesecloth or a fine mesh strainer.

Juice shouldn't replace eating fruits and vegetables, unless the pulp is left in. We all need fiber, whether it's from veggies, whole grains or fruits. If you like smoothies, have at it. If you like juice without pulp, fine, but be sure to eat enough fiber from other foods. Mix and match to discover nifty combinations that suit your palate, increase your vegetable and fruit consumption and increase food diversity.