

# Fruit juices and smoothies: Dangerous for your health?

Experts, studies warn about dangers of fruit juices, smoothies



Customers ask for juice, said Protein Bar founder Matt Matros, because they believe it is an important part of their healthy diets. (E. Jason Wambsgans/Tribune Photo)

By Abby Olena, Chicago Tribune reporter

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The marketing for freshly pressed and blended juices promises instant energy, weight loss, a flood of vitamins and minerals — all in a single, portable, gulpable serving.

Health-minded consumers seem to have bought the claims — and with them, gallons of juice.

Jamba Juice, which sells juices and smoothies, reported \$55.1 million in revenue for the 13 weeks ending April 2. Beverage giant Coca-Cola tapped the juice trend early by acquiring Odwalla in 2001, and in 2007 PepsiCo followed suit with Naked Juice.

Raw vegetable and fruit juices make up about 10 percent of sales at the Protein Bar, a Chicago-based chain of health food restaurants, said founder Matt Matros. His customers ask for juice, he said, because they believe it is an important part of their healthy diets.

Tools for juicing at home are also a big business; one of the dozens of juicer choices, a stainless steel model with more than 100 Amazon.com reviews, sells for close to \$1,200. Meanwhile, more than 40 books or e-books related to juice or smoothies have been released in the past 30 days alone on Amazon, with the majority mentioning health, weight loss or both in their titles.

But according to dietitians and nutrition scientists, juice is far from the healthiest way to consume fruit, and one expert went so far as to call its popularity a dangerous trend.

"The fruit juice industry has essentially taken the 'apple-a-day' mentality and used it to sell fruit juices as healthy," said Barry Popkin, a professor in the department of nutrition at the University of North Carolina at Chapel Hill's Gillings School of Public Health.

Popkin and other experts would rather see people eating whole fruit. Because most juicing methods remove the produce's fiber, drinking juice omits one of the key benefits of eating fruit, while delivering huge amounts of sugar and calories.

"Every one of the long-term studies of the health effects of fruit juices shows that you increase your risk of diabetes and weight gain" with regular juice consumption, Popkin said.

One 2010 study in the American Journal of Epidemiology followed more than 43,000 adults in Singapore for five years and found that those who consumed two or more servings of fruit juice per week had a 29 percent higher risk of developing diabetes than those who didn't drink juice regularly — not far behind the 42 percent increased risk for weekly soda drinkers.

Expensive, freshly pressed fruit juices from the local juice bar are no healthier than the kind sold in groceries, Popkin added.

Smoothies do provide fiber, as the entire fruit often goes into the blender, skins and all, but they still contain a lot of calories. Choosing a vegetable-based juice or smoothie is one way to reduce the sugar content, health advocates say.

However, epidemiological studies on juice consumption show correlations, not cause and effect, said Elizabeth Ward, a registered dietitian on Jamba Juice's Healthy Living Council. Ward said that because of the vitamins and minerals, juices are a good alternative to beverages that contain only calories.

Ward and Karen May, a spokeswoman for Naked Juice and Tropicana, agreed that most Americans don't consume enough produce, and juice products are a good way to help fix that.

"Orange juice is a convenient and great-tasting way to help people meet nutrient needs, providing vitamin C, potassium and calcium ... in fortified varieties," May said.

But according to Lara Field, a pediatric dietitian at University of Chicago Medicine and founder of a nutrition counseling practice called Forming Early Eating Decisions, or FEED, the sugar in fruit juice far outweighs any possible benefit from the concentrated vitamins and minerals.

"Eating too much fruit can make us gain weight, just like eating too much candy," Field said.

Plus, the fiber in fruit complements the vitamins and minerals, so juice drinkers miss out on the optimal health benefits, said Bethany Doerfler, clinical research dietitian in the division of gastroenterology at Northwestern Medicine.

Americans already are harming their health by not consuming enough fiber, said Joanne Slavin, professor in the department of food science and nutrition at the University of Minnesota and a self-described "fiber person."

Diets higher in fiber are associated with lower risk of cardiovascular disease and lower body weight, Slavin said, yet most American adults achieve only half the recommended daily fiber intake, which is 25 to 38 grams.

"I want people to eat more fiber," Slavin said, and that includes choosing whole fruits over juice.

Eating fiber also contributes to a feeling of fullness, or satiety, that helps prevent people from overeating. In one study, published in the journal *Appetite* in 2009, people who ate apple slices before lunch felt more full and subsequently consumed 15 percent fewer calories than those who drank apple juice.

But the same study suggests that fiber isn't the only factor affecting satiety. A third group of participants in the study consumed applesauce containing fiber comparable with that in the apple slices. That group still consumed more calories at lunch than those who ate raw apples — though not as many as the juice drinkers.

Field offered one explanation: Juice, smoothies and applesauce don't require chewing, which research suggests helps signal the body that it's eaten enough calories for the moment.

Field highlighted research published in the journal *Obesity* in 2012 in which subjects took either one or eight minutes to chew as much cake as they naturally would have chosen, while spitting out each

bite at the moment they would typically swallow. At the same time, they had either a small or large volume of cake mixed with water delivered to their stomachs via feeding tube.

At a subsequent meal, the subjects who chewed for eight minutes ate fewer calories than others, regardless of the volume of food delivered to their stomachs, suggesting that chewing is as important as the amount of food consumed to subsequent caloric intake.

Some nutrition experts say drinking produce is better than consuming none at all.

"Considering the fact that more than 90 percent of Americans are not meeting their recommendations of daily fruit, 100 percent fruit juice is an easy and convenient way to meet these goals," Diane Welland, a registered dietitian for the Juice Products Association, wrote via email. The association represents the fruit and juice products industry.

Federal dietary guidelines state that 4 ounces of 100 percent fruit juice is equivalent to a half-cup of whole fresh fruit, Welland said.

Those guidelines also recommend that the majority of fruit consumed be whole fruit, but it can be challenging for adults to eat the suggested 1 1/2 to 2 cups of fruit and 2 1/2 to 3 cups of vegetables a day.

"Sitting down to a bowl of kale is intimidating," said Doerfler, and that's one possible reason that juices and smoothies are so popular.

"Americans do not eat enough fruits and vegetables, so any step (toward eating more produce) is better than none," said Cornell University nutritionist Christina Stark.

But Stark cautioned eaters not to choose the same fruit in the same form over and over again, as the goal should be "variety in all aspects" of the consumption of vegetables and fruits, from texture to type.

Doerfler said smoothies and juice could be a less scary way to shift to a more plant-based diet. Predominantly vegetable-based blends are a healthier choice with "a small amount of fruit to make a juice or smoothie more palatable," she said.

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