

On Nutrition: The form of food we eat may have more impact than we think

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Bill W. asks, "Is drinking many of our fruits, vegetables, nuts and seeds in a smoothie as healthy and nutritious as eating them?"

Surprisingly, even though the whole [food](#) we pop into the blender may have the same nutrients as the liquid smoothie, how those nutrients are absorbed can be affected by their form and structure.

A 2019 paper published in the journal *Food & Function* describes how researchers tested the digestibility of three different forms of foods (solid, semisolid and liquid) that were identical in nutrient content. Then they measured how the varied forms of food affected appetite and specific blood tests in human subjects.

Interestingly, scientists found that the liquid food caused a higher rise in triglycerides (a form of fat in the blood) than the [solid food](#). The liquid food also caused less fullness and satisfaction (satiety) than the solid food.

Other studies (cited in this same article) have found similar results. Ground nuts ([peanut butter](#)) have been shown to cause a higher rise in blood fat (triglycerides) than whole nuts, for example.

Why is this important?

When excess triglycerides enter the circulation after a meal, it can trigger inflammation. In fact, these rises in blood fat after meals have been found to increase our risk for [heart disease](#) as well as Type 2 diabetes, say experts.

These types of studies are intriguing, but they are also inconsistent because they are so difficult to study. Liquid meals can also be convenient and life-saving, especially in people who rely on liquid nourishment for medical reasons.

Still, it's fascinating to learn that the form of the food we eat may have more impact than we think. Thanks for the question.

Karen W. asks, "Is there any evidence that drinking seltzer [water](#) is bad for people with osteoporosis?"

No good evidence, Karen. Seltzer water is plain water that has been infused, or "carbonated," with carbon dioxide. It was discovered by accident in 1767, when a man in England suspended a bowl of water above a beer vat at a brewery. He called the procedure "Impregnating Water with Fixed Air."

According to Harvard Medical School, although carbonated drinks have long been associated with [low bone density](#) and fractures (especially in [teenage girls](#)), research points primarily to the caffeine in these beverages being a contributor rather than the carbonation. Of course, if carbonated beverages replace calcium-rich foods, this can have a negative effect on bones as well.

"So feel free to enjoy seltzer water without worrying," say these experts, "but don't overdo the caffeinated beverages, whether carbonated or not." And don't let your seltzer water replace your intake of high-calcium foods and beverages in the process.

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