

Study Shows Smoothies with Seeds may Improve Glycemic Control

In a recent perspective piece published, researchers at the University of Plymouth, UK, highlighted smoothies as an important source of [plant-based nutrition](#). They noted that they should not be grouped with fruit juices since they are important sources of fiber and may not necessarily cause significant glycemic spikes.



Rethinking Smoothies and Public Health Guidelines

Smoothies have become increasingly popular as a convenient way to boost the consumption of [vegetables](#) and fruits. They are readily available commercially, and also easy to make at home.

However, current public health recommendations in the United Kingdom and Europe classify smoothies similarly to [fruit juices](#). They advise limiting their consumption to less than 150 ml per day and counting this as a single portion of vegetables and fruit.

However, there is reason to believe that smoothies may be healthier than juice. Current guidance is based on concerns that juiced fruits increase the [bioavailability](#) of free sugar, leading to rapid blood sugar spikes. Unlike fruit juices, smoothies retain the entirety of the fruit, including fiber, which may slow digestion and reduce glycemic response.

Since frequent blood sugar spikes are known to increase the risk of metabolic diseases like type 2 diabetes, the [health implications](#) of smoothies need further investigation. Recent research challenges traditional assumptions, suggesting that blended fruit may not negatively affect glycemic control. In some instances, they may improve glycemic response by up to 57%.

Given that only an estimated one-third of UK adults meet the recommended five daily servings of fruits and vegetables, reevaluating smoothie consumption could encourage healthier [dietary habits](#).

Blended vs Whole Fruit: Glycemic Response Comparisons

Several studies indicate that consuming blended fruit does not lead to higher blood sugar levels than eating whole fruit. For instance, research on mango found no difference in [glycemic index](#) (GI) between whole and blended forms.

Another study showed that a smoothie containing multiple fruits – such as raspberries, passionfruit, [banana](#), mango, pineapple, and kiwi – produced a significantly lower glycemic response (with a GI of 32.7) than consuming the same fruits whole (which had a GI of 66.2).

Similar trends were observed in studies on apples (seeds removed) and blackberries, where the glycemic response was lower when the fruits were consumed in a blended form. While these studies involve small sample sizes, they were adequately powered and well-designed to detect meaningful differences between whole and blended [fruit consumption](#).

These results suggest that smoothies may not cause harmful blood sugar spikes and could even be beneficial for glycemic control, even in individuals with obesity or [glucose intolerance](#). However, researchers caution that findings from controlled laboratory settings may not fully reflect real-world dietary patterns.

Possible Explanations: Fibre, Digestion, and the Role of Seeds

One key factor influencing glycemic response is the presence of fiber, particularly in the seeds of fruits. When whole fruit is consumed, chewing initiates the digestive process by stimulating the release of [salivary enzymes](#), which begin breaking down complex carbohydrates.

In contrast, blended fruit bypasses this initial step, which may affect [sugar absorption](#) rates. Some studies suggest that blending may increase the release of dietary fiber from seeds, slowing glucose absorption in the small intestine and reducing blood sugar spikes.

For example, research on mango and banana (both seedless fruits) showed no difference in glycemic response between whole and [blended forms](#). However, when flaxseeds were added to blended fruit, blood sugar levels decreased significantly, supporting the hypothesis that seeds play a role in regulating glycemic response. This finding is supported by a published study (Alkutbe et al. 2020), which showed that adding flaxseeds to blended mango and banana significantly reduced postprandial glucose levels.

Further studies are needed to explore how different types of fiber, including resistant starch found in fruits such as bananas and unripe [mangoes](#), influence blood sugar levels when consumed in blended form. A recent review suggests that resistant starch may be more effective than soluble fiber in lowering glycemic and insulinemic responses.

Conclusion

The findings challenge current dietary recommendations that limit smoothie consumption. While existing research suggests that blending fruit does not necessarily increase blood [sugar levels](#), further studies are needed to evaluate its long-term effects, including their impact on satiety, insulin response, and overall energy intake.

Researchers note that postprandial insulin levels should be measured to determine whether reductions in blood glucose are accompanied by lower [insulin spikes](#), which could reduce risks associated with metabolic syndrome and type 2 diabetes.

Some evidence suggests that consuming liquid calories may lead to lower satiety compared to solid foods, which could influence eating habits throughout the day. This raises concerns that smoothies, while glycemicly favorable, may not provide the same feeling of fullness, potentially

impacting total [caloric intake](#). Future research should examine whether smoothies affect hunger and food intake over extended periods.

Additionally, most studies have focused on controlled laboratory conditions, so it is necessary to explore real-world dietary patterns, including the impact of commonly added ingredients such as dairy, plant-based milks, and [protein powders](#).

Understanding these factors will help refine [public health policies](#) to encourage fruit and vegetable consumption while minimizing metabolic health risks. A systematic approach to studying the dispersion of fiber during blending and its physiological effects will be crucial in shaping dietary guidelines. Researchers should continue investigating these areas to inform evidence-based recommendations on smoothie consumption and its role in promoting health.

Source:

<https://www.news-medical.net/news/20250403/Smoothies-with-seeds-may-improve-glycemic-control-study-shows.aspx>