Nutrient extraction can lower the glycaemic index of fruit juice

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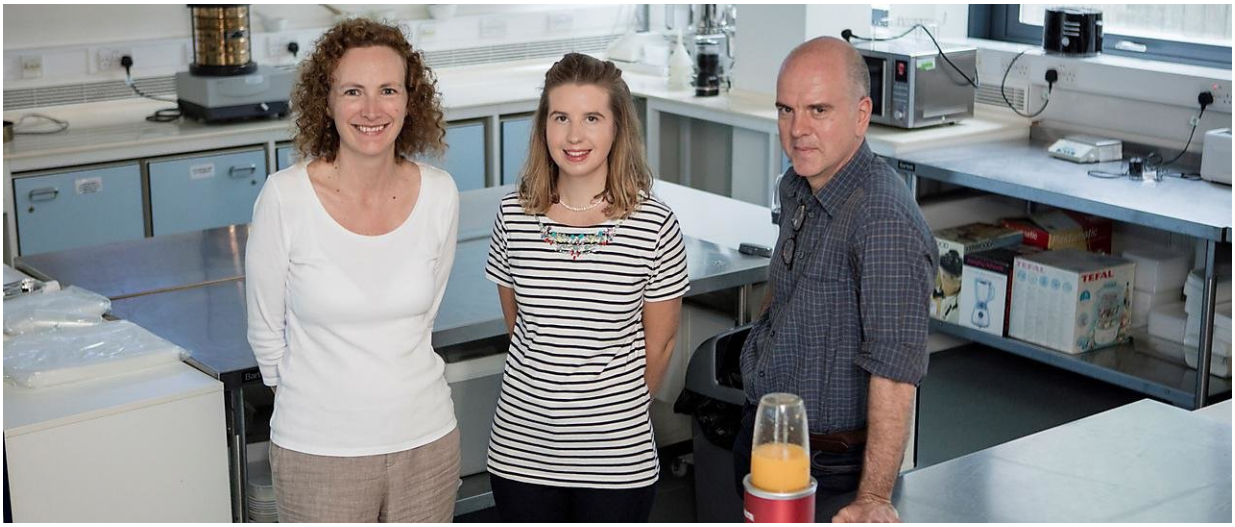

Credit: University of Plymouth

A new study suggests that consumption of juice obtained via a commercially available nutrient extractor results in blood glucose levels the same or lower than seen with whole fruit. This unexpected finding offers a possible dietary alternative enabling consumption of normally dietary-restricted fruit juice.

Paradoxically, while consumption of whole fruit is universally recognised as playing a role in lowering the risk of many chronic diseases (such as Type 2 diabetes), consumption of fruit juice may

actually increase the risk. This effect is thought to be due to the spike in blood glucose levels (called glycaemic index; GI) that occurs following fruit juice consumption. Consequently, current public health advice recommends limiting the consumption of fruit juice to just 150ml a day.

A team of scientists from the University of Plymouth has carried out the first independent research into the effect on post-meal blood glucose of juice prepared using increasingly popular nutrient extractors.

The results of their study were published in *Nutrition and Diabetes*.

The surprising finding was that juice prepared using a nutrient extractor resulted in a significant lowering of GI compared to mixed fruit consumed whole. The reduction was substantial, resulting in a 50 per cent reduction in blood sugar levels. Mango, which is recognised as a high sugar fruit, displayed no difference in GI between nutrient-extracted and whole fruit. Together, this study shows that preparation of fruit juice by using a commercially available nutrient extractor can decrease the spike in blood glucose levels that occurs after consumption of fruit, and at worse it results in a spike comparable to that seen with eating whole fruit.

The mechanism responsible for this effect is unclear, but the results of the study suggest that fruit juice prepared with a nutrient extractor could be considered as a relatively healthy way to maintain recommended levels of fruit consumption particularly among those with chronic diseases such as Type 2 diabetes.

The study was led by Drs Michael Jarvis and Gail Rees from the School of Biomedical and Healthcare Sciences at the University of Plymouth, with support from Kathy Redfern and the Nutrition Department.

Dr Rees said:

"Even though everyone seems to be using them these days, no one had looked at the effect of fruit juice prepared using a nutrient extractor on blood sugar levels. We were just curious to see how it would compare to the whole fruit.

"The results were really surprising and we are excited that nutrient-extracted fruit could now possibly be considered a viable alternative to conventional fruit juice for the many people who find it hard to incorporate whole fruit into their diets. This is of course only an initial study and will require additional investigation before we know whether this should change nutritional guidelines. Mechanism is also important."

The nutrient extractor used was a 600W, 20,000 RPM blender under the brand name Nutribullet 600. The authors of the study have no commercial or financial interest in Nutribullet and the study was conducted as an independent study supported by University of Plymouth funding.

More information: Nutrient-extraction blender preparation reduces postprandial glucose responses from fruit juice consumption. *Nutrition & Diabetes*. (2017) 7, e288; DOI: 10.1038/nutd.2017.36

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