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[Informatics](#)**News****New test for sweet tooth****Published:** Jun 20, 2013**Author:** Jon Evans**Channels:** Gas Chromatography

It's well known that consuming lots of sugary food and drinks is not very good for you, potentially leading to obesity, diabetes and cardiovascular disease. But asking someone to estimate how much sugary food and drink they consume is highly unreliable, both because people don't remember and because they deliberately under-report. So it comes as welcome news that US scientists have discovered the first biomarker able to provide an objective measure of a person's sugar intake.

The biomarker is simply the ratio between two isotopes of carbon, carbon-12 and carbon-13. This ratio has been suggested before as a marker for the intake of sugary foods, as most of the sugar in these foods is derived from corn or sugar cane, which both have a distinctive carbon ratio. But the stumbling block has always been that the carbon ratios of other food sources tend to mask the distinctive ratio found in dietary sugar.

Now, a team led by [Diane O'Brien](#) at the University of Alaska Fairbanks has overcome this problem by focusing specifically on the carbon ratio of the amino acid alanine, which turns out to be strongly associated with sugar intake. 'We used the isotopic signature of alanine, an amino acid and building block of protein that essentially traps the carbon from dietary sugar so that it can be measured in the protein component of hair or blood,' says O'Brien.

As they report in the *Journal of Nutrition*, O'Brien and her colleagues uncovered this association by using gas chromatography-combustion-isotope ratio mass spectrometry to measure the carbon ratio of various non-essential amino acids present in samples of hair and blood taken from 68 different people. They then compared these measured ratios with reports of sugar intake, finding the strongest association with the carbon ratio of alanine.

'Even for validated and well-accepted biomarkers of diet, associations with self-reported intake are generally very weak,' explains O'Brien. 'Our biomarker was able to explain almost half of the variation in self-reported sugar-sweetened beverage intake, which in this field is a very high level of explanatory power.'



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