

Biomarker provides accurate measurement of flavanol intake

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A new, objective way of measuring flavanol intake has been developed, which could help nutritional experts assess the link between these compounds and their health benefits at scale.

In the first study of its kind published in *Nature Scientific Reports*, researchers at the University of Reading, the University of California Davis and Mars, Incorporated have identified and validated the first biomarkers for flavanol- and procyanidin intake at scale.

This research, recently presented at the International Conference on Polyphenols and Health 2019, validates the use of specific biomarkers to objectively and accurately estimate the intake of flavanols and procyanidins. These studies have been published amid a growing consensus that many nutritional epidemiological studies have considerable limitations due to their dependence on subjective self-reporting, uncertainty around food content data and the impact of food preparation on nutrient content.

To address these limitations, there is an urgent

need for new methods that objectively measure the intake of specific nutrients in large populations. Using these newly developed biomarkers, researchers can now investigate the links between dietary intake of flavanols and procyanidins and associated health benefits at scale, without constraints inherent to past research approaches.

Professor Gunter Kuhnle, Lead Investigator at the University of Reading, said: "If we can't objectively measure what people eat, we can't give evidence-based recommendations. We now know that previous approaches to measure dietary flavanols intake are simply not accurate. This [new methodology](#) has the potential to improve the study of how diet impacts human health by providing researchers with an accurate method for assessing the intake of bioactives and creating a way forward for more robust nutritional epidemiology standards."

Flavanols and procyanidins are [bioactive compounds](#) naturally present in various foods including apples, blueberries, grapes, pears and cocoa. These compounds are being widely investigated for their health benefits. Researchers have now established the first method to assess actual bioactive intake, without relying on a surrogate. This will enable more accurate studies into links between dietary intake of flavanols and procyanidins and [health](#) benefits. Beyond investigating these compounds, this research has wide-reaching consequences for the field of nutritional epidemiologic studies more broadly.

Key findings

- With this new method researchers can, for the first time, accurately assess dietary flavanol and procyanidin intake in humans
- Researchers can now measure how much epicatechin—the flavanol monomer responsible for improvements in vascular function—a person has consumed, enabling further investigation into associations

between intake and disease risk

- This research has also demonstrated that new biomarkers can be developed to improve the reliability and rigor of nutritional epidemiological research
- With reliable biomarkers, researchers can now investigate the links between flavanol and procyanidins intake and [health benefits](#) in large-scale studies, free from limitations inherent to past research approaches

More information: Javier I. Ottaviani et al. Evaluation at scale of microbiome-derived metabolites as biomarker of flavan-3-ol intake in epidemiological studies, *Scientific Reports* (2018). [DOI: 10.1038/s41598-018-28333-w](https://doi.org/10.1038/s41598-018-28333-w)

Provided by University of Reading

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