

# Chemists develop foolproof new test to track the fats we eat

May 15 2020

---



Philip Britz-McKibbin, Professor of Chemistry & Chemical Biology, McMaster University Credit: JD Howell, McMaster University

A team of researchers at McMaster University has developed a reliable and accurate blood test to track individual fat intake, a tool that could

guide public health policy on healthy eating.

Establishing reliable guidelines has been a significant challenge for nutritional epidemiologists until now, because they have to rely on study participants faithfully recording their own consumption, creating results that are prone to human error and selective reporting, particularly when in the case of high-fat diets.

For the study, published in the *Journal of Lipid Research*, chemists developed a test, which detects specific non-esterified [fatty acids](#) (NEFAs), a type of circulating free fatty acid that can be measured using a small volume of blood sample.

"Epidemiologists need better ways to reliably assess [dietary intake](#) when developing nutritional recommendations," says Philip Britz-McKibbin, professor in the Department of Chemistry & Chemical Biology at McMaster University and lead author of the study.

"The food we consume is highly complex and difficult to measure when relying on self-reporting or memory recall, particularly in the case of dietary fats. There are thousands of chemicals that we are exposed to in foods, both processed and natural," he says.

The study was a combination of two research projects Britz-McKibbin conducted with Sonia Anand in the Department of Medicine and Stuart Phillips in the Department of Kinesiology.

Researchers first assessed the habitual [diet](#) of pregnant [women](#) in their second trimester, an important development stage for the fetus. The women, some of whom were taking omega-3 fish oil supplements, were asked to report on their average consumption of oily fish and full-fat dairy and were then tested with the new technology. Their study also monitored changes in omega-3 NEFAs in women following high-dose

omega-3 fish oil supplementation as compared to a placebo.

Researchers were able to prove that certain blood NEFAs closely matched the diets and/or supplements the women had reported, suggesting the dietary biomarkers may serve as an objective tool for assessment of fat intake.

"Fat intake is among the most controversial aspects of nutritional public health policies given previously flawed low-fat diet recommendations, and the growing popularity of low-carb/high-fat ketogenic based diets" says Britz-McKibbin. "If we can measure it reliably, we can begin to study such questions as: Should pregnant women take fish oil? Are women deficient in certain dietary fats? Does a certain diet or supplement lead to better health outcomes for their babies?"

Researchers plan to study what impact NEFAs and other metabolites associated with dietary exposures during pregnancy, might have on childhood health outcomes in relation to the obesity, metabolic syndrome and chronic disease risk later in life.

**More information:** Sandi M. Azab et al, Serum non-esterified fatty acids have utility as dietary biomarkers of fat intake from fish, fish oil and dairy in women, *Journal of Lipid Research* (2020). [DOI: 10.1194/jlr.D120000630](https://doi.org/10.1194/jlr.D120000630)

Provided by McMaster University

Citation: Chemists develop foolproof new test to track the fats we eat (2020, May 15) retrieved 30 April 2024 from <https://medicalxpress.com/news/2020-05-chemists-foolproof-track-fats.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private

study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.