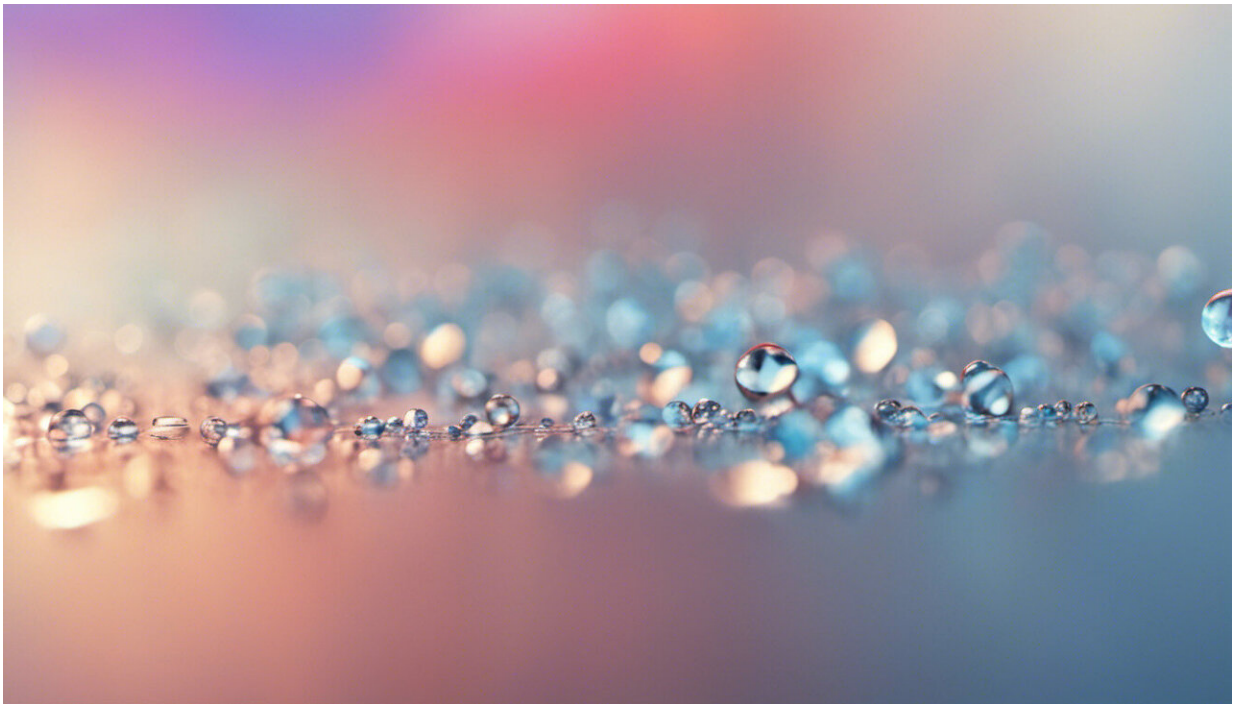


# Researchers help develop rapid, reliable vitamin D test

April 15 2022, by Andrea Lawson

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Credit: AI-generated image ([disclaimer](#))

A McMaster researcher is part of a team that has developed a more efficient way to screen for vitamin D deficiency that could become a tool in the fight against COVID-19 and other respiratory illnesses.

Studies show vitamin D is an important pro-hormone with a powerful

impact on immune function and metabolic health. "Vitamin D deficiency is quite prevalent in Canada over the winter months due to the lack of sunlight exposure, which also coincides with respiratory illness season," says Philip Britz-McKibbin, a McMaster professor of chemistry and chemical biology. "Beyond its importance in bone health, vitamin D also plays a key role in stimulating immune responses to foreign pathogens while modulating inflammation."

There was a need for a cost-effective and [rapid test](#) that assesses vitamin D status from a blood sample, he says.

Britz-McKibbin and his colleagues developed a rapid method to identify vitamin D deficiency in critically ill children, who would likely benefit from vitamin D supplementation. The method is detailed in a paper published in the *Journal of Lipid Research*.

"The immunoassay system we were using had certain constraints related to precision and accuracy," he says.

"We've developed a faster and more reliable method that is amenable to [high throughput screening](#), unlike traditional methods."

This work is part of an ongoing multicenter clinical trial, which is being led by pediatric critical care physician Dayre McNally from the Children's Hospital of Eastern Ontario, examining the safety and efficacy of high-dose vitamin D intervention to improve health outcomes following critical illness.

"This new screening method is extremely valuable for [clinical trials](#) evaluating therapeutic interventions in patients with vitamin D deficiency," McNally says. "Routine vitamin D screening can take several days, or is not routinely available at many Canadian hospitals. If our trial shows that high-dose vitamin D is beneficial for critically ill children, this screening method can better guide treatment of vitamin D

deficiency as standard care in Canadian pediatric intensive care units."

Having a rapid test to identify vitamin D deficiency is "crucial," particularly for cases of critically ill children, where delays in treatment may affect patient outcomes, says Karen Choong, pediatric critical care physician at McMaster Children's Hospital, who co-authored the paper. "This test is a major step in ensuring widespread testing is feasible and timely amongst the sickest children admitted to our hospitals."

Researchers envision that home testing could be performed in the future using a finger pinprick of blood. This supports personalized health initiatives to ensure optimal vitamin D status, because treatment responses can vary widely between individuals.

For Britz-McKibbin, the development is an example of how fundamental science can be translated for clinical care. "Here's our inspiration to develop new analytical methods that can be a benefit for clinicians and ultimately be used to improve patient outcomes."

**More information:** Erick Helmeczi et al, A High-Throughput Platform for the Rapid Screening of Vitamin D Status by Direct Infusion-Tandem Mass Spectrometry, *Journal of Lipid Research* (2022). [DOI: 10.1016/j.jlr.2022.100204](https://doi.org/10.1016/j.jlr.2022.100204)

Provided by McMaster University

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