

A new test for chronic fatigue syndrome

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Myalgic encephalomyelitis (ME), better known as chronic fatigue syndrome, is a complex chronic disease affecting some 600,000 Canadians and up to 2.5 million Americans. It's also poorly understood: until now there has been no validated blood biomarker or test to diagnose the disease.

Researchers at CHU Sainte-Justine and Université de Montréal led by Dr. Alain Moreau has developed an innovative diagnostic [test](#) that makes it possible for the first time to test patients who cannot participate in clinical studies due to the severity of their condition.

Led by Dr. Alain Moreau, a professor in the faculties of dentistry and medicine at UdeM, the researchers detail their innovation in a study published today in *Scientific Reports*.

The development of this test represents the first molecular diagnostic tool for ME and one that has been long awaited by many clinicians and patients, say Moreau and his team. It also opens up the possibility of classifying patients into subgroups to better understand the [molecular mechanisms](#) involved in their symptoms and to better select patients who could benefit from therapeutic approaches by repositioning existing drugs.

An inflatable arm cuff

Mechanical stimulation applied to the arm by an inflatable arm cuff causes post-exertional malaise, the primary [symptom](#) of ME, and provides a precise molecular signature that makes it possible to differentiate patients from normal subjects or those suffering from related conditions such as fibromyalgia.

An increase or reduction of some of the eleven microRNAs measured in the test can help predict the patient's therapeutic response to certain drugs, which improves the chances of finding the right therapy by personalizing the treatment.

Moreau's team is now validating the test in other populations in order to determine whether the biomarkers used here are equally sensitive in detecting ME and equally relevant for launching new clinical trials. The

test may allow for early detection of ME in people with persistent post-COVID-19 symptoms that are very similar to ME, making earlier intervention possible, the researchers add.

"Profile of circulating microRNAs in [myalgic encephalomyelitis](#) and their relation to symptom severity, and disease pathophysiology," by Alain Moreau et al, was published Nov. 12, 2020 in *Scientific Reports*.

More information: Evguenia Nepotchatykh et al. Profile of circulating microRNAs in myalgic encephalomyelitis and their relation to symptom severity, and disease pathophysiology, *Scientific Reports* (2020). [DOI: 10.1038/s41598-020-76438-y](https://doi.org/10.1038/s41598-020-76438-y)

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