

# Ion channel discovery offers hope for long COVID patients

May 7 2024

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Researchers from Griffith University's National Center for Neuroimmunology and Emerging Diseases (NCNED) have made a discovery that could bring relief to those struggling with long COVID.

In a world-first finding, they've identified a way to restore the faulty function of [ion channels](#) on [immune cells](#) using a well-known drug typically used for other medical purposes.

The breakthrough, [published](#) in the journal *Frontiers in Immunology*, builds on previous research showing long COVID patients share similar issues with ion channels as those with [chronic fatigue syndrome](#) (also known as myalgic encephalomyelitis or ME/CFS).

The team had previously shown success in restoring ion channel function in ME/CFS patients using a drug called Naltrexone, and now they've achieved similar results with long COVID patients.

First author Ph.D. candidate Etianne Sasso said the research team had previously reported restoring the function of these ion channels of immune cells in laboratory trials.

"Ion channels are integral membrane proteins that facilitate the passage of ions (charged particles) across the [cell membrane](#)," Sasso said.

"We found that by restoring the function of these ion channels, important ions such as calcium were again able to move in and out of immune cells, controlling many of the body's biological processes."

This breakthrough offers hope for alleviating various ME/CFS symptoms, including brain fog, muscle fatigue, and issues with the cardiovascular and gastrointestinal systems.

Professor Sonya Marshall-Gradisnik, senior author and Director of NCNED, said the significance of this discovery, achieved through the gold standard test called electrophysiology, will help in better understanding long COVID and ME/CFS paving the way for potential therapies.

The NCNED is preparing to launch two clinical trials, one for long COVID and another for ME/CFS, testing the effectiveness of low-dose Naltrexone.

This drug, typically used for [opioid addiction](#), has shown promising results in restoring ion channel function in previous research and in anecdotal reports from patients.

"We will be undertaking two [clinical trials](#) testing the efficacy of low dose naltrexone where the first will be in long COVID patients while the second trial will, for the first time, be in ME/CFS patients," Professor Marshall-Gradisnik said.

"Should these trials prove successful, it could mean a vastly improved quality of life for countless individuals struggling with long COVID and ME/CFS."

**More information:** Etianne Martini Sasso et al, Investigation into the restoration of TRPM3 ion channel activity in post-COVID-19 condition: a potential pharmacotherapeutic target, *Frontiers in Immunology* (2024). [DOI: 10.3389/fimmu.2024.1264702](https://doi.org/10.3389/fimmu.2024.1264702)

Provided by Griffith University

Citation: Ion channel discovery offers hope for long COVID patients (2024, May 7) retrieved 16 August 2024 from <https://medicalxpress.com/news/2024-05-ion-channel-discovery-covid-patients.html>

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