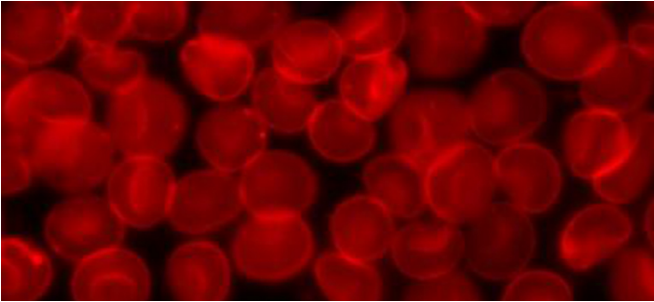


# Test confirms COVID-19 as trigger for rare Kawasaki-like syndrome in children

8 June 2020



Credit: Wikimedia Commons

A test developed by experts in Birmingham has offered evidence confirming COVID-19 to be the cause of a newly emerged multi-system inflammatory syndrome in children, who have tested negative for the virus by the PCR test. This raises the possibility that children who may have had the virus in their system, even if they haven't been unwell, could be at risk of developing this new condition.

Reports have emerged in recent weeks of the COVID-19 pandemic, of [children](#) presenting with symptoms similar to those seen in Kawasaki disease; a rare condition, usually seen in under-fives, that causes a persistently high temperature, rashes and inflammation of the blood vessels. This new condition has recently been termed Paediatric Inflammatory Multi-System Syndrome—Temporally associated with SARS-CoV-2 (PIMS-TS) and to date has affected around 100 children in the UK with further reports of cases across Europe and the United States.

This latest research demonstrates the value of an antibody test, developed by a team at the University of Birmingham, to confirm the diagnosis of children hospitalised with symptoms consistent with PIMS-TS. All of the children tested negative

for the SARS-CoV-2 virus by PCR. This research was the product of a collaboration between the University of Birmingham, Birmingham Health Partners, Birmingham Women's and Children's NHS Foundation Trust, University Hospitals Birmingham NHS Foundation Trust, the University of Southampton and The Binding Site Group Ltd.

The blood test, which demonstrates the presence of different types of antibodies to the virus, showed that every child had high levels of anti-SARS-CoV-2 antibodies. The pattern of [antibodies](#) indicated that the infection most likely occurred weeks or even months previously. This means that antibody testing can be used to help diagnose PIMS-TS, even when virus is not directly detectable in the patient.

Dr. Alex Richter, lead researcher and Consultant Immunologist at the University of Birmingham's Institute of Immunology and Immunotherapy said: "By focusing on assay development using academic principles, we have designed a sensitive antibody test that can be used to detect exposure to SARS-CoV-2 infections. The test will be used to understand how many people have suffered from COVID-19 in our communities but we have found another use identifying PIMS-TS in these [sick children](#)".

Professor Adam Cunningham, co-author and professor of functional immunity at the University's Institute of Immunology and Immunotherapy said: "It has been a privilege to work with colleagues within the University of Birmingham and the Birmingham Children's Hospital to adapt this test to help doctors diagnose this condition and enable them to choose the best life-saving treatments."

Dr. Barney Scholefield, paediatric intensive care consultant at Birmingham Women's and Children's NHS Foundation Trust and researcher at the University's Institute of Inflammation and Ageing said: "Having access to cutting edge immunology

expertise and the new sensitive antibody [test](#) at the University of Birmingham has been essential in allowing rapid diagnosis and early treatment of these critically unwell children with PIMSTS."

Dr. Fiona Reynolds, chief medical officer at Birmingham Women's and Children's NHS Foundation Trust, said: "We're passionate about offering world-class care to our patients and families not only today but also in the future. Participating in such research projects like this is so important to help greater understand this illness and, most importantly, how we can offer the best treatment."

Provided by University of Birmingham

APA citation: Test confirms COVID-19 as trigger for rare Kawasaki-like syndrome in children (2020, June 8) retrieved 9 September 2022 from <https://medicalxpress.com/news/2020-06-covid-trigger-rare-kawasaki-like-syndrome.html>

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