



**COVID-19 IMMUNITY  
TASK FORCE**

# Spotlight on **CITF-FUNDED RESEARCH**



## **CITF Announcements**

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### **CITF Databank now has data from 35 studies, including 20 with harmonized data**

The CITF Databank continues to grow and researchers can now access data from a total of 35 studies, including harmonized data for 20 of them, with individual-level data from 100,000+ participants. The Databank's Harmonized Data Overview and Harmonized Cohort Search Dashboard offer interactive and customizable features to help researchers access data and assess the feasibility of using CITF harmonized datasets as a source for their research. Discover more and register by visiting the Data Access Portal.

[Explore](#)



## **CITF-Funded Research Results**

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## **Longitudinal sero-monitoring enhances ability to detect SARS-CoV-2 re-infections**

A CITF-funded study, published in *BMC Infectious Diseases*, found that longitudinal sero-monitoring for antibodies, combined with PCR or RAT saliva testing for acute infection, increased the detection of re-infections four-fold compared to PCR or RAT tests alone. The study focused on people experiencing homelessness in Toronto.

[Read more](#)

## **Black Canadians had disproportionately higher rates of COVID-19 early in the pandemic**

A CITF-funded study, published in the *Journal of Racial and Ethnic Health Disparities*, reported on the results of serologic testing for SARS-CoV-2 infections in the Black Canadian community and found that early in the pandemic, Black Canadians had disproportionately higher rates of COVID-19 compared to white Canadians.

[Read more](#)

## **Clinical manifestations of SARS-CoV-2 differ depending on the variant in children and adolescents**

A CITF-supported study, published in *JAMA Network Open*, systematically compared the clinical manifestations of different SARS-CoV-2 variants in the pediatric population presenting in emergency departments. The authors aimed to shed more light on the disease severity of four main variants of concern (VOC)—original, Alpha, Delta, and Omicron—by comparing data collected on the presence and number of presenting symptoms (primary outcome) and on the presence of core COVID-19 symptoms, chest radiography findings and treatments, and 14-day outcomes (secondary outcomes).

[Read more](#)

## **Assessing various T cell immunity assays for SARS-CoV-2 studies**

A CITF-funded study, published in *The Journal of Immunology*, reviewed the benefits and limitations of commonly used methods for assessing T cell immunity across SARS-CoV-2 studies. These include ELISPOT, intracellular cytokine staining (ICS), activation induced markers (AIM), cytokine secretion assays (CSA), and peptide MHC tetramer staining (pMHC). The authors highlighted the necessity for ongoing efforts to standardize T cell assays to ensure consistency and comparability across research studies.

[Read more](#)

## **Wastewater surveillance could help predict SARS-CoV-2 incidence and disease burden in the community**

A CITF-funded study, published in *Science of the Total Environment*, demonstrated that wastewater-based surveillance (WBS) for SARS-CoV-2 could indicate disease incidence and predict disease burden at various stages of the pandemic. Additionally, during future potential seasonal vaccination campaigns against SARS-CoV-2 and emerging variants, WBS is expected to be able to provide a moderate indication of COVID-19 disease incidence and a strong indication of disease burden in the community.

[Read more](#)

## **Applying the test of reasonableness in determining when proof of vaccination is required in the private sector**

A commentary by a CITF-funded researcher, published in *Intelligence Memos*, explores the extent to which privacy laws restrict businesses' ability to verify an individual's vaccination status. Clarity on this issue is essential when federal and provincial governments impose vaccination mandates in some

workplaces, like they did at the height of the COVID-19 pandemic. The overriding standard of "reasonableness" can guide businesses not covered by these requirements in determining the legality of verifying the vaccination status of patrons or employees depending on the context.

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## **Longitudinal SARS-CoV-2 seroprevalence study on food and retail workers reveals similar humoral immune responses across occupational sectors**

A CITF-funded study, published in preprint and not yet peer-reviewed, reported longitudinal data on humoral immunity collected over a year and a half from food and retail workers over key periods of the pandemic, including the initial vaccination campaigns and the emergence of the Omicron variant. The researchers found high rates of seroconversion (either due to infection or vaccination) in people from the four occupations studied and did not find that any one group had significantly higher levels of antibodies due to vaccination or infection overall.

[Read more](#)



## **From Preprint to Publication**

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### **Omicron breakthrough infection instills higher and more broadly neutralizing immune responses against SARS-CoV-2 variants than a booster dose alone**

A CITF-funded study, published in *Mucosal Immunology*, found that the breadth and magnitude of T-cell responses were comparable whether individuals with two vaccine doses had a third vaccine dose or an Omicron breakthrough infection. Those with two vaccine doses and an Omicron

breakthrough infection produced higher salivary SARS-CoV-2 IgA antibodies against spike and RBD than individuals with three vaccine doses and no breakthrough infection. SARS-CoV-2 IgA antibodies produced after a breakthrough infection also cross-reacted with other variants, including the ancestral SARS-CoV-2 strain and even SARS-CoV-1.

[Read more](#)

## **SARS-CoV-2 antibody levels increased in Canadian healthcare workers with each vaccine dose, but they waned over time**

A CITF-funded study among Canadian healthcare workers, published in *Vaccine*, found that SARS-CoV-2 anti-receptor binding domain (RBD) IgG levels increased following each COVID-19 vaccine dose and after the first SARS-CoV-2 infection. However, SARS-CoV-2 anti-RBD IgG levels decreased over time, with the sharpest decline observed after the third vaccine dose.

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