



COVID-19 IMMUNITY  
TASK FORCE

# Spotlight on **CITF-FUNDED RESEARCH**



## CITF Announcements

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### **CITF Databank: Data from 130K+ participants**

Studies currently in the CITF Databank represent data from more than 133,000 participants and include data on the general population, as well as specific populations such as residents of long-term care homes, university staff and students, people living with HIV, professionals such as teachers and paramedics, and so much more. Access to the CITF Databank is free and open to researchers from around the world to support their research work.

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## CITF-Funded Research Results

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## **Vaccination helps reduce Long COVID symptoms and down-regulates systemic markers of inflammation**

A CITF-funded study, published in the *International Journal of Infectious Diseases*, explored whether COVID-19 vaccination in people with post-COVID-19 condition (PCC), also known as Long COVID, could affect their symptoms, immune responses, and viral persistence. The study found that higher pro-inflammatory responses were associated with Long COVID symptoms, but vaccination helped mitigate symptoms, possibly by decreasing systemic inflammation. Vaccination did not reduce the persistence of viral products left by the virus that could be involved in perpetuating inflammation through non-classical monocytes.

[Read more](#)

## **Each booster dose increases vaccine effectiveness against all Omicron subvariants**

A CITF-funded study, published in preprint and not yet peer-reviewed, provided evidence that individuals with hybrid immunity (a combination of infection-acquired and vaccine-induced SARS-CoV-2 immunity) had nearly 90% protection against severe outcomes (hospitalization or death) during the Omicron BA.1/BA.2 and BA.4/BA.5 predominant periods. However, this protection was reduced during the BQ/XBB predominant period. Nonetheless, each subsequent booster vaccine dose (up to five vaccine doses were studied) did increase protection against severe outcomes.

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## **Healthcare workers had a higher incidence of both SARS-CoV-2 infection and mental health conditions compared to the general population**

A CITF-funded study, published in preprint and not yet peer-reviewed, found that healthcare workers (HCW) in Alberta had a higher incidence of both SARS-CoV-2 infection and mental health issues compared to community members (referents) seen in pre-pandemic physician consultations who were matched on gender, age, and geographic location. Excess infection was most notable early in the pandemic and during the fifth (Omicron) wave. The excess incidence of mental health conditions, including stress/adjustment

reaction or depressive disorder, was seen with each wave of the pandemic, increasing to a peak in the fourth wave in Alberta, as evident from administrative health data.

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

A CITF-funded study among Canadian healthcare workers, published in preprint and not yet peer-reviewed, 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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## **Hybrid immunity conferred stronger immune responses in children and adults than vaccination alone**

A CITF-supported study, published in preprint and not yet peer-reviewed, found that two doses of mRNA vaccine (Pfizer or Moderna) produced robust antibody responses three months post-vaccination in both children and adults. Additionally, hybrid immunity (immunity derived from the combination of SARS-CoV-2 infection and vaccination) conferred stronger immune responses in both age groups when compared to vaccination alone.

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## **Profiling a cohort of retail workers in Quebec to study the COVID-19 immune response**

A CITF-funded team studied the risk to grocery store, hardware store, bar, and restaurant workers during the COVID-19 pandemic. This cohort profile

preprint article, not yet peer-reviewed, describes participant demographic, socioeconomic, behavioural, clinical, and occupational characteristics, as well as whether participants had tested positive for SARS-CoV-2, experienced any COVID-19 symptoms (where applicable), and were vaccinated.

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## **CITF-funded findings on COVID-19 and vaccine effects on pregnancy and infants**

CITF-funded studies have confirmed that COVID-19 is indeed more severe in many pregnant people, and that pregnant people and their babies respond just as well as the general population to COVID-19 vaccines. Here, we summarize results from the five presentations given during the breakout session “COVID-19 and vaccine effects on pregnancy and infants” at the CITF Scientific Meeting in Vancouver, March 8-10, 2023. The study teams presented a broad spectrum of population research on COVID-19 and pregnancy, addressing infections, outcomes, vaccine safety, and vaccine uptake.

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## **CITF-funded findings on methodologic approaches to improve seroprevalence estimates**

Assessing seroprevalence is the main methodology used in Canada and around the world to determine the extent and trends in SARS-CoV-2 immunity, whether from infection, vaccination, or both. Here, we summarize results from the four presentations given during the breakout session “Methodologic approaches to improving seroprevalence estimates” at the CITF Scientific Meeting in Vancouver, March 8-10, 2023. The study teams presented data, advantages, and limitations of new serological tests, ways to effectively manage high-throughput testing facilities during a pandemic, and the importance of biobanks and lessons learned from them.

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