



COVID-19 IMMUNITY  
TASK FORCE

# Spotlight on CITF-FUNDED RESEARCH



## CITF Events



COVID-19  
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GRUPE DE TRAVAIL  
SUR L'IMMUNITÉ  
FACE À LA COVID-19

Seminar Series | Research Results & Implications

## COVID-19's youngest victims



March 27, 2023 | 11:30 a.m. to 1:00 p.m. EST

### Register Now for the final seminar in our series: *Research Results & Implications*

At the beginning of the pandemic, COVID-19 was generally very mild in young children, creating a sense that most were not at risk.

Once Omicron struck, the millions of people infected led to increased numbers of serious cases, including in children. This included some rare yet

serious and lingering complications. Furthermore, the rigorous process before vaccines were approved for children caused delays in pediatric vaccination. Coupled with poorer vaccine uptake in young children, this has led to gaps in immune protection against COVID-19.

The CITF has funded several studies examining the impact of SARS-CoV-2 on pediatric populations, as well as vaccine efficacy and the durability of immune responses in children. Join our CITF-funded experts for an informative discussion about the current state of research on COVID-19 and pediatrics in Canada.

**Panelists:**

- **Stephen Freedman, MDCM, MSc**, Alberta Children's Hospital Foundation Professor in Child Health and Wellness & Professor of Pediatrics and Emergency Medicine, Cumming School of Medicine, University of Calgary; Pediatric Emergency Medicine Physician, Alberta Children's Hospital.
- **Jim Kellner, MD**, Pediatric Infectious Diseases Specialist; Professor, Pediatrics, University of Calgary; Leader, CITF Pediatric Network.
- **Caroline Quach-Thanh, OQ, MD, FRCPC, MSc**, Professor, Department of Microbiology, Infectious Diseases and Immunology and Department of Pediatrics, Université de Montréal; Pediatric Infectious Diseases & Medical Microbiologist, CHU Sainte-Justine; Medical Lead, Infection Prevention & Control, CHU Sainte-Justine.
- **Manish Sadarangani, BM, BCH, DPhil**, Director, Vaccine Evaluation Center, BC Children's Hospital Research Institute; Associate Professor, Division of Infectious Diseases, Department of Pediatrics, UBC; Physician Lead, Family Immunization Clinic, BC Children's Hospital.

**Moderator:**

**Timothy Evans, MD, PhD**, Executive Director, COVID-19 Immunity Task Force

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## **Infection-acquired seroprevalence continued to increase in younger Canadians in December: Canadian Blood Services**

Canadian Blood Services data suggest that 73.5% of donors had infection-acquired antibodies by the end of 2022. This was slightly higher than the 71% estimated at the end of November. The seroprevalence rate increased in all age groups in December, but the 17-24 age group continued to see the biggest jump, with about 87% seropositivity due to infection.

[Read more](#)

## **Vaccination during pregnancy effective at protecting infants**

In a study recently published in *BMJ*, CITF-funded research revealed that COVID-19 vaccination during pregnancy is effective at protecting newborns from SARS-CoV-2 infections and hospitalizations, particularly during the first two months of life. Vaccination was more effective against Delta than Omicron infections. A third dose substantially increased vaccine effectiveness against the immune-evasive Omicron variant.

[Read more](#)

## **Third vaccine doses have different efficacy against Omicron subvariants depending on a person's infection history**

A partially CITF-funded study published in *Cell Reports* demonstrated that people infected with SARS-CoV-2, whether before or after vaccination, have better antibody responses than vaccinated individuals who were never infected (SARS-CoV-2 naïve). This indicates that hybrid immunity generates better immune responses against the ancestral virus, its variants and subvariants. The researchers also observed that BA.4/5 and BQ.1.1 spike glycoproteins are more resistant to neutralization than other Omicron subvariants, even with three doses of SARS-CoV-2 vaccine.

[Read more](#)

## **Poorer mental health reported in patients with acute SARS-CoV-2 infections needing visits to emergency departments**

A CITF-funded study published in *Public Health* revealed that although patients to emergency departments with SARS-CoV-2 reported stable physical conditions 30 days after discharge, they reported substantially worse mental health than did their SARS-CoV-2-negative counterparts.

[Read more](#)

## **Unvaccinated healthcare workers in contact with infected patients have increased risk of COVID-19**

A CITF-funded study published in the *American Journal of Industrial Medicine* looked at the risk of infection among healthcare workers (HCW). It found that unvaccinated HCWs who came into direct contact with patients with COVID-19 on a ward designated for care of infected patients, or who handled objects used by infected patients, were at elevated risk. Once vaccination became almost universal among HCWs, the risk from working with infected patients was much reduced but remained higher for vaccinated HCWs without access to N95 masks or who reused masks.

[Read more](#)

## **Pregnant individuals more reticent to get vaccinated in 2021**

Despite the fact that pregnant individuals were prioritized for COVID-19 vaccination in late April 2021, a CITF-funded study, published in *Vaccine*, showed that COVID-19 vaccine coverage with at least one dose among pregnant individuals (71.2%) remained lower than in the general population of reproductive-age females (88%) at the end of 2021. Among pregnant individuals in December 2021, only 12.5% had received a third dose.

[Read more](#)



## Preprint to Published

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### **Third dose of vaccine enhances antibody response, particularly among older adults**

A CITF-funded study now published in *Open Forum Infectious Diseases* demonstrated that a third dose of an mRNA vaccine significantly enhanced the magnitude and durability of antibody responses. This included among adults over the age of 70 who remained COVID-naïve (never infected with SARS-CoV-2). Their antibody concentrations were comparable to those found in younger healthcare workers (median age of 40) who were triply vaccinated.

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