

COVAXHIV AIM 1: COVID-19 vaccine immunogenicity in people living with HIV (CTN 328)

Wednesday, March 8, 2023

COVID-19 Immunity Task Force Scientific Meeting

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University of British Columbia and Centre for Health Evaluation and Outcome Sciences

on behalf of the COVAXHIV CTN 328 study team



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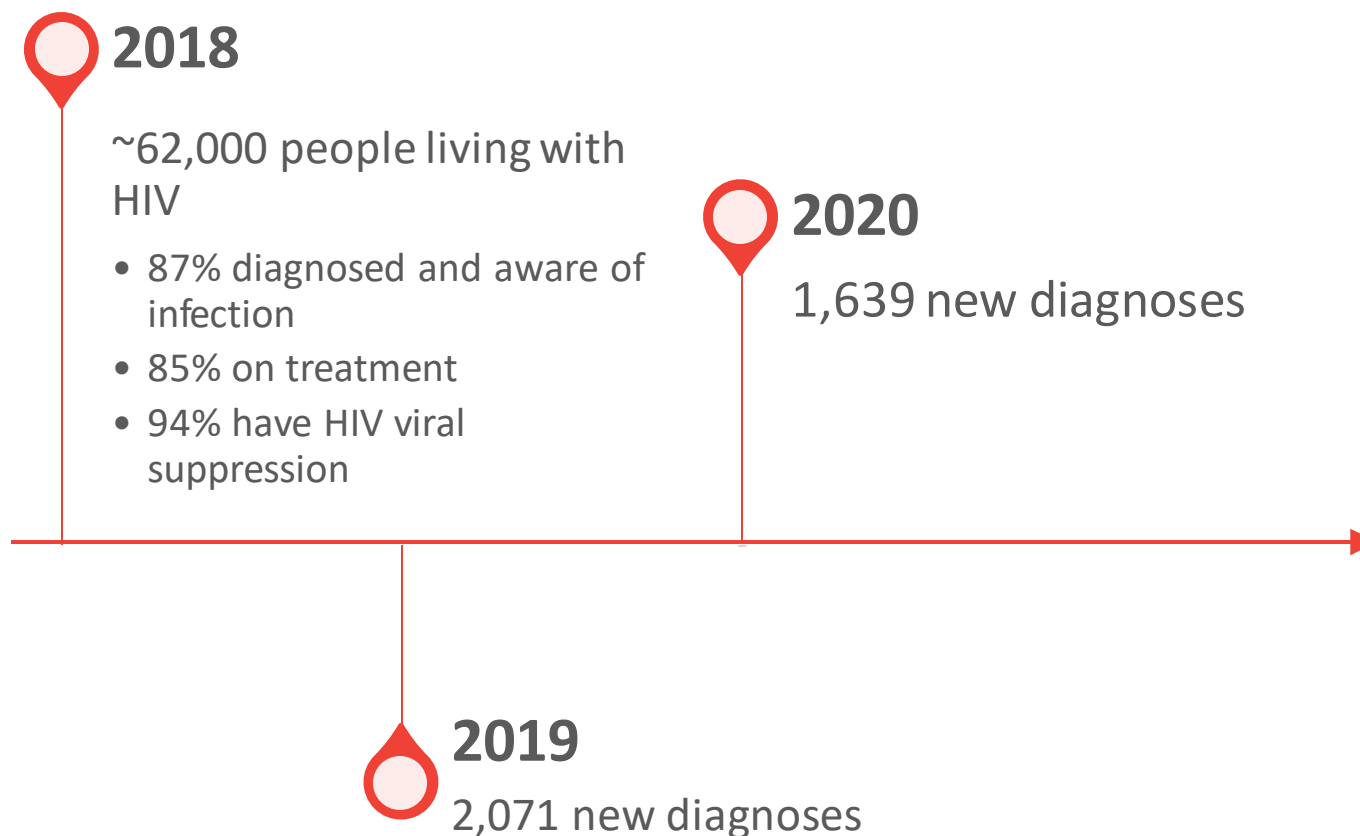


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People living with HIV in Canada

30% are immune non-responders, i.e., undetectable HIV viral load but abnormal CD4 T cell counts (<350 cells/mm³)

Many face challenges due to social determinants of health including lower incomes, unemployment, sexual orientation, gender, and racism



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Why is it important to study COVID-19 vaccination among people living with HIV?

PLWH display poor immunogenicity to common vaccines influenza, pneumococcal, meningococcal and Hepatitis A and B vaccines, especially with low CD 4 T cell counts (<200 cells/mm³)/viremia

Other intersecting vulnerabilities increase risk of COVID-19 acquisition and outcomes

PLWH understudied in COVID-19 vaccine clinical trials:

normal CD4 T cell counts (>500 cells/mm³) and few comorbidities

data were excluded from primary publications

not generalizable to the broader spectrum of PLWH



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-19 vaccines and HIV,
2021, UNAIDS

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What is the immune response to COVID-19 vaccines among people living with HIV?

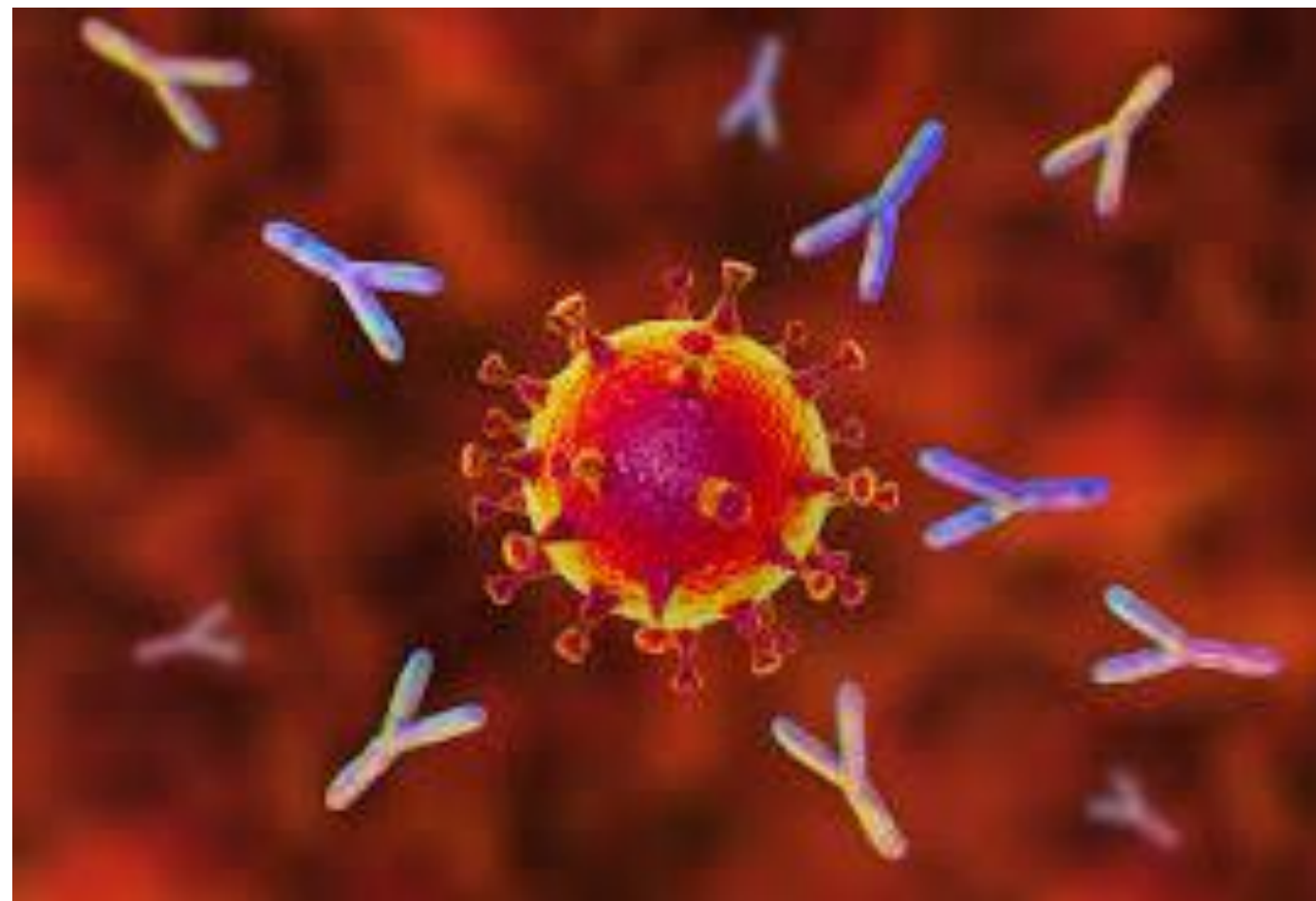


Photo credit: <https://www.cdc.gov/coronavirus/2019-ncov/your-health/about-covid-19/antibodies.html>



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Visits completed to date

Site	Visit 1	Visit 2 + Visit 1/2	Visit 3 + Visit 1/3	Visit 4	V5	V6	B1	B6	B12
	Pre-vaccine	4 weeks after dose 1	3 months after dose 2	6 months after dose 2	12 months after dose 2	15 months after dose 2	4 Weeks after dose 3	6 months after dose 3 OR prior to dose 4	12 months after dose 3 OR 4 weeks after dose 4
Montreal	14	28	102	81	15	2	56	32	22
Ottawa	14	97	78	30	2		57	20	13
Toronto	5	12	63	54	9	4	17	41	25
Vancouver	66	97	96	62			88	82	65
Study Total	99	234	339	227	26	6	218	175	125

Montreal (Chronic Viral Illness Service—Dr C Costiniuk)

Ottawa (The Ottawa Hospital Immunodeficiency Clinic—Dr C Cooper)

Toronto (University Health Network—Dr S Walmsley)

Vancouver (St Paul's Hospital—Dr M Hull)



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Select Publications to date

Open access

Protocol

BMJ Open CTN 328: immunogenicity outcomes in people living with HIV in Canada following vaccination for COVID-19 (HIV-COV): protocol for an observational cohort study

Cecilia T Costiniuk^{1,2}, Joel Singer^{2,3}, Marc-André Langlois⁴, Iva Kulic², Judy Needham², Ann Burchell^{5,6}, Mohammad-Ali Jenabian⁷, Sharon Walmsley⁸, Mario Ostrowski^{9,10}, Colin Kovacs¹¹, Darrell Tan^{12,13}, Marianne Harris¹⁴, Mark Hull¹⁴, Zabrina Brumme^{14,15}, Mark Brockman^{14,15}, Shari Margolese¹⁶, Enrico Mandarino¹⁶, Jonathan B Angel¹⁷, Jean-Pierre Routy¹⁸, Aslam H Anis^{2,3}, Curtis Cooper¹⁹



Article

SARS-CoV-2 Vaccine-Induced T-Cell Response after Three Doses in People Living with HIV on Antiretroviral Therapy Compared to Seronegative Controls (CTN 328 COVAXHIV Study)

Yulia Alexandrova^{1,2}, Alexis Yero¹, Ralph-Sydney Mboumba Bouassa^{1,2}, Eve Comeau¹, Suzanne Samarani², Zabrina L. Brumme^{3,4}, Mark Hull^{4,5}, Angela M. Crawley^{6,7,8,9}, Marc-André Langlois^{7,9}, Jonathan B. Angel^{6,7,9,10}, Curtis L. Cooper^{6,10}, Judy Needham¹¹, Terry Lee¹¹, Joel Singer¹¹, Aslam H. Anis¹¹, Cecilia T. Costiniuk^{2,12} and Mohammad-Ali Jenabian^{1,*}

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COVID-19 vaccine immunogenicity in people with HIV

Cecilia T. Costiniuk^{a,b,c}, Joel Singer^{d,e,f}, Terry Lee^{e,f}, Marc-André Langlois^g, Corey Arnold^g, Yannick Galipeau^g, Judy Needham^{e,f}, Iva Kulic^{e,f}, Mohammad-Ali Jenabianⁱ, Ann N. Burchell^h, Hasina Shamji^{j,k}, Catharine Chambers^h, Sharon Walmsley^l, Mario Ostrowski^m, Colin Kovacsⁿ, Darrell H.S. Tan^{l,o,p}, Marianne Harris^q, Mark Hull^q, Zabrina L. Brumme^{j,q}, Hope R. Lapointe^q, Mark A. Brockman^{j,q,r}, Shari Margolese^e, Enrico Mandarino^e, Suzanne Samarani^a, Branka Vulesevic^{e,s}, Bertrand Lebouché^{a,b,t,u}, Jonathan B. Angel^{g,s}, Jean-Pierre Routy^{a,b,v}, Curtis L. Cooper^s, Aslam H. Anis^{d,e,f}, for the COVAXHIV Study Group

SARS-CoV-2 live virus neutralization after four COVID-19 vaccine doses in people with HIV receiving suppressive ART. Cheung P, Lapointe H Sang Y... Brumme Z. AIDS 2023



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Lessons learned: Adaptive funding designs

- Networks can leverage research infrastructure and funds to support pandemic-related research before official study funding received
- Methodologists may be challenged by powering of studies
- Keep enrolment criteria as broad as possible to maximize recruitment and ensure study power
- REBs must accept more generic, less focused protocols
- Funding agencies must accept more open-ended designs



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- CIHR Canadian HIV Trials Network CTN 328



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