

Occ-COVID Conversations: A 3 year “check-up” - Not remotely "just a cold or flu"- February 10, 2023

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Long COVID Discussion in 3 Parts

Part 1: What we know about Long COVID so far

Part 2: Impact on Workers and Occupational Health

Part 3: Long COVID Treatment

Case #1 - C.C. 33 yr old Registered Nurse

Feb 2021 - Infected with COVID after a hospital outbreak

Fatigue - naps many times per day

Memory loss - short term memory and word finding

PEM - post exertional SOB and had to lie down all day with ↑ activity

Case initially accepted by Work Safe BC

Tests normal

Work Safe BC says she is Fit to Return back to work

Case #2 - K.S. 27 yr old childcare worker

February 2021- Caught COVID at the child daycare centre where she works

April 2021- Acute Appendicitis with appendectomy

Dizziness

Tiredness

Memory loss - could not remember which was the brake and gas pedal in her car

Re-infections with COVID Nov 2022 and Jan 2023 with more severe symptoms

Case #3: M.W. 21 yr old University Student

April 2020 - Caught COVID at high school

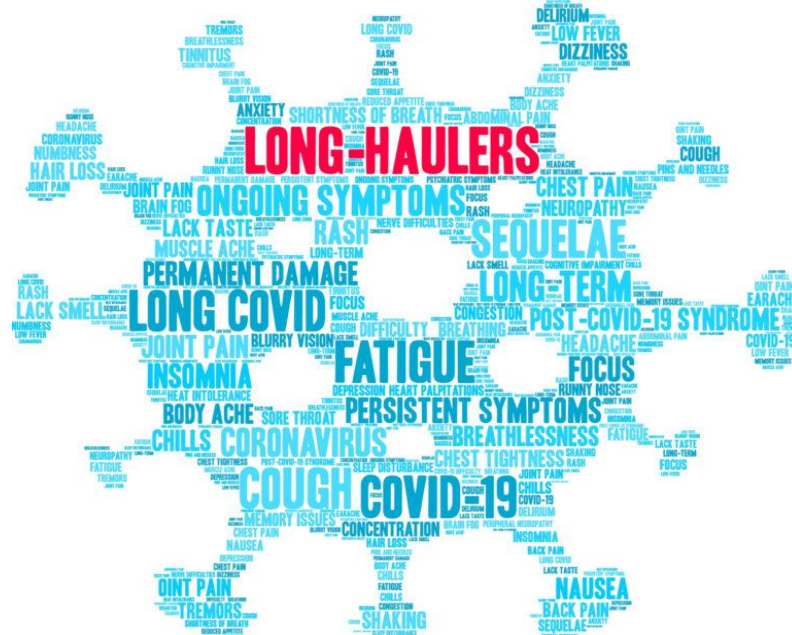
POTS: Postural Orthostatic Tachycardia - Fast HR > 100 BPM when stands up

ME/ CFS: Myalgic Encephalitis / Chronic Fatigue Syndrome- tiredness, dizziness, sleep disturbance, muscle and joint pain, memory and concentration

PEM: Post exertional malaise - SOB and tiredness after physical or mental exertion

Depression and Anxiety

What We Know About Long COVID



What is Long COVID?

Post-acute sequelae of COVID-19 or Post COVID Syndrome

Long COVID = Long Haulers

WHO: “ The continuation or development of new symptoms 3 months after the initial SARS-CoV-2 infection, with these symptoms lasting for at least 2 months with no other explanation”

Nature(Nov 2022): “ a multisystemic condition comprising often severe symptoms that follow a severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) infection”

Epidemiology of Long COVID

Estimated 65 million people world wide

WHO: 17 million people in Europe 10-20% of people infected with SARS CoV-2

Statistics Canada: 1.4 million or 15% of people infected with SARS CoV-2

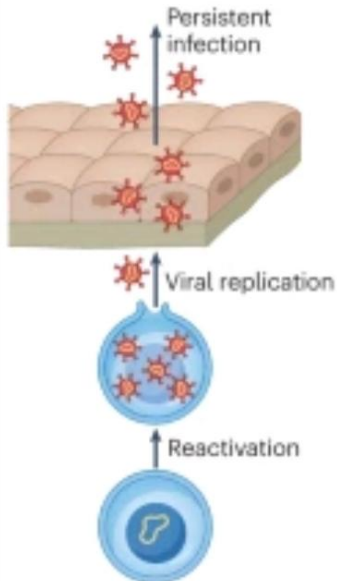
Women > Men

Most cases are in people who have had **no previous underlying health conditions**

Majority of Long COVID cases are in **Non-hospitalized** cases of COVID with **mild** acute illnesses

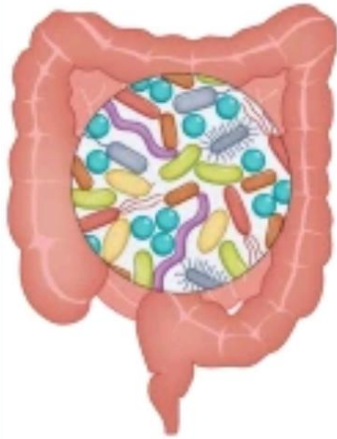
Mechanisms for Long COVID - Nature Nov 2022

Immune dysregulation



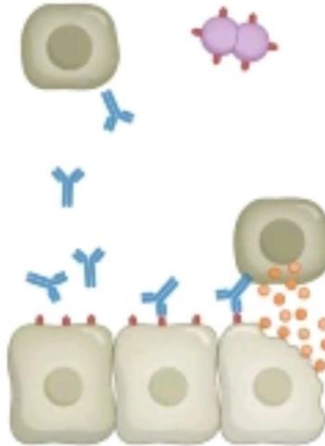
Immune dysregulation, with or without reactivation of underlying pathogens, including herpesviruses such as EBV and HHV-6

Microbiota dysbiosis



Impacts of SARS-CoV-2 on the microbiota and virome (including SARS-CoV-2 persistence)

Autoimmunity and immune priming



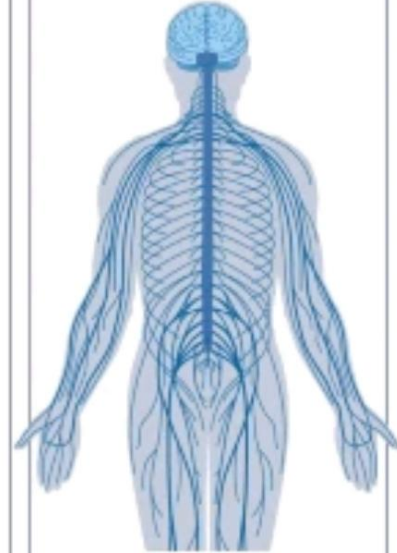
Autoimmunity and primed immune cells from molecular mimicry

Blood clotting and endothelial abnormalities



Microvascular blood clotting with endothelial dysfunction

Dysfunctional neurological signalling



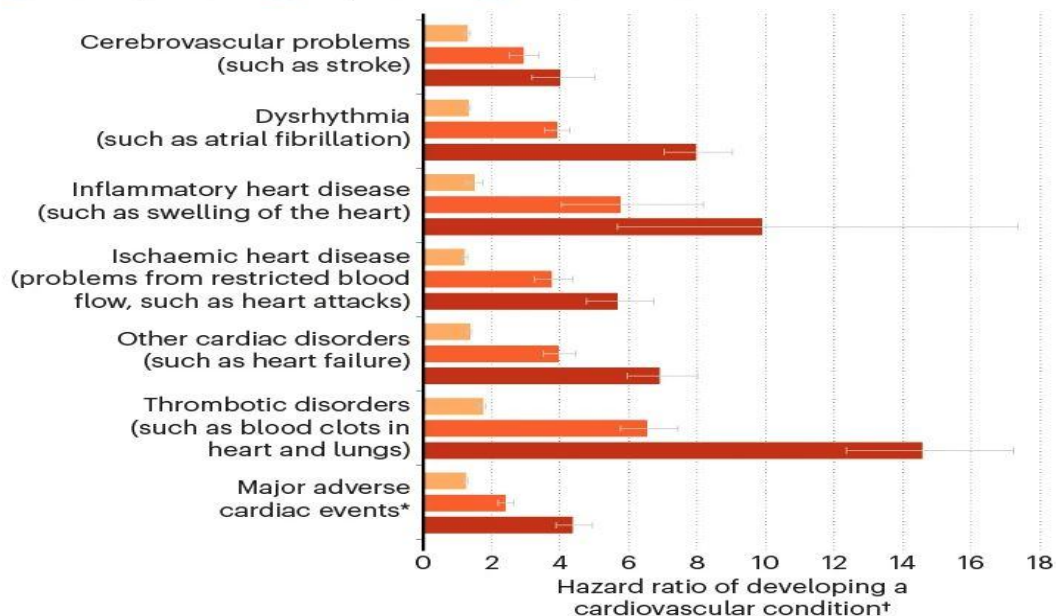
Dysfunctional signalling in the brainstem and/or vagus nerve

VA Study on Short COVID Heart Risks- Aug 2022

CARDIAC CONCERNS

A study of more than 150,000 people with COVID-19 found that they faced increased risks of various cardiovascular problems after their infection, even if they were not hospitalized. The risks were highest for those who were admitted to intensive care.

■ Non-hospitalized ■ Hospitalized ■ Admitted to intensive care



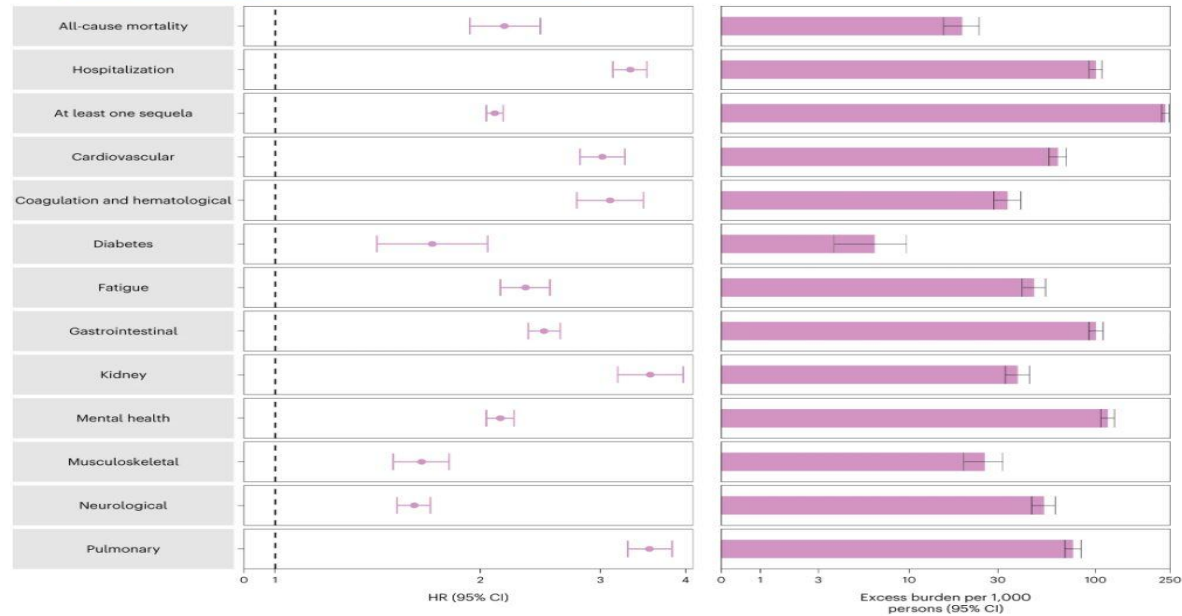
*Composite of heart attacks, strokes and death from cardiovascular incidents.

†Ratio compared with control groups. Two equals a doubling of the risk.

VA Study(Nature Nov 2022): Reinfection leads to worse outcomes

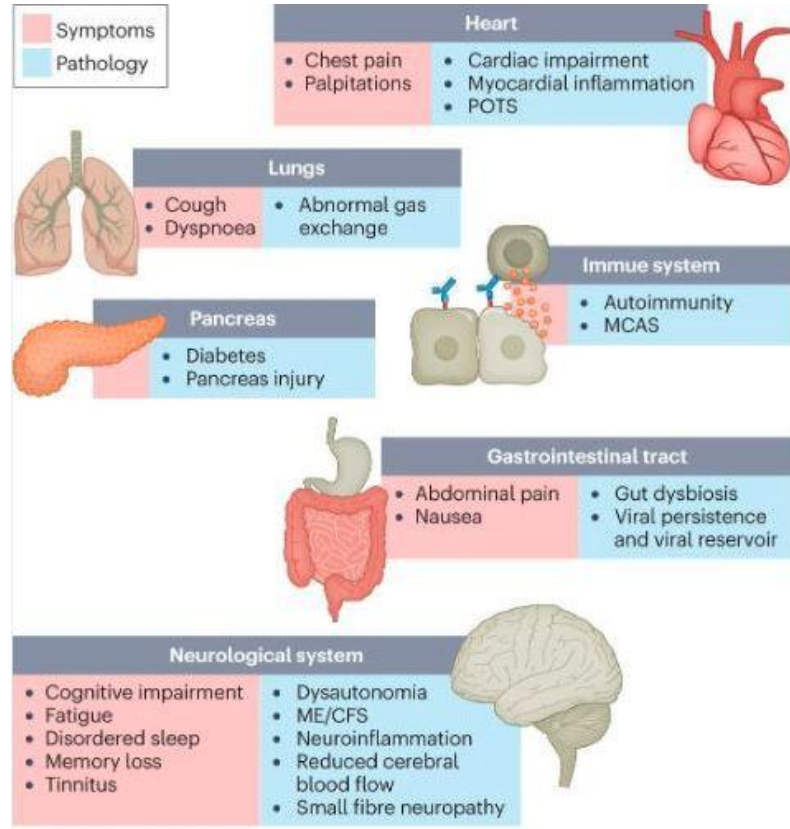
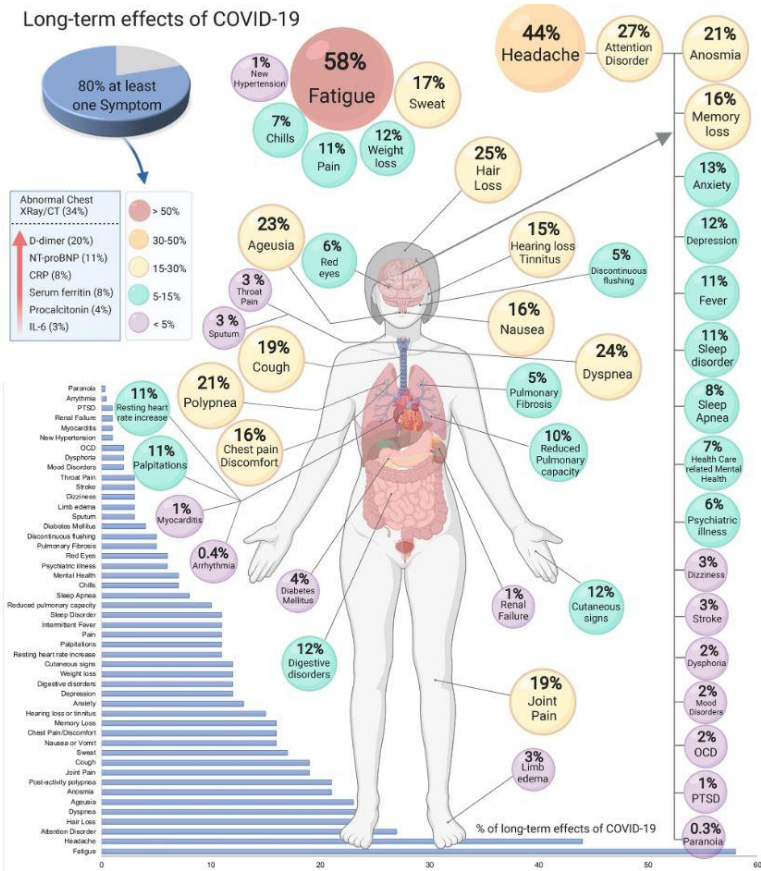
Fig. 1: Risk and burden of sequelae in people with SARS-CoV-2 reinfection versus no reinfection.

From: [Acute and postacute sequelae associated with SARS-CoV-2 reinfection](#)



Long COVID : A Multisystem Disease

Long-term effects of COVID-19

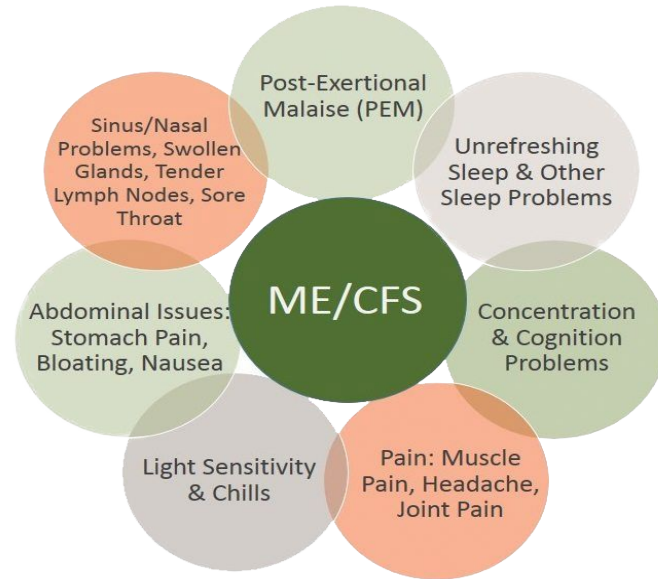


ME/CF Association with LONG COVID

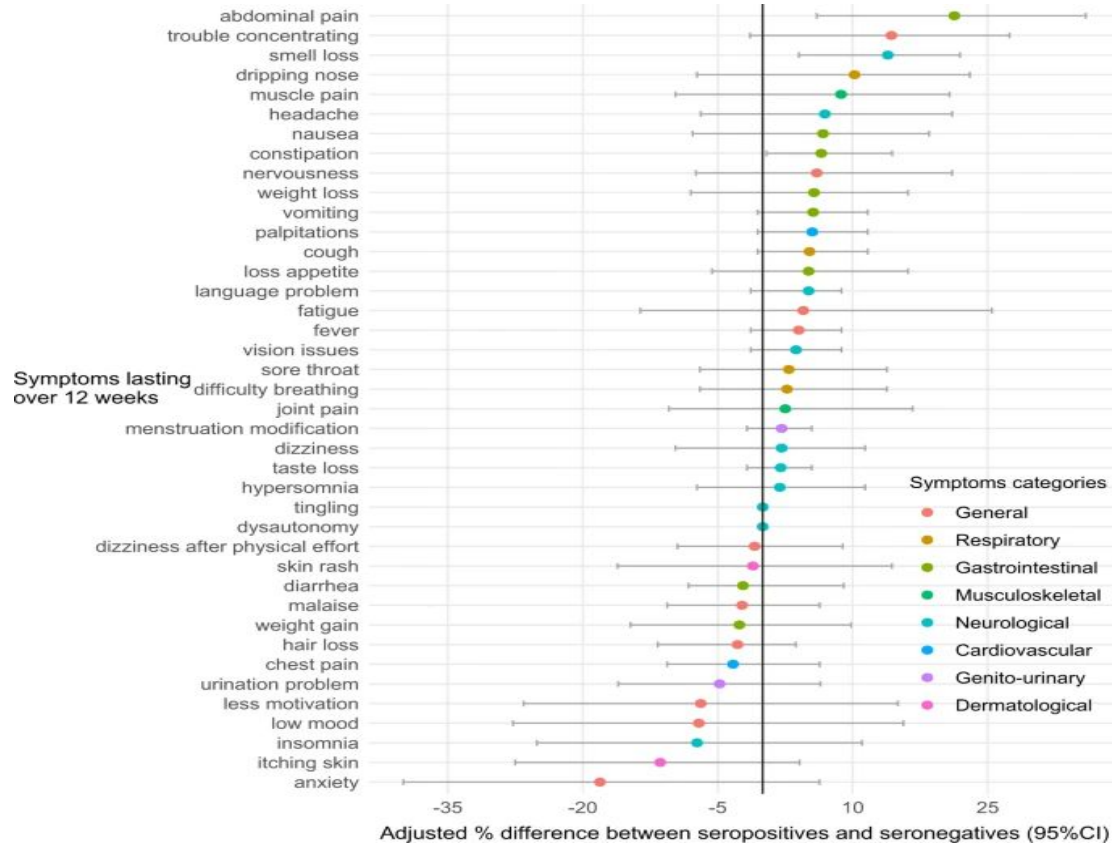
50% people with Long COVID also meet the criteria for Myalgic encephalitis/ Chronic Fatigue Syndrome

Key Symptoms:

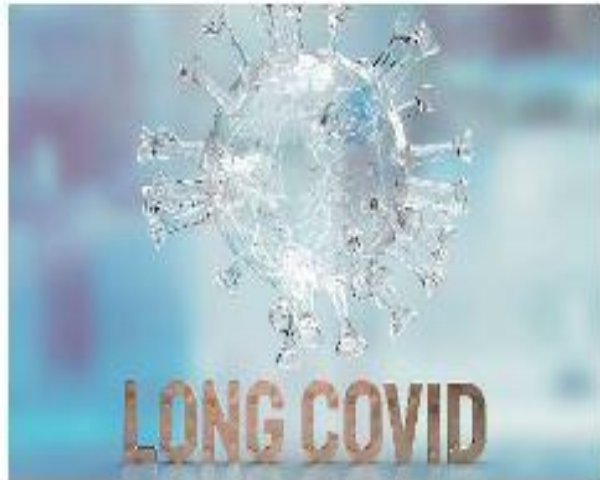
- Fatigue
- Sleep dysfunction
- PEM
- Pain



Long COVID in Children and Adolescents- Nature November 2022



University Students and COVID



Long COVID Affecting More Than One Third of College Students, Faculty - [webmd.com](https://www.webmd.com)

Jan. 27, 2023 -- Almost 36% of students and faculty at George Washington University with a history of COVID-19 reported symptoms consistent with long COVID in a new study. With a median age of 23 ...

www.webmd.com

LONG COVID is a Clinical Diagnosis

The U.S. government August 2022 Services and Supports for Longer-Term Impacts of COVID-19 report stated:

“no laboratory test can definitively distinguish” long covid from other causes of illness.

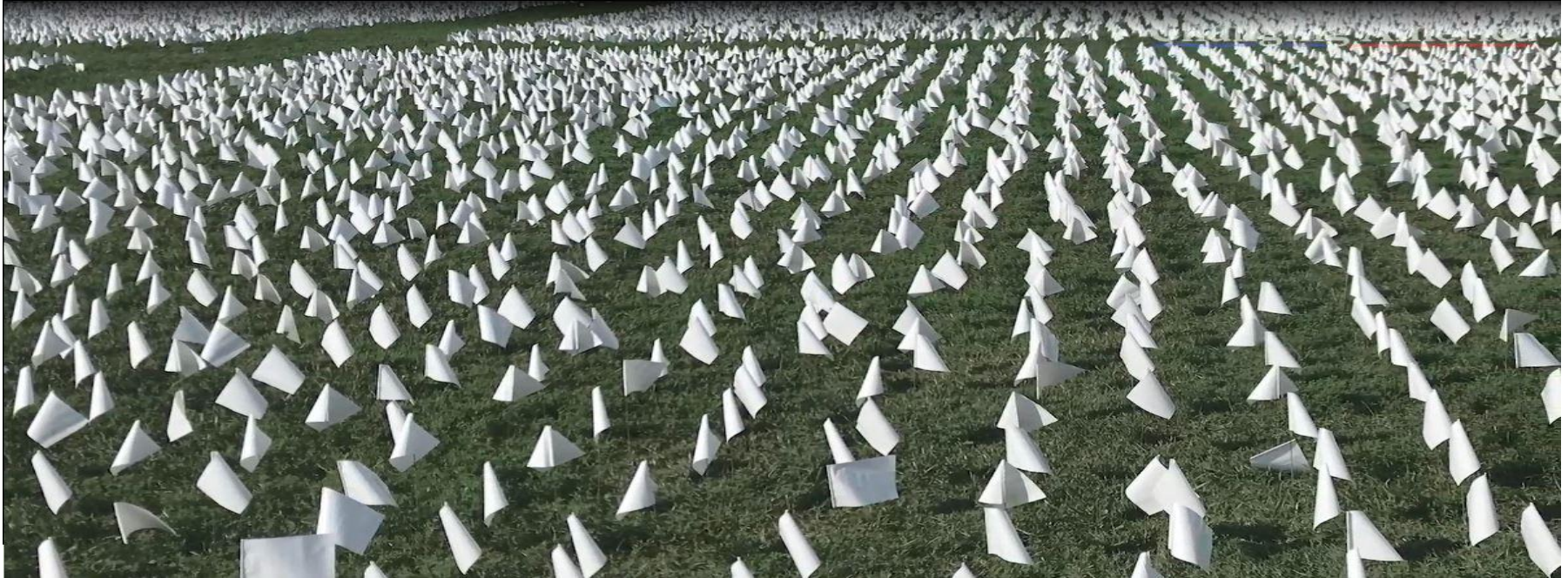
A **Clinical Diagnosis**

Not an diagnosis by exclusion

Huge Impacts on Society due to Deaths from COVID

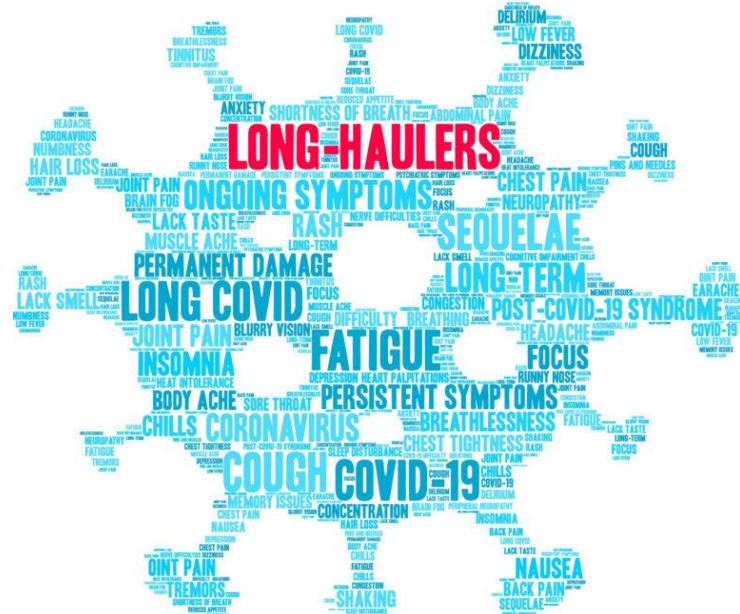
‘Huge, huge numbers:’ insurance group sees death rates up 40 percent over pre-pandemic levels

By Shirin Ali | Jan. 7, 2022 | Jan. 07, 2022



Part 2

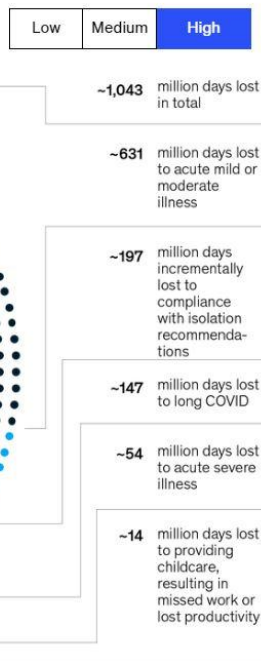
Impact on Workers and Occupational Health



McKinsey Report January 2023

Three scenarios suggest that the US workforce might have lost around a billion workdays in 2022 because of the COVID-19 pandemic.

Working days in 2022 lost to COVID-19 pandemic,
number of days (each dot represents 1 million days)



Workers off work by reason:

191 million: Acute mild COVID Infection

60 million: At Home Complying COVID

45 million: Long COVID

16 million: Severe acute COVID infection

4 million: Unable to work due to childcare

316 million lost days in total for 2022

BBC Panorama: Forgotten heroes of the Covid front line (30 November 2023)

Posted by **Patient Safety Learning**

130 views

[Home](#) > [Learn](#) > [Coronavirus \(COVID-19\)](#) > [Frontline insights during the pandemic](#)

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Summary

Health workers, hailed as heroes during the pandemic, say they're being abandoned by the NHS and the government. Some are living with Long Covid and say it's having a devastating impact on both their personal and professional lives. For *Panorama*, the BBC's health correspondent, Catherine Burns, meets staff struggling to return to work and reveals how some are now facing financial hardship and the prospect of having to retire early or, worse, being sacked.

Work Safe BC COVID Claims December 31, 2022

All COVID claims data by industry

	Eligibility Decision						Total
	Allowed	Disallowed	No adjudication required	Pending	Rejected	Suspended	
Total	15,348	2,196	257	168	59	1,475	19,503
Service - Health Care and Social Services	8,702	741	85	92	11	554	10,185
Service - Education	2,354	223	18	20	6	116	2,737
Self-insured employers	714	117	11	21	5	116	984
Service - Other subsectors (including business, professional and other services)	538	143	31	2	8	129	851

Work Safe COVID Claims: Acute vs LTC Healthcare workers

Industry classification unit	Industry subsector	Claims registered
Long-Term Care	Health Care and Social Services	4,736
Acute Care	Health Care and Social Services	3,154
Public School District	Education	2,677
Community Health Support Services	Health Care and Social Services	760

60% LTC workers

Racialized new immigrants workers

BC LTC workers Not permitted to wear N95 masks

Effects of COVID on Racialized Populations



COVID: Racialized people had higher mortality rates, StatCan says | CTV News

A Statistics Canada study has found that some racialized populations in Canada had significantly higher mortality rates from COVID-19. The analysis says the COVID-19 death rate was much higher for ...

www.ctvnews.ca

Working while SICK with Long COVID



COVID Testing and Return to Work for Health Care Workers

Posted on: February 1, 2023

Chief Medical Health Officer Dr. Reka Gustafson and Chief Medical Health Executive Dr. Ben Williams are providing some clarification around COVID testing and return to work guidance for Island Health staff and medical staff.

The five day isolation period for health care workers who test positive for COVID-19 remains [provincial policy](#). [However](#), it is important to remember that the majority health care workers with respiratory symptoms do NOT need to test for COVID-19, and can return to work when their fever is resolved and they feel well enough to work.

Testing is recommended for health care workers who are themselves at risk of severe disease and would be eligible for treatment, who are pregnant or who are hospitalized. Please read: [When to get a COVID-19 test \(bccdc.ca\)](#). Otherwise, COVID testing for HCW **is not recommended**.

Staff who do test positive for COVID-19 may be able to return to work *before* five days if their fever is resolved, they feel well enough to work and their manager or medical staff leader has determined they are required for safe operation of the service. They should continue to adhere to recommended infection control precautions while at work.

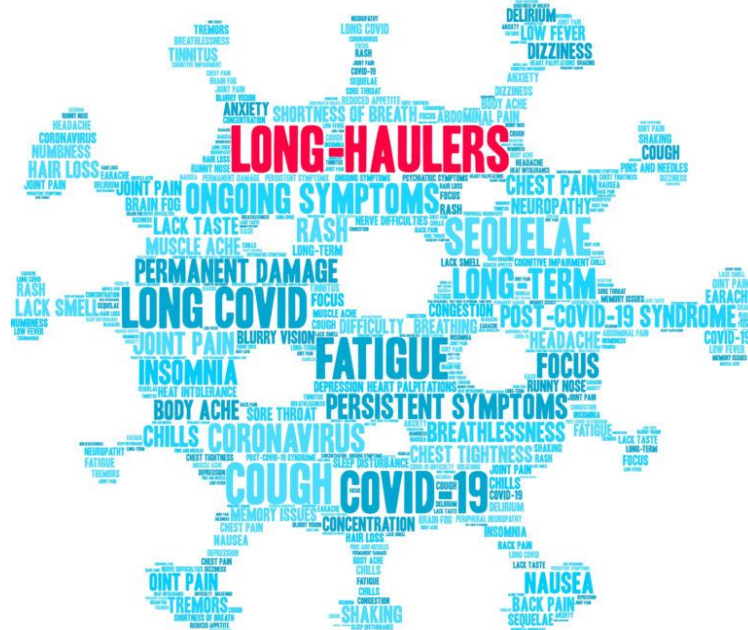
Dr. Ben Williams,
VP, Medicine, Quality, Research & Chief Medical Executive

and

Dr. Reka Gustafson,
VP, Population and Public Health & Chief Medical Health Officer

Part 3

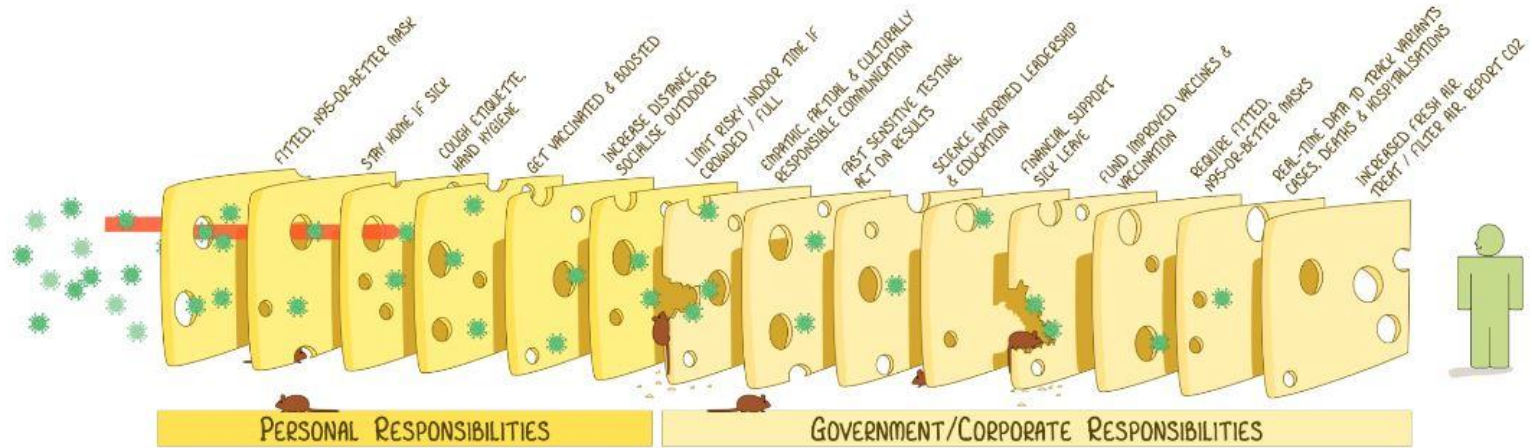
Long COVID Treatments



Prevent Long COVID by preventing COVID

THE SWISS CHEESE VACCINE-PLUS RESPIRATORY VIRUS DEFENCE GRAPHIC

RECOGNISING THAT NO SINGLE INTERVENTION IS PERFECT AT PREVENTING SPREAD



EVERY INTERVENTION (SLICE/LAYER) HAS IMPERFECTIONS (HOLES) WHICH CHANGE IN SIZE, NUMBER AND POSITION DEPENDING ON VIRUS BURDEN, HOW THE INTERVENTION IS ROLLED OUT & COMPLIANCE.

MULTIPLE LAYERS IMPROVE SUCCESS.

LAYER ORDER IS NOT RELEVANT.

Table 1 Summary of candidate treatments and supporting evidence

From: [Long COVID: major findings, mechanisms and recommendations](#)

Symptoms and/or biological mechanism	Treatments	Supporting evidence	Comments
Postexertional malaise	Pacing	ME/CFS literature	Exercise, cognitive behavioural therapy and graded exercise therapy are contraindicated
POTS	Pharmacological: β -blockers, pyridostigmine, fludrocortisone, midodrine	POTS and ME/CFS literature	Options can be prioritized on the basis of a specific constellation of symptoms
	Non-pharmacological: increase salt and fluid intake, intravenously administered salt, compression stockings	POTS and ME/CFS literature	–
Immune dysfunction	Intravenous immunoglobulin	ME/CFS literature	Consider consulting an immunologist on implementation
Cognitive dysfunction	Cognitive pacing	ME/CFS literature	Consider implementation alongside pacing physical exertion
Cognitive dysfunction	Postconcussion syndrome protocols	ME/CFS and postconcussion syndrome literature	–
Fatigue	Coenzyme Q ₁₀ , D-ribose	ME/CFS literature	–
Pain, fatigue, neurological symptoms	Low-dose naltrexone	ME/CFS and other literature	Substantial anecdotal reports of success within the patient community
Fatigue, unrefreshing sleep, brain fog	Low-dose aripiprazole	ME/CFS literature	–
Autoimmunity	BC007	Long COVID case report	Neutralizes G protein-coupled receptor autoantibodies
Abnormal clotting	Anticoagulants	Long COVID pilot study	Additional trials in progress
Abnormal clotting	Apheresis	ME/CFS literature, long COVID pilot study	–
Viral persistence and antivirals (COVID-19)	Paxlovid	Long COVID case reports	No active trials, despite strong evidence for viral persistence

Paxlovid and Long COVID

Nirmatrelvir and the Risk of Post-Acute Sequelae of COVID-19



Long Covid – the disease encompassing the post-acute sequelae of SARS-CoV-2 (PASC) — affects millions of people around the world. Prevention of PASC is an urgent public health priority. In this work, we aimed to examine whether treatment with nirmatrelvir in the acute phase of COVID-19 is associated with reduced risk of post-acute sequelae. We used the healthcare databases of the US Department of Veterans Affairs to identify users of the

www.medrxiv.org

LONG COVID IS REAL



Edmonton

People struggling with long COVID face increased stigma, new University of Alberta study shows



U of A study also links stigma with decreased quality of life

[Madeleine Cummings](#) · CBC News · Posted: Jan 17, 2023 3:00 AM PST | Last Updated: January 17



A recently published study conducted by researchers at the University of Alberta shows that people struggling with long COVID symptoms also face increased stigma. (panitanphoto/Shutterstock)

The Stigma of Long COVID

Worse Symptoms = Worse Stigma

Worse Stigma = Worse Outcomes

What We Know About Long COVID

All age groups and in previously healthy people

The prevalence in Canada now is at least 15% of COVID cases but increasing

A Multisystem disease with severe debilitating symptoms

A Clinical diagnosis

Impact on Workers and Occupational Health

COVID has had a huge impact on the workers and occupational health:

- Disability from COVID
- Death from COVID
- Impact on racialized populations
- Healthcare workers major impact

Long COVID Treatment

Prevent Long COVID by preventing COVID infections

Long COVID is Real

Western medicine often dismisses diagnoses which we cannot explain fully

Long COVID support groups and websites valuable

No current established treatments

Hope with new research

“The only thing worse than suffering from a chronic, severe, invisible disability is suffering from a chronic, severe, invisible disability that no one believes exists”

- Dr. Rae Duncan, Consultant Cardiologist & Long Covid Researcher



COVID Support Groups

