



Health|care Impact, Lessons & 2024 Work|place Choices

## Managing Mask Madness - Benefits, Challenges & Solutions

Friday March 15, 1:30pm - 3:00pm EST

Occ-COVID Year 5: Managing Mask Madness - Benefits, Challenges & Solutions

A key tool in the fight against aerosol hazards, but much maligned and misunderstood. Review latest research, controversy & new CSA standard

### Draft Details

#### Table of Contents

- Selection, use and care of respirators (New Ed...
- CSA Z94.4:24 (Draft New Edition)
- Legal Notice for Draft Standards
- Preface

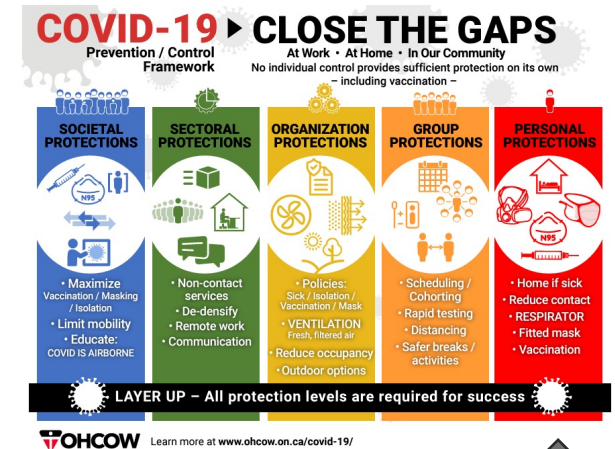
#### Selection, use and care of respirators (New Edition)

**Designation:** Z94.4  
**Source:** CSA  
**Contact:** ron.meyers@csagroup.org  
**Review start date:** Jan 18, 2024  
**Review end date:** Mar 18, 2024  
**Categories:** Occupational Health and Safety

Read Draft

Alert a colleague

<https://publicreview.csa.ca/Home/Details/5176>



Respiratory protection

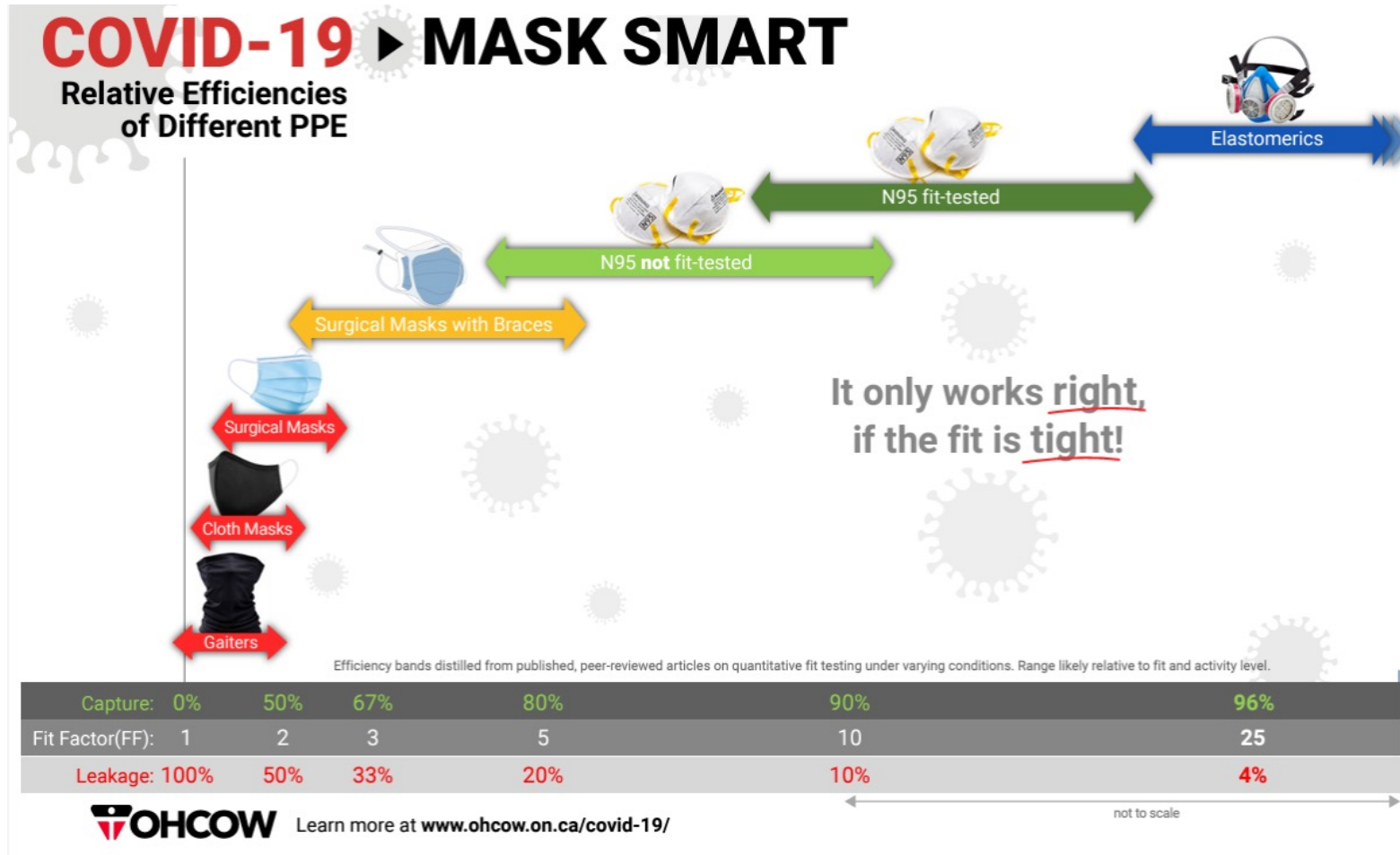
<https://www.ohcow.on.ca/occupational-illness/covid-19/>



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<https://www.aerosoltransmissioncoalition.ca/>



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- Covid has waned again after a seasonal surge, yet other respiratory diseases are hanging on, and the next variant climb might be just around the corner. The pandemic certainly is not over and continues to impact workplaces large and small. Masks and respirators have been key tools in worker protection and infection control for decades, yet they have become objects of ridicule and extensive mis-information.
- They remain important for **personal protection** and **source control**, and we need to understand their efficacy and use parameters to maximize their effectiveness in our illness prevention toolkit.

For more information and past events in the Occ-COVID series

visit: <https://www.ohcow.on.ca/events/occ-covid-webinar-series/>

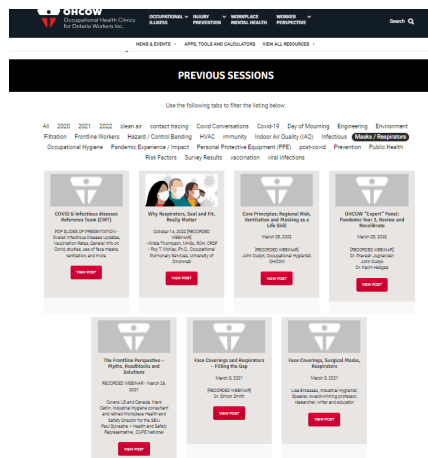
Visit [OHCOW's website](#) for many still useful [Covid Prevention resources](#) including a [Ventilation calculation tool](#) and [Checklist](#) plus [Mask Smart](#) and [Respirator](#) Infographics

See list below for recordings of all Occ-Covid webinars.

## PREVIOUS SESSIONS

Use the following tabs to filter the listing below:

- All 2020 2021 2022 clean air contact tracing Covid Conversations Covid-19 Day of Mourning Engineering Environment Filtration Frontline Workers Hazard / Control Banding HVAC Immunity Indoor Air Quality (IAQ) Infectious Masks / Respirators Occupational Hygiene Pandemic Experience / Impact Personal Protective Equipment (PPE) post-covid Prevention Public Health Risk Factors Survey Results vaccination viral infections



The screenshot shows the OHCOW website interface. At the top is the navigation bar with the OHCOW logo and menu items: OCCUPATIONAL ILLNESS, INJURY PREVENTION, WORKPLACE MENTAL HEALTH, and WORKER PERSPECTIVE. Below the navigation bar is a search bar and a 'PREVIOUS SESSIONS' heading. Underneath, there are filter tabs for years (All, 2020, 2021, 2022) and various topics. The main content area displays a grid of six webinar recording thumbnails, each with a title, date, and a 'VIEW MORE' button. The thumbnails include titles like 'COVID-19 Infectious Diseases', 'Why Respirators, Seal and Fit', 'Core Principles: Respirator Risk, Sensitivity and Sealing as a Life-Saver', 'OHCOW "Expert" Panel: Personal Care, Hygiene and Resilience', 'The Frontline Perspective - Alpha, Beta and Gamma Variants', 'How COVID-19 and Respirators - Filling the Gap', and 'How Overlay, Sealed Masks, Respirators'.

<https://www.ohcow.on.ca/ohcow-events/occ-covid-webinar-series/>

## Covid-19 in the Workplace

### COVID is Airborne!

COVID-19 and its variants will be a factor in our lives for the long-term. As an airborne virus it is highly transmissible. OHCOW provides a collection of resources to assist workers and workplaces in the prevention of virus transmission. Symptoms of Covid can range from mild to severe, in the worst cases requiring hospitalization and intubation.

There are many layers of protection against airborne transmission that are recommended:

- COVID-19 vaccines and flu shots
- the use of N95 masks in indoor public settings, especially anyone at higher risk
- good ventilation in indoor settings
- frequent testing and staying home when ill
- covering your mouth when coughing or sneezing

Below are multi-media resources that address the nature of COVID-19 and prevention measures, both from from OHCOW's internal archive and external partners. For further information, go to the Ontario government's page on [COVID-19 and workplace health and safety](#) and [Public Health Ontario's](#) information on COVID and preventing viral transmission.

<https://www.ohcow.on.ca/occupational-illness/covid-19/#respirators>

OHCOW RESOURCE

WEBINAR



**Managing Mixed Immunity and Related Infection Risks**

October 6, 2023

Dr. Dawn Bowdish discusses Covid-19 in the workforce, vaccination vs. natural immunity, and more in this recent Occ-Covid webinar.



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## Guest speakers

Dr. Mark Ungrin,

Interdisciplinary biomedical  
researcher and associate  
professor at the University of Calgary



Scientific American opinion piece: **Masks Work. Distorting Science to Dispute the Evidence Doesn't**, the science of respirator value in illness prevention and the challenges we face in implementing them as an effective control amidst the noise and fatigue.

Dr. Simon Smith,

Respirator scientist



Introduction of the draft of **CSA Standard Z94.4 Selection, use and care of respirators (New Edition)** that is currently posted for public comment. It has been updated to incorporate insights from the Covid experience, and is open for feedback until Monday, March 18th.



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## Draft Review

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## Dr Simon Smith

Current committee work includes:

**Chair, ISO TC94 SC15 WG7 working group for "Performance of CBRN respiratory protective devices".**

Vice Chair, CSA Z94.4.1 standard for "Performance of Filtering Respirators".

Vice Chair, CSA Z94.4 standard for "Selection, Use and Care of Respirators".

**Chair, Canadian Standards Biological Aerosols Working Group as part of CSA Z94.4.**

Member, CSA S700 Steering committee for public safety.

Member, CSA Z1610, standard for PPE for responders to CBRN events.

Member, Canadian Advisory Committee, ISO TC94 SC15.

Member, Canadian Aerosol Transmission Coalition.

Member, US National Academies of Sciences, Engineering and Medicine Committee on PPE.

Member, AIHA Respiratory Protection Committee.

Member, AIHA International Affairs Committee.

Member, ISRP Education Committee.

Member, Workplace Health Without Borders.

**Recipient of Canadian Standards Association Award of Merit 2022:**

[https://www.csagroup.org/wp-content/uploads/CSA-2022AwardOfMerit\\_EN\\_Accessible\\_Smith-Simon.pdf](https://www.csagroup.org/wp-content/uploads/CSA-2022AwardOfMerit_EN_Accessible_Smith-Simon.pdf)

## 2022 Award of Merit

**Dr. Simon Smith**



Dr. Simon Smith has been a CSA Group member since 2007, serving on various committees including the Strategic Steering Committee on Public Safety, the Technical Committee (TC) on Personal Protection Equipment (PPE) for Clandestine Drug Lab Operations, and the TC on Protection of First Responders from CBRN Events. He also currently serves in the role of Vice-Chair on two Technical Subcommittees.

Simon's knowledge in the area of respiratory protection, and his contributions to the development of CSA PPE standards, have been invaluable. His ongoing focus on resources needed by CSA Group committees, including analyzing relevant research and technical publications, helps committees justify and make evidence-informed decisions. Simon has shown an unwavering commitment and appreciation for the value of standards and CSA Group's standards development process. He has been instrumental in helping to recruit experts for and engaging stakeholders with CSA Group committees and consistently advocates

**In recognition of vast expertise  
and outstanding commitment and  
contributions to the development of  
standards for public safety**

for the wider recognition of standards. Simon has delivered many presentations at conferences and events over the years, including organizing courses on applying CSA standard guidance to national and international audiences.

During the pandemic, Simon prepared publications and presentations on respirator use and performance to promote the protection of healthcare and other workers and the public, and was called upon to advise industry and government agencies. Most recently, Simon's effort with the CSA Group committee to draft and drive to finalization a brand-new standard, CSA Z94.4.1 *Performance of Filtering Respirators*, in less than a year helped to produce a tremendous and swift impact on Canada's ability to build capacity for respirator manufacturing, and see CSA Group positioned as a vital contributor to Canada's COVID-19 response.

Simon retired in late 2019 after a 30-year career as a manager and research specialist 3M Canada (and previously Racal Filter Technologies) in Brockville, Ontario. He continues to support standards development for CSA Group and the International Organization for Standardization and participates in committees of the US National Academies of Sciences, Engineering and Medicine, the American Industrial Hygiene Association, and the International Society for Respiratory Protection.

Recipient of Canadian  
Standards Association  
Award of Merit 2022:  
[https://www.csagroup.org/  
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essible\\_Smith-Simon.pdf](https://www.csagroup.org/wp-content/uploads/CSA-2022AwardOfMerit_EN_Accessible_Smith-Simon.pdf)





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Annals of Internal Medicine®

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## Medical Masks Versus N95 Respirators for Preventing COVID-19 Among Health Care Workers: A Randomized Trial

FREE

This article has been corrected. VIEW CORRECTION

Authors: Mark Loeb, MD, Amy Bartholomew, MScN, Madiha Hashmi, MD, Wade Tarhuni, MD, Mohamed Hassany, MD, Ilan Youngster, MD, Ranjani Somayaji, MD, ... SHOW ALL ... and John Conly, MD

AUTHOR, ARTICLE, & DISCLOSURE INFORMATION

Publication: Annals of Internal Medicine • Volume 175, Number 12 • <https://doi.org/10.7326/M22-1966>

Eligible for CME Point-of-Care

VISUAL ABSTRACT



PDF/EPUB

[Medical Masks Versus N95 Respirators for Preventing COVID-19 Among Health Care Workers: A Randomized Trial: Annals of Internal Medicine: Vol 175, No 12 \(acpjournals.org\)](https://www.acpjournals.org)

## Comments

25 Comments



Sign In to Submit A Comment

Lisa M Brosseau • University of Minnesota • 1 December 2022

### Unethical Study Without A Control

I request that the journal rescind this study. It was unethical to perform this type of study during the pandemic, when the data clearly support transmission of SARS-CoV-2 by aerosol inhalation, not droplets. Surgical masks are not designed to protect the wearer from inhalation of small infectious particles and will not prevent person-to-person transmission from patients or co-workers. Respirators must be worn during all exposures - with all patients and co-workers - to ensure user protection. It is clear from the data provided in the supplementary files that this was not the case. Without a control (no mask), it is impossible to conclude that surgical masks or respirators were effective. It is likely they were equally ineffective - for different reasons. There are many studies - in laboratories, clinical settings, etc. - that clearly demonstrate the efficacy of fit-tested respirators for protecting workers from hazardous aerosol exposures. But only if they are worn for every exposure. This paper does a significant disservice to healthcare workers, who have given their jobs and lives caring for patients throughout this pandemic.



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**Annals of Internal Medicine,**

Editor in Chief of *Annals of Internal Medicine*

Dr. Christine Laine

Dr. Laine,

We have concerns about the study by Loeb et al. 2022 “Medical Masks Versus N95 Respirators for Preventing COVID-19 Among Health Care Workers – A randomized trial”<sup>1</sup> – from an interdisciplinary standpoint including, occupational hygiene, occupational medicine, bioengineering, ethical, medical science, and clinical perspectives. Therefore, in line with other comments objecting to this study<sup>1</sup>, we request that the journal rescind this study.

Our concerns include:

- a) Ethical issues, including violation of equipoise
- b) Lack of interdisciplinary involvement, in particular - occupational hygiene expertise
- c) Study design
- d) Results
- e) The dangers of misinterpreting the results of this study

[loeb-study-2022.pdf \(aerosoltransmissioncoalition.ca\)](https://aerosoltransmissioncoalition.ca/loeb-study-2022.pdf)

Kevin Hedges, Occupational Hygienist, Ph.D., CIH, COH

Genevieve Marchand, PhD, Microbiologist, and biochemist specialized in bioaerosols, occupational health and respiratory protection

Marianne Levitsky, Occupational Hygienist, MES, CIH, ROH

Mario Possamai, Senior Advisor, SARS Commission (2003-2007)

Laurence Svirchev, Occupational Hygienist CIH, MA, BSc

Dave Zalk, Occupational Hygienist, Ph.D., CIH

Claudina Nogueira, Occupational Health Specialist, BSc, BSc (Hons), MSc.

Dr. Tee Guidoti, MD, MPH, Occupational and Environmental Health Specialist

Dr. Joe Vipond, Emergency Physician

Dr. Stéphane Bilodeau, P.Eng. Ventilation Engineer

Dr. Lisa Brosseau, Occupational Hygienist

Dr. Simon Smith, PhD, Respiratory Protection Specialist

Dr. Marie-Claude Letellier, MD, M.Sc., Mcb.A, specialist in Public Health and Preventive Medicine

Dr. Luc Bhérier, MD, specialist in Occupational Medicine

Alec Farquhar, BA, Princeton University; LLB, University of Toronto, Faculty of Law

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Dr. Om Malik, PhD, PEng, CIH, ROH, Occupational Hygienist

Marc-Andre Lavoie, M.Sc., ROH, Occupational Hygienist

Dorothy Wigmore, MS, Occupational hygienist

Paul Bozek, Professor & Occupational Hygienist

Neil McDermott, Occupational Hygienist, M.Sc. CRSP, CIH

Anne-Marie Landis-Groom MHSC, CIH, ROH

Krista Thompson, Occupational Hygienist, MHSc, ROH, CRSP

Jane L. Whitelaw, FAIOH, CIH, COH

Lydia Renton, Occupational Hygienist, B.Sc., CIH, ROH, FAIHA

Dr. Malgorzata Gasperowicz, Developmental Biologist

Professor Lidia Morawska, PhD, Air Quality Specialist

Dr. Joel Andersen MD, MSc., FCBOM, CCFP, CIME, Occupational Medicine Physician Associate Professor.

Joseph Kaufert. B.A., M.A, PhD. Professor Emeritus.

Kashif Pirzada, BSc, MD, CCFP (EM)

Kate Cole, MAIOH Certified Occupational Hygienist (COH)<sup>®</sup>, Churchill Fellow

Dr David R. Tomlinson MD MRCP Consultant Cardiologist and Electrophysiologist

Michael Benoit, Health, and Safety Specialist.

BY [MATTHEW OLIVER](#), [MARK UNGRIN](#) & [JOE VIPOND](#)



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*“New mask studies relying on a medical paradigm do not erase decades of engineering and occupational science that show they work”*

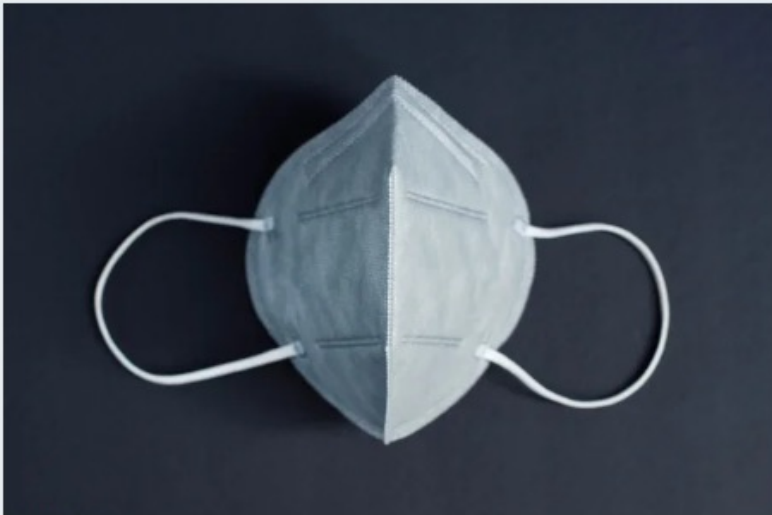
OPINION

MAY 5, 2023 | 5 MIN READ

### Masks Work. Distorting Science to Dispute the Evidence Doesn't

New mask studies relying on a medical paradigm do not erase decades of engineering and occupational science that show they work

BY MATTHEW OLIVER, MARK UNGRIN & JOE VIPOND



Credit: Karl Tapolau/Getty Images

Public Health

Opinion

Masks work. Especially respirator-style N95 masks. Amid an ongoing pandemic and outbreaks of influenza and RSV caused by airborne viruses, arguing over the virus-blocking power of masks remains one of the COVID era's signature follies. Disconcertingly, despite decades of evidence of their efficacy, some of the disagreement comes from a few in the medical field itself, misusing science and endangering lives. Demands to reject this evidence reflect a failure to recognize and respect interdisciplinary expertise that has undercut the global pandemic response.

<https://www.scientificamerican.com/article/masks-work-distorting-science-to-dispute-the-evidence-doesnt/>