



**Unmasking the Masks:
Summary of Studies Regarding the Efficacy and
Safety of Mask Wearing**

by

Deborah Brakeley, M.Ed. R.C.C.

October 15, 2023



Canadian Covid Care Alliance
Alliance canadienne pour la prévention
et prise-en-charge de la covid

<https://www.canadiancovidcarealliance.org/>



This summary consists of conclusions from numerous studies and articles that document the ineffectiveness of masks, risk of harm from mask-wearing, and lastly, a section with references for the summary points cited. This may be a useful resource for consideration in places where the use of masks to reduce COVID-19 transmission may be contemplated.

CONCLUSIVE COMMENTS FROM VARIOUS STUDIES:

Wearing masks in the community likely makes little or no difference to the outcome of laboratory-confirmed influenza/SARS-CoV-2 infection compared to not wearing masks. There is a significant lack of clinical evidence to support their use. Many studies show them to be ineffective. Public policy regarding mask wearing during the COVID-19 pandemic seems to have been based on assumptions of what *may* be true rather than on current and previous quality evidence related to their actual effectiveness.

Not Effective

- Surgical and cloth masks, currently used as they are, have no demonstrated impact on controlling the transmission of SARS-CoV-2, the virus responsible for COVID-19.
- They do not decrease the transmission of respiratory viruses from people wearing masks to people who are *not* wearing masks.
- No evidence exists to claim that facemasks worn during exercise offer additional protection from the droplet transfer of the virus.
- N95 respirators vs medical masks as worn by participants resulted in no significant difference in the incidence of laboratory-confirmed influenza (similar particle size to SARS-CoV-2) or COVID-19.
- There is no discernible difference in mask wearing to COVID-19 transmission rates in hospitals.

Risk of Harm

- Current evidence implies that face masks can actually be harmful physically, socially, and psychologically.

Studies: Three Meta-Reviews of Masking Information That Stand Out:

The Cochrane Review: a seminal study challenging the effectiveness of masking (see summary below) <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC9885521/pdf/CD006207.pdf>

Effectiveness and Risks of Masking for COVID-19 by Drs. Pelech and Hardie.
https://www.canadiancovidcarealliance.org/wp-content/uploads/2023/08/23AU28_PelechHardie_Effectiveness-of-Masks-for-COVID-19.pdf



More than 170 Comparative Studies and articles on Mask Ineffectiveness and Harms by Dr. Paul Alexander.

<https://brownstone.org/articles/more-than-150-comparative-studies-and-articles-on-mask-ineffectiveness-andharms/>

SUMMARY OF COCHRANE REVIEW FINDINGS ADDRESSING THE EFFECTIVENESS OF MASK WEARING.

- MODERATE DEGREE OF CERTAINTY THAT WEARING MASKS COMPARED TO NOT WEARING MASKS IN THE COMMUNITY MAKES LITTLE TO NO DIFFERENCE TO THE OUTCOME OF INFLUENZA-LIKE AND COVID-19-LIKE ILLNESSES.
- MODERATE DEGREE OF CERTAINTY THAT WEARING MASKS COMPARED TO NOT WEARING MASKS IN THE COMMUNITY MAKES LITTLE OR NO DIFFERENCE TO THE OUTCOME OF LABORATORY-CONFIRMED INFLUENZA/SARS-COV-2.
- MODERATE DEGREE OF CERTAINTY THAT USING N95/P2 RESPIRATORS COMPARED TO SURGICAL MASKS PROBABLY MAKES LITTLE TO NO DIFFERENCE FOR THE OBJECTIVE AND MORE PRECISE OUTCOME OF LABORATORY-CONFIRMED INFLUENZA INFECTION.
- THERE WERE NO CLEAR DIFFERENCES BETWEEN THE USE OF MEDICAL/SURGICAL MASKS COMPARED WITH N95/P2 RESPIRATORS IN HEALTHCARE WORKERS WHEN USED IN ROUTINE CARE TO REDUCE RESPIRATORY TRACT INFECTION.
- MODERATE LEVEL OF CONFIDENCE IN THE ACCURACY OF THE ABOVE FINDINGS.
- POTENTIAL HARMS OF WEARING MASKS WERE POORLY MEASURED AND RARELY REPORTED BUT DISCOMFORT WEARING MEDICAL/SURGICAL MASKS OR N95/P2 RESPIRATORS WAS MENTIONED IN SEVERAL STUDIES.

<https://www.cochranelibrary.com/cdsr/doi/10.1002/14651858.CD006207.pub6/full>

TWO MAIN ASPECTS ASSOCIATED WITH FACE MASKS: INEFFECTIVENESS AND RISK OF HARM.

Note: Additional references for information shared in these pages is available in the References section pages 5 and following.

INEFFECTIVENESS OF MASK WEARING

Masks too porous to stop viral particles from passing through

The SARS-CoV-2 virus mainly spreads by microscopic aerosols that remain airborne for minutes or hours, easily penetrate common masks, and travel freely through gaps around their edges. The pores in masks are many times larger than the size of the small airborne viral particles and cannot prevent the spread of or exposure to SARS-Co-2, influenza, or other airborne viruses. Surgical and cloth masks have pore sizes that usually range between 35 microns and 500 microns in size, while



the diameters of the SARS-CoV-2 and influenza viral particles are much smaller – both close to 0.15 microns. The largest possible small droplet of a typical aerosol containing a virus particle in the air is about 60 microns in diameter and can still “pass right through” most pores in a surgical or cloth mask.

Masks make no difference in infection rates

Summary of Findings from various studies:

Largest waves of COVID-19 have occurred despite mask wearing, social distancing, and even COVID-19 vaccination.

Experts in one hospital found masks made 'no discernable difference'.

The infection rate remained unchanged even when the mask mandate was removed.

N95 respirators vs medical masks as worn by participants in one particular trial resulted in no significant difference in the incidence of laboratory-confirmed influenza.

Updated as of September 2023: So far, most studies have found little to no evidence for the effectiveness of face masks in the general population, neither as personal protective equipment or as a source control.

RISK OF HARM BY MASK WEARING

Higher levels of CO₂

Too much carbon dioxide in blood and tissues can cause *hypercapnia* also called *hypercarbia*.

This condition can cause headaches, dizziness, and confusion.

Difficulty breathing and hyperventilation can occur with moderate and intense exercise. Alterations in oxygen and carbon dioxide blood levels change respiratory physiology and function, *e.g.* cause air trapping.

This dysfunction can prevent proper carbon dioxide exchange and result in carbon dioxide poisoning*

CDC warns against prolonged use of N95 masks – there is a 40% elevation in CO₂ levels under a surgical mask and 99% increase under the N95 masks compared with fresh air.

A decrease in the ability to oxygenate can also cause oxygen deficiency and symptoms similar to altitude sickness (see below).**

Respiratory alkalosis hypocarbia (not enough CO₂) can be detected after use of N95 masks and faster breathing.

This condition can result in headaches, anxiety, tremors, and muscle cramps, dizziness, or numbness of fingertips.



Accumulated CO₂ can lead to acidification in our bodies which can adversely affect immune function.

*Carbon dioxide poisoning leads to: 1) Increase in breathing resistance; 2) Decrease in blood oxygen saturation; 3) Increase in heart rate; 4) Decrease in cardiopulmonary capacity; 5) Feelings of exhaustion; 6) Increase in respiratory rate; 7) Difficulty breathing and shortness of breath; 8) Headache; 9) Dizziness; and 10) Feeling of dampness and heat.

** The resulting hypercapnic hypoxia state may potentially increase cardiac overload, anaerobic metabolism and renal overload, and this may aggravate an underlying pathology of established chronic disease.

Microbial Contamination

Contamination of masks – the in-flow can capture airborne pathogens.

In one study, 83% of masks tested were found to be contaminated with 96 unique strains of biological contaminants -- 21 of them were pathogenic, 33% of the masks were contaminated with antibiotic-resistant strains.

Heat and moisture in the breath serve as an incubator in the mask for bacterial and fungal diseases.

Self-contamination and reinfection: moisture retention, reuse of cloth masks and poor filtration. Mask wearing can lead to “mask mouth”: sour breath, bleeding gums, gingivitis, dental plaque, and/or caries.

This may predispose people to viral and infectious illnesses.

Dermatitis and Other Skin Ailments

When breath is trapped inside the mask, “mask dermatitis” can occur. The symptoms are dry, itchy skin.

Prolonged mask use can cause facial acne and rosacea (blushing or flushing of visible blood vessels).

Dizziness and Headaches

N95 masks have been found to cause respiratory alkalosis and hypocarbia after 4 hours.

Toxic Substances

Masks contain and emit a variety of toxic substances.



In various studies the concentration of harmful volatile organic compounds (VOCs) in masks is 147 times higher than usual and mask wearing releases 8 times the recommended levels of toxic volatile organic compounds.

Masks are mainly made of *atactic polypropylene* which can cause irritation of the respiratory system.

When *graphene* in the mask fabrication and inhaled, it can be harmful to the lungs. There seems to be a release of *microplastics* and *phthalates* or phthalic acid esters (PAE'S) present in the synthetic fibers.

The effects of exposure to chemicals in masks on the body and a weakened immune system parallel many Long COVID symptoms.

Besides contamination of the mask wearer, these substances can reach water bodies and present environmental hazards.

Each surgical and N95 face mask can release more than a billion *nanoplastics* and *microplastics* - these minuscule particles have been detected in the nasal mucosa and blood of mask wearers and have also been found in lung tissue.

Titanium dioxide is a toxin found in the synthetic fibers of face masks.

The possibility exists that *titanium dioxide* is a potential human carcinogen when inhaled.

Increase in psychological stress (particularly for children)

Stress hormones and cortisol levels with mask wearing can increase and lead to chronic stress, and anxiety.

Mask wearing can also instigate a fight-flight response and thus create an overdrive situation for the nervous system and the body.

The act of breathing is harder with a mask over the mouth and this can trigger a fear response, irritability, a headache, poor concentration, reduced happiness, reluctance to go to school, general malaise, impaired learning, and fatigue.

Masks can promote societal fear and division.

Masks interfere with social learning in children and impair healthy communication between people.

Masks interfere with learning to emote feelings and read other people's emotions.

Masks can cause distorted verbal speech, a decline in cognitive performance, and brain fog.

Mask wearing makes it difficult for people who are deaf and hard of hearing and depend on lip reading and facial expression.



Disruption in Healthy Immune System Functioning

Masks can interfere with the natural evolution of the adaptive immune system.

Mask wearing can increase susceptibility to allergies, asthma, and auto-immune conditions.

False assurance

Wearing a face mask may give a false sense of security and make people adopt a reduction in compliance with other infection control measures including social distancing *when* symptomatic and ill.

REFERENCES

Ineffectiveness of Mask Wearing

Cochrane Library Database of Systematic Review of 324 pages in January 2023. Cochrane is the world's largest and most respected organization for evaluating health interventions.

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC9885521/pdf/CD006207.pdf>

Cochrane Library found masking made little or no difference in influenza-like illnesses.

<https://www.recordnet.com/story/opinion/2022/05/06/point-theres-no-evidence-maskwork/9677658002/>

Interview regarding Cochrane studies with known evidence-based researcher Prof. Heneghan & epidemiologist Dr. Jefferson.

https://www.youtube.com/watch?v=P_JTBftjQuA

Commentary on authoritative Cochrane Study says masks don't make a difference.

https://www.thefp.com/p/the-real-science-on-masks-they-make?utm_source=emailufi&play_audio=true

Brownstone draws on Cochrane Report: no need to mask, they "wrought havoc."

<https://brownstone.org/articles/masks-did-not-do-nothing-they-wrought-havoc/>

Face coverings do nothing to reduce the spread of COVID-19 according to the Cochrane report.

https://www.thefp.com/p/the-real-science-on-masks-they-make?utm_source=emailufi&play_audio=true

Real world data along with Cochrane studies demonstrates ineffectiveness of masks.

<https://brownstone.org/articles/cochrane-ends-the-masking-rage/>



Updated review of physical interventions to reduce spread. Jan. 2023.

<https://www.cochranelibrary.com/cdsr/doi/10.1002/14651858.CD006207.pub6/full>

“More than 170 Comparative Studies on Mask Ineffectiveness and Harms” by Dr. Paul Alexander.

<https://brownstone.org/articles/more-than-150-comparative-studies-and-articles-on-maskineffectiveness-and-harms/>

“The Effectiveness and Risks of Masking for COVID-19” – Canadian Covid Care Alliance. Detailed analysis of the evidence. <https://www.canadiancovidcarealliance.org/all/the-effectiveness-andrisks-of-masking-for-covid-19/>

Lack of effectiveness and harms.

<https://www.canadiancovidcarealliance.org/wpcontent/uploads/2023/09/Masking-evidence-Time-to-Breathe-Easy-2023-09.pdf>

CCCA newsletters with mask information. <https://www.canadiancovidcarealliance.org/all/its-time-to-breathe-easy-masking-what-theevidence-shows/>

“Lack of Evidence to Support Claims That Face Masks Stop Virus Transmission in Unsealed Expert Testimonies.” https://www.theepochtimes.com/lack-of-evidence-to-support-claims-that-face-masks-stopvirus-transmission-experts-tell-tribunal_4367230.html

Interview about aerosol particles with Dennis Rancourt.

<https://mercola.fileburst.com/PDF/ExpertInterviewTranscripts/Interview-DenisRancourtCanFaceMasksProtectYouFromAerosolParticles.pdf>

“Mask Efficacy” by Stephen Petty, a certified industrial hygienist, safety professional, and engineer. <https://thesafetypropodcast.com/159-mask-efficacy-covid-19-wstephen-petty-ciH>

“Masks do Not Prevent the Spread of COVID-19.”

<https://www.iamanantimasker.com/science?s=35>

32 points including referenced studies related to the ineffectiveness of mask wearing.

<https://www.lifesitenews.com/news/47-studies-confirm-ineffectiveness-of-masks-for-covid-and32-more-confirm-their-negative-health-effects>

Studies confirm ineffectiveness of masks. <https://www.lifesitenews.com/news/47-studies-confirm-ineffectiveness-of-masks-for-covid-and32-more-confirm-their-negative-health-effects>

Top disease expert warned the U.S. CDC during COVID-19 that the group’s promotion of masks stemmed from a flawed interpretation of scientific data.



<https://www.lifesitenews.com/news/recently-released-docs-reveal-disease-experts-warnedcdc-about-flawed-data-to-support-masks/>

Pore size inadequate from preventing virus penetration.

<https://www.lifesitenews.com/news/recently-released-docs-reveal-disease-experts-warnedcdcabout-flawed-data-to-support-masks/>

Ineffectiveness of masks to stop microscopic aerosols.

<https://www.justfacts.com/news/face-masks-deadly-falsehoods#co2>

“Doctor Uses Vape Clouds to Demonstrate How Face Masks Are Useless!”

<https://rumble.com/v3c3nqs-doctor-uses-vape-clouds-to-demonstrate-how-face-masks-areuseless.html>

N95 respirators vs medical masks as worn by participants in this trial resulted in no significant difference in the incidence of laboratory-confirmed influenza.

<https://jamanetwork.com/journals/jama/fullarticle/2749214>

Open letter to Trustees and Public Servants regarding masking in schools.

<https://www.canadiancovidcarealliance.org/all/open-letter-regarding-masking/>

How policies regarding mask wearing took place over time in spite of scarce evidence that they provide protection.

<https://brownstone.org/articles/masks-before-and-after-things-they-became-political/>

Risk of Harm

Risks associated with masking for COVID-19.

<https://www.canadiancovidcarealliance.org/all/the-effectiveness-and-risks-of-masking-forcovid-19/> https://www.canadiancovidcarealliance.org/wp-content/uploads/2023/08/23AU28_PelechHardie_Effectiveness-of-Masks-for-COVID-19.pdf

Mask harms with extensive list of references.

<https://media.mercola.com/ImageServer/Public/2023/September/PDF/more-maskmasquerades-pdf.pdf>

“Experimental Assessment of Carbon Dioxide Content in Inhaled Air With and Without Masks in Healthy Children.” Impairments are attributable to hypercapnia.

<https://jamanetwork.com/journals/jamapediatrics/fullarticle/2781743>



“The Harm Caused by Masks” by Jeffrey Anderson: *“A new study suggests that the excess carbon dioxide breathed in by mask-wearers can have major health consequences.”* <https://www.city-journal.org/article/the-harm-caused-by-masks>

Respiratory alkalosis and hypocarbia were detected after the use of N95.
<https://pubmed.ncbi.nlm.nih.gov/33646335/>

Comparative studies include harms of mask wearing. <https://brownstone.org/articles/more-than-150-comparative-studies-and-articles-on-maskineffectiveness-and-harms/>

“More than 170 Comparative Studies Include Risk of Harms” by Dr. Paul Alexander
<https://brownstone.org/articles/studies-and-articles-on-mask-ineffectiveness-and-harms/>
<https://greenmedinfo.com/blog/more-170-comparative-studies-and-articles-maskineffectiveness-and-harms>

Study quietly re-shared by the National Institutes of Health in spring suggests the tight-fitting mask may expose users to dangerous levels of toxic chemicals.
<https://www.dailymail.co.uk/health/article-12443319/Mask-study-published-NIH-suggests-N95Covid-masks-expose-wearers-dangerous-level-toxic-compounds-linked-seizures-cancer.html>

Cancer causing compound found in masks. <https://newspunch.com/scientists-discover-cancercausing-compound-in-face-masks/>.

Cancer causing pollutants in face masks.
<https://www.wdty.com/news/disposable-face-masks-contain-cancer-causing-pollutants/>

Extended use of masks may cause cancer and liver damage.
<https://www.lifesitenews.com/news/new-study-finds-extended-use-of-best-covid-masks-maycause-cancer-liver-damage/>

Detailed description of effect of toxic mask chemicals on the body; exposure to chemicals and weakened immune system parallel many Long COVID symptoms.
<https://brownstone.org/articles/how-masking-contributes-to-long-covid/>

Inhaled microplastics from masks.
<https://childrenshealthdefense.org/defender/inhaled-microplastics-lung-tissue-face-masks/> |
<https://www.oralhealthgroup.com/features/the-necessary-reassessment-of-mask-use-indentistry/>



Microplastics found in lung tissue.

<https://westernstandardonline.com/2022/04/study-shows-microplastics-found-in-covid-masks-present-in-patients-lungs/>

Microplastics. <https://childrenshealthdefense.org/defender/inhaled-microplastics-lung-tissue-face-masks/>

Phthalates in masks.

<https://www.news-medical.net/news/20221017/Do-phthalates-in-face-masks-pose-health-hazards-with-increased-usage-during-the-COVID-19-pandemic.aspx>

Recent study by Korean scientists found that some masks emit substances that may be harmful.

<https://www.theepochtimes.com/epochtv/shocking-study-are-your-masks-secretly-poisoning-you-5483788>

32 points include harms of mask wearing. <https://www.lifesitenews.com/news/47-studies-confirm-ineffectiveness-of-masks-for-covid-and-32-more-confirm-their-negative-health-effects>

Review of a wide variety of harms including environmental impact.

<https://brownstone.org/articles/why-mask-mandates-should-be-immediately-banned/>

Masks contained titanium dioxide in amounts that exceed acceptable levels.

<https://takecontrol.substack.com/p/titanium-dioxide-detected-in-masks>

Side effects and health implications of masks with references.

<https://www.lifesitenews.com/news/47-studies-confirm-ineffectiveness-of-masks-for-covid-and-32-more-confirm-their-negative-health-effects>

“Alberta’s Chief Medical Officer Allegedly Withheld Information on Dangers of Masking Children, Justice Centre Says.”

https://www.theepochtimes.com/albertas-chief-medical-officer-allegedly-withheld-information-on-dangers-of-masking-children-justice-centre-says_4686839.html

“Bacterial and Fungal Isolation From Face Masks Under the COVID-19 Pandemic.”

<https://www.nature.com/articles/s41598-022-15409-x>

Study of kids’ masks: 83% contaminated; 96 unique strains of biological contaminants; 21 of them pathogenic; 33% contaminated with antibiotic-resistant strains.

<https://greenmedinfo.com/blog/21-pathogenic-bacteria-detected-kids-face->



[masks1?utm_campaign=Daily+Newsletter: 21 Pathogenic Bacteria Detected on Kids' Face Masks \(X6Sjwg\)&utm_medium=email&utm_source=Daily](#)

Chemicals and other toxic substances identified in masks worn by children including graphene used in fabrication.

<https://brownstone.org/articles/how-dangerous-are-masks-for-children/>

Masks can cause physical, social, psychological harms.

<https://www.iamanantimasker.com/science?s=35>

“Unintended consequences” including disrupted learning and speech development.

https://www.theepochtimes.com/albertas-chief-medical-officer-allegedly-withheld-information-on-dangers-of-masking-children-justice-centre-says_4686839.html

Psychological effects of mask wearing among children.

<https://brownstone.org/articles/a-partial-list-of-the-myriad-abuses-that-facemasks-inflict-on-our-children/>

Articles about masking children. <https://brownstone.org/?s=masks+and+children>

Emotional stressors and trauma associated with mask wearing for children.

<https://brownstone.org/articles/a-partial-list-of-the-myriad-abuses-that-facemasks-inflict-on-our-children/>

Open letter to Headteachers regarding the uses of face masks for children in schools.

<https://preview.mailerlite.com/h5b3p2/1792115913466583709/r2f7/>