Review of scientific reports of harms caused by face masks, up to February 2021

Denis G. Rancourt, PhD
Research Director, Corvere Research
Member Scientist, PANDA (Pandemics — Data + Analytics)
Working report, published at Researchgate.net

22 February 2021

Tweet Share

POPULAR

Vaccination vs Chad and Mali
Jan 2, 2021

Does Jo Anti-Pope Bergoglio plus Parody Card Calling all
Jan 2, 2021

Hawks Don't Work: A Comprehensive Framework to COVID Parasites
Jan 2, 2021

Research Science and Education Incompetence
Jan 2, 2021

Data Mining in Clinical Medicine
Jan 2, 2021

2x10 COVID Fraud: 156 Cases
Jan 2, 2021

FAQ10 COVID Fraud: 55 Cases
Jan 2, 2021

10x10 COVID Fraud: 10 Cases
Jan 2, 2021

Horrified Examples of Pseudo-Bioweapons
Jan 2, 2021

4x10 COVID Fraud: Dissentable Suspicion
Jan 2, 2021

Coronavirus Deaths in Elsewhere Ontario
Jan 2, 2021

CoBCon Lawsuit in Ontario
Jan 2, 2021

Chiropractic news COVID-19 Vaccine Injuries
Jan 2, 2021

CDF-CDC QUARCTION Program: Fraudulent Pseudo-COVID Vaccine Rollout
Jan 2, 2021

3x10 COVID Fraud: -690 Cases
Jan 2, 2021

FAQ20 COVID Fraud: 25 Cases
Jan 2, 2021

This is the most recent of the Rancourt Reports which I tried to reproduce as grammatically as possible, so please feel free to shoot me a message via Feedback if you spot any glaring errors in the reproduction.

This article is organized into the following sections:

- Summary
- Introduction: Government's onus to evaluate safety
- Context: Risk-benefit harm analysis
- Healthcare workers (HCWs)
- Physiological impacts of face masks in healthy adults
- Psychological harm in the general population
- Infants and school children
- Microbial pathogen infections from masks
- Endnotes / References

Summary

Any intervention to prevent or ameliorate, mitigate and cure, the disease to society called the pandemic, must be rational and proportionate, and not cause more harm than good. Governments, and the health agencies of the world, have not established that the pandemic is a sufficiently serious threat to society to warrant the application of any of the measures that have been implemented, and that are being implemented, in the COVID-19 pandemic. In the general meaning implementation of Canadian provinces were even more aggressive than those of the United States and Europe.

This review gives evidence that face masks cause harm in most scenarios commonly in use. The examples are as follows.

- As early as 20 April 2020, Lazzarino et al. directly opposed a logical precautionary of the precautionary principle which has been applied by some scientists and many governments in the COVID-19 pandemic. Lazzarino et al. stated the precautionary principle as:

> "Within no-regret interventions, we define as those actions that are consistent with the precautionary principle aims at preventing irreversibility and policy inertia, and are proportionate to the expected benefits and harms."

Social scientists used to understand the precautionary principle to be a tool that helps us highlight two potential side effects of wearing surgical face masks in the public: (1) the side effect of wearing a mask that is not well-fitting and (2) the side effect of a false and other-side-of-the-coin-unaccounted-for positive effect of public health policy in implemented restricting behaviors of people. [1]

- Ten days later, Greenhalgh et al. published a recommendation that may well be spreading between popular and regular Twitters of wearing surgical masks as widespread, based. It is not time to set without evidence:

> "Wearing a surgical mask in community settings to COVID-19 important potential side effects of wearing face masks for the general public to minor." Antonio Lazzarino, R. Stephen Jay, Harman, S. Nichols. 20 April 2020. BMJ
> https://www.bmj.com/

- On 11 August 2020, the surgeon-frontoriented Ms. at warned that COVID-19 enthusiasm for improper personal protective equipment (PPE) on surgeons could put the surgeon's patients at risk the equivalent can be said of trains, trams, and bus drivers, and a large number of other occupations and professions.

> "Before we rush to impose the wearing of masks in the public at large, we need to be sure that the benefits outweigh the harms. Mandatory mass mask wearing could actually increase the spread of COVID-19 for surgeons should be investigated. All parts of PPE increase surgeons' discomfort and decrease their dexterity, and surgeons wearing masks, especially during prolonged and complicated surgical procedures, is inevitable. In addition, PPE seems to be associated with important side effects, like dermatoses and acne, which could lead to a shortage of surgeons available to care for patients during surgery may increase surgeons' wearing masks and gloves performing difficult operations." [2]

- Dr. Lisa Brosseau, Dr. Anne Vesley, C. Nelson, D. Schoen, et al. "Personal protective equipment against COVID-19 harm surgeons, harmful for patients?" The American Journal of Surgery. 13 August 2020.
https://www.ajsurg.com

- By 22 November 2020, Dr. Vanessa Brown et al. warned that COVID-19 enthusiasm for improper personal protective equipment (PPE) on surgeons could put the surgeon's patients at risk the equivalent can be said of trains, trams, and bus drivers, and a large number of other occupations and professions.

> "Wearing a surgical mask in community settings to COVID-19 important potential side effects of wearing face masks for the general public to minor." Antonio Lazzarino, R. Stephen Jay, Harman, S. Nichols. 20 April 2020. BMJ
> https://www.bmj.com/

- Dr. Lisa Brosseau, Dr. Anne Vesley, C. Nelson, D. Schoen, et al. "Personal protective equipment against COVID-19 harm surgeons, harmful for patients?" The American Journal of Surgery. 13 August 2020.
https://www.ajsurg.com

- By 22 November 2020, Dr. Vanessa Brown et al. warned that COVID-19 enthusiasm for improper personal protective equipment (PPE) on surgeons could put the surgeon's patients at risk the equivalent can be said of trains, trams, and bus drivers, and a large number of other occupations and professions.

> "Wearing a surgical mask in community settings to COVID-19 important potential side effects of wearing face masks for the general public to minor." Antonio Lazzarino, R. Stephen Jay, Harman, S. Nichols. 20 April 2020. BMJ
> https://www.bmj.com/

- Dr. Lisa Brosseau, Dr. Anne Vesley, C. Nelson, D. Schoen, et al. "Personal protective equipment against COVID-19 harm surgeons, harmful for patients?" The American Journal of Surgery. 13 August 2020.
https://www.ajsurg.com

generation of young people?(Section 2) Because of the long-term psychological, physiological, educational and even economic burden (ref), that isolation can do their most vulnerable members, (ref)

- *Face masks may have physical side effects.*
- *Face masks impair face recognition and face identification.*
- *Face masks impair verbal and non-verbal communication.*
- *Face masks block emotional signaling between teacher and learner.*

Given these pros and cons, it is not clear whether face masks should play a major role in educational settings in times of the current viral pandemic. ... This model should be developed urgently, since it globally affects more than 1.5 billion students, teachers, and school staff members in more than 200 countries.

> *"Face masks interrupt emotional signaling between teachers and students. ... In our cognitive, and emotional, to the subsequent emotional displays of one's peer faces is a critical and necessary component of social interaction in schools. It helps pupils and teachers to adjust their behavior in order to align with such conversational and behavioral norms. When teachers wear face masks, they may appear to their students as cold, unemotional, unfriendly, with one another, is relevant and we are primarily left with minimizing negative (pain) emotions. All of this happens primarily outside of conscious awareness, and hence, is hard to be consciously controlled or even corrected. Since emotions are a major driver of group cohesion, the decreased emotionality, and decreased positive emotionality in particular, in face mask wearers may negatively affect the cohesion of the classroom. Cohesion is facilitated by emotions this is their main vision of first, face masks are likely to cause some interference with pedagogy."* [highlights are added]

25. 2020- Spitzer : "Review! Attached! The benefits and burdens of wearing face masks in schools during the current Corona pandemic", Trends in Neuroscience and Education, 2020;19:100136. doi:10.1016/j.tine.2020.100136 https://www.sciedirect.com/science/article/pii/S2211949320300386

Still later, two studies posited that the likelihood that babies are significantly harmed by general masking practices. Especially, the (2) September 2020 study of Green et al. alerted us to "potential negative effects of masks on long-term development related to human connection and attachment."

> *"Newborns (2020-19 has changed the way that newborn babies are cared for within the neonatal setting due to the introduction of social distancing and wearing of face masks to protect from the spread of the coronavirus. Although masks may be vital for the healthy development of bonding and connections with others. This paper discusses the importance of face to face interactions for early attachment between babies and parents within the context of neonatal underpinning developmental theory. ..."*

26. 2021- Green : Green, Jared et al. "The implications of face masks for babies and families during the COVID-19 pandemic: A discussion paper" *Journal of neonatal nursing* JNN vol. 27, 1(2021) 21-25, doi:10.1016/j.xjnn.2020.10.005 https://www.sciedirect.com/

Likewise, on 15 September 2021, Lewkowicz pointed out the following about language acquisition by babies:

> *"—the COVID pandemic has and bare our fundamental need to see whole faces. Could it be that the wearing of face masks by people who talk to babies in a high-pitched communicative signal, normally available in their social partners' faces, are especially vulnerable to their degradation in partially visible faces? ... in my lab ... We discovered that infants' ability to detect the audio-visual synchrony of a talking face undergoes a major shift in infancy. It becomes the default mode of speech processing whereas comprehension is difficult. ...*
>
> *Overall, the research to date demonstrates that the visible articulations that babies normally see others are talking play a key role in the acquisition of speech and language. Although we do not know what happens when babies see mouths covered by masks, they do raise the possibility that masks might potentially hinder babies' acquisition of speech and language."*

27. 2021-Lewkowicz : "Masks Can Be Detrimental to Babies' Speech and Language Development", David J. Lewkowicz, Scientific American, Cognition, Opinion, 11 February 2021 https://www.scientificamerican.com

On 28 August 2020, Karnovsky et al. submitted that mask wearing is a potential trigger for youth with chronic migraine:

> *— "Many common triggers such as dehydration, fasting, sleep problems, and stresses were discussed above. Here we highlight (compared screen use and mask wearing as potential triggers of migraine in youth with chronic migraine. Screen use and mask wearing are various common points on the face or scalp could trigger headache"*

28. 2021-Karnovsky: Karnovsky D, Marshak, M, Bruno, A.G., VanderPluym, J.H., Patel, C., Lydal, A. Ojeda, J., Patterson Gentile, C., Turner, S., Avis, M., Bannerburg, B., Chakhunashvi, M., Kalkbrenner, J., Matovska, C.P., Clement, M.A., Gerson, T. and Szperka, C.L. (2021) "The Intersection of COVID-19, school, and headache: Problems and solutions". Headache. The Journal of Head and Face Pain, 61: 190-201. https://doi.org/10.1177/

The idea of a mask is to breathe through the material and not have large gaps. This implies that the material is not "tight." The Karnovsky et al. observation, that "tight" masks can cause "the pressure points, to turn cause discomfort, at the very least, which may be aggravated by lengthy duration and microenvironmental, psychological and physiological effects. Removing the pressure in the mouth and nose coverage defeats the purpose of the mask, in the belief that masks work to prevent transmission of the virus. And there are always unforeseen negative effects, such as causing permanent ear protrusions.

> *— Materiel ... Among those on the market, surgical masks with elastic loops are the ones most likely to cause pressure injuries. Pressure injuries are a well-recognized complication of skin and compromising, on the cartilage of the auricle, leading to erythematous and painful lesions of the retroauricular skin when the masks are used for many hours a day. Pressure injuries are well-known complications of prolonged use of medical devices, and addressing pressure injuries from the elastic loops of the masks is of the utmost importance. Yet, at the anthelix level can influence the cosmetic growth and aspiration of the outer ear. In fact, while when using conservative methods for the treatment of protruding ears, this prolonged pressure can increase the cephalomucosal angle of the outer auricle. It is important to consider the corresponding the masks to be aware of this potential risk and find alternative solutions to the future.*

29. 2020-Zanetti Zanetti, B., Parrett, F.C., Rizzo, M. et al. "Can the Elastic of Surgical Face Masks Stimulate Ear Protrusion in Children?", Aesth Plast Surg 44, 1947–1950 (2020). https://doi.org/ https://link.springer.com

Most importantly, however, whereas more professional public health agencies and health researchers have been loath to embark on objective risk-benefit analysis, parents in Germany have answered a recent research-group's call to provide observations regarding their children's mask-wearing. In October 2020, Schwarz et al. reported initially results from the full-scale survey of the cohort:

> — ABSTRACT
>
> *• Background: Narratives about complaints in children and adolescents caused by wearing a mask are accumulating. There is, to date, no registry for side effects of masks.*
>
> *• Methods: At the University of Witten/Herdecke an online registry has been set up where parents can report side effects of mask wearing in their children (aged 0–18 years). 815 doctors were asked to make entries and to invite patients and teachers aware of the registry.*
>
> *• Results: By 26.10.2020 the registry had been used by 20,352 people. In this publication we report the results from the parents, who entered data on a total of 25,630 children (12,816 girls, 12,814 boys). Of the children, 6,068 (24%) had complaints attributable to wearing the mask were reported by 58% of the parents. These included irritability (60%), headache (52%), difficulty concentrating (50%), less happiness (38%), reluctance to go to school (34%), difficulty breathing (26%), other impaired learning (24%) and disease/cold (dripping nose) (17%).*
>
> *• Discussion: This world's first registry for recording the effects of wearing masks in children is dedicated to a new research question. Bias with respect to professional documentation of children who are particularly severely affected or who are particularly unaffected is to be expected because of the voluntary nature of the registry. The registry can and the provision of symptoms registered and the frequency of occurrence of the topic and call for representative surveys, randomized controlled trials with various masks and a renewed risk-benefit assessment for the vulnerable group of children adults need to collectively reflect the circumstances under which they would be willing to accept the disadvantages associated with the use of wearing masks in exchange for quality of life without having to wear a mask.*

30. 2021-Schwarz : Lilke Schwarz, Edeltraut Jenetzky, Harald Krofta, Tobias Maurer, David Martin, "Corona children studies "Co-KiTa": First results of a Germany-wide registry on mouth and nose covering (mask) in children", 18 December 2020. DOI: 10.21203/rs.3.rs-124004/v1
- v1 – https://www.researchsquare.com
- v2 – https://www.researchsquare.com

Microbial pathogen infections from masks

Finally, regarding potential health harms, a noteworthy unrebutted issue is the potential population and individual health impacts of the development of bacterial and other pathogenic infections from mask wearing. In 2020, Matuschek et al. briefly reported it this way, without reference or demonstration:

> *— "If masks are not exchanged regularly (or washed properly when made of cloth), pathogens can accumulate in the mask. When improperly used, the risk of spreading the pathogens—including SARS-CoV-2—might be critically increased." (p. 5)*

2020-Matuschek : Matuschek, C., Moll, F., Fangerau, H. et al. "Face masks: benefits and risks during the COVID-19 crisis", European Journal of Medical Research 25, 32 (2020). https://doi.org/

In November 2020, Bonsny et al. (32) published an extensive review of biological and medical knowledge that allowed them to infer a large potential for significant harms from masking, via microbial challenges from the masks. They rightly stress the known yet ignored fact that masks become moist and that moisture allows the pathogens to escape from and bacteria, which can be reduced by mask wearing to prevent pneumonia and infect the respiratory tract and lungs.

32. (32) 2020-Bonsny : Boris Bonsny, Colleen Huber, Maria Crider, "Masks, false safety and real dangers, Part 2: Microbial challenges from masks", Primary Doctor Medical Journal. November 2020. https://pdmj.org/

Endnotes / References

1. "Technical note Addendum" 17 June 2020 letter to the Executive Director of the WHO, RE: WHO advising the use of masks in the general population to prevent COVID-19 transmission". Hickey, J and Rancourt DG. Ontario Civil Liberties Association (21 June 2020). https://ocla.ca
2. Jefferson T. "Rapid Response: Covid-19: important potential side effects of wearing face masks that we should bear in mind". Antonio Lazarus A, Stephen M James, S Mishra. 26 April 2020. BMJ https://www.bmj.com
3. 2020-Fitzsimon: M. Fitzsimon, C. Nebolsa, D. Schnas et al., "Personal protective equipment and COVID-19 – a review of evidence in healthcare workers and their families", The American Journal of Surgery, 17 August 2020.
4. 2020-Jefferson: Jefferson Tom(Robert) B. "Facemasks in the COVID-19 era: A health hypothesis". Medical Hypotheses, 2021;146:110411. doi:10.1016/j.mehy.2020.110411.
5. 2020-Rancourt: "Masks Don't Work: a Review of Science Relevant to Covid-19 Social Policy", Rancourt, DG et al. 30 June 2020 ResearchGate, obtained 400 X reads, then was depublished, as per this report https://archive.org. Now also at https://vixra.org, and at https://www.crosdon.com. And see the Daily Veritas alternate discussion of the article "Dig-Debates: The Face Mask Debate", Digi Debates YouTube Channel, 25 July 2020 https://www.bitchute.com/channel/digidebates/ (Rancourt, Dr. Denis)
6. 2020-Rancourt : "Face masks, lies, damn lies, and public health: difficult, "A growing body of evidence"". ResearchGate (3 August 2020). DOI: 10.13140/RG.2.2.11351.20165
7. 2020-Rancourt : "Measures do not prevent deaths, transmission is not by contact, masks provide no benefit, vaccines are inherently dangerous: Review update of recent science relevant to COVID-19 policy", Rancourt, DG (28 December 2020). ResearchGate, DOI: 10.13140/RG.2.2.12127.07206. https://www.medrxiv.org
8. 2020-Badrie : "Downsides of face masks and possible mitigation strategies: a systematic review and meta-analysis". Mina Badrie, Natasa Kojuharova, Anna Mae Scott, Justin Clark, Paul Glasziou, Chris Del Mar. https://www.medrxiv.org doi: https://doi.org/10.1101/2020.06.16.20132051 Now accepted for publication in IRMJ Open.
9. https://www.medrxiv.org
10. 2020-Chandrasekharan: Chandrasekharan, P., Rawlinson, E. & Vadhiyaraan, S. "Effects of Prolonged Use of Facemask on Healthcare Workers in Tertiary Care Hospital During COVID-19 Pandemic". Indian J Otolaryngol Head Neck Surg 73, 59–65 (2021). https://doi.org/
11. 2020-Ong : Ong JJY, Bharatendu C, Goh Y, Tang JZY, Sooi KWX, Tan YL, Tan BYQ, Teoh HL, Ong ST, Allen SM, Sharma VK. "Headaches Associated With Personal Protective Equipment - A Cross-Sectional Study Among Frontline Healthcare Workers During COVID-19". Headache: The Journal of Head and Face Pain. 2020 May;60(5):864-877. doi: 10.1111/head.13835. Epub 2020 Apr 17. PMID: 32304487
12. https://pubmed.ncbi.nlm.nih.gov/
13. 2020-Magnavita: Urban-M Ong, 2020; Magnavita, N. and Chirico, F. (2020). "Headaches, Personal Protective Equipment, and Psychosocial Factors Associated With Medical Staff Working in Hospitals". The Journal of Head and Face Pain, 60: 1444-1445. https://doi.org/
14. 2020-Goh (response to critique of Ong, 2020): Goh Y, Ong JJY, Bharatendu C, Tan BYQ, Sharma VK. "Headaches Due to Personal Protective Equipment During COVID-19 Pandemic: A Comment". Headache: The Journal of Head and Face Pain. 2020;60(9):2319-2320. doi:10.1111/head.13879
15. https://pubmed.ncbi.nlm.nih.gov
16. 2020-Lim: Lim J, Mohanraj J, Timbol M, Fortunato T, et al. "Facemask headache: a new nosographic entity among healthcare providers in COVID-19 era". Neurological Sciences (2021). https://doi.org/10.1111/head.13879
17. https://pubmed.ncbi.nlm.nih.gov
18. 2020-Hajj: Hajj A, Kadhim S, Khalil M, et al. "Personal Protective Equipment and Headache: Lessons Learned from Healthcare Workers During COVID-19 Pandemic". Cureus. 2020 Dec;12(12):e12401. DOI: 10.7759/cureus.12401. https://europepmc.org
19. 2020- Caglar : Caglar, A., Kaya, I., Yenilmezoglu, M., Özturk, B., & Özturk, K. (2020). "Headache associated with personal protective equipment among frontline healthcare professionals during the COVID-19 pandemic". Disaster Medicine and Public Health Preparedness, 1-15. https://doi.org/10.1017/dmp.2020.455
20. https://www.cambridge.org
21. 2020-Ramirez-Moreno : Ramirez-Moreno, JM, Cabezmo G, Gonzalez Plata A, et al. "Nose associated bar nose headache in healthcare workers during the COVID-19 pandemic". Occupational and Environmental Medicine. Published Online First: 30 September 2020. doi: 10.1136/oemed-2020-106956
22. https://oem.bmj.com
23. 2020-Zohan : Rumeysa Zohan, Mahnen Khan, Ahmed Tanveer, Amal Farooq, Zohaib Khurshid. "Association of Personal Protective Equipment with Skin Lesions in Frontline Healthcare Workers during Covid-19 Pandemic: A Cross-Sectional Survey". European Journal of Dentistry. 2020 Dec;14(S1):S175-S185. doi: 10.1055/s-0040-1721406. Epub 2020 Dec 24. PMID: 33357417; PMCID: PMC7770223. https://www.ncbi.nlm.nih.gov/pmc
24. 2020- Engh : Engh, M., Pawar, M., Bothra, A., Maheshwari, A., Dubey, V., Tiwari, A. and Halan, K. (2020). "Personal protective equipment induced facial dermatitis in healthcare workers managing Coronavirus disease 2019". Journal of the European Academy of Dermatology and Venereology, 34: e779-e780. https://doi.org/
25. 2020- Li : Li X, Tokura Y, Guo YP, et al. "Effects of wearing N95 and surgical facemasks on heart rate, thermal stress and subjective sensations". Int Arch Occup Environ Health. 2005;78(6):501-509. doi:10.1007/s00420-005-0004-9. https://www.ncbi.nlm.nih.gov
26. 2020-Fikenzer : Fikenzer S, Uhe T, Lavall D, Rudolph U, Falz R, Busse M, Hepp P, Laufs U. "Effects of surgical masks on cardiopulmonary exercise capacity". Clin Res Cardiol. 2020 Dec;109:1522-1530. doi: 10.1007/s00392-020-01776-y. Epub 2020 Apr 8. PMID: 32253523; PMCID: PMC7738098. https://link.springer.com
27. 2020-Roberge : Roberge RJ, Kim JW, Powell JB. "Fit of the N95 respirator and surgical mask". Ann Occup Hyg. 2008 Jan;52(1):51-56. doi: 10.1093/annhyg/mem059. Epub 2007 Sep 19. PMID: 17873223.
28. 2020-Ramirez-Moreno : Ramirez-Moreno JM, Cabezmo G, Gonzalez Plata A, et al. "Nose associated bar nose headache in healthcare workers during the COVID-19 pandemic". Occupational and Environmental Medicine. Published Online First: 30 September 2020. doi: 10.1136/oemed-2020-106956
29. 2020-Zohan : Rumeysa Zohan, Mahnen Khan, Ahmed Tanveer, Amal Farooq, Zohaib Khurshid. "Association of Personal Protective Equipment with Skin Lesions in Frontline Healthcare Workers during Covid-19 Pandemic: A Cross-Sectional Survey". European Journal of Dentistry. 2020 Dec;14(S1):S175-S185. doi: 10.1055/s-0040-1721406. Epub 2020 Dec 24. PMID: 33357417; PMCID: PMC7770223. https://www.ncbi.nlm.nih.gov/pmc
30. 2020- Engh : Engh, M., Pawar, M., Bothra, A., Maheshwari, A., Dubey, V., Tiwari, A. and Halan, K. (2020). "Personal protective equipment induced facial dermatitis in healthcare workers managing Coronavirus disease 2019". Journal of the European Academy of Dermatology and Venereology, 34: e779-e780. https://doi.org/
31. 2005- Li : Li X, Tokura Y, Guo YP, et al. "Effects of wearing N95 and surgical facemasks on heart rate, thermal stress and subjective sensations". Int Arch Occup Environ Health. 2005;78(6):501-509. doi:10.1007/s00420-005-0004-9. https://www.ncbi.nlm.nih.gov
32. 2020-Fikenzer : Fikenzer S, Uhe T, Lavall D, Rudolph U, Falz R, Busse M, Hepp P, Laufs U. "Effects of surgical masks on cardiopulmonary exercise capacity". Clin Res Cardiol. 2020 Dec;109:1522-1530. doi: 10.1007/s00392-020-01776-y. Epub 2020 Apr 8. PMID: 32253523; PMCID: PMC7738098. https://link.springer.com
33. 2020-Roberge : Roberge RJ, Kim JW, Powell JB. "Fit of the N95 respirator and surgical mask". Ann Occup Hyg. 2008 Jan;52(1):51-56. doi: 10.1093/annhyg/mem059. Epub 2007 Sep 19. PMID: 17873223.
34. 2020-Bernard : Bernard D, Beggs P, Bidan C, Blanchard N, Bonnefoy M, Chakiba C, Chauvin P, Gouttenoire P, Lepelletier D, Makinson A, Pavese P, Pelletier J, Pinquier D, Pulcini C, Rogues A, Salmon-Rousseau A, Tattevin P, Thuaudet S, Tosolini J, Vanhems P, Verdier M, Zahar JR, Zuber B, Lucet JC. "Lessons learned about isolation during the COVID-19 pandemic. Joint recommendations from the French scientific societies and the French infection control association". J Hosp Infect. 2020 Sep;105(4):717-725. doi: 10.1016/j.jhin.2020.05.035. Epub 2020 May 27. PMID: 32470275; PMCID: PMC7260564. https://www.ncbi.nlm.nih.gov/pmc
35. 2020-Greenhalgh : Greenhalgh T, Jimenez JL. "Masks for the masses". BMJ. 2020 Jun 23;371:m2779. doi: 10.1136/bmj.m2779. PMID: 32580991. https://www.ncbi.nlm.nih.gov
36. 2020-Wang : Wang Y, Tian J, Sun J, Chen L, Zhang X, Wei W, et al. "Physiological Impact of Face Mask Usage during the COVID-19 Pandemic". Int J Environ Res Public Health. 2020 Sep 12;17(18):6635. doi: 10.3390/ijerph17186635. PMID: 32933020; PMCID: PMC7559264. https://pubmed.ncbi.nlm.nih.gov
37. 2005- Li : Li X, Tokura Y, Guo YP, et al. "Effects of wearing N95 and surgical facemasks on heart rate, thermal stress and subjective sensations". Int Arch Occup Environ Health. 2005;78(6):501-509. doi:10.1007/s00420-005-0004-9. https://www.ncbi.nlm.nih.gov
38. 2020-Fikenzer : Fikenzer S, Uhe T, Lavall D, Rudolph U, Falz R, Busse M, Hepp P, Laufs U. "Effects of surgical masks on cardiopulmonary exercise capacity". Clin Res Cardiol. 2020 Dec;109:1522-1530. doi: 10.1007/s00392-020-01776-y. Epub 2020 Apr 8. PMID: 32253523; PMCID: PMC7738098. https://link.springer.com
39. 2020-Roberge : Roberge RJ, Kim JW, Powell JB. "Fit of the N95 respirator and surgical mask". Ann Occup Hyg. 2008 Jan;52(1):51-56. doi: 10.1093/annhyg/mem059. Epub 2007 Sep 19. PMID: 17873223.
40. 2020-Bernard : Bernard D, Beggs P, Bidan C, Blanchard N, Bonnefoy M, Chakiba C, Chauvin P, Gouttenoire P, Lepelletier D, Makinson A, Pavese P, Pelletier J, Pinquier D, Pulcini C, Rogues A, Salmon-Rousseau A, Tattevin P, Thuaudet S, Tosolini J, Vanhems P, Verdier M, Zahar JR, Zuber B, Lucet JC. "Lessons learned about isolation during the COVID-19 pandemic. Joint recommendations from the French scientific societies and the French infection control association". J Hosp Infect. 2020 Sep;105(4):717-725. doi: 10.1016/j.jhin.2020.05.035. Epub 2020 May 27. PMID: 32470275; PMCID: PMC7260564. https://www.ncbi.nlm.nih.gov/pmc
41. 2020-Greenhalgh : Greenhalgh T, Jimenez JL. "Masks for the masses". BMJ. 2020 Jun 23;371:m2779. doi: 10.1136/bmj.m2779. PMID: 32580991. https://www.ncbi.nlm.nih.gov
42. 2020-Wang : Wang Y, Tian J, Sun J, Chen L, Zhang X, Wei W, et al. "Physiological Impact of Face Mask Usage during the COVID-19 Pandemic". Int J Environ Res Public Health. 2020 Sep 12;17(18):6635. doi: 10.3390/ijerph17186635. PMID: 32933020; PMCID: PMC7559264. https://pubmed.ncbi.nlm.nih.gov
43. 2005- Li : Li X, Tokura Y, Guo YP, et al. "Effects of wearing N95 and surgical facemasks on heart rate, thermal stress and subjective sensations". Int Arch Occup Environ Health. 2005;78(6):501-509. doi:10.1007/s00420-005-0004-9. https://www.ncbi.nlm.nih.gov
44. 2020-Fikenzer : Fikenzer S, Uhe T, Lavall D, Rudolph U, Falz R, Busse M, Hepp P, Laufs U. "Effects of surgical masks on cardiopulmonary exercise capacity". Clin Res Cardiol. 2020 Dec;109:1522-1530. doi: 10.1007/s00392-020-01776-y. Epub 2020 Apr 8. PMID: 32253523; PMCID: PMC7738098. https://link.springer.com
45. 2020-Roberge : Roberge RJ, Kim JW, Powell JB. "Fit of the N95 respirator and surgical mask". Ann Occup Hyg. 2008 Jan;52(1):51-56. doi: 10.1093/annhyg/mem059. Epub 2007 Sep 19. PMID: 17873223.
46. 2020-Bernard : Bernard D, Beggs P, Bidan C, Blanchard N, Bonnefoy M, Chakiba C, Chauvin P, Gouttenoire P, Lepelletier D, Makinson A, Pavese P, Pelletier J, Pinquier D, Pulcini C, Rogues A, Salmon-Rousseau A, Tattevin P, Thuaudet S, Tosolini J, Vanhems P, Verdier M, Zahar JR, Zuber B, Lucet JC. "Lessons learned about isolation during the COVID-19 pandemic. Joint recommendations from the French scientific societies and the French infection control association". J Hosp Infect. 2020 Sep;105(4):717-725. doi: 10.1016/j.jhin.2020.05.035. Epub 2020 May 27. PMID: 32470275; PMCID: PMC7260564. https://www.ncbi.nlm.nih.gov/pmc
47. 2020-Greenhalgh : Greenhalgh T, Jimenez JL. "Masks for the masses". BMJ. 2020 Jun 23;371:m2779. doi: 10.1136/bmj.m2779. PMID: 32580991. https://www.ncbi.nlm.nih.gov
48. 2020-Wang : Wang Y, Tian J, Sun J, Chen L, Zhang X, Wei W, et al. "Physiological Impact of Face Mask Usage during the COVID-19 Pandemic". Int J Environ Res Public Health. 2020 Sep 12;17(18):6635. doi: 10.3390/ijerph17186635. PMID: 32933020; PMCID: PMC7559264. https://pubmed.ncbi.nlm.nih.gov

My competence to review science about COVID-19

I am retired and a former tenured Full Professor of Physics, University of Ottawa. Full Professor is the highest academic rank. During my 23-year career as a university professor, I developed new courses and taught over 2000 university students, at all levels, and in three languages (English, French, and Russian). I supervised over 100 students, at undergraduate terms or degrees at all levels from pre-doctoral fellow to graduate students to NSERC undergraduate researchers. I headed an internationally recognized interdisciplinary research laboratory, and attracted significant research funding for two decades.

I have been an invited plenary, keynote, or special session speaker at major scientific conferences some 40 times. I have published over 100 research papers in leading peer-reviewed scientific journals, in the areas of physics, chemistry, geology, bio-geochemistry, measurement science, soil science, and environmental science.

My scientific h-index impact factor is 40, and my articles have been cited more than 5,000 times according to Google Scholar. My Google Scholar profile is https://scholar.google.ca/citations?user=ITxPqQMAAAJ.

My personal knowledge and ability to evaluate the facts in this article are grounded in my education, research, training and experience, as follows:

1. Regarding environmental transportation, Viral respiratory diseases are transmitted by the smallest size-fraction of micro-aden- aerosol particles, which are reactive environmental nanoparticles. Therefore, the chemical and physical stabilities and transport properties of these aerosol particles are the foundation of the transmission of contagion mechanism through air. My extensive work on reactive environmental nanoparticles includes: Brownian motion, Stokes-Einstein-Sutherland-Smoluchowski theory, surface reactivity, agglomeration, surface charging, phase transformations, settling and sedimentation, and surface dissolution. In addition, I have taught the relevant fluid mechanics, and I have developed and taught the relevant statistical mechanics, and I have done relevant application research on the technology of filtration face masks are filters).
2. Regarding molecular science, molecular dynamics, and surface complexation, I am an expert in molecular structures, reactions, and dynamics, including molecular spectroscopy, molecular bonding, molecular structures, surface charge, ion and proton attachment, oxygen attachment, molecular replication, attachment to mask fibers, particle charging, loss and growth in aerosol particles, and all such phenomena involved in viral transmission and infection, and in protection measures. I taught quantum mechanics at the advanced university level for many years, which is the foundation of molecular bonding, molecular structures, and all such phenomena.
3. Regarding research in fluid diffusion theory and methodology for characterizing small material particles.
4. Regarding data analysis methods, Statistical analysis of scientific studies, including the use in epidemiologic analyses and robust estimates of bias, sets the limit of what reliably can be inferred from any observational study, including randomized controlled trials in medicine, and including field measurements during epidemics. I am an expert in error analysis and statistical analysis of complex data, at the research level in many fields of science, including in the fields of medicine and epidemiology.
5. Regarding mathematical modelling, Much of epidemiology is based on mathematical models of disease transmission and evolution in the population. I have research-level knowledge and experience with predictive and explanatory mathematical models and simulation methods. I have expert knowledge related to parameter uncertainties and sensitivities, including Monte Carlo methods, Bayesian parameter estimation, and epidemiological dynamics, using standard compartmental models (SIR, MSIR) and new models.
6. Regarding measurement methods, In science there are five main categories of measurements methods:
   - spectroscopy (including nuclear, electronic and vibrational spectroscopies),
   - imaging (including optical and electron microscopies, and resonance imaging),
   - diffraction (including X-ray and neutron diffractions, used to elaborate molecular, crystal and material structures),
   - transport measurements (including reaction rates, energy transfers, and conductivities), and
   - physical property measurements (including specific density, thermal capacities, stress response, material fatigue,).

   I have research-level experimental methods in an interdisciplinary graduate course that I developed and gave to graduate (M.Sc. and Ph.D.) students of physics, biology, chemistry, geology, and engineering for many years. I have made fundamental discoveries and advances in areas of spectroscopy, diffraction, magnetometry, and microscopy, which have been published in leading scientific journals. I have been invited to give keynote presentations. I know measurement science, the state of all sciences, at the highest level.

YOU MAY ALSO LIKE

Science

Review Covid CDC Guidance: Medical CDC science the actual risk that does the justify the "cure"?

Trends

Face masks, lies, damn lies, and public health: difficult, "A growing body of evidence"

Trends

Masks Don't Work: a Review of Science Relevant to COVID-19 Social policy

COVFEFE
OPERATIONS • INTELLIGENCE

Donate Brimstone Complaints Disclaimer Feedback Lawsuit Rebellion

Copyright ©2021 Covfefe Operations, All Rights Reserved

This is an unofficial website created by Covfefe Operations, a non-profit, non-partisan, non-political, non-religious, non-commercial, non-gerrymandered, non-sectarian, non-hierarchical, non-bureaucratic, non-hierarchical, non-bureaucratic, non-hierarchical, non-bureaucratic