THE EFFICACY OF MASKS

A Review of the Literature

+

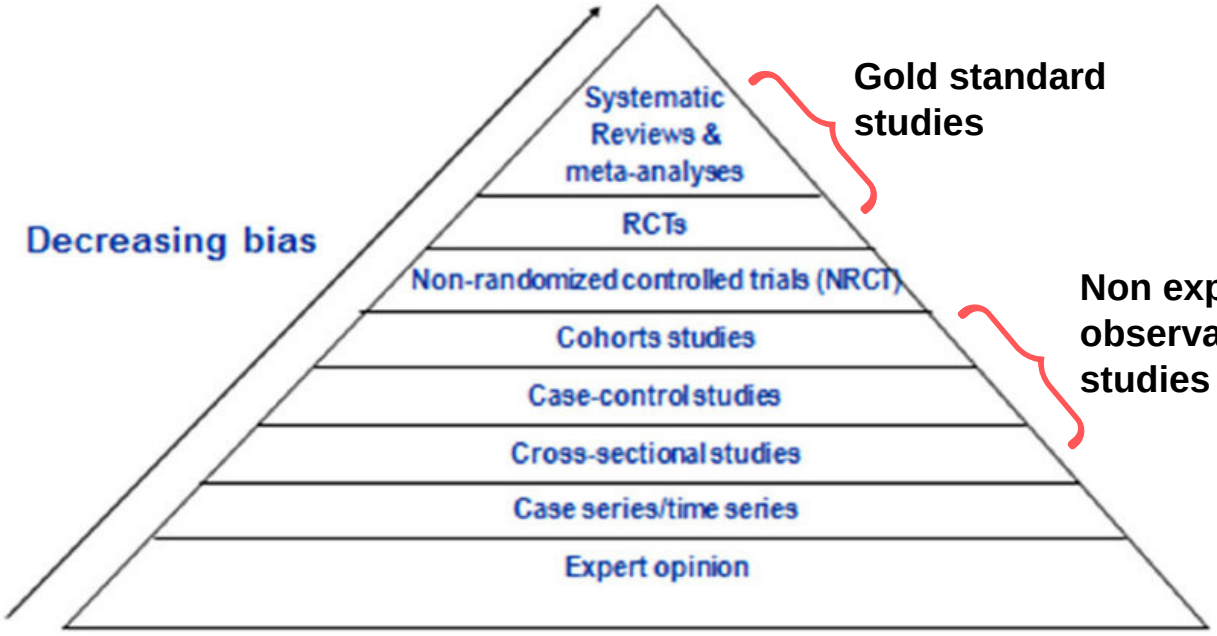
How to Understand It

Stephanie Young BSc, DC

KEY POINTS

- **Must understand hierarchy of evidence - not all research is created equal.**
- **Must search for conflicts of interests and questionable funding or involvement.**
- **To date there is no policy-grade evidence to support masking the general population and the in fact encourages against it.**
- **There is also not a "growing body of evidence." There are no new randomized controlled trials that conclude masks are effective as a protective measure to reduce transmission of infection for the general public.**
- **Filtration studies do not measure the efficacy of a mask intervention on viral transmission. They measure one variable, filtration, that's it.**
- **There are thousands of doctors, scientists and professionals who urge against the use of these measures as they are not only NOT effective, they harm.**

THE HIERARCHY OF EVIDENCE



©Prof. Dr. John Sievenpiper

Research designs which have the lowest level of bias are systematic reviews and meta-analyses of randomized controlled trials (RCTs) and RCTs themselves.

"Clinical experience or observational studies should never be used as the sole basis for assessment of intervention effects - randomized clinical trials are always needed."

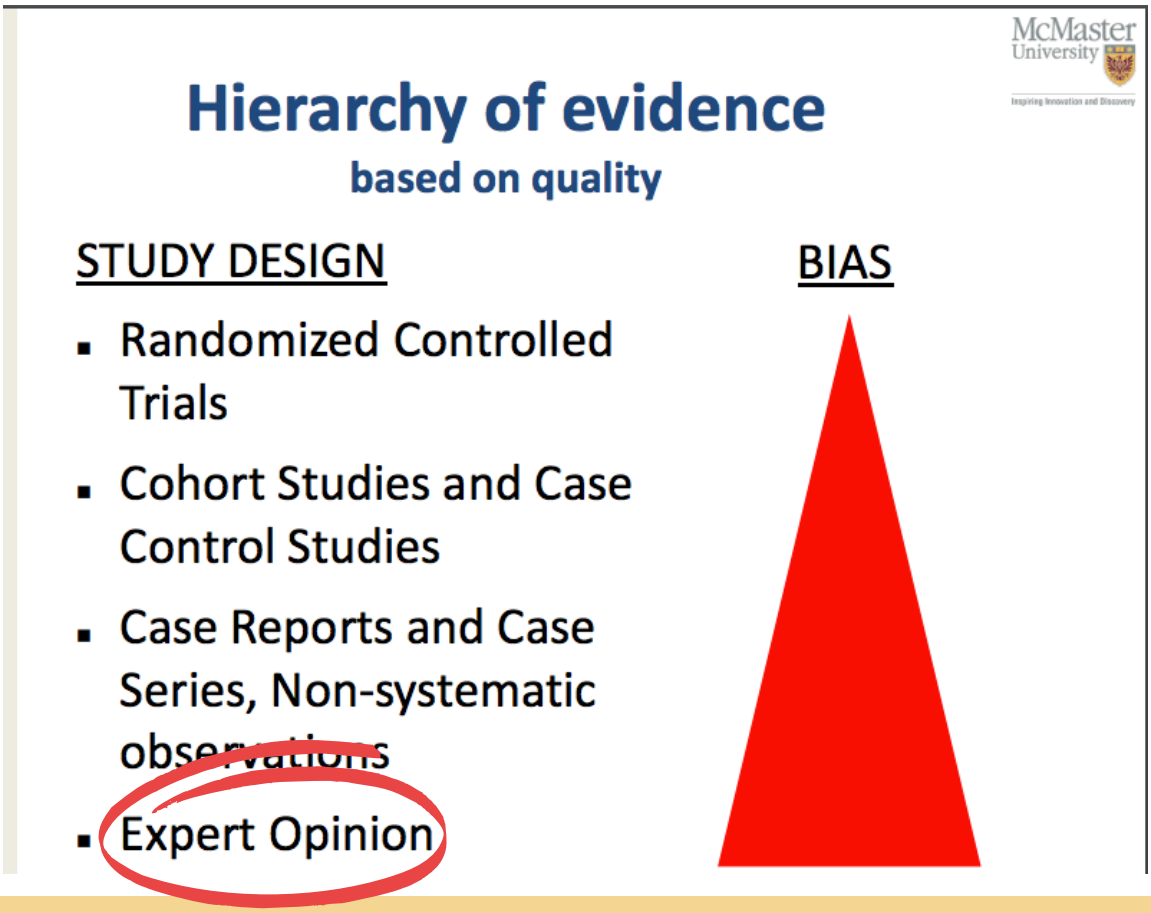
Janus Christian Jakobsen, MD

BMC Med Res Methodol. 2014 Nov 21;14:120. doi: 10.1186/1471-2288-14-120.

Randomization reduces bias and provides a rigorous tool to examine cause-effect relationships between an intervention and outcome. This is not possible with any other study design.

BJOG. 2018 Dec ; 125(13): 1716. doi: 10.1111/1471-0528.15199.

BUT THE "EXPERTS"



Recall that expert opinions are the lowest on the hierarchy. Their opinion may or may not be evidence informed which is why "listening to the experts" is not only disregarding high level evidence but also a dangerous thing to do.

The strength of a recommendation reflects the extent to which we can, across the range of patients for whom the recommendations are intended, be confident that desirable effects of a management strategy outweigh undesirable effects.

Translation: The cure can't be worse than the disease.

CHERRY PICKING

"Cherry picking, suppressing evidence, or the fallacy of incomplete evidence is the act of pointing to individual cases or data that seem to confirm a particular position while ignoring a significant portion of related and similar cases or data that may contradict that position. This fallacy is a major problem in public debate."

Gary Klass
Department of Politics and Government
Illinois State University

“Politicians and governments are suppressing science. They do so in the public interest, they say, to accelerate availability of diagnostics and treatments. They do so to support innovation, to bring products to market at unprecedented speed. Both of these reasons are partly plausible; the greatest deceptions are founded in a grain of truth. But the underlying behaviour is troubling.”

Kamran Abbasi, MD
British Medical Journal
Department of Primary Care and Public Health Executive
Editor of the British Medical Journal

THE META-ANALYSES & SYSTEMATIC REVIEWS

Highest level of research

SYSTEMATIC REVIEW

YEAR: 2009
EVIDENCE QUALITY: HIGH
SETTING: COMMUNITY & HEALTHCARE

Epidemiol. Infect. (2010), **138**, 449–456.
doi:10.1017/S0950268809991658

REVIEW ARTICLE
Face masks to prevent transmission of influenza virus: a systematic review

B. J. COWLING[1]*, Y. ZHOU[1], D. K. M. IP[1], G. M. LEUNG[1] AND A. E. AIELLO[2]

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[2] *Department of Epidemiology, Center for Social Epidemiology & Population Health, School of Public Health, University of Michigan, Ann Arbor, MI, USA*

(*Accepted 16 December 2009; first published online 22 January 2010*)

SUMMARY

Influenza viruse circulate around the world every year. From time to time new strains emerge and cause globa pandemics. Many national and international health agencies recommended the use of face sks during the 2009 influenza A (H1N1) pandemic. We reviewed the English-langua literature on this subject to inform public health preparedness. There is some evidence to sup rt the wearing of masks or respirators during illness to protect others, and

Conclusion

While there is some experimental evidence that masks should be able to reduce infectiousness under controlled conditions, there is even less evidence on whether this translates to effectiveness in natural settings. There is little evidence to support the effectiveness of face masks to reduce the risk of infection.

Table 1.
All the studies reviewed in healthcare settings

RCT (randomized controlled trial) is the gold standard we look for.

No significant difference between N95 & surgical masks.

No significant differences between mask group and control group

Table 1. *Studies conducted in healthcare settings*

Study	Setting	Participants and follow-up	Study design	Interventions evaluated	Main outcomes	Findings
Loeb *et al.* [8]	8 tertiary-care hospitals, Ontario, 2008–2009	446 nurses	RCT	N95 respirators, surgical masks	Seroconversion or RT–PCR-confirmed influenza infection	No significant difference between N95 and surgical masks
Jacobs *et al.* [9]	Tertiary-care hospital in Tokyo, 2008	32 individuals followed for 77 days	RCT	Surgical masks, control	Self-reported colds	No significant differences between mask group and control group
Ng *et al.* [10]	Teaching hospital in Hong Kong, 2007	133 healthcare workers	Cross-sectional	Vaccination, use of personal protective equipment, hand washing	Self-reported influenza-like illness	Suboptimal use of standard precautions during high-risk procedures associated with higher risk of infection
Al-Asmary *et al.* [11]	Medical personnel in two Hajj mission hospitals, Saudi Arabia, 2004	250 medical personnel	Cross-sectional	Vaccination, face masks, hand hygiene	Self-reported acute respiratory illness	No significant protective effect of face masks
Davies *et al.* [12]	General practice and a teaching hospital, 1991–1992	50 dental surgeons	Cross-sectional	Masks and spectacles	Seropositivity	No significant differences by mask use
Hobday & Cason [13]	'Open air' hospital in Boston, 1918	Patients and staff	Observational	Ventilation, use of personal protective equipment, hand washing	Mortality	Low case-fatality rate could be associated with use of natural ventilation and gauze face masks

RCT, Randomized controlled trial.

Cross-sectional / observational studies don't have the power to adequately measure interventional outcomes, but they also found no overall protective effects of face masks.

Table 2.
All the studies reviewed in community

No significant difference overall for masking in community settings in these reviewed RCTs.

Table 2. *Randomized controlled trials conducted in community settings*

Study	Setting	Participants and follow-up	Interventions evaluated	Main outcomes	Findings
Cowling *et al.* [14]	Outpatients in Hong Kong, 2008	322 index cases and their household contacts	Surgical masks plus hand hygiene, hand hygiene, control	RT–PCR-confirmed infection	No significant difference overall; significant difference between surgical masks plus hand hygiene and control if implemented within 36 hours of illness onset in index case
Cowling *et al.* [15]	Outpatients in Hong Kong, 2007	122 index cases and their household contacts	Surgical masks, hand hygiene, control	RT–PCR-confirmed infection	No significant differences between surgical masks and control
MacIntyre *et al.* [16]	Outpatients in Australia, 2006–2007	143 index cases and their household contacts	Surgical masks, P2 (N95-type) respirators, control	Self-reported influenza-like illness	No significant difference overall; significant difference between masks and control in per-protocol analysis
Aiello *et al.* [17]	Residents of university dormitories, Michigan, 2008	1437 university students	Surgical masks plus hand hygiene, surgical masks alone, control	Clinically diagnosed and survey-reported influenza-like illness	No significant differences overall; significant reductions in influenza-like illness during weeks 4–6 between mask plus hand hygiene *vs.* control groups and similar, but non-significant, reductions between mask-only *vs.* control groups

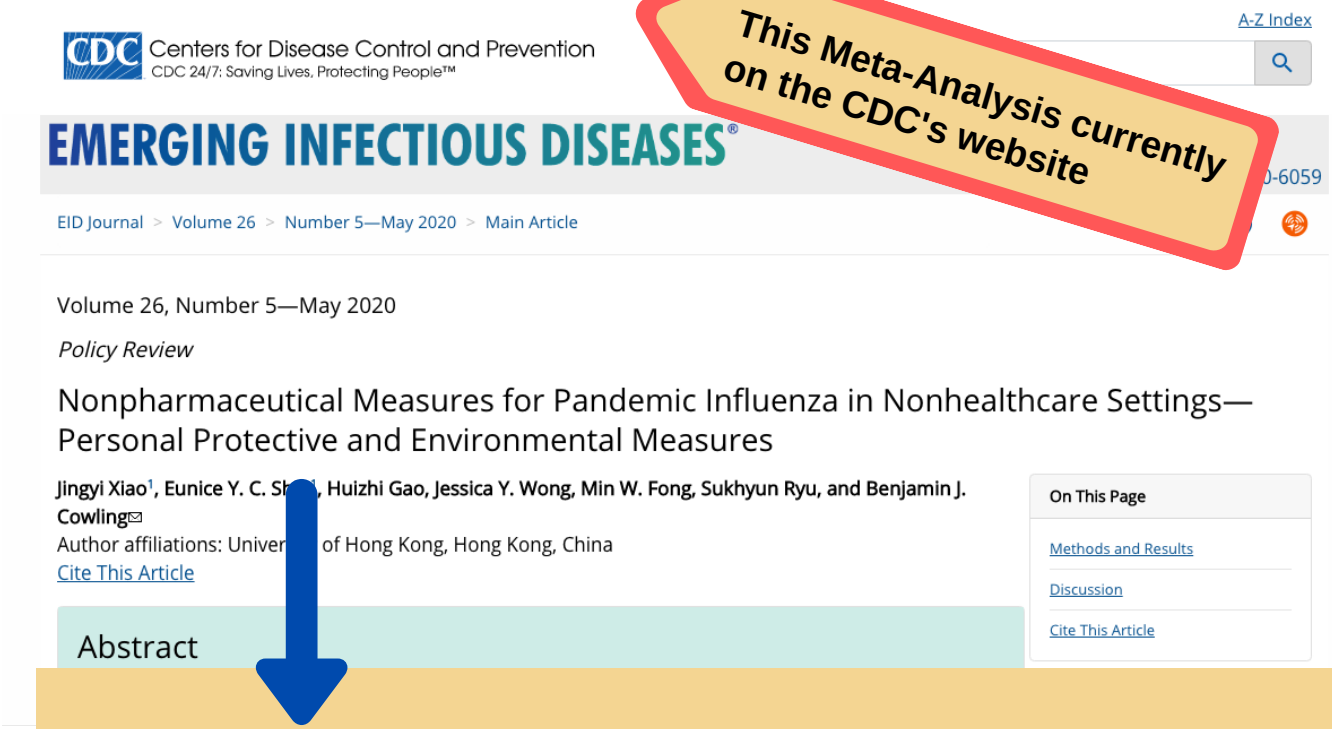
Epidemiol Infect. 2010 Apr;138(4):449-56. doi: 10.1017/S0950268809991658.

META-ANALYSIS

YEAR: 2020
EVIDENCE QUALITY: HIGHEST
SETTING: COMMUNITY

Nonpharmaceutical Measures for Pandemic Influenza in Nonhealthcare Settings—Personal Protective and Environmental Measures

This Meta-Analysis currently on the CDC's website



A-Z Index

Centers for Disease Control and Prevention
CDC 24/7: Saving Lives, Protecting People™

EMERGING INFECTIOUS DISEASES®

EID Journal > Volume 26 > Number 5—May 2020 > Main Article

Volume 26, Number 5—May 2020

Policy Review

Nonpharmaceutical Measures for Pandemic Influenza in Nonhealthcare Settings—Personal Protective and Environmental Measures

Jingyi Xiao[1], Eunice Y. C. Sh[illegible], Huizhi Gao, Jessica Y. Wong, Min W. Fong, Sukhyun Ryu, and Benjamin J. Cowling

Author affiliations: Univer[illegible] of Hong Kong, Hong Kong, China

Cite This Article

Abstract

On This Page

Methods and Results

Discussion

Cite This Article

Results & Discussion:

We identified 10 RCTs that reported estimates of the effectiveness of face masks in reducing laboratory-confirmed influenza virus infections in the community from literature published during 1946–July 27, 2018. In pooled analysis, we found no significant reduction in influenza transmission with the use of face masks (RR 0.78, 95% CI 0.51–1.20; I2 = 30%, p = 0.25).

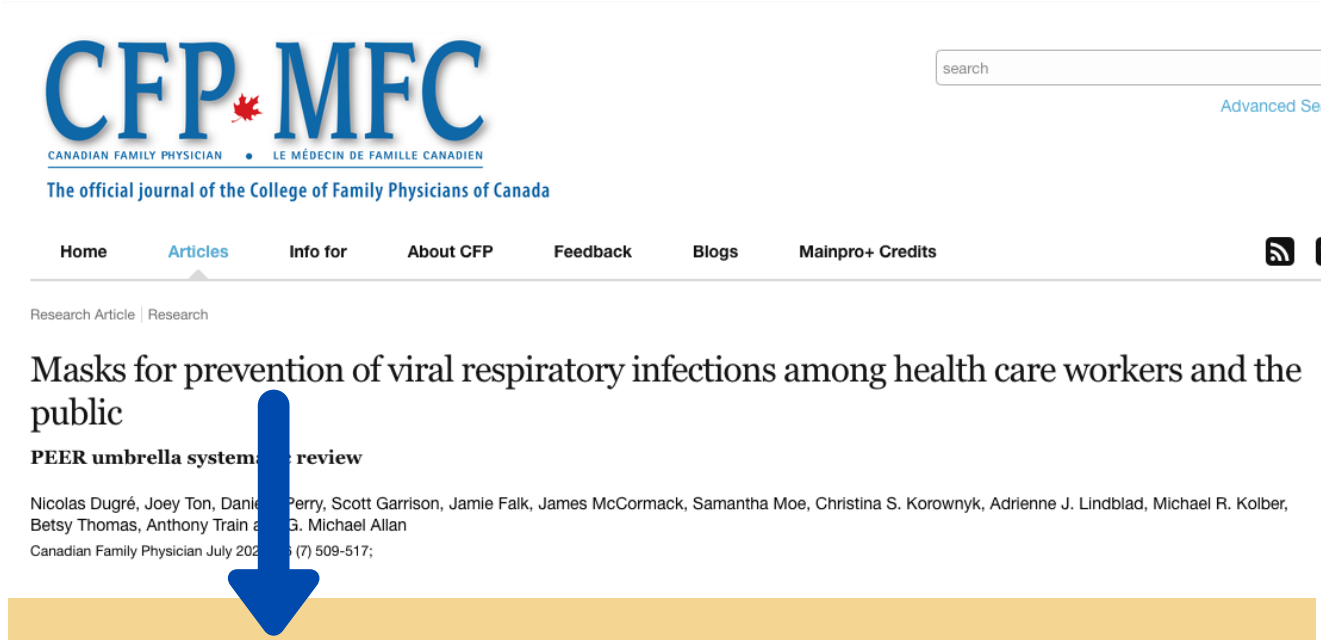
We did not find evidence to support a protective effect of personal protective measures or environmental measures in reducing influenza transmission.

Nonpharmaceutical Measures for Pandemic Influenza in Nonhealthcare Settings—Personal Protective and Environmental Measures. Emerging Infectious Diseases. 2020;26(5):967-975. doi:10.3201/eid2605.190994

SYSTEMATIC REVIEW

YEAR: 2020
EVIDENCE QUALITY: HIGH
SETTING: COMMUNITY & HEALTHCARE

Masks for prevention of viral respiratory infections among health care workers and the public
PEER umbrella systematic review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The official journal of the College of Family Physicians of Canada

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Masks for prevention of viral respiratory infections among health care workers and the public

PEER umbrella systema review

Nicolas Dugré, Joey Ton, Danie Perry, Scott Garrison, Jamie Falk, James McCormack, Samantha Moe, Christina S. Korownyk, Adrienne J. Lindblad, Michael R. Kolber, Betsy Thomas, Anthony Train a G. Michael Allan

Canadian Family Physician July 202 (7) 509-517;

Results & Discussion:

From these 11 systematic reviews, 18 unique RCTs were identified, including a total of 26,444 participants.
No additional RCTs published in 2020 were found.

The use of masks in community settings in general did not reduce the risk of confirmed influenza (RR = 0.97; 95% CI 0.75 to 1.25; I2 = 0%) or confirmed viral respiratory infection (RR = 1.28; 95% CI 0.87 to 1.89; I2 = 0%).

Results were not statistically significant in any subgroup analysis (masks worn by all, just the sick person, or just the healthy family members at home).
The use of masks in community settings did not result in a significant risk reduction of influenza like illness.

Canadian Family Physician July 2020, 66 (7) 509-517;

SYSTEMATIC REVIEW

YEAR: 2012
EVIDENCE QUALITY: HIGH
SETTING: COMMUNITY & HEALTHCARE

The use of masks and respirators to prevent transmission of influenza: a systematic review of the scientific evidence

DOI:10.1111/j.1750-2659.2011.00307.x
www.influenzajournal.com
Review Article

The use of masks and respirators to prevent transmission of influenza: a systematic review of the scientific evidence

Faisal bin-Reza,[a] Vicente Lopez Chavarrias,[b] Angus Nicoll,[a,b] Mary E. Chamberland[a]

[a]Health Protection Agency, London, England. [b]European Centre for Disease Prevention and Control, Stockholm, Sweden.
Correspondence: Mary E. Chamberland, MD, MPH, Private public health consultant, 78 Lindbergh Drive Unit 70, Atlanta, GA 30305, USA.
E-mail: mechamberland@googlemail.com
Faisal bin-Reza, Angus Nicoll and Mary E Chamberland undertook this work whilst at the Health Protection Agency but no longer work at the HPA.
An earlier version of this review was published on-line by the Department of Health at: http://www.dh.gov.uk/prod_consum_dh/groups/dh_digitalassets/documents/digitalasset/dh_125425.pdf. This version has been updated and revised.

Accepted 10 October 2011. Published Online 21 December 2011.

There are limi data on the use of masks and respirators to reduce transmi n of influenza. A systematic review was undertaken to p inform pandemic influenza guidance in the

hand sanitiser alone resulted in no reduction. One hospital-based trial found a lower rate of clinical respiratory illness associated with non-fit-tested N95 respirator use compared with

Discussion:

None of the studies we reviewed established a conclusive relationship between mask/respirator use and protection against influenza infection.

META-ANALYSIS

YEAR: 2016
EVIDENCE QUALITY: HIGHEST
SETTING: HEALTHCARE

Disposable surgical face masks for preventing surgical wound infection in clean surgery

Disposable surgical face masks for preventing surgical wound infection in clean surgery

Monitoring Editor: Marina Vincent,[✉] Peggy Edwards, and Cochrane Wounds Group
University of York, Department of Health Sciences, Heslington, YorkUK, YO10 5DD
University of Manchester, C/o Cochrane Wounds, School of Nursing, Midwifery and Social Work, ManchesterUK, M13 9PL
Marina Vincent, Email: , marina.vincent7@gmail.comEmail: marina.vincent7@gmail.com.

Results:

We included three trials, involving a total of 2106 participants. There was no statistically significant difference in infection rates between the masked and unmasked group in any of the trials.

Cochrane Database Syst Rev. 2016 Apr 26;4(4):CD002929. doi: 10.1002/14651858.CD002929.

SYSTEMATIC REVIEW

YEAR: 2015
EVIDENCE QUALITY: HIGH
SETTING: HEALTHCARE

Unmasking the surgeons: the evidence base behind the use of facemasks in surgery

J R Soc Med. 2015 Jun; 108(6): 223–228.
doi: 10.1177/0141076815583167
PMCID: PMC4480558
PMID: 26085560

Unmasking the surgeons: the evidence base behind the use of facemasks in surgery

Charlie Da Zhou,[1] Pamela Sivathondan,[2] and Ashok Handa[2]

Author information Copyright and License information Disclaimer

Abstract

Conclusion:

Examination of the literature revealed much of the published work on the matter to be quite dated and often studies had poorly elucidated methodologies.

As a result, we recommend caution in extrapolating their findings to contemporary surgical practice.

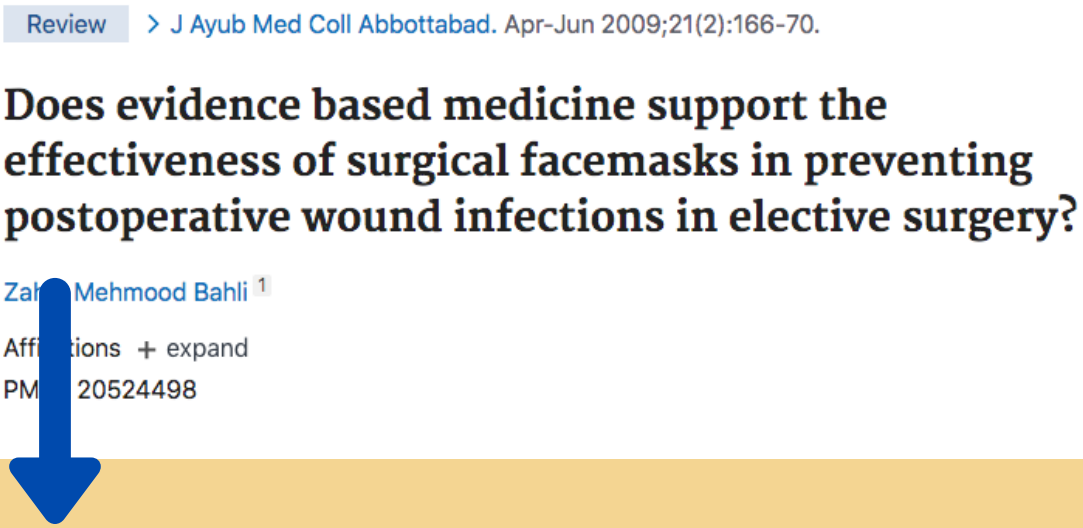
However, overall there is a lack of substantial evidence to support claims that face masks protect either patient or surgeon from infectious contamination.

J R Soc Med. 2015 Jun; 108(6): 223–228. doi: 10.1177/0141076815583167.

SYSTEMATIC REVIEW

YEAR: 2009
EVIDENCE QUALITY: HIGH
SETTING: HEALTHCARE

Does evidence based medicine support the effectiveness of surgical facemasks in preventing postoperative wound infections in elective surgery?


Review > J Ayub Med Coll Abbottabad. Apr-Jun 2009;21(2):166-70.

Does evidence based medicine support the effectiveness of surgical facemasks in preventing postoperative wound infections in elective surgery?

Zal Mehmood Bahli [1]

Affi tions + expand

PM 20524498

Results:

No significance difference in the incidence of postoperative wound infection was observed between masks group and groups operated with no masks (1.34, 95% CI, 0.58-3.07). There was no increase in infection rate in 1980 when masks were discarded. In fact there was significant decrease in infection rate ($p < 0.05$).

J Ayub Med Coll Abbottabad. Apr-Jun 2009;21(2):166-70.

META-ANALYSIS

YEAR: 2016
EVIDENCE QUALITY: HIGHEST
SETTING: HEALTHCARE

Effectiveness of N95 respirators versus surgical masks in protecting health care workers from acute respiratory infection: a systematic review and meta-analysis

This analysis looks at N95 versus surgical masks not mask versus no mask.

CMAJ. 2016 May 17; 188(8): 567–574.
Published online 2016 Mar 7. doi: 10.1503/cmaj.150835 PMID:

Effectiveness of N95 respirators versus surgical masks in protecting health care workers from acute respiratory infection: a systematic review and meta-analysis

Jeffrey D. Smith, MSc, Colin C. MacDougall, MSc, Jennie Johnstone, MD PhD, Ray A. Copes, MD, Brian Schwartz, MD, and Gary E. Garber, MD

Abstract Go to:

Background:

Conflicting recommendations exist related to which facial protection should be used by health care workers to prevent transmission of acute respiratory infections, including pandemic influenza. We performed a systematic review of both clinical and surrogate exposure data comparing N95 respirators and surgical

Results:

In the meta-analysis of the clinical studies, we found no significant difference between N95 respirators and surgical masks in associated risk of (a) laboratory-confirmed respiratory infection.

CMAJ. 2016 May 17;188(8):567-574. doi: 10.1503/cmaj.150835.

META-ANALYSIS

YEAR: 2020
EVIDENCE QUALITY: HIGHEST
SETTING: HEALTHCARE

Effectiveness of N95 respirators versus surgical masks against influenza: A systematic review and meta-analysis

This analysis looks at N95 versus surgical masks not mask versus no mask.

Received: 3 February 2020 | Accepted: 12 February 2020
DOI: 10.1111/jebm.12381

ARTICLE

Effectiveness of N95 respirators versus surgical masks against influenza: A systematic review and meta-analysis

Youlin Long[1] | Tengyue Hu[2] | Liqin Liu[2] | Rui Chen[3] | Qiong Guo[1] | Liu Yang[1] | Yifan Cheng[1] | Jin Huang[4] | Liang Du[1]

Results:
A total of six RCTs involving 9171 participants were included. There were not statistically significant differences in preventing laboratory-confirmed influenza, laboratory-confirmed respiratory viral infections, laboratory-confirmed respiratory infection and influenza-like illness using N95 respirators and surgical masks.

The use of N95 respirators compared with surgical masks is not associated with a lower risk of laboratory-confirmed influenza. It suggests that N95 respirators should not be recommended for general public and non high-risk medical staff those are not in close contact withinfluenza patients or suspected patients

J Evid Based Med. 2020 May;13(2):93-101. doi: 10.1111/jebm.12381.

SYSTEMATIC REVIEW

YEAR: 2020
EVIDENCE QUALITY: PRE-PRINT
SETTING: COMMUNITY & HEALTHCARE

Physical interventions to interrupt or reduce the spread of respiratory viruses. Part 1 - Face masks, eye protection and person distancing: systematic review and meta-analysis

Results

Our results show that masks alone have no significant effect in interrupting spread of ILI or influenza in the all populations analysis. Our findings are similar for ILI in healthcare workers RR 0.37 (95% CIs 0.05 to 2.50) and for the comparisons between N95 respirators and surgical masks: for clinical respiratory illness, and influenza.

Despite the lack of evidence, we would still recommend using facial barriers in the setting of epidemic and pandemic viral respiratory infections, but there does not appear to be a difference between surgical and full respirator wear. Despite the methodological concerns, our review of the available studies demonstrates consistency in the finding of no difference between surgical and N95 or equivalent masks as a physical intervention to interrupt or reduce the spread of respiratory viruses, mainly influenza.

J Evid Based Med. 2020 May;13(2):93-101. doi: 10.1111/jebm.12381.

RANDOMIZED CONTROLLED TRIALS

There are dozens which have already been reviewed in the analyses above, here are a few for reference.

Randomized Controlled Trial

YEAR: 2015
EVIDENCE QUALITY: HIGH
SETTING: HEALTHCARE

A cluster randomised trial of cloth masks compared with medical masks in healthcare workers

BMJ Open. 2015; 5(4): e006577.
Published online 2015 Apr 22. doi: 10.1136/bmjopen-2014-006577
PMCID: PMC4420971
PMID: 25903751

A cluster randomised trial of cloth masks compared with medical masks in healthcare workers

C Raina MacIntyre,[1] Holly Seale,[1] Tham Chi Dung,[2] Nguyen Tran Hien,[2] Phan Thi Nga,[2] Abrar Ahmad Chughtai,[1] Bayzidur Rahman,[1] Dominic E Dwyer,[3] and Quanyi Wang[4]

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This article has been cited by ot articles in PMC

Results

Cloth masks resulted in significantly higher rates of infection than medical masks, and also performed worse than the control arm.

There was no significant difference between the medical mask and control arms.

When we analysed all mask-wearers including controls, the higher risk of cloth masks was seen for laboratory-confirmed respiratory viral infection.

The physical properties of a cloth mask, reuse, the frequency and effectiveness of cleaning, and increased moisture retention, may potentially increase the infection risk for HCWs (health care worker).

We also showed that filtration was extremely poor (almost 0%) for the cloth masks.

BMJ Open. 2015 Apr 22;5(4):e006577. doi: 10.1136/bmjopen-2014-006577.

Randomized Controlled Trial

YEAR: 2020
EVIDENCE QUALITY: HIGH
SETTING: COMMUNITY

Effectiveness of Adding a Mask Recommendation to Other Public Health Measures to Prevent SARS-CoV-2 Infection in Danish Mask Wearers

› Ann Intern Med. 2020 Nov 18. doi: 10.7326/M20-6817. Online ahead of print.

Effectiveness of Adding a Mask Recommendation to Other Public Health Measures to Prevent SARS-CoV-2 Infection in Danish Mask Wearers : A Randomized Controlled Trial

He ng Bundgaard [1], Johan Skov Bundgaard [1], Daniel Emil Tadeusz Raaschou-Pedersen [1], C stian von Buchwald [2], Tobias Todsen [2], Jakob Boesgaard Norsk [3], Mia M Pries-Heje [1], C stoffer Rasmus Vissing [1], Pernille B Nielsen [3], Ulrik C Winsløw [1], Kamille Fogh [3], Rasmus alch [3], Jonas H Kristensen [3], Anna Ringgaard [1], Mikkel Porsborg Andersen [4], Nicole

Results

Our results suggest that the recommendation to wear a surgical mask when outside the home among others did not reduce, at conventional levels of statistical significance, the incidence of SARS-CoV-2 infection in mask wearers in a setting where social distancing and other public health measures were in effect, mask recommendations were not among those measures, and community use of masks was uncommon.

Randomized Controlled Trial

YEAR: 2016
EVIDENCE QUALITY: HIGH
SETTING: HEALTHCARE & COMMUNITY

Cluster randomised controlled trial to examine medical mask use as source control for people with respiratory illness

BMJ Open. 2016; 6(12): e012330.
Published online 2016 Dec 30. doi: 10.1136/bmjopen-2016-012330
PMCID: PMC5223715
PMID: 28039289

Cluster randomised controlled trial to examine medical mask use as source control for people with respiratory illness

Chandini Raina MacIntyre,[1,2] Yi Zhang,[3] Abrar Ahmad Chughtai,[1,2] Holly Seale,[1,2] Daitao Zhang,[3] Yanhui Chu,[3] Haiyan Zhang,[3] Bayzidur Rahman,[1,2] and Quanyi Wang[3]

Abstract

Go to:

Rati ale

Medi masks are commonly used by sick individuals with influenza-like illness (ILI) to prevent spread of infec ns to others, but clinical efficacy data are absent.

Results

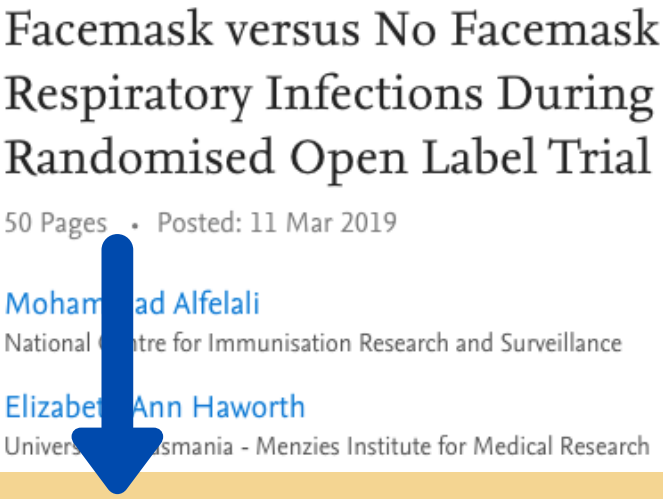
Rates of clinical respiratory illness (relative risk (RR) 0.61, 95% CI 0.18 to 2.13), ILI (RR 0.32, 95% CI 0.03 to 3.13) and laboratory-confirmed viral infections (RR 0.97, 95% CI 0.06 to 15.54) were not statistically significant between the the mask arm compared with control.

BMJ Open. 2016 Dec 30;6(12):e012330. doi: 10.1136/bmjopen-2016-012330.

Randomized Controlled Trial

YEAR: 2019
EVIDENCE QUALITY: HIGH
SETTING: COMMUNITY

Facemask versus No Facemask in Preventing Viral Respiratory Infections During Hajj: Cluster Randomised Open Label Trial


Facemask versus No Facemask in Preventing Viral Respiratory Infections During Hajj: A Cluster Randomised Open Label Trial

50 Pages • Posted: 11 Mar 2019

Moham ad Alfelali
National tre for Immunisation Research and Surveillance

Elizabet Ann Haworth
Univers smania - Menzies Institute for Medical Research

Findings & Conclusions

7,687 adult participants from 318 tents were randomised to facemasks or no facemasks.

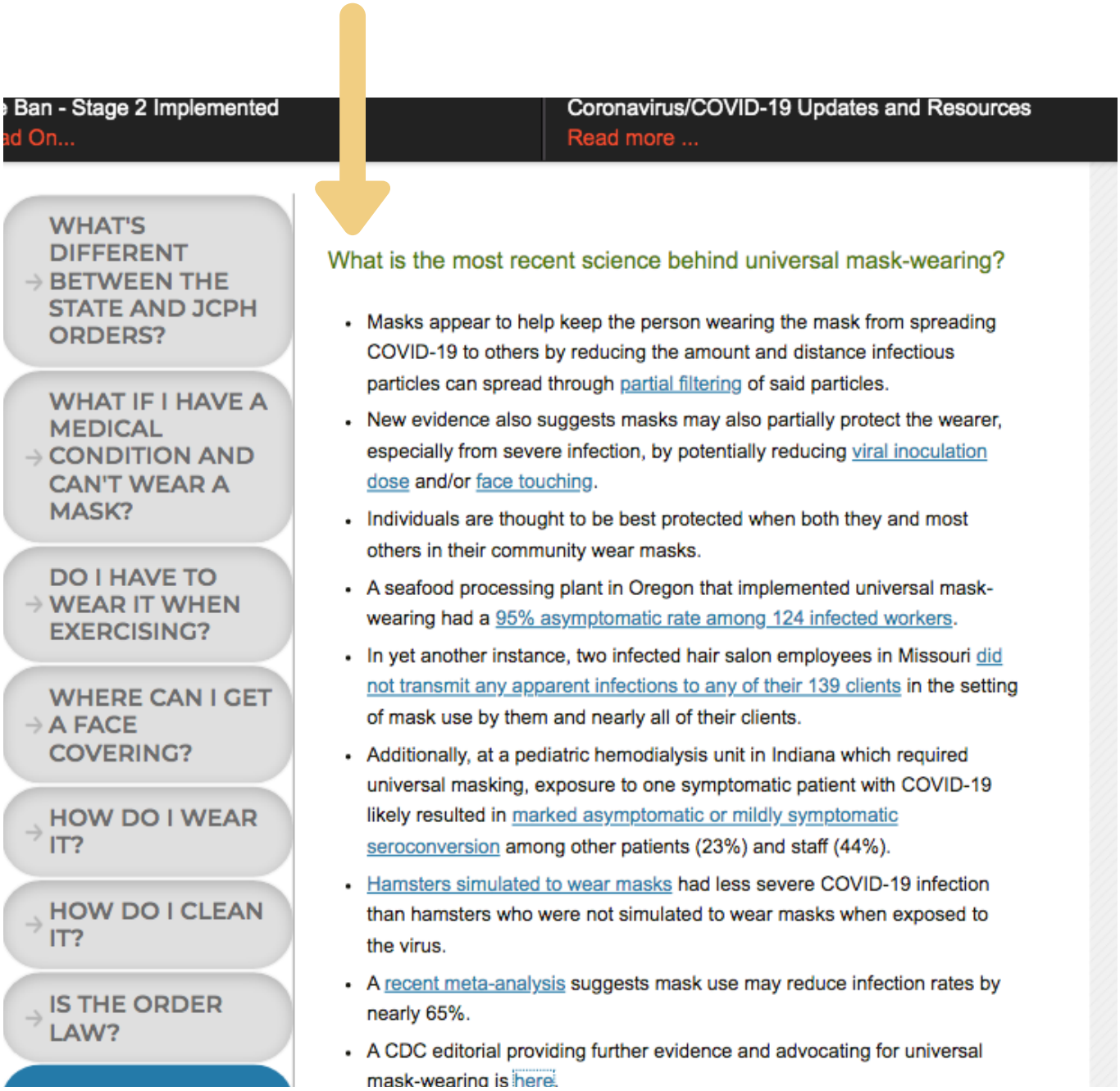
In intention-to-treat analysis, facemask use was neither effective against laboratory-confirmed vRTIs (OR 1.35, 95% CI 0.88-2.07) nor against CRI (OR 1.1, 95% CI 0.88-1.39), not even in per-protocol analysis

Facemask use does not prevent clinical or laboratory-confirmed viral respiratory infections.

J Epidemiol Glob Health. 2015 Jun;5(2):181-9. doi: 10.1016/j.jegh.2014.08.002.

ADDITIONAL CONSIDERATIONS

THIS IS A TYPICAL CITY'S WEBSITE EXPLAINING 'WHY MASKS WORK'



Let's break down each point of their "evidence."

jeffco.us/4056/Mask-Guidance

THEY CLAIM	THE FACT
• Masks appear to help keep the person wearing the mask from spreading COVID-19 to others by reducing the amount and distance infectious particles can spread through **partial filtering of said particles.**	• **Filtration studies cannot access if masking the general public will in-fact reduce viral transmission**, only a Randomized Control Trial that measures efficacy of interventions can appropriately do this.
• **New evidence** also suggests masks may also partially protect the wearer, especially from severe infection, by potentially reducing viral inoculation dose and/or face touching.	• New evidence? The paper they linked is **not even a published study.** This is a manuscript. Absolutely absurd to cite this as a source of "evidence."
• **Individuals are thought** to be best protected when both they and most others in their community wear masks.	• **Zero evidence for this statement**, which is why they don't list any source.
• A **seafood processing plant** in Oregon that implemented universal mask-wearing had a 95% asymptomatic rate among 124 infected workers.	• This is **NOT a legitimate scientific source.** It was a facility's written statement of their operations and attempt to measure outcomes. It offers zero clarity in the scope of quality science.

THEY CLAIM	THE FACT
• In yet another instance, two infected **hair salon** employees in Missouri did not transmit any apparent infections to any of their 139 clients in the setting of mask use by them and nearly all of their clients.	• This is a REPORT on the CDC's owned Morbidity and Mortality Weekly Report website. It is a **not a peer reviewed scientific study**.
• Additionally, at **a pediatric hemodialysis** unit in Indiana which required universal masking, exposure to one symptomatic patient with COVID-19 likely resulted in marked asymptomatic or mildly symptomatic seroconversion among other patients (23%) and staff (44%).	• This study is a low level study as a case series, but what's more is that it **has no relevance on if masks stop transmission of viruses in the general population**, again only a well designed RCT can measure this.
• **Hamsters simulated** to wear masks had less severe COVID-19 infection than hamsters who were not simulated to wear masks when exposed to the virus.	• A **simulation, an animal model not a clinical trial.** Again, not an appropriate study for measuring an intervention in human populations in community.
• A recent meta-analysis suggests mask use may reduce infection rates by nearly 65%.	• This analysis looked ONLY at **observational studies** (weak evidence) and ZERO RCTs. (high level evidence)

Why do they omit ALL the randomized controlled trials & the meta-analyses we have on this?

Instead they reference the weakest and entirely inappropriate sources.

For any those who understand the structure of science, this is not only absurd, it is fraudulent.

JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

EDITORIAL

This Issue Views 360,483 | Citations 0 | Altmetric 2244

JAMA Patient Page

March 4, 2020

Medical Masks

Angel N. Desai, MD, MPH[1]; Preeti Mehrotra, MD, MPH[2]

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"Face masks should be used only by individuals who have symptoms of respiratory infection such as coughing, sneezing, or, in some cases, fever. Face masks should also be worn by health care workers, by individuals who are taking care of or are in close contact with people who have respiratory infections, or otherwise as directed by a doctor.

Face masks should not be worn by healthy individuals to protect themselves from acquiring respiratory infection because there is no evidence to suggest that face masks worn by healthy individuals are effective in preventing people from becoming ill."

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EDITORIAL

JAMA Patient Page

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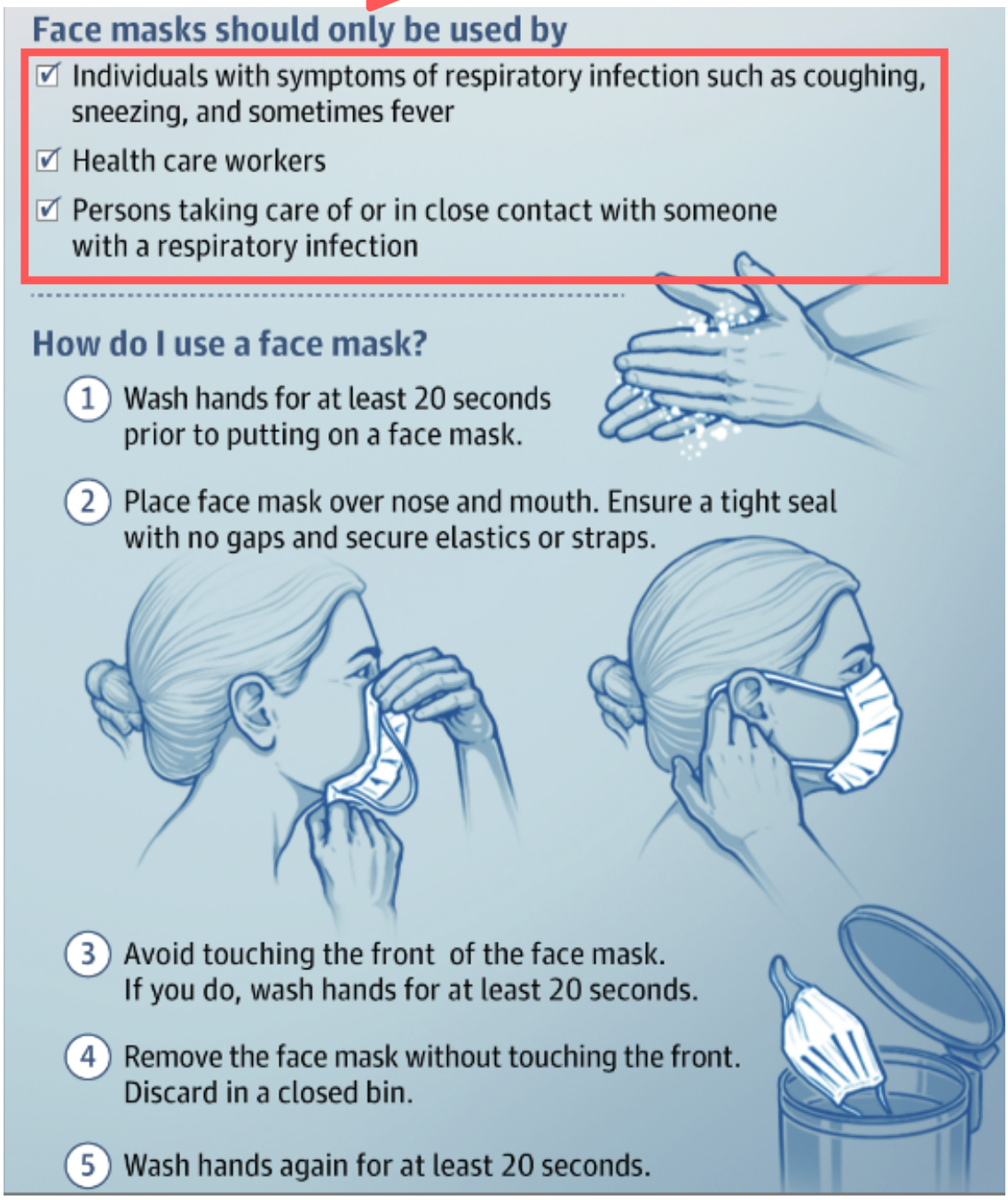

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World Health Organization on Masks

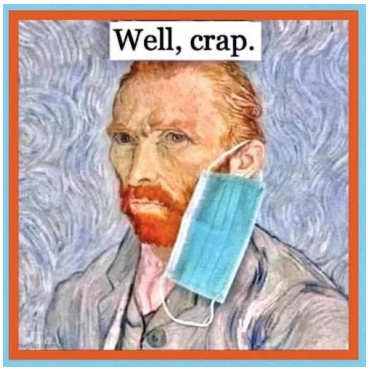
"At the present time, the widespread use of masks by healthy people in the community setting is **not yet supported** by **high quality** or direct scientific evidence and there are potential benefits and **harms** to consider.

...A growing compendium of **observational evidence** on the use of masks by the general public in several countries, individual values and preferences, as well as the difficulty of physical distancing in many contexts, WHO has updated its guidance to advise that to prevent COVID-19 transmission effectively in areas of community transmission, governments should encourage the general public to wear masks..."

Remember observational studies are weaker studies - why do they not mention all the RCTs we have? Perhaps because they conclude masks aren't effective?

https://www.who.int/publications/i/item/advice-on-the-use-of-masks-in-the-community-during-home-care-and-in-healthcare-settings-in-the-context-of-the-novel-coronavirus-(2019-ncov)-outbreak

Know anyone using these guidelines when using a mask? Not only is it not effective regardless, poor mask handling increases risk.



Guidance on mask management

For any type of mask, appropriate use and disposal are essential to ensure that they are as effective as possible and to avoid any increase in transmission.

WHO offers the following guidance on the correct use of masks, derived from best practices in health care settings:

- perform hand hygiene before putting on the mask;
- place the mask carefully, ensuring it covers the mouth and nose, adjust to the nose bridge, and tie it securely to minimize any gaps between the face and the mask;
- avoid touching the mask while wearing it;
- remove the mask using the appropriate technique: do not touch the front of the mask but untie it from behind.
- after removal or whenever a used mask is inadvertently touched, clean hands with an alcohol-based handrub, or soap and water if hands are visibly dirty;
- replace masks as soon as they become damp with a new clean, dry mask;
- do not re-use single-use masks;
- discard single-use masks after each use and dispose of them immediately upon removal.

https://www.who.int/publications/i/item/advice-on-the-use-of-masks-in-the-community-during-home-care-and-in-healthcare-settings-in-the-context-of-the-novel-coronavirus-(2019-ncov)-outbreak

THOUSANDS OF PROFESSIONALS SPEAK OUT

"As for the scientific support for the use of face masks, a recent careful examination of the literature, in which 17 of the best studies were analyzed, concluded that, “None of the studies established a conclusive relationship between mask/respirator use and protection against influenza infection.

Keep in mind, no studies have been done to demonstrate that either a cloth mask or the N95 mask has any effect on transmission of the COVID-19 virus. Any recommendations, therefore, have to be based on studies of influenza virus transmission. The fact is, there is no conclusive evidence of their efficiency in controlling flu virus transmission."

Russell Blaylock, MD

"As a physician and former medical journal editor, I've carefully read the scientific literature regarding the use of face masks to mitigate viral transmission. I believe the public health experts have community wearing of masks all wrong. What follows are the key issues that should inform the public against wearing medical face masks during the CoVID-19 pandemic, as well as all future respiratory disease pandemics."

Jim Meehan, MD

“Face masks in public places are not necessary, based on all the current evidence. There is no benefit and there may even be negative impact.”

Coen Berends
National Institute for Public Health and the Environment

"We know that wearing a mask outside healthcare facilities offers little, if any, protection from infection. Public health authorities define a significant exposure to CoVID-19 as face-to-face contact within 6 feet with a patient with symptomatic CoVID-19 that is sustained for at least a few minutes (and some say more than 10 minutes or even 30 minutes). The chance of catching CoVID-19 from a passing interaction in a public space is therefore minimal. In many cases, the desire for widespread masking is a reflexive reaction to anxiety over the pandemic."

Michael Klompas, MD
Charles A. Morris, MD
Julia Sinclair, MBA
Madelyn Pearson, DNP
Erica S. Shenoy, MD

"From a medical point of view, there is no evidence of a medical effect of wearing face masks, so we decided not to impose a national obligation."

Tamara van Ark
Medical Care Minister Netherlands

"Face masks should not be seen as a magic bullet that halts the spread."

Christian Hoebe
Professor of infectious diseases

"Sweeping mask recommendations—as many have proposed—will not reduce SARS-CoV-2 transmission, as evidenced by the widespread practice of wearing such masks in Hubei province, China, before and during its mass COVID-19 transmission experience earlier this year...

Our review of relevant studies indicates that cloth masks will be ineffective at preventing SARS-CoV-2 transmission, whether worn as source control or as PPE. Surgical masks likely have some utility as source control (meaning the wearer limits virus dispersal to another person) from a symptomatic patient in a healthcare setting to stop the spread of large cough particles and limit the lateral dispersion of cough particles..."

Lisa Brosseau, ScD
National expert infectious diseases
University of Illinois at Chicago

"The University of Minnesota Center for Infectious Disease Research & Policy calls out CDC for using bogus sources to support its revised cloth mask-wearing policy because the sources “employ very crude, non-standardized methods” and “are not relevant to cloth face coverings because they evaluate respirators or surgical masks.”

University of Minnesota Center for Infectious Disease Research & Policy

"It’s not science that seems to be leading what's going on with COVID, it’s public opinion and politics.”

Annie Janvier, PhD

"The fact that this virus is a relatively benign infection for the vast majority of the population and that most of the at-risk group also survive, from an infectious disease and epidemiological standpoint, by letting the virus spread through the healthier population we will reach a herd immunity level rather quickly that will end this pandemic quickly and prevent a return next winter. During this time, we need to protect the at-risk population by avoiding close contact, boosting their immunity with compounds that boost cellular immunity and in general, care for them.One should not attack and insult those who have chosen not to wear a mask, as these studies suggest that is the wise choice to make."

Russell Blaylock, MD
Neuroseurgon

"Given the fact that there is no peered reviewed research published in a reputable medical journal that scientifically and conclusively shows that healthy people wearing face masks slows the spread of disease, it is illogical and potentially detrimental for a healthy person to be wearing a mask."

Gabriel Cousens, MD

"Schools and universities should be open for in-person teaching. Extracurricular activities, such as sports, should be resumed. Young low-risk adults should work normally, rather than from home. Restaurants and other businesses should open."

Martin Kulldorff, PhD - Harvard epidemiologist
Sunetra Gupta, PhD - Oxford epidemiologist
Jay Bhattacharya, MD, PhD - Stanford public health expert

"I want to state that we do not have a medical pandemic or epidemic. We also state that COVID-19 should not be on list A for any longer, because we now know that it is a normal flu virus.

We are also starting a lawsuit to the State of the Netherlands to bring this in with a large group of doctors and a really large group of nurses also, because we have contact with 87,000 nurses that do not want the vaccine that is being prepared for us.

The panic is caused by these false positive PCR tests. 89 to 94% of these PCR tests are false positive. They don't test for the COVID-19. Medical doctors need to stop looking at those tests. Let's go back to the clinics and the facts."

Elke De Klerk, MD
Founder of Doctors for Truth

THE GREAT BARRINGTON DECLARATION

MISSION

"As infectious disease epidemiologists and public health scientists we have grave concerns about the damaging physical and mental health impacts of the prevailing COVID-19 policies, and recommend an approach we call Focused Protection."

Signatures

current signature count

concerned citizens	medical & public health scientists	medical practitioners
639,186	12,122	35,243

Over 12,000 scientists and over 35,000 medical practitioners do not agree with the unscientific and destructive mandates for the general public.

These scientists urge that, "The most compassionate approach that balances the risks and benefits of reaching herd immunity, is to allow those who are at minimal risk of death to live their lives normally to build up immunity to the virus through natural infection, while better protecting those who are at highest risk. We call this Focused Protection. Adopting measures to protect the vulnerable should be the central aim of public health responses to COVID-19.**"**

MISSION

An independent non-profit alliance of doctors, nurses, healthcare professionals and staff around the world who have united in the wake of the Covid-19 response chapter to share experiences with a view to ending all lockdowns and related damaging measures and to re-establish universal health determinance of psychological and physical wellbeing for all humanity.

- Most importantly covid deaths are at an all-time low. It is clear that these 'cases' are in fact not 'cases' but rather they are normal healthy people. So-called asymptomatic cases have never in the history of respiratory disease been the driver for spread of infection. Rather it is symptomatic people who spread respiratory infections - not asymptomatic people. (2)

- It is also abundantly clear that the 'pandemic' is basically over and has been since June 2020. (3) We have very highly likely reached herd immunity and therefore have no need for a vaccine.

- We have safe and very effective treatments and preventative treatments for covid, we therefore call for an immediate end to all lockdown measures, social distancing, mask wearing, testing of healthy individuals, track and trace, immunity passports, the vaccination program and so on.

- There has been a catalogue of unscientific, non-sensical policies enacted which infringe our inalienable rights, such as - freedom of movement, freedom of speech and freedom of assembly. These draconian totalitarian measures must never be repeated.

MISSION

The Victorian government's response to the SARS-CoV-2 virus is now doing more harm than good. These measures will cause more deaths and result in far more negative health effects than the virus itself. Left unchecked, the Victorian government risks creating the state's worst ever public health crisis.

- Many Australian doctors and other health professionals consider the lockdown measures to be disproportionate, unscientific, excessively authoritarian and the cause of widespread suffering for many Victorians.Thereby, we Australian Doctors and Health Professionals, in solidarity with thousands of international doctors, call for the cessation of all disproportionate measures that contravene the International Siracusa Principles.

- These policies seriously compromise the health of individuals and the wider community by imposing curfews, local travel restrictions, reduced exercise and outdoor activities, imposed isolation and the quarantining of the healthy, enforced mask wearing in open spaces, the denial of children's play, the denial of socialisation and education with friends and peers and the disruption of family relationships. These policies are contrary to common-sense and the arbitrary application of laws enforcing these policies has created unnecessary disquiet in our community and a growing loss of confidence in those responsible for such decisions

- Evidence does not support these measures. The limited virulence of the SARS-CoV-2 virus for the vast majority of the population is now well established from the latest international data sets.

Non Exhaustive List of Professionals That Do Not Support Mandates for the General Public

Dr. Alexander Walker, former Chair of Epidemiology, Harvard
Dr. Andrius Kavaliunas, epidemiologist
Dr. Angus Dalgleish, oncologist, infectious disease expert
Dr. Annie Janvier, professor of pediatrics and clinical ethics
Dr. Ariel Munitz, professor clinical microbiology and immunology
Dr. Boris Kotchoubey, Institute for Medical Psychology
Dr. Cody Meissner, professor of pediatrics, vaccine development
Dr. David Katz, founder Yale Prevention Research Center
Dr. David Livermore, microbiologist, infectious disease
Dr. Eitan Friedman, professor of medicine
Dr. Eyal Shahar, physician, epidemiologist
Dr. Florian Limbourg, physician and researcher
Dr. Gabriela Gomes, mathematician studying epidemiology
Dr. Gerhard Krönke, physician and professor
Dr. Gesine Weckmann, professor of health education and prevention
Dr. Günter Kampf, Institute for Hygiene and Environmental Medicine
Dr. Helen Colhoun, professor of medical informatics epidemiology
Dr. Jonas Ludvigsson, pediatrician, epidemiologist and professor
Dr. Karol Sikora, physician, oncologist, and professor of medicine
Dr. Laura Lazzeroni, professor of psychiatry and behavioral sciences
Dr. Lisa White, professor of modeling and epidemiology, Oxford
Dr. Mario Recker, malaria researcher and associate professor
Dr. Matthew Strauss, critical care physician & professor of medicine
Dr. Michael Jackson, research fellow
Dr. Michael Levitt, biophysicist, recipient 2013 Nobel Prize Chemistry
Dr. Mike Hulme, professor of human geography
Dr. Motti Gerlic, professor of clinical microbiology and immunology
Dr. Partha P. Majumder, National Institute of Biomedical Genomics
Dr. Paul McKeigue, professor of epidemiology and public health
Dr. Rajiv Bhatia, physician, epidemiologist and public policy expert

Non Exhaustive List of Professionals That Do Not Support Mandates for the General Public

Dr. Rodney Sturdivant, infectious disease scientist
Dr. Salmaan Keshavjee, professor Harvard Medical School
Dr. Simon Thornley, epidemiologist and biostatistician
Dr. Simon Wood, biostatistician and professor
Dr. Stephen Bremner, professor of medical statistics
Dr. Sylvia Fogel, instructor Harvard Medical School
Dr. Udi Qimron, professor of clinical microbiology and immunology
Dr. Ulrike Kämmerer, professor and expert in virology, immunology
Dr. Uri Gavish, biomedical consultant

Andrew Kaufman, MD
Scott Jensen, MD
Eddie Weller, DC
Allison Lucas, Esq
Gabriel Cousens, MD
Eric Nepune, DC
Jessica Peatross, MD
Josheph Arena, DC
Liam Schubel, DC
Daniel Knowles, DC
Kelly Brogan, MD
Suzan Tenpenny, MD
Tom Cowen, MD
Tommy John, DC
Joseph Audie, PhD
Denis Rancourt, PhD
Zev Myerowitz, DC
Seth Gerlach, DC
Ben Tapper, DC
Lauren Keller, APRN
Sarah Carnes, ND

Josh Henk, DC
Jay Komarek, DC
Josh Howe, DC
Jocobey Mark, DC
Joseph Mercola, DO
Cassie Huckaby, ND
Ben Lynch, ND
Morgan Towles, DC
Alex Lee, DC
Rashid Buttar, DO
Edith Chan, DAOM
Tyna Moore, DC, ND
Suneil Jane, NMD
Ashton Joyce, NMD
Jo Yi, MD
Melanie Joy, PhD
Melissa Sell, DC
Christiane Northrup, MD
Zack Bush, MD
Michael Christian, DHSc, CMS
Shiva Ayyadurai, PhD

+ THOUSANDS MORE