



Know Your Rights, Protect Your Freedom

**MASKS:**  
**Not Effective at Preventing Transmission or Infection,  
Pose Health Risks, Increase Risk of Infection, and Cause Harm**  
*A Compilation of Clinical Studies, Professional Opinions, and Articles*

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**MASKS AND CHILDREN**

**The Smile Project**

The Smile Project is uniting parents around the globe in an effort to remove unsafe and unnecessary mask mandates and restore parental rights. Un-masking Children covers: A look at the role of children in Covid-19 transmission in schools; understanding relative risk; mask (in)effectiveness in limiting Covid-19 transmission; and most importantly, the plan to un-mask children and return to normal. [thesmileproject.global/blog](https://thesmileproject.global/blog)

**World Health Organization: Children Are Not Little Adults**

Children have a dynamic physiology that is not only turned up to “high” because of growth demands, but also vulnerable to damage during differentiation and maturation of organs and systems. Their needs for energy, water and oxygen are higher, because they go through an intense anabolic process. (pg 14) Children breathe more air per kilogram of body weight than adults at rest, as shown here. An infant has three times the minute ventilation of an adult and a 6-year-old has double. Children also tend to be more physically active than adults. (pg 15) Like the nervous system, the respiratory system continues to grow and develop through linear growth. At birth a baby has only about 10 million alveoli, but at age 8 years, he or she has 300 million. (pg 28) [who.int/ceh/capacity/Children\\_are\\_not\\_little\\_adults.pdf](https://who.int/ceh/capacity/Children_are_not_little_adults.pdf)

**World Health Organization: Coronavirus Disease (COVID-19): Children and Masks**

Children should not wear a mask when playing sports or doing physical activities, such as running, jumping or playing on the playground, so that it doesn't compromise their breathing. When organizing these activities for children, it is important to encourage all other critical public health measures: maintaining at least a 1-metre distance from others, limiting the number of children playing together, providing access to hand hygiene facilities and encouraging their use.

[who.int/emergencies/diseases/novel-coronavirus-2019/question-and-answers-hub/q-a-detail/q-a-children-and-masks-related-to-covid-19](https://who.int/emergencies/diseases/novel-coronavirus-2019/question-and-answers-hub/q-a-detail/q-a-children-and-masks-related-to-covid-19)

**Corona Children Studies “Co-ki”: First Results of a Germany-Wide Registry on Mouth and Nose Covering (Mask) in Children**

By October 26, 2020 the registry had been used by 20,353 people. In this publication we report the results from the parents, who entered data on a total of 25,930 children. The average wearing time of the mask was 270 minutes per day. Impairments caused by wearing the mask were reported by 68% of the parents. These included irritability (60%), headache (53%), difficulty concentrating (50%), less happiness (49%), reluctance to go to school/kindergarten (44%), malaise (42%) impaired learning (38%) and drowsiness or fatigue (37%). [researchsquare.com/article/rs-124394/v3](https://researchsquare.com/article/rs-124394/v3)

**A Randomised Clinical Trial to Evaluate the Safety, Fit, Comfort of a Novel N95 Mask in Children**

Study dated December 2019:

A randomised clinical trial to evaluate the safety, fit, comfort of a novel N95 mask in children

“Several studies have investigated the effectiveness, safety, fit and comfort of different types of masks However these studies were done only in adult populations. Even alternatives such as cloth masks have been tested only in adult populations<sup>16</sup>. In another study, the facemasks for paediatric use (FPU, the masks that are not specifically designed for paediatric use but are the existing mask that may be used for children during emergency situation like that of airborne disease outbreaks) were tested mainly to evaluate the leakage associated with donning the FPU. This study did show superiority of FPU in comparison to surgical masks in certain aspects, however, the study was not performed in children.

One study was performed in children to evaluate the redesigned open system face mask. However, the objective of this study was to evaluate the mask for monitoring PETCO<sub>2</sub> during sedation in clinical practice and the children in this study donned the mask only for 30 sec. [These and other similar studies merely point to the fact that there are no masks that are specifically designed and tested in children such that they can be prescribed for paediatric use in the setting of daily routine activities.](https://pubmed.ncbi.nlm.nih.gov/PMC6908682/) [ncbi.nlm.nih.gov/pmc/articles/PMC6908682/](https://pubmed.ncbi.nlm.nih.gov/PMC6908682/)

### **COVID-19 Masks Are a Crime Against Humanity and Child Abuse, Testimony of a Virologist**

The rebreathing of our exhaled air will without a doubt create oxygen deficiency and a flooding of carbon dioxide. We know that the human brain is very sensitive to oxygen deprivation. There are nerve cells for example in the hippocampus, that can't be longer than 3 minutes without oxygen – they cannot survive. The acute warning symptoms are headaches, drowsiness, dizziness, issues in concentration, slowing down of the reaction time – reactions of the cognitive system. However, when you have chronic oxygen deprivation, all of those symptoms disappear, because you get used to it. But your efficiency will remain impaired and the undersupply of oxygen in your brain continues to progress.

[For children and adolescents, masks are an absolute no-no.](https://globalresearch.ca/covid-19-masks-crime-against-humanity-child-abuse/5726059) Children and adolescents have an extremely active and adaptive immune system and they need a constant interaction with the microbiome of the Earth. Their brain is also incredibly active, as it has so much to learn. The child's brain, or the youth's brain is thirsting for oxygen. The more metabolically active the organ is, the more oxygen it requires. In children and adolescents every organ is metabolically active. To deprive a child's or an adolescent's brain from oxygen, or to restrict it in any way, is not only dangerous to their health, it is absolutely criminal. Oxygen deficiency inhibits the development of the brain, and the damage that has taken place as a result CANNOT be reversed. The child needs the brain to learn, and the brain needs oxygen to function. We don't need a clinical study for that. This is simple, indisputable physiology. Conscious and purposely induced oxygen deficiency is an absolutely deliberate health hazard, and an absolute medical contraindication.

[globalresearch.ca/covid-19-masks-crime-against-humanity-child-abuse/5726059](https://globalresearch.ca/covid-19-masks-crime-against-humanity-child-abuse/5726059)

### **Need for Assessing the Inhalation of Micro(Nano)Plastic Debris Shed from Masks, Respirators, and Home-Made Face Coverings during the Covid-19 Pandemic**

There seems to be, however, an important piece missing in the suite of standards and volumes of research on inhalable environmental contaminants. None of these standards, including the ASTM standards and NIOSH regulation, which are adopted by the FDA in regulating medical face masks and surgical respirators in the U.S. (FDA, 2020a), regulate respirable debris such as micro(nano)plastics that may be present in these products. In fact, such neglect is not unique to US standards: a review of current ISO standards, EU standards and Chinese standards on masks and respirators found no information pertinent to this particular type of hazard. With these becoming a necessity for many in their daily life and work, questions must be raised over this apparent regulatory gap concerning their long-term use safety. This is especially important given that there is already a growing body of evidence on the inhalation of micro(nano)plastics and their adverse effects in humans and animals ([Prata, 2018](#)).

Whether these plastic debris could cause stress and inflammation in the human respiratory tract and exacerbate vulnerability to viral infection is a further question that warrants investigation.

*A special note must be given on home-made cloth face coverings. For fabrics repurposed as face masks, as per the current guidelines by the CDC ([Centers for Disease Control and Prevention CDC, 2020](#)), debris is likely to be generated from cutting and tearing ... Detergent residues and lint generated from machine laundering and tumble drying may also be present as inhalable contaminants in washed garments.* [ncbi.nlm.nih.gov/pmc/articles/PMC7537728/](https://pubmed.ncbi.nlm.nih.gov/PMC7537728/)

### **Two Boys Drop Dead in China While Wearing Masks During Gym Class**

"Two Chinese boys dropped dead within a week of one another while wearing face masks during gym class, according to a report." [nypost.com/2020/05/06/two-boys-drop-dead-in-china-while-wearing-masks-during-gym-class/](https://nypost.com/2020/05/06/two-boys-drop-dead-in-china-while-wearing-masks-during-gym-class/)

### **Open Schools, Covid-19, and Child and Teacher Morbidity in Sweden**

Despite Sweden's having kept schools and preschools open, we found a low incidence of severe Covid-19 among schoolchildren and children of preschool age during the SARS-CoV-2 pandemic. Among the 1.95 million children who were 1 to 16 years of age, 15 children had Covid-19, MIS-C, or both conditions and were admitted to an ICU, which is equal to 1 child in 130,000 ... Social distancing was encouraged in Sweden, but wearing face masks was not.

[nejm.org/doi/full/10.1056/NEJMc2026670](https://www.nejm.org/doi/full/10.1056/NEJMc2026670)

### **No Evidence of Secondary Transmission of Covid-19 from Children Attending School in Ireland, 2020**

In summary, examination of all Irish paediatric cases of COVID-19 attending school during the pre-symptomatic and symptomatic periods of infection (n = 3) identified no cases of onward transmission to other children or adults within the school and a variety of other settings. These included music lessons (woodwind instruments) and choir practice, both of which are high-risk activities for transmission. Furthermore, no onward transmission from the three identified adult cases to children was identified. [ncbi.nlm.nih.gov/pmc/articles/PMC7268273/](https://ncbi.nlm.nih.gov/pmc/articles/PMC7268273/)

## **MASKS DON'T PREVENT INFECTION OR TRANSMISSION OF RESPIRATORY VIRUSES i.e. COVID-19**

### **Community and Close Contact Exposures Associated with COVID-19 Among Symptomatic Adults ≥18 Years in 11 Outpatient Health Care Facilities — United States, July 2020**

Reported use of cloth face covering or mask 14 days before illness onset: Always 108 (70.6), meaning 70% of people who became ill, wore face coverings. [cdc.gov/mmwr/volumes/69/wr/pdfs/mm6936a5-H.pdf](https://cdc.gov/mmwr/volumes/69/wr/pdfs/mm6936a5-H.pdf)

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

The recommendation to wear surgical masks to supplement other public health measures did not reduce the SARS-CoV-2 infection rate among wearers by more than 50% in a community with modest infection rates, some degree of social distancing, and uncommon general mask use. The data were compatible with lesser degrees of self-protection.

[acpjournals.org/doi/10.7326/M20-6817](https://acpjournals.org/doi/10.7326/M20-6817)

### **SARS-CoV-2 Transmission among Marine Recruits during Quarantine**

Transmission clusters occurred within [masked and socially distanced] platoons. [nejm.org/doi/full/10.1056/NEJMoa2029717](https://nejm.org/doi/full/10.1056/NEJMoa2029717)

### **Facemasks, Hand Hygiene, and Influenza among Young Adults: A Randomized Intervention Trial**

Masks alone did not provide a benefit, suggesting that single personal protective interventions do not protect against incidence of ILI or influenza. [ncbi.nlm.nih.gov/pmc/articles/PMC3266257/](https://ncbi.nlm.nih.gov/pmc/articles/PMC3266257/)

### **Universal Masking in Hospitals in the Covid-19 Era**

We know that wearing a mask outside health care 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. [nejm.org/doi/full/10.1056/NEJMp2006372](https://nejm.org/doi/full/10.1056/NEJMp2006372)

### **Optical Microscopic Study of Surface Morphology and Filtering Efficiency of Face Masks**

Filtering efficiency of CM for ambient PM10 was poorer than in SM. The poor efficiency was due to the presence of larger sized pores. Our study also demonstrated that washing and drying cycle deteriorates the filtering efficiency due to change in pore shape and clearance. We also found that stretching of the CM surface alters the pore size and potentially decreases the filtering efficiency. The findings of this study suggest that CM are not effective, and that effectiveness deteriorates if used after washing and drying cycles and if used under stretched condition.

[ncbi.nlm.nih.gov/pmc/articles/PMC6599448/](https://ncbi.nlm.nih.gov/pmc/articles/PMC6599448/)

### **The Use of Masks and Respirators to Prevent Transmission of Influenza: A Systematic Review of the Scientific Evidence**

The initial review was performed in November 2009 and updated in June 2010 and January 2011. Inclusion criteria included randomised controlled trials and quasi-experimental and observational studies of humans published in English with an outcome of laboratory-confirmed or clinically-diagnosed influenza and other viral respiratory infections. There were

17 eligible studies ... None of the studies established a conclusive relationship between mask/respirator use and protection against influenza infection. [pubmed.ncbi.nlm.nih.gov/22188875/](https://pubmed.ncbi.nlm.nih.gov/22188875/)

### **Unmasking the Surgeons: The Evidence Base Behind the Use of Facemasks in Surgery**

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. More rigorous contemporary research is needed to make a definitive comment on the effectiveness of surgical facemasks. [ncbi.nlm.nih.gov/pmc/articles/PMC4480558/](https://ncbi.nlm.nih.gov/pmc/articles/PMC4480558/)

### **Effectiveness of N95 Respirators Versus Surgical Masks in Protecting Healthcare Workers from Acute Respiratory Infection: A Systematic Review and Meta-Analysis**

“ ... our meta-analysis showed that there were insufficient data to determine definitively whether N95 respirators are superior to surgical masks in protecting health care workers against transmissible acute respiratory infections in clinical settings.” [cmaj.ca/content/cmaj/188/8/567.full.pdf](https://cmaj.ca/content/cmaj/188/8/567.full.pdf)

### **Masks-for-All for COVID-19 Not Based on Sound Data - Commentary by Dr. Brosseau, National Expert on Respiratory Protection and Infectious Diseases and Dr. Sietsema, Expert on Respiratory Protection**

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.”

[cidrap.umn.edu/news-perspective/2020/04/commentary-masks-all-covid-19-not-based-sound-data](https://cidrap.umn.edu/news-perspective/2020/04/commentary-masks-all-covid-19-not-based-sound-data)

### **Why Face Masks Don't Work: A Revealing Review**

It should be concluded from these and similar studies that the filter material of face masks does not retain or filter out viruses or other submicron particles. When this understanding is combined with the poor fit of masks, it is readily appreciated that neither the filter performance nor the facial fit characteristics of face masks qualify them as being devices which protect against respiratory infections. [oralhealthgroup.com/features/face-masks-dont-work-revealing-review/](https://oralhealthgroup.com/features/face-masks-dont-work-revealing-review/)

### **Use of surgical face masks to reduce the incidence of the common cold among health care workers in Japan: a randomized controlled trial**

Conclusion: Face mask use in health care workers has not been demonstrated to provide benefit in terms of cold symptoms or getting colds. [pubmed.ncbi.nlm.nih.gov/19216002/](https://pubmed.ncbi.nlm.nih.gov/19216002/)

### **The Surgical Mask Is a Bad Fit for Risk Reduction**

Histories of the surgical mask offer some clues about our contemporary risk profile, a profile that is, according to the nature of risk, future-oriented. The birth of the mask came from the realization that surgical wounds need protection from the droplets released in the breath of surgeons. The technology was applied outside the operating room in an effort to control the spread of infectious epidemics. In the 1919 influenza pandemic, masks were available and were dispensed to populations, but they had no impact on the epidemic curve. At the time, it was unknown that the influenza organism is nanoscopic and can theoretically penetrate the surgical mask barrier. As recently as 2010, the US National Academy of Sciences declared that, in the community setting, “face masks are not designed or certified to protect the wearer from exposure to respiratory hazards.” A number of studies have shown the inefficacy of the surgical mask in household settings to prevent transmission of the influenza virus. [ncbi.nlm.nih.gov/pmc/articles/PMC4868614/](https://ncbi.nlm.nih.gov/pmc/articles/PMC4868614/)

### **Medical Masks**

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. [jamanetwork.com/journals/jama/fullarticle/2762694](https://jamanetwork.com/journals/jama/fullarticle/2762694)

### Simple respiratory protection--evaluation of the filtration performance of cloth masks and common fabric materials against 20-1000 nm size particles

To address the filtration performance of common fabric materials against nano-size particles including viruses, five major categories of fabric materials including sweatshirts, T-shirts, towels, scarves, and cloth masks were tested for polydisperse and monodisperse aerosols (20-1000 nm) at two different face velocities (5.5 and 16.5 cm s<sup>-1</sup>) and compared with the penetration levels for N95 respirator filter media. The results showed that cloth masks and other fabric materials tested in the study had 40-90% instantaneous penetration levels against polydisperse NaCl aerosols employed in the National Institute for Occupational Safety and Health particulate respirator test protocol at 5.5 cm s<sup>-1</sup>. Similarly, varying levels of penetrations (9-98%) were obtained for different size monodisperse NaCl aerosol particles in the 20-1000 nm range. The penetration levels of these fabric materials against both polydisperse and monodisperse aerosols were much higher than the penetrations for the control N95 respirator filter media. [pubmed.ncbi.nlm.nih.gov/20584862/](https://pubmed.ncbi.nlm.nih.gov/20584862/)

### N95 Respirators vs Medical Masks for Preventing Influenza Among Health Care Personnel: A Randomized Clinical Trial

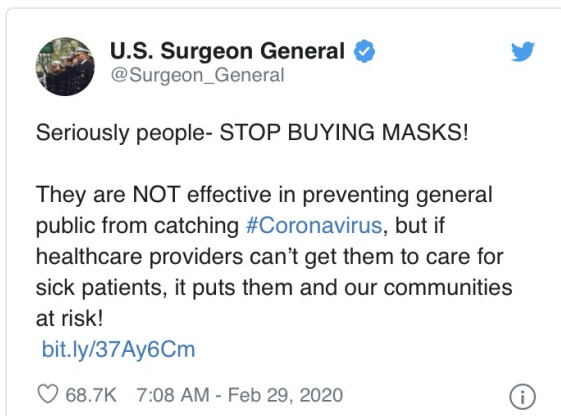
Conclusions and relevance: Among outpatient health care personnel, N95 respirators vs medical masks as worn by participants in this trial resulted in no significant difference in the incidence of laboratory-confirmed influenza. [pubmed.ncbi.nlm.nih.gov/31479137/](https://pubmed.ncbi.nlm.nih.gov/31479137/)

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

There is little evidence to support the effectiveness of face masks to reduce the risk of infection. Current research has several limitations including under-powered samples, limited generalizability, narrow intervention targeting and inconsistent testing protocols, different laboratory methods, and case definitions. [doi.org/10.1017/S0950268809991658](https://doi.org/10.1017/S0950268809991658)

### Non Pharmaceutical Measures for Pandemic Influenza in Non Healthcare Settings—Personal Protective and Environmental Measures

We did not find evidence that surgical-type face masks are effective in reducing laboratory-confirmed influenza transmission, either when worn by infected persons (source control) or by persons in the general community to reduce their susceptibility [wwwnc.cdc.gov/eid/article/26/5/19-0994\\_article](https://wwwnc.cdc.gov/eid/article/26/5/19-0994_article)



## MASKS POSE HEALTH RISKS AND CAUSE HARM

### Effects of mask-wearing on the inhalability and deposition of airborne SARS-CoV-2 aerosols in human upper airway

The overall lower speeds of the respirable particles after wearing a mask, as well as an increased area of respiration, can increase the chance of respirable particles to land on the face or being inhaled into the mouth and nose. This unexpected finding raises an alarm that wearing masks with very low filtration efficiencies may lead to a higher chance of deposition of ambient aerosols and thus can do more harm than protection. [aip.scitation.org/doi/10.1063/5.0034580](https://aip.scitation.org/doi/10.1063/5.0034580)

### **Protective masks reduce resilience, July 2020**

The masks therefore impair breathing, especially the volume and the highest possible speed of the air when exhaling. The maximum possible force on the ergometer was significantly reduced. In the metabolism, a faster acidification of the blood was registered during exertion. The participants also used questionnaires to assess their subjective feelings, which also showed a considerable impairment of well-being. [science.orf.at/stories/3201213/](https://www.sciencemag.org/stories/2020/07/protective-masks-reduce-resilience)

### **Respiratory consequences of N95-type Mask usage in pregnant healthcare workers-a controlled clinical study**

Breathing through N95 mask materials have been shown to impede gaseous exchange and impose an additional workload on the metabolic system of pregnant healthcare workers, and this needs to be taken into consideration in guidelines for respirator use. The benefits of using N95 mask to prevent serious emerging infectious diseases should be weighed against potential respiratory consequences associated with extended N95 respirator usage.

[pubmed.ncbi.nlm.nih.gov/26579222/](https://pubmed.ncbi.nlm.nih.gov/26579222/)

### **Contamination by respiratory viruses on outer surface of medical masks used by hospital healthcare workers**

Respiratory pathogens on the outer surface of the used medical masks may result in self-contamination. The risk is higher with longer duration of mask use (> 6 h) and with higher rates of clinical contact. Protocols on duration of mask use should specify a maximum time of continuous use, and should consider guidance in high contact settings. Viruses were isolated from the upper sections of around 10% samples, but other sections of masks may also be contaminated. HCWs should be aware of these risks in order to protect themselves and people around them.

[pubmed.ncbi.nlm.nih.gov/31159777/](https://pubmed.ncbi.nlm.nih.gov/31159777/)

### **In an interview on May 15, 2020, Immunologist and Molecular Biologist Dr. Dolores Cahill, a worldwide renowned expert and pioneer in high-throughput proteomics (the large-scale study of proteins) technology development and automation, definitively states that masks do not protect you from coronavirus and in contrast, stress your immune system, putting you at a greater health risk.**

"If it was an ebola virus outbreak, then a mask would be effective because ebola viruses are transmitted through the air. But in the case with coronavirus, it's not transmitted through the air, it's transmitted through droplets that then will drop on the surface like a door handle. So in coronavirus, there is absolutely no need to wear a mask . . . because the mask is covering you, you have less oxygen and that puts your immune system under stress. And then the latent viruses that are in your body because you're under immune stress will reappear and not only will you have more coronavirus but if you had other latent viruses it will allow them to re-emerge . . . And in this case in coronavirus the immune system can clear the virus within 10 or 11 days. So I would definitively say for coronavirus there is no need for masks and also there is no need for social distancing. [youtube.com/watch?v=czjAebDKsEw&t=810s](https://www.youtube.com/watch?v=czjAebDKsEw&t=810s)

### **Neurosurgeon Dr. Russell Blaylock: Face Masks Pose Serious Risks to the Healthy**

The researchers found that the mask reduced the blood oxygen levels (paO<sup>2</sup>) significantly. The longer the duration of wearing the mask, the greater the fall in blood oxygen levels . . . The importance of these findings is that a drop in oxygen levels (hypoxia) is associated with an impairment in immunity. In essence, your mask may very well put you at an increased risk of infections and if so, having a much worse outcome.

[technocracy.news/blaylock-face-masks-pose-serious-risks-to-the-healthy/](https://www.technocracynews.com/blaylock-face-masks-pose-serious-risks-to-the-healthy/)

### **Covid-19: Important potential side effects of wearing face masks that we should bear in mind**

The innate immunity's efficacy is highly dependent on the viral load. If masks determine a humid habitat where SARS-CoV-2 can remain active because of the water vapour continuously provided by breathing and captured by the mask fabric, they determine an increase in viral load (by re-inhaling exhaled viruses) and therefore they can cause a defeat of the innate immunity and an increase in infections. [bmj.com/content/369/bmj.m2003](https://www.bmj.com/content/369/bmj.m2003)

### **A Cluster Randomised Trial of Cloth Masks Compared with Medical Masks in Healthcare Workers**

Health care workers using cotton cloth masks were at increased risk of infection and influenza like illness compared with those who wore medical masks.

" . . . until such research is carried out, cloth masks should not be recommended. We also recommend that infection control guidelines be updated about cloth mask use to protect the occupational health and safety of HCWs."

[ncbi.nlm.nih.gov/.../pdf/bmjopen-2014-006577.pdf](https://pubmed.ncbi.nlm.nih.gov/.../pdf/bmjopen-2014-006577.pdf)

## Headaches Associated With Personal Protective Equipment - A Cross-Sectional Study Among Frontline Healthcare Workers During COVID-19

Conclusion: Most healthcare workers develop de novo PPE-associated headaches or exacerbation of their pre-existing headache disorders. [pubmed.ncbi.nlm.nih.gov/32232837/](https://pubmed.ncbi.nlm.nih.gov/32232837/)

## The Physiological Impact of N95 Masks on Medical Staff

Wearing N95 masks results in hypooxygenemia and hypercapnia which reduce working efficiency and the ability to make correct decisions. Medical staff are at increased risk of getting 'Severe acute respiratory syndrome'(SARS), and wearing N95 masks is highly recommended by experts worldwide. However, dizziness, headache, and short of breath are commonly experienced by the medical staff wearing N95 masks. The ability to make correct decisions may be hampered, too. The purpose of the study was therefore to evaluate the physiological impact of N95 masks on medical staff.

[clinicaltrials.gov/ct2/show/NCT00173017](https://clinicaltrials.gov/ct2/show/NCT00173017)

## Preliminary report on surgical mask induced deoxygenation during major surgery

Results: Our study revealed a decrease in the oxygen saturation of arterial pulsations (SpO2) and a slight increase in pulse rates compared to preoperative values in all surgeon groups. [pubmed.ncbi.nlm.nih.gov/18500410/](https://pubmed.ncbi.nlm.nih.gov/18500410/)

## Do face masks protect against COVID-19?

"... many people in Asia and elsewhere walked around wearing surgical or homemade cotton masks to protect themselves. One danger of doing this is the illusion of protection. Surgical face masks are designed to be discarded after single use. As they become moist they become porous and no longer protect. Indeed, experiments have shown that surgical and cotton masks do not trap the SARS-CoV-2 (COVID-19) virus, which can be detected on the outer surface of the masks for up to 7 days.<sup>7,8</sup> Thus, a pre-symptomatic or mildly infected person wearing a facemask for hours without changing it and without washing hands every time they touched the mask could paradoxically increase the risk of infecting others." [ncbi.nlm.nih.gov/pmc/articles/PMC7323223/](https://ncbi.nlm.nih.gov/pmc/articles/PMC7323223/)

## Masks Prevent You from Infecting Others with Coronavirus, But May Not Protect You from Being Infected

The average healthy person does not need to have a mask, and they shouldn't be wearing masks," Dr. Perencevich said. "There's no evidence that wearing masks on healthy people will protect them. They wear them incorrectly, and they can increase the risk of infection because they're touching their face more often.

[forbes.com/sites/tarahaelle/2020/02/29/no-you-do-not-need-face-masks-for-coronavirus-they-might-increase-your-infection-risk/](https://forbes.com/sites/tarahaelle/2020/02/29/no-you-do-not-need-face-masks-for-coronavirus-they-might-increase-your-infection-risk/)

## Effects of wearing N95 and surgical facemasks on heart rate, thermal stress and subjective sensations

Therefore, it can be concluded that N95 and surgical facemasks can induce significantly different temperatures and humidity in the microclimates of facemasks, which have profound influences on heart rate and thermal stress and subjective perception of discomfort. [ncbi.nlm.nih.gov/pmc/articles/PMC7087880/](https://ncbi.nlm.nih.gov/pmc/articles/PMC7087880/)

## Effect of a Surgical Mask on Six Minute Walking Distance

Introduction: Six minutes walking test (6MWT) is regularly used in pulmonology.

Aim of the study: To evaluate the effect of wearing a surgical mask during 6MWT in healthy subjects.

Conclusion: Wearing a surgical mask modifies significantly and clinically dyspnea [shortness of breath] without influencing walking distance. [pubmed.ncbi.nlm.nih.gov/29395560/](https://pubmed.ncbi.nlm.nih.gov/29395560/)

## The physiological impact of wearing an N95 mask during hemodialysis as a precaution against SARS in patients with end-stage renal disease

Thirty nine patients (23 men; mean age, 57.2 years) were recruited for participation in the study. Seventy percent of the patients showed a reduction in partial pressure of oxygen (PaO<sub>2</sub>), and 19% developed various degrees of hypoxemia. Wearing an N95 mask significantly reduced the PaO<sub>2</sub> level (101.7 +/- 12.6 to 92.7 +/- 15.8 mm Hg, p = 0.006), increased the respiratory rate (16.8 +/- 2.8 to 18.8 +/- 2.7/min, p < 0.001), and increased the occurrence of chest discomfort (3 to 11 patients, p = 0.014) and respiratory distress (1 to 17 patients, p < 0.001). Baseline PaO<sub>2</sub> level was the only significant predictor of the magnitude of PaO<sub>2</sub> reduction (p < 0.001).

Conclusion: Wearing an N95 mask for 4 hours during HD significantly reduced PaO<sub>2</sub> and increased respiratory adverse effects in ESRD patients. [pubmed.ncbi.nlm.nih.gov/15340662/](https://pubmed.ncbi.nlm.nih.gov/15340662/)

### **Carbon Dioxide Rebreathing in Respiratory Protective Devices: Influence of Speech and Work Rate in Full-Face Masks**

Carbon dioxide (CO<sub>2</sub>) rebreathing has been recognised as a concern regarding respirator use and is related to symptoms of discomfort, fatigue, dizziness, headache, muscular weakness and drowsiness ... The results showed that phonic respiration and low work rates contributed to significantly higher levels of CO<sub>2</sub> rebreathing.

[pubmed.ncbi.nlm.nih.gov/23514282/](https://pubmed.ncbi.nlm.nih.gov/23514282/)

### **Carbon Dioxide Re-Breathing with Close Fitting Face Respirator Masks**

A healthy intensivist (SF), wearing such a respirator (Tecno Fluidshield PFR95, Kimberly Clark Corporation, Roswell, GA) to perform a percutaneous tracheostomy on a patient with multidrug resistant pulmonary tuberculosis, experienced dyspnoea, tachycardia and tremor after 30 min. End-tidal carbon dioxide measured at the mouth by hand-held capnometry was 6.3 kPa (normal value 5.3 kPa). We postulated that the symptoms were due to hypercapnia.

[doi.org/10.1111/j.1365-2044.2006.04767.x](https://doi.org/10.1111/j.1365-2044.2006.04767.x)

### **Effect of face veil on ventilator function among Saudi adult females**

Results: Mean values of FVC, FEV<sub>1</sub>, FEV<sub>1</sub>/FVC (%) and MVV for niqab wearers were significantly lower than the corresponding values for non-niqab wearers. Significant negative correlation was found between the FVC and FEV<sub>1</sub> values and the number of hours of the use of face veil per day. Conclusions: Long-term use of traditional niqab use can affect VF.

Terms: forced vital capacity (FVC), forced expiratory volume in one second (FEV<sub>1</sub>), ventilator function (VF), and maximal voluntary ventilation (MVV)

[researchgate.net/publication/244485085\\_Effect\\_of\\_face\\_veil\\_on\\_ventilator\\_function\\_among\\_Saudi\\_adult\\_females](https://researchgate.net/publication/244485085_Effect_of_face_veil_on_ventilator_function_among_Saudi_adult_females)

### **No Good Choices: A Mask May Block Out Some Pollution but Have Other Ill Health Effects**

A mask may also cause respiratory distress and become a hotbed for microbes to thrive ... It can lead to oxygen shortage, suffocation, respiration trouble, and heart attacks," said Dr D Saha, scientist and additional director at the Central Pollution Control Board. He pointed out that masks are a potential source of bacteria and viruses. "The moisture from exhalation inside the mask, when in constant contact with the 37 degrees Celsius warm human body, becomes an ideal place for virus and bacteria to thrive," he said. This could result in the growth of microbes on masks and aid the spread of airborne diseases like influenza.

[scroll.in/pulse/860276/no-good-choices-a-mask-may-block-out-some-pollution-but-have-other-ill-health-effects](https://scroll.in/pulse/860276/no-good-choices-a-mask-may-block-out-some-pollution-but-have-other-ill-health-effects)

### **Surgeon General Doubles Down: Masks Increase Virus Risk**

Surgeon General Jerome Adams Tuesday doubled down on his advice against healthy people wearing face masks to protect themselves from coronavirus, saying that wearing one improperly can 'actually increase your risk' of getting the disease. [newsmax.com/us/surgeon-general-adams-masks/2020/03/31/id/960679/](https://newsmax.com/us/surgeon-general-adams-masks/2020/03/31/id/960679/)

### **Jogger's Lung Collapses After He Ran for 2.5 Miles While Wearing a Face Mask**

But the mishap was directly caused by the sudden increase of pressure in Mr Zhang's lung due to intense running while wearing the face-covering, Dr Chen said.

[dailymail.co.uk/news/article-8311179/Joggers-lung-collapses-ran-2-5-miles-wearing-face-mask.html](https://dailymail.co.uk/news/article-8311179/Joggers-lung-collapses-ran-2-5-miles-wearing-face-mask.html)

### **"Exercise with facemask; Are we handling a devil's sword?" - A physiological hypothesis**

Exercising with facemasks may reduce available Oxygen and increase air trapping preventing substantial carbon dioxide exchange. The hypercapnic hypoxia may potentially increase acidic environment, cardiac overload, anaerobic metabolism and renal overload, which may substantially aggravate the underlying pathology of established chronic diseases. Further contrary to the earlier thought, no evidence exists to claim the facemasks during exercise offer additional protection from the droplet transfer of the virus. [pubmed.ncbi.nlm.nih.gov/32590322/](https://pubmed.ncbi.nlm.nih.gov/32590322/)

### **The Amygdala is a Chemosensor that Detects Carbon Dioxide and Acidosis to Elicit Fear Behavior**

We found that inhaled CO<sub>2</sub> reduced brain pH and evoked fear behavior in mice.

[ncbi.nlm.nih.gov/pmc/articles/PMC2808123/](https://ncbi.nlm.nih.gov/pmc/articles/PMC2808123/)



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## MASKS AS A PUBLIC HEALTH POLICY: A FAILED APPROACH

### **WHO: Advice on the Use of Masks in the Context of COVID-19, 5-June-2020**

At present, there is no direct evidence (from studies on COVID19 and in healthy people in the community) on the effectiveness of universal masking of healthy people in the community to prevent infection with respiratory viruses, including COVID-19 ... The likely disadvantages of the use of mask by healthy people in the general public include: potential increased risk of self-contamination due to the manipulation of a face mask and subsequently touching eyes with contaminated hands and/or if nonmedical masks are not changed when wet or soiled. This can create favourable conditions for microorganism to amplify; potential headache and/or breathing difficulties, depending on type of mask used; potential development of facial skin lesions, irritant dermatitis or worsening acne, when used frequently for long hours; a false sense of security, leading to potentially lower adherence to other critical preventive measures such as physical distancing and hand hygiene ... 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.

[apps.who.int/iris/bitstream/handle/10665/332293/WHO-2019-nCov-IPC\\_Masks-2020.4-eng.pdf?sequence=1&isAllowed=y](https://apps.who.int/iris/bitstream/handle/10665/332293/WHO-2019-nCov-IPC_Masks-2020.4-eng.pdf?sequence=1&isAllowed=y)

### **WHO: COVID-19 Advice for the Public: When and How to Use Masks**

If you are healthy, you only need to wear a mask if you are taking care of a person with COVID-19.

[who.int/emergencies/diseases/novel-coronavirus-2019/advice-for-public/when-and-how-to-use-masks](https://who.int/emergencies/diseases/novel-coronavirus-2019/advice-for-public/when-and-how-to-use-masks)

### **WHO: Advice on the Use of Masks in the Context of COVID-19, 6-April-2020**

There is limited evidence that wearing a medical mask by healthy individuals in the households or among contacts of a sick patient, or among attendees of mass gatherings may be beneficial as a preventive measure. However, there is currently no evidence that wearing a mask (whether medical or other types) by healthy persons in the wider community setting, including universal community masking, can prevent them from infection with respiratory viruses, including COVID-19. [who.int/publications-detail/advice-on-the-use-of-masks-in-the-community-during-home-care-and-in-healthcare-settings](https://who.int/publications-detail/advice-on-the-use-of-masks-in-the-community-during-home-care-and-in-healthcare-settings)

### **Facemasks in the COVID-19 era: A Health Hypothesis**

The existing scientific evidences challenge the safety and efficacy of wearing facemask as preventive intervention for COVID-19. The data suggest that both medical and non-medical facemasks are ineffective to block human-to-human transmission of viral and infectious disease such SARS-CoV-2 and COVID-19, supporting against the usage of facemasks. Wearing facemasks has been demonstrated to have substantial adverse physiological and psychological effects. These include hypoxia, hypercapnia, shortness of breath, increased acidity and toxicity, activation of fear and stress response, rise in stress hormones, immunosuppression, fatigue, headaches, decline in cognitive performance, predisposition for viral and infectious illnesses, chronic stress, anxiety and depression. Long-term consequences of wearing facemask can cause health deterioration, developing and progression of chronic diseases and premature death. Governments, policy makers and health organizations should utilize proper and scientific evidence-based approach with respect to wearing facemasks, when the latter is considered as preventive intervention for public health.

[ncbi.nlm.nih.gov/pmc/articles/PMC7680614/](https://ncbi.nlm.nih.gov/pmc/articles/PMC7680614/)

### **Florida's Covid-19 Response has Outperformed Lockdown States on Excess Deaths, Education, and the Economy**

According to data released today by Florida Governor Ron DeSantis' office, Florida is outperforming lockdown states like California and New York on all metrics. Florida has lower per-capita mortality, higher availability of in-person education, and a lower unemployment rate.

[rationalground.com/floridas-covid-19-response-has-outperformed-lockdown-states-on-excess-deaths-education-and-the-economy/](https://rationalground.com/floridas-covid-19-response-has-outperformed-lockdown-states-on-excess-deaths-education-and-the-economy/)

## ONGOING CONCERNS

### **Carbon dioxide in the study of panic disorder: issues of definition, methodology, and outcome**

We begin by reviewing studies that have employed CO<sub>2</sub> as a stimulus for panic provocation focusing on the status of key methodological parameters between the studies and the relationship of these parameters to findings.

[pubmed.ncbi.nlm.nih.gov/12464286/](https://pubmed.ncbi.nlm.nih.gov/12464286/)

### **Effect of hypercapnia and other disturbances in the acid-base-balance on panic disorder**

Naturally occurring panic attacks and various interventions which trigger anxiety in panic patients are accompanied by disturbances in the acid-base balance. Carbon dioxide appears to play an important role in many experimental panic provoking conditions. The influence of respiratory and metabolic pH disturbances on cerebral physiology is discussed and speculations are made about the possible mechanisms underlying CO<sub>2</sub>-induced anxiety in panic disorder.

[pubmed.ncbi.nlm.nih.gov/2488058/](https://pubmed.ncbi.nlm.nih.gov/2488058/)

## LESSONS FROM THE SPANISH FLU PANDEMIC OF 1918

### **Predominant Role of Bacterial Pneumonia as a Cause of Death in Pandemic Influenza: Implications for Pandemic Influenza Preparedness**

The majority of deaths in the 1918–1919 influenza pandemic likely resulted directly from secondary bacterial pneumonia caused by common upper respiratory–tract bacteria. [academic.oup.com/jid/article/198/7/962/2192118](https://academic.oup.com/jid/article/198/7/962/2192118)

### **A Working Program Against Influenza**

In December 1918, the American Public Health Association recommended that the “wearing of proper masks” should be compulsory for medical staff, occupations such as “barbers, dentists, etc.,” and “all who are directly exposed to infection.” However, they found that “as to beneficial results consequent on the enforced wearing of masks by the entire population at all times was contradictory,” and thus DID NOT recommend “the widespread adoption of this practice.”

[ncbi.nlm.nih.gov/pmc/articles/PMC1362453/pdf/amjphhealth00209-0016.pdf](https://ncbi.nlm.nih.gov/pmc/articles/PMC1362453/pdf/amjphhealth00209-0016.pdf)

### **Influenza, a Study of Measures Adopted for the Control of the Epidemic**

In 1919, Wilfred Kellogg’s study for the California State Board of Health concluded that mask ordinances “applied forcibly to entire communities” did not decrease cases and deaths, as confirmed by comparisons of cities with widely divergent policies on masking - “very complete records at the disposal of the California State Board of Health indicate conclusively that the compulsory wearing of masks does not affect the progress of the epidemic ... The case against the mask as a measure of compulsory application for the control of epidemics appears to be complete.”

[catalog.hathitrust.org/Record/011933637](https://catalog.hathitrust.org/Record/011933637)

### **Influenza; an Epidemiologic Study**

In a 1921 study, Warren T. Vaughn declared “the efficacy of face masks is still open to question. Certainly the face mask as extensively used during the 1918 epidemic was of little benefit and in many cases was, without a doubt, a decided detriment.” Vaughn’s sobering conclusion: “It is safe to say that the face mask as used was a failure.”

[catalog.hathitrust.org/Record/001583712](https://catalog.hathitrust.org/Record/001583712)

### **The Influenza Epidemic of 1918: II Preventive Measures**

In 1927, Edwin Jordan’s study, published in the Journal of the American Medical Association as a series of articles and then as a book, determined that masks were effective when worn by patients already sick or by those directly exposed to victims, including nurses and physicians. But he admitted “The effect of mask wearing throughout the general community is not easy to determine.” [jamanetwork.com/journals/jama/article-abstract/251741](https://jamanetwork.com/journals/jama/article-abstract/251741)