

More Bad News for Masks

Analysis by [Dr. Joseph Mercola](#) ✓ Fact Checked

STORY AT-A-GLANCE

- › Researchers analyzed the CO2 content of inhaled air among children wearing two types of masks, as well as wearing no mask
- › CO2 in inhaled air under surgical and filtering facepiece masks came in between 13,120 ppm and 13,910 ppm; the German Federal Environmental Office set a limit of CO2 for closed rooms of 2,000 ppm
- › Younger children appeared to have the highest CO2 values; a level of 25,000 ppm was measured from a 7-year-old wearing a facemask
- › The researchers believe the use of facemasks could lead to “impairments attributable to hypercapnia,” which is a buildup of CO2 in the blood
- › Children wearing facemasks at school have reported symptoms such as shortness of breath, dizziness, headaches, irritability, fatigue and difficulty concentrating

Mandating children to wear facemasks for long periods of time while at school and participating in other activities is an unprecedented move, one that was put into place despite no research showing the practice is safe. It’s not simply a case of “something is better than nothing,” because the act of mask wearing comes with a risk of adverse effects.

Now that the pandemic is more than a year behind us, evidence is starting to accumulate showing that the use of face masks in children may cause more harm than good. One of the latest studies noted that the evidence base for making face masks

compulsory in schoolchildren is “weak,” and looked into their effects on carbon dioxide in inhaled air.¹

Masks Increase Carbon Dioxide Inhalation

Your body produces carbon dioxide (CO₂) as a byproduct of cellular function.² This odorless, colorless gas is then transported via your blood to your lungs, where it is exhaled from your body. Normally, the CO₂ then dissipates into the air around you before you take another breath. In the open air, carbon dioxide typically exists at about 400 parts per million (ppm), or 0.04% by volume.

The German Federal Environmental Office set a limit of CO₂ for closed rooms of 2,000 ppm, or 0.2% by volume. If you're wearing a facemask, the CO₂ cannot escape as it usually does and instead becomes trapped in the mask. In a study published in JAMA Pediatrics, researchers analyzed the CO₂ content of inhaled air among children wearing two types of masks, as well as wearing no mask.³

Children in the study ranged in age from 6 to 17 years, with a mean age of 10.7. While no significant difference in CO₂ was found between the two types of masks, there was a significant elevation when wearing masks compared to not wearing them.

CO₂ in inhaled air under surgical and filtering facepiece masks came in between 13,120 ppm and 13,910 ppm, “which is higher than what is already deemed unacceptable by the German Federal Environmental Office by a factor of 6,” the researchers noted.⁴ Also important, this level was reached after only three minutes, while [children wear masks](#) at school for a mean of 270 minutes at a time.

Even the child who had the lowest measured CO₂ level had a measurement threefold greater than the closed room CO₂ limit of 0.2%. However, younger children appeared to have the highest CO₂ values; a level of 25,000 ppm was measured from a 7-year-old wearing a facemask.⁵

The study attracted criticism and calls for retraction by those questioning mask risks to children, but in a thoughtful synopsis by Dr. Vinay Prasad, a hematologist-oncologist and

associate professor of medicine at the University of California San Francisco, it's noted that there are both benefits and risks to forcing children to wear masks.⁶

While large, empirical studies could answer the question of whether masks help or harm children, "we did literally zero of them," Prasad said, and the CO2 study is attempting to add some clarity. He added:⁷

"Here is the real answer to the question of whether it's worth it to mask kids: No one has any clue. During the last year and half, the scientific community has failed to answer these questions. Failed entirely.

We have no idea if masks work for 2-year-olds and above, 5 and above, 12 and above. No idea if they only work for some period of time. No idea if this is linked to community rates. No idea if the concerns over language loss offset the gains in reduced viral transmission, and if so, for what ages."

Children's Mask Complaints Could Be Caused by Elevated CO2

A German study using data from 25,930 children showed that 68% reported adverse effects from wearing facemasks.⁸ Among them, 29.7% reported feeling short of breath, 26.4% being dizzy and 17.9% were unwilling to move or play.⁹

Hundreds more experienced "accelerated respiration, tightness in chest, weakness and short-term impairment of consciousness." Additional symptoms were also reported among the children, who wore facemasks for an average of 270 minutes a day:¹⁰

Irritability (60%)	Headaches (53%)
Difficulty concentrating (50%)	Less happiness (49%)
Reluctance to go to school/kindergarten (44%)	Malaise (42%)
Impaired learning (38%)	Drowsiness or fatigue (37%)

Signs of mild to moderate hypercapnia, which is a buildup of CO₂ in your bloodstream, include shortness of breath, daytime sluggishness, headache, daytime sleepiness and anxiety.¹¹

Hypercapnia is often associated with chronic obstructive pulmonary disease (COPD), which makes it harder for you to breathe, but it can also be caused by activities that limit you from breathing fresh air, such as scuba diving or being on a ventilator.^{12,13} The researchers of the featured study believe, however, that the use of facemasks could lead to “impairments attributable to hypercapnia,” adding:¹⁴

“Most of the complaints reported by children can be understood as consequences of elevated carbon dioxide levels in inhaled air. This is because of the dead-space volume of the masks, which collects exhaled carbon dioxide quickly after a short time.

This carbon dioxide mixes with fresh air and elevates the carbon dioxide content of inhaled air under the mask, and this was more pronounced in this study for younger children ... We suggest that decision-makers weigh the hard evidence produced by these experimental measurements accordingly, which suggest that children should not be forced to wear face masks.”

Nanoparticles, Pollutants Detected in Facemasks

Disposable plastic facemasks pose another risk in terms of the pollution they contain. A study by Swansea University researchers noted that 200 million disposable plastic facemasks are produced in China daily, and “improper and unregulated disposals” have led to a significant plastic pollution problem.¹⁵

The researchers submerged seven disposable facemask brands in water to simulate what happens with littering, when masks end up in waterways. Micro- and nanoscale fibers and particles and heavy metals, including lead, antimony and copper, were detected, raising significant environmental and public health concerns. According to a university news release:¹⁶

“The findings reveal significant levels of pollutants in all the masks tested – with micro/nano particles and heavy metals released into the water during all tests.

Researchers conclude this will have a substantial environmental impact and, in addition, raise the question of the potential damage to public health – warning that repeated exposure could be hazardous as the substances found have known links to cell death, genotoxicity and cancer formation.”

Not only are masks not being recycled, but their materials make them likely to persist and accumulate in the environment. Most disposable face masks contain three layers – a polyester outer layer, a polypropylene or polystyrene middle layer and an inner layer made of absorbent material such as cotton.

Polypropylene is already one of the most problematic plastics, as it’s widely produced and responsible for large waste accumulation in the environment. Leading researchers from the University of Southern Denmark and Princeton University also warned that masks could quickly become **“the next plastic problem.”**¹⁷

A performance study published in the June 2021 issue of Journal of Hazardous Materials¹⁸ also highlighted the little talked about fact that wearing masks poses a risk of microplastic inhalation, and reusing masks increases the risk.

The Link Between Masks and Advanced Stage Lung Cancer

A National Institutes of Health study¹⁹ published in February 2021 confirmed that when you wear a mask, most of the water vapor you would normally exhale remains in the mask, becomes condensed and is re-inhaled.²⁰ They went so far as to suggest that **wearing a moist mask** and inhaling the humid air of your own breath was a good thing, because it would hydrate your respiratory tract.

But researchers from New York University (NYU) Grossman School of Medicine revealed that when oral commensals – microbes that live in your mouth – are “enriched” in the lungs, it’s associated with cancer.²¹

Specifically, in a study of 83 adults with lung cancer, those with advanced-stage cancer had more oral commensals in their lungs than those with early-stage cancer. Those with an enrichment of oral commensals in their lungs also had decreased survival and worsened tumor progression.

While the study didn't look into how mask usage could affect oral commensals in your lungs, they did note, "The lower airway microbiota, whether in health or disease state, are mostly affected by aspiration of oral secretions, and the lower airway microbial products are in constant interaction with the host immune system."²²

It seems highly likely that wearing a mask would accelerate the accumulation of oral microbes in your lungs, thereby raising the question of whether mask usage could be linked to advanced stage lung cancer.

Masks Developed That Test for COVID-19

Adding further support that masking leads to an accumulation of breath droplets, which you can then re-inhale, engineers from the Massachusetts Institute of Technology and Harvard University developed a face mask that tests such droplets for the presence of COVID-19.²³

The facemasks contain tiny, freeze-dried sensors surrounded by water. When the wearer pushes a button, the water is released, hydrating the sensor, which then begins the test.

Reportedly, the mask can diagnose COVID-19 within 90 minutes and is "as sensitive as the gold standard, highly sensitive PCR tests,"²⁴ which have been **fraught with trouble** since the beginning of the pandemic.

CDC Study Finds Masks in Schools Had Little Effect on COVID

If children are risking inhalation of excessive levels of CO₂ to wear masks at school, what benefit are they receiving in exchange? Very little, if any, according to a CDC study that compared the incidence of COVID-19 in Georgia kindergarten through grade 5

schools that were open for in-person learning in fall 2020 with various recommended prevention strategies, such as mandatory masks and improvements to ventilation.²⁵

The study revealed that COVID-19 incidence was 37% lower in schools that required teachers and staff members to use masks and 39% lower in **schools that improved ventilation**, compared to schools that did not use these strategies.²⁶

Because the COVID-19 incidence at the schools was extremely low to begin with, even with a 37% reduction in incidence from staff members wearing masks, that only reduced COVID-19 incidence by about one case in the entire school. When students were masked, it also made virtually no difference. Further, ventilation led to better outcomes, reducing incidence by 39%.

Dilution methods, which work by diluting the number of airborne particles, include opening windows and doors or using fans. This led to a 35% lower incidence of COVID-19, while methods to filter airborne particles, such as using HEPA filtration systems with or without ultraviolet germicidal irradiation, led to a 48% lower incidence.

More States Ban Mask Mandates in Schools

While the CDC continues to recommend “universal and correct use of masks and physical distancing” in kindergarten through grade 12 schools,²⁷ a number of states, including Texas, Iowa, South Carolina and Arkansas, are defying the CDC’s nonsensical advice and proceeding to ban mask mandates in public schools or at least make mask usage optional.²⁸

In addition to the physical risks, experts have warned that masks are likely to be causing psychological harm to children and interfering with their development.²⁹ All of these risks come at little benefit to children, as, one expert report noted, “Figures illustrate that the risk of death from this disease for this age group is negligible ... To introduce these [compulsory face covering measures] without detailed, thorough and meticulous risk assessment, is potentially reckless.”³⁰

Mass, peaceful protests are often effective at compelling change, so if you're unhappy with the facemask policies at your child's school, contact your local district and let them know.

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