



Top Reasons Long Term wearing of Masks are Harmful for Children:

- 1. SARS CoV-2 Becomes More Dangerous When Blood Oxygen Levels Decline**
- 2. Medical masks lower oxygen levels in the blood.**
- 3. Lowering arterial oxygen suppresses the immune system, thus increasing the susceptibility of mask wearers to infectious disease.**
- 4. Masks collect and colonize viruses, bacteria, microbes and mold.**
- 5. Medical masks trap exhaled viral (and other) pathogens in the mouth/mask interspace, increase viral/infectious load, and increase the severity of disease.**
- 6. Face masks are dangerous and contraindicated for a large number of people with pre-existing medical conditions and disabilities.**
- 7. Medical masks should not be worn by children during exercise.**
- 8. Mandating Children to Wear Face Masks for Long Periods Risks Causing Them Mental and Psychological Injuries**
- 9. Medical masks raise carbon dioxide levels in the blood.**
- 10. Chemical cocktail found in face masks are toxic for children.**

Long Term Mask Wearing is Harmful For Children:

Face masks are more dangerous than parents are being told. Scientific studies over the course of many years have concluded that wearing face masks for extended periods of time puts the wearer, especially children, in imminent risk of physical and psychological harms.



In fact, there is a large and growing body of physicians, pediatricians, scientists, epidemiologists, and researchers around the world that are speaking out against the anti-scientific public health recommendations that have been forced upon the general public and our children.

<https://gbdeclaration.org/>

<https://www.meehanmd.com/blog/post/173679/an-evidence-based-scientific-analysis-of-why-mas>

Mandating Children to Wear Face Masks for Long Periods Risks Causing Them Mental and Psychological Injuries

Children are at risk for psychological trauma in multiple ways by being forced to wear face masks all day long at school. Doctors from around the country warn of the dangers to children of wearing face masks all day. Jeffrey I. Barke, M.D., *Open the schools without politics, American Thinker, June 10, 2020.*

https://www.americanthinker.com/blog/2020/06/open_the_schools_without_politics.html

“Mandatory masks in school are a ‘major threat’ to children’s development, doctors warn”

https://www.brusselstimes.com/news/belgium-all-news/health/130480/face-mask-obligation-in-school-major-threat-to-childrens-development-doctors-say/?fbclid=IwAR2l_Cg8ghpWbwieEXuLxZzIo9buF5K2Pb9qPkcvkbcF5zNVy8sBes-qdI

“Mandatory face masks in schools are a major threat to their development. It ignores the essential needs of the growing child. The well-being of children and young people is highly dependent on emotional attachment to others,” they wrote.

Mandatory face coverings on children is very harmful to the child: learning is inhibited; critical interactions among students and between student and teacher are fractured; and the face covering is counterproductive, as kids will naturally touch their faces, thereby contaminating their covering. This new normal that many are advocating may well lead to a spike in childhood behavior problems such as learning disabilities, anxiety disorders, and depression, to name a few. Kathleen M. Pike, PhD, Why a Mask is Not Just a Mask, Global Mental Health Programs, Columbia University, April 17, 2020. <https://www.cugmhp.org/five-on-friday/why-a-mask-is-not-just-a-mask>

The development of facial recognition is relatively weak in young children. According to University of Toronto psychologist, Dr. Kang Lee, it is not until kids are about 14 years old that they reach adult skill levels in recognizing faces. By putting on masks, we take away information that makes it especially difficult for children to recognize others and read emotional signals, which is unsettling and disconcerting. These issues may be especially true for children with autism spectrum disorder, including Asperger’s syndrome, who tend to have particular difficulties reading non-verbal cues.

Dr. Alice Kuo, President of the Southern California chapter of the American Academy of Pediatrics issued a statement criticizing Los Angeles County school reopening guidelines that require children wear masks as “not realistic or even developmentally appropriate for children.” She explained that, “wearing masks throughout the day can hinder language and socio-emotional development, particularly for younger children.” *Local Pediatricians Urge Collaborative Decision-Making about Reopening Schools, Southern California*



chapter of the American Academy of Pediatrics, June 2, 2020. <http://aapca2.org/wp-content/uploads/2020/06/AAP-CA2-press-release-on-schools-re-opening-6-2-20-Rev.pdf>

Some of the serious psychological harms to children caused by extended mask wearing are tied to lack of facial and emotional recognition. Christiane Bormann-Kischkel, *Face Recognition in Children*, *Eur Arch Psychiatr Neurol Sci* (1986) 236: 17-20. <https://link.springer.com/article/10.1007/BF00641052>

The use of salient visual speech cues is hidden by masks making learning difficult for young children.

- Kaylah Lalondea and Rachael Frush Holta, Preschoolers Benefit From Visually Salient Speech Cues, *Journal of Speech, Language, and Hearing Research*, Vol. 58, 135–150, February 2015. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4712850/pdf/JSLHR-58-135.pdf>
- see also Martin Wegrzyn, et al., Mapping the emotional face. How individual face parts contribute to successful emotion recognition, *PLoS ONE* 12(5): e0177239, May 11, 2017. <https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0177239>
- Lawrence Brancazio et al., Use of visual information in speech perception: Evidence for a visual rate effect both with and without a McGurk effect, *Perception & Psychophysics* 2005, 67 (5), 759-769. <https://pubmed.ncbi.nlm.nih.gov/16334050/>
- Mustapha Skhiri, Visual Cues in Speech Perception, Department of Computer and Information Science, Linköping University, GSLT, LiTH 20001/3/02. http://www.speech.kth.se/~rolf/gslt_papers/MustaphaSkiri.pdf

Voices of teachers and other students muffled through face masks makes learning more difficult, especially for any child with a diagnosed or undiagnosed hearing impairment.

- See Amanda B. Silberer, PhD, et al., Importance of High Frequency Audibility on Speech Recognition With and Without Visual Cues in Listeners with Normal Hearing, Department of Communication Sciences and Disorders The University of Iowa, March 2014. https://haar.lab.uiowa.edu/sites/haar.lab.uiowa.edu/files/wysiwyg_uploads/silberer_bentler_wu_aas_2014.pdf

The great weight of scientific evidence shows unmistakably that wearing face masks for extended periods is harmful to people's health, safety and emotional well-being, especially to young children. <https://www.meehanmd.com/blog/post/173679/an-evidence-based-scientific-analysis-of-why-mas>

https://www.scientificamerican.com/article/masks-can-be-detrimental-to-babies-speech-and-language-development/?fbclid=IwAR3tpLM7ogXdX3y7993SCexcnCv14rwrsgfey-Kcq9IOKiFvNaf_9NJvKQw
https://www.mihealthchoice.org/masks?utm_campaign=b1840b36-f0f9-47cc-a71f-18e2f73513a7&utm_source=so&utm_medium=mail&cid=98fff4e6-faf6-4959-ae20-e689e94c3376 (see 2021 open letter)

Medical masks should not be worn during exercise, especially for children.

Researchers are concerned about possible burden of facemasks during physical activity on pulmonary, circulatory and immune systems, due to oxygen reduction and air trapping reducing substantial carbon dioxide exchange. As a result of hypercapnia, there may be cardiac overload, renal overload, and a shift to metabolic acidosis. *Exercise with facemask; are we handling a devil's sword – a physiological hypothesis*. *Med Hypotheses*. 2020 Jun 22. 144:110002. <https://pubmed.ncbi.nlm.nih.gov/32590322/>



- Surgical mask wearers had significantly increased dyspnea after a 6-minute walk than non-mask wearers. (30) Effect of a surgical mask on six minute walking distance. Rev Mal Respir. 2018 Mar; 35(3):264-268. <https://pubmed.ncbi.nlm.nih.gov/29395560/>
- Here are two cases of the tragic consequences of forcing children to wear masks: Two Chinese boys drop dead while wearing face masks during physical exercise classes. [<https://www.dailymail.co.uk/news/article-8283965/Two-Chinese-boys-drop-dead-run-PE-lessons-wearing-face-masks.html>] <https://www.globaltimes.cn/content/1187434.shtml>
Two boys from two Chinese cities died of sudden cardiac arrest within a week. The first boy, 15, collapsed after jogging in PE class while wearing a face mask on April 24. The other boy, 14, reportedly died during a running exam while wearing a mask.
Why would healthy boys drop dead while wearing masks and running in gym class?! To answer this question, we must consider how mask induced deoxygenation and increased oxygen demands of heart muscle during exercise could have precipitated heart attacks in otherwise healthy teenagers:
- Lung collapse was caused by jogging with a face covering. https://www.dailymail.co.uk/news/article-8311179/Joggers-lung-collapses-ran-2-5-miles-wearing-face-mask.html?ito=facebook_share_article-facebook_preferred-top&fbclid=IwAR0kieVZJ9qUeNir6ELHbdys4KoOJqfk6Wsz-RknRDXWrQZCpBRr--br2A0

Chemical cocktail found in face masks are toxic for children.

- Most masks and face coverings, including cloth, are made with toxic and carcinogenic chemicals, including fire retardant, fiberglass, lead, phthalates, polyfluorinated chemicals and formaldehyde which those wearing masks are forced to breathe in all day.
- **Top German scientists have found that wearing certain types of face masks for long periods of time could result in potentially hazardous chemicals and harmful microplastics being inhaled deep into human lungs.**
- **Professor Michael Braungart, director at the Hamburg Environmental Institute has said, that mask wearers unwittingly run the risk of breathing in carcinogens, allergens and tiny synthetic microfibers by wearing both textile and nonwoven surgical masks for long periods of time.** <https://www.ecotextile.com/2021040127603/dyes-chemicals-news/exclusive-chemical-cocktail-found-in-face-masks.html> Tests on used surgical masks that found traces of chemicals such as the known carcinogen aniline as well as formaldehyde and optical brighteners – both heavily restricted on consumer goods by European and US authorities to minute parts per million concentrations. Presence of compounds such as 2-butanone oxime (carcinogenic) blocked diisocyanates used as cross linkers for perfluorocarbons (PFCs) on face masks. Used in the textile sector as oil and water repellents on fabrics, by-products of PFCs are known to be bio-persistent and their use is heavily restricted by authorities in Europe and the USA. Textile masks do not begin to pass this most basic hazard test for kids, for whom the risks of COVID have been categorically demonstrated to be miniscule

Face masks are dangerous and contraindicated for a large number of children with pre-existing medical conditions and disabilities.

- Large percentages of the population have medical conditions that make wearing a mask dangerous. Individuals should be examined by a medical professional to ensure that mask wear will not further compromise their medical condition.
 - Children with asthma (7.5% of American children) and other respiratory disabilities are being harmed by mask mandates, they are being discriminated against by businesses, schools, and public spaces that require masks.
 - Children with autism and other neurodevelopmental disorders are extremely prone to agitation and severe anxiety that results from the adverse effects, e.g., oxygen lowering effects, of masks.
 - An ever increasing number of children and young adults with autism are sensitive to touch and texture. <https://www.autismspeaks.org/sensory-issues> Covering the nose and mouth with fabric can cause sensory overload, feelings of panic, and extreme anxiety.
- **The CDC also states that anyone who has trouble breathing should not wear a face mask.** <https://www.cdc.gov/coronavirus/2019-ncov/prevent-getting-sick/cloth-face-cover-guidance.html>
- People with post-traumatic stress disorder (PTSD), severe anxiety, or claustrophobia (an abnormal fear of being in enclosed or narrow places), may feel afraid or terrified when wearing a face mask. These individuals may not be able to stay calm or function when wearing a face mask.
- A person who has cerebral palsy may have difficulty moving the small muscles in the hands, wrists, or fingers. Due to their limited mobility, they may not be able to tie the strings or put the elastic loops of a face mask over the ears. This means that the individual may not be able to put on or remove a face mask without assistance.
- A person who uses mouth control devices such as a sip and puff to operate a wheelchair or assistive technology, or uses their mouth or tongue to use assistive ventilators will be unable to wear a mask.

Medical masks lower children's oxygen levels in the blood.

Wearing a mask for more than a few minutes can cause a significant reduction in a person's blood oxygen level.

- **Masks inhibit air flow into and out of the lungs.**



For people with asthma, chronic obstructive pulmonary disease (COPD), and many other chronic lung diseases, face masks are intolerable to wear as they worsen breathlessness. [

<https://pubmed.ncbi.nlm.nih.gov/31992666/>

- Studies of masked individuals have shown that mask wear decreases arterial oxygen. Study revealed the surgeons experienced a significant decrease in the oxygen saturation of arterial pulsations (SpO₂) and a slight increase in pulse rates after one hour. <https://pubmed.ncbi.nlm.nih.gov/18500410/>
- Transcranial Ultrasound Doppler (TCUD) studies on masked and unmasked individuals demonstrate the changes in blood flow in the brain the result from the arterial CO₂ elevation that occurs within seconds of donning a mask. **This video demonstrates the use of TCUD and heart rate variability to measure the adverse effects of masking a healthy nine year old child:** <https://bit.ly/2GGQWiZ>
- Given that a **small decrease in SpO₂ reflects a large decrease in partial pressure of oxygen in the arterial blood (PaO₂)**, the findings of this study suggests that surgical masks worn more than one hour may lower arterial oxygen enough to induce physiologically detrimental effects. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5427770/>
- Pregnant healthcare workers were found to have a loss in volume of oxygen consumption by 13.8% compared to controls when wearing N95 respirators. 17.7% less carbon dioxide was exhaled. (<https://pubmed.ncbi.nlm.nih.gov/26579222/>) Patients with end-stage renal disease were studied during use of N95 respirators. Their partial pressure of oxygen (PaO₂) decreased significantly compared to controls and increased respiratory adverse effects. (<https://pubmed.ncbi.nlm.nih.gov/15340662/>) 19% of the patients developed various degrees of hypoxemia while wearing the masks.
- [Hypoxia, Hypercapnia, and Physiological Effect of Masking](https://pdmj.org/papers/masks_false_safety_and_real_dangers_part3/)
- [Microbial Challenges from Masks](https://pdmj.org/papers/masks_false_safety_and_real_dangers_part2/)

Lowering arterial oxygen suppresses the immune system, thus increasing the susceptibility of mask wearers to infectious disease.

[Recent studies] found that about a third of the [healthcare] workers developed headaches with use of the mask, most had preexisting headaches that were worsened by the mask wearing <https://headachejournal.onlinelibrary.wiley.com/doi/full/10.1111/head.13811>, and 60% required pain medications for relief. As to the cause of the headaches, while straps and pressure from the mask could be causative, the bulk of the evidence points toward hypoxia and/or hypercapnia as the cause. Hypoxia increases the risk of blood clot formation or an elevation in blood CO₂ (hypercapnia).

<https://www.sciencedaily.com/releases/2018/08/180802115657.htm>

Healthcare workers' N95 respirators were measured by personal bio aerosol samplers to harbor influenza virus. (<https://pubmed.ncbi.nlm.nih.gov/30029810/>) And 25% of healthcare workers' respirators were found to contain influenza in an emergency department during the 2015 flu season.

<https://pubmed.ncbi.nlm.nih.gov/30169507/>



Moisture retention, reuse of cloth masks and poor filtration may result in increased risk of infection.”
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4420971/pdf/bmjopen-2014-006577.pdf> (This study is the first RCT of cloth masks, and the results caution against the use of cloth masks.)

See MacIntyre CR, Seale H, Dung TC, et al., A cluster randomized trial of cloth masks compared with medical masks in healthcare workers, *BMJ Open* 2015; 5: e006577, US National Library of Medicine, National Institutes of Health, doi: 10.1136/bmjopen-2014-006577, April 22, 2015.
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4420971/pdf/bmjopen-2014-006577.pdf>

Healthcare workers wearing cloth masks had significantly higher rates of influenza-like illness after four weeks of continuous on-the-job use, when compared to controls.
<https://bmjopen.bmj.com/content/5/4/e006577>

The increased rate of infection in mask-wearers may be due to a weakening of immune function during mask use. Surgeons have been found to have lower oxygen saturation after surgeries even as short as 30 minutes. (<http://scielo.isciii.es/pdf/neuro/v19n2/3.pdf>)

- It is known that the N95 mask, if worn for hours, can reduce blood oxygenation as much as 20%, which can lead to a loss of consciousness.

The importance of these findings is that a drop in oxygen levels (hypoxia) is associated with an impairment in immunity. Studies have shown that hypoxia can inhibit the type of main immune cells used to fight viral infections called the CD4+ T-lymphocyte. Low oxygen induces hypoxia-inducible factor 1 alpha (HIF-1). (<https://www.jimmunol.org/content/177/8/4962>)

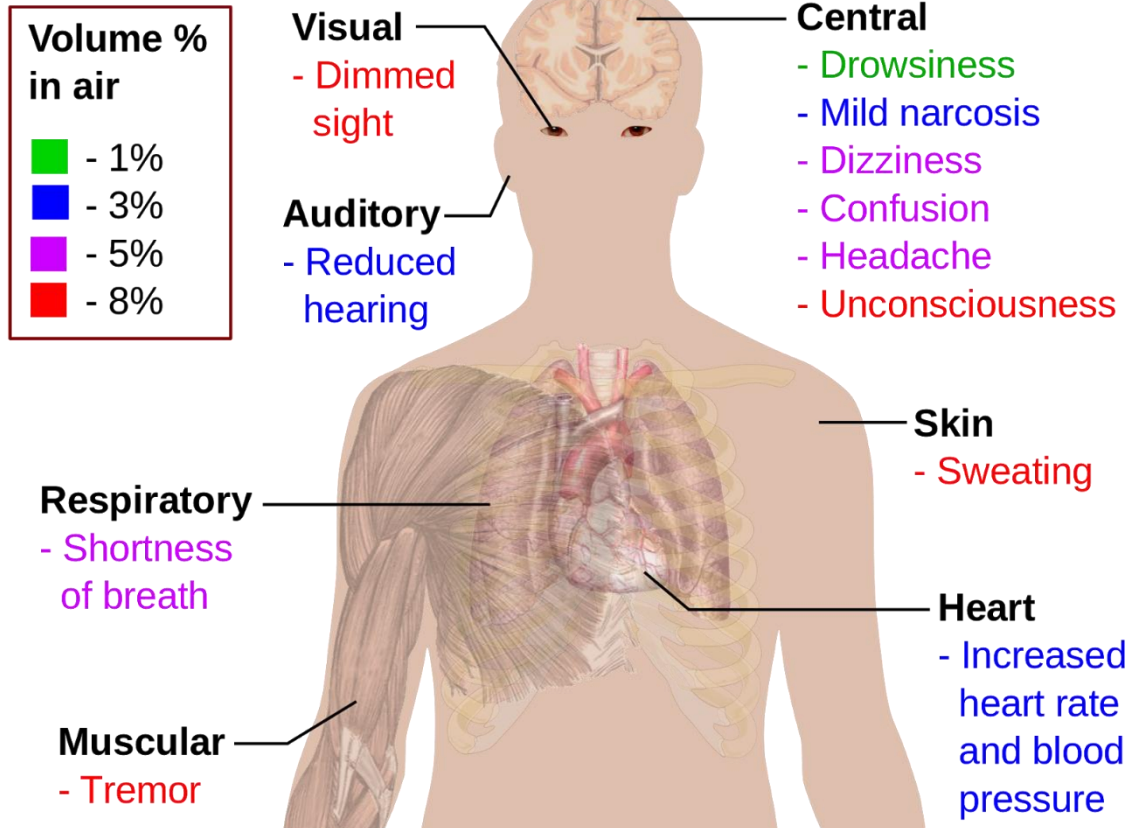
This occurs because the hypoxia increases the level of a compound called hypoxia inducible factor-1 (HIF-1), which inhibits T-lymphocytes and stimulates a powerful immune inhibitor cell called the TREG. <https://pubmed.ncbi.nlm.nih.gov/20672742/> . This in turn down-regulates CD4+ T-cells. CD4+ T-cells, in turn, are necessary for viral immunity. (<https://europepmc.org/article/PMC/3420330>)

Medical masks raise carbon dioxide levels in the blood.

Although the body has robust mechanisms for mitigating transient and minor elevations of CO₂ in the air we breathe, these mechanisms can easily be overwhelmed by chronic exposure to significant elevations in CO₂, such as occurs with prolonged wearing of a medical mask.

- The science clearly demonstrates that **face masks cause carbon dioxide rebreathing and hypercapnia** [Rhttps://onlinelibrary.wiley.com/doi/full/10.1111/j.1365-2044.2006.04767.x](https://onlinelibrary.wiley.com/doi/full/10.1111/j.1365-2044.2006.04767.x)
- Exhaled air is rich in [carbon dioxide](#), a waste product of [cellular respiration](#).
- A portion of carbon dioxide previously exhaled is inspired (breathed) at each respiratory cycle.
- **Masks trap CO₂ rich respiratory exhalations at the mask-mouth interface, force re-breathing of CO₂ rich exhalations, raise carbon dioxide blood (CO₂) levels.**
<https://associationofanaesthetists-publications.onlinelibrary.wiley.com/doi/full/10.1111/j.1365-2044.2006.04767.x>

Main symptoms of Carbon dioxide toxicity



Objective evidence demonstrating how masks increase blood carbon dioxide levels and negatively impact health and function.

- **Transcranial Ultrasound Doppler (TCUD)** is a noninvasive means of assessing blood flow in the cerebral vasculature. The increase in carbon dioxide partial pressures (PCO₂) caused by medical masks can be assessed by TCUD.
<https://journals.sagepub.com/doi/pdf/10.1038/jcbfm.1984.54>

- Elevation of PCO₂ causes vasodilation of the arteriolar channels leading to a decrease in peripheral vascular resistance. The decrease in peripheral vascular resistance is responsible for the changes in cerebrovascular circulation time, CBF, and the velocity of flow (V) in cerebral arteries.
- Medical masks force the wearer to inspire (re-breathe) air that is a mix of air from the local environment and the respiratory waste products from the mask wearer's previous exhalations.
 - Respiratory exhalations contain significantly higher levels of carbon dioxide (CO₂), one of the waste products of respiration.
 - The pulmonary system is designed to collect oxygen and remove CO₂ from the body. Masks trap CO₂ rich exhalations at the mask-mouth interface.
- Changes in arterial PCO₂ considerably influence cranial blood flow (CBF). Transcranial Ultrasound Doppler (TCUD) studies on masked and unmasked individuals demonstrate the changes in blood flow in the brain the result from the arterial CO₂ elevation that occurs within seconds of donning a mask.

Video demonstrating the use of TCUD and heart rate variability to measure the adverse effects of masking a healthy nine year old child: <https://bit.ly/2GGQWiZ>

- <https://www.meehanmd.com/blog/post/173679/an-evidence-based-scientific-analysis-of-why-mas>

SARS CoV-2 Becomes More Dangerous When Blood Oxygen Levels Decline

- Arterial oxygen desaturation is a critical issue in CoVID-19. The virus' ability to infect cells is markedly enhanced by oxygen desaturation, which has been shown to occur even in the ideal operating room environment in which surgeons operate: high air flow/exchange systems, cool temperature, and higher room oxygen levels, when wearing a surgical mask. <https://www.sciencedirect.com/science/article/abs/pii/S1130147308702355?via%3Dihub>
- One of the features that make SARS CoV-2 uniquely infectious is the "furin" sequence in the virus that activates increased ACE2 receptor attack and cellular invasion in low oxygen environments. [https://www.jbc.org/article/S0021-9258\(19\)62767-5/fulltext](https://www.jbc.org/article/S0021-9258(19)62767-5/fulltext)

Medical masks trap exhaled viral (and other) pathogens in the mouth/mask interspace, increase viral/infectious load, and increase the severity of disease.

Medical masks increase viral load, and increase the severity of disease.

- The trapped viral particles are prevented from removal from the airways. The mask wearer is thus forced to **re-breathe** the viral particles, increasing infectious viral particles in the airways and lungs. Asymptomatic or mild cases of CoVID-19 become more severe when the infected is



masked, oxygen lowers, viral load increases from particle re-breathing, and the disease **overwhelms the innate immune system.**

<https://www.frontiersin.org/articles/10.3389/fphys.2018.01487/full>

- Face masks **trap exhaled viral particles** in the mouth/mask interspace.
<https://www.technocracy.news/blaylock-face-masks-pose-serious-risks-to-the-healthy/> This trapping, re-breathing, and increasing pathogen load delivered to the lungs becomes dramatically more dangerous when the medical mask becomes contaminated with the opportunistic viruses, bacteria, and fungi that can grow in the warm, moist environment of the mask
- Dr. Jenny Harries, England's deputy chief medical officer, has warned that it was not a good idea for the public to wear face masks as **the virus can get trapped in the material and causes infection when the wearer breathes in.**
 - Angela Betsaida B. Laguipo, BSN, “Reusing Masks May Increase Your Risk of Coronavirus Infection, Expert Says,” News, Medical, Life Sciences, March 15, 2020.
<https://www.news-medical.net/news/20200315/Reusing-masks-may-increase-your-risk-of-coronavirus-infection-expert-says.aspx>

Masks increase the incidence of “Mask Mouth”, **dental cavities**, inflamed gums, and bad breath.

- Leads to all kinds of dental disasters like decaying teeth, receding gum lines and seriously sour breath. “*Mask Mouth*” *Is a Seriously Stinky Side Effect of Wearing Masks*. New York Post, August 5, 2020. <https://nypost.com/2020/08/05/mask-mouth-is-a-seriously-stinky-side-effect-of-wearing-masks/>
- Dr. Rob Ramondi <https://fineartsdentistry.com/how-face-masks-are-affecting-oral-health-during-a-pandemic/>

Masks collect and colonize viruses, bacteria, microbes and mold.

Many microbes get transferred to surfaces the child (or adult) touches after they touch, fiddle, and mishandle their mask. This is one of the many reasons that masks are almost certainly INCREASING the transmission of infectious disease. More dangerously, these microbes are being inhaled and delivered deep into the lungs where respiratory disease far worse than CoVID-19 can result. The oxygen lowering effects of masks forces the body to compensate by increasing heart rate and deepening inspirations (increasing tidal volumes). Increased tidal volumes drives the mask pathogens deep into the lungs where they can cause serious pneumonia, inflammation, and tissue damage. And now a new study finds that cultivation and enrichment of microbes on the face can [infiltrate the lungs through unconscious aspirations](https://www.azolifesciences.com/news/20201112/Presence-of-microbes-in-lung-can-activate-immune-response-to-modulate-lung-cancer-pathogenesis.aspx) and cause inflammatory responses and advanced stage lung cancer.
<https://www.azolifesciences.com/news/20201112/Presence-of-microbes-in-lung-can-activate-immune-response-to-modulate-lung-cancer-pathogenesis.aspx>



Studies show healthcare workers' surgical masks also were measured by personal bio aerosol samplers to harbor for influenza virus. (<https://pubmed.ncbi.nlm.nih.gov/30029810/>) Various respiratory pathogens were found on the outer surface of used medical masks, which could result in self-contamination. The risk was found to be higher with longer duration of mask use. (<https://pubmed.ncbi.nlm.nih.gov/31159777/>)

Surgical masks were also found to be a repository of bacterial contamination. The source of the bacteria was determined to be the body surface of the surgeons, rather than the operating room environment. (<https://pubmed.ncbi.nlm.nih.gov/30035033/>)

- **Long term mask use breeds microbes that infiltrate the lungs and contribute to advanced stage lung cancer** <https://science.news/2021-01-15-long-term-mask-use-breeds-microbes-lung-cancer.html#>
- The Central Michigan District Health Department is investigating after more than a **dozen cases of strep throat** were reported within Shepherd Public Schools **despite COVID-19 protocols**. https://www.abc12.com/app/2020/10/02/health-department-investigating-after-high-number-of-strep-throat-cases-at-shepherd-schools/?fbclid=IwAR2ECNvulrMVGX_1adk_btUieta6sUPfCTu532-2UC2inKv6m9Hmb8Ey3W4
- “Surgical Masks as Source of Bacterial Contamination during Operative Procedures.” Journal of Orthopaedic Translation 14 (July): 57–62. <https://www.sciencedirect.com/science/article/pii/S2214031X18300809>
- **Microbial Contamination on Used Surgical Masks among Hospital Personnel and Microbial Air Quality in their Working Wards: A Hospital in Bangkok** <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4202234/>
<https://www.meehanmd.com/blog/post/173679/an-evidence-based-scientific-analysis-of-why-mas>