

Covid-19 and Face Masks

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Each party picks its nominees but the swing voters hold the balance of power and they decide the election. Swing voters trust the Democrats, with the hopeful exception of New York's Andrew Cuomo, on Covid-19 more than they trust us, and we need to change that. This paper will seek to eliminate some of the misconceptions that promote opposition to face mask usage and vaccination.

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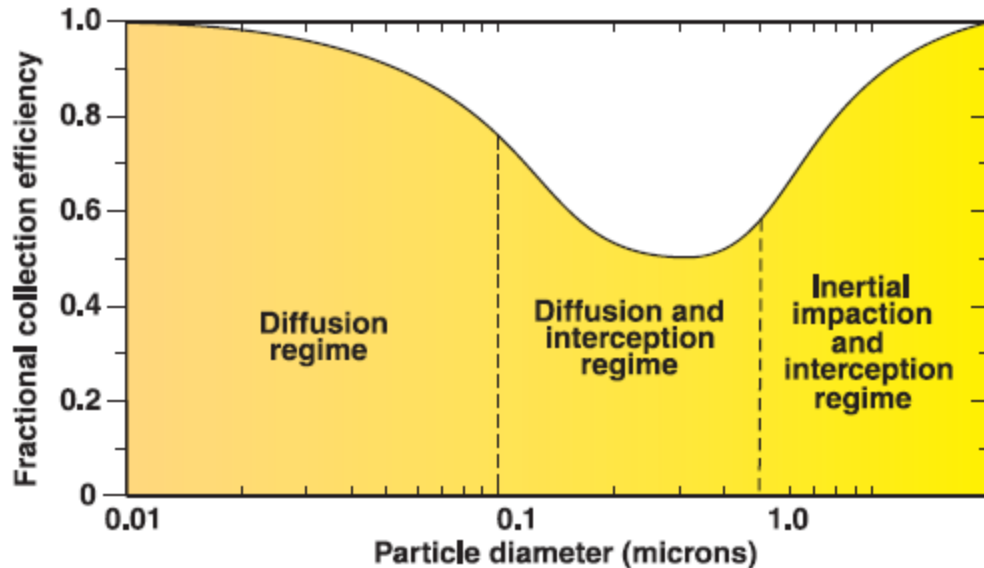
Face Masks and Respirators

Face mask opponents argue that the virus is much smaller than 0.3 microns (0.3 thousandths of a millimeter) and that trying to stop the virus with face masks or respirators is like trying to stop mosquitoes with a chain link fence.

1. The virus travels in aerosol droplets that are often larger than 0.3 microns
2. 0.3 microns is the **worst case scenario** where filtration efficiency is poorest, at least for respirators. This is because molecular forces (Brownian motion) buffet smaller particles to drive them sideways into the filter before they can go through. This would be similar to crosswinds throwing the mosquitoes sideways into the chain link fence. Here is a public domain (from NIOSH, National Institute for Occupational Safety and Health) figure that explains this.²

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² "Guidance for Filtration and Air-Cleaning Systems to Protect Building Environments from Airborne Chemical, Biological, or Radiological Attacks" published by the National Institute for Occupational Safety and Health (NIOSH) DHHS (NIOSH) Publication No. 2003-136
<https://www.cdc.gov/niosh/docs/2003-136/pdfs/2003-136.pdf?id=10.26616/NIOSH PUB2003136>



Your Face Mask Protects You As Well as Others

Another misconception is that face masks do not protect the wearer. The UK's Health and Safety Executive (their counterpart of OSHA) tested respirators and masks with simulated virus aerosols **directed at the wearer** and found that they offer considerable resistance.³ "The Health and Safety Executive uses a specialist machine that sprays water droplets at a person wearing a mask to accurately replicate being hit with a cough or a sneeze." The results were as follows:

1. Screwfix mask respirator with P3 filters; **100-fold protection**. (P3 is apparently equal to FFP3, which is comparable to N99 because it stops 99% of the challenge particles.)⁴ A friend told me, by the way, that painters went for their respirators immediately when the pandemic broke out because these offer enormous protection.⁵
2. 3M 9913, **78-fold protection**. This appears to be FFP1⁶ which stops 80% of the challenge particles, which is not as good as an N95 respirator but still far better than the face masks promoted by Dr. Fauci, President Biden, and Governor Wolf—the latter of whom tested positive despite his use of a face mask. More about this later.
3. If you don't want to wear something that looks like a suction cup over your face—and respirator usage requires, among other things, performing seal checks to ensure that air does not leak around the sides—a **surgical face mask still offers 6-fold protection**.
4. A do-it-yourself mask made from a bra or sanitary towel offers 2-fold protection.

That Ain't a Mask, Mate; THIS is a Mask

Recall that Governor Wolf got slimed by the virus despite his use of a face mask. To paraphrase Crocodile Dundee, "That ain't a mask, mate; THIS is a mask." The cloth masks being sold around the country are made of different materials for which there are few if any standards which means, to put it

³ <https://www.dailymail.co.uk/news/article-8050587/Coronavirus-face-masks-selling-one-buy.html>

"Coronavirus face masks sell out as prices soar 800%: But do they really work and which one should you buy?"

⁴ <https://www.smilewithvk.com/post/surgical-mask-vs-ffp3-vs-n95-vs-respirator-pediatric-dentist>

⁵ A caveat is that respirator filters should not be exposed to water.

⁶ https://www.3m.co.uk/3M/en_GB/p/dc/v000078851/

quite bluntly, **you don't know what you are getting in terms of protection**. There are even people who sell fashion mesh face masks through which the wearer's nose and mouth are clearly visible. One web page says it adds flair to your regular face mask (i.e. implies it should be worn over a real mask) but the people modeling them are not wearing anything underneath them. They should include little signs that say "Covid-19 Entrance Here."

The Health and Safety Executive found, however, that **surgical face masks** offer six-fold protection against contagious aerosols. These masks meet ASTM (American Society for Testing and Materials) specifications for resistance to challenge aerosols and bacterial filtration efficiency.⁷

- Level 1 stops 95% of 0.1 micron challenge particles which is comparable to N95 performance (except the latter are tested against 0.3 micron challenge particles).
- Levels 2 and 3 stop 98% of 0.1 micron challenge particles.

The reason these masks are not as effective as respirators is because air can go around the sides. Their performance can be improved with mask braces⁸ (from FixTheMask.com) and mask tighteners that pull the ear loops behind the head. The CDC recommends the use of mask braces.⁹ **The Durand hospital mask of 1918 was in fact superior, at least in terms of seal if not material, to the earloop masks we are using today.**¹⁰



Durand hospital mask, devised by Miss Charlotte Johnson, superintendent: The gauze (44 by 40 mesh) is cut 8 inches wide and 23 inches long. The sides and one end are turned down one-quarter inch. It is folded twice, the outside end being turned down.

Face Shields and Goggles

Use of eye protection may reduce your chance of getting Covid-19 threefold because the virus might be able to get in through the eyes, which are mucous membranes.¹¹

⁷ <https://www.halyardhealth.com/articles/face-mask/choosing-the-right-face-mask-3-things-to-know/>

⁸ <https://www.fixtheface.com/>

⁹ <https://www.cdc.gov/coronavirus/2019-ncov/your-health/effective-masks.html>

¹⁰ "Further Experience with Face Masks," George H. Weaver, The Journal of the American Medical Association October 26, 1918, p. 1405 – 1407 looks interesting. Note that the Durand mask, as invented in 1918, is superior in terms of nose and mouth coverage, i.e. preventing leakage around the sides, than the earloop masks that are popular today

¹¹ Gillespie, Claire. 2020. "Should You Wear Goggles to Protect Against Coronavirus? Here's What Experts Told Us." <https://www.health.com/condition/infectious-diseases/coronavirus/goggles-covid>

Get The Vaccine

Anti-vaxxers (they've been with us for more than 200 years as shown by a public domain cartoon by James Gillray) contend that even vaccinated people can get Covid-19 and give it to others. **Vaccination, however, reduces enormously your chance of death or hospitalization.** The annual flu vaccine is rarely if ever 100% effective either but, if you do get the flu, it will usually be far less serious than if you did not get the vaccine. **In addition, the flu vaccine may increase your resistance to Covid-19.**¹² The FDA meanwhile approved the Pfizer vaccine on August 23 2021.¹³



"The Cow-Pock—or—the Wonderful Effects of the New Inoculation!—vide. the Publications of ye Anti-Vaccine Society" by James Gillray (1802, public domain due to age) shows people getting Edward Jenner's cowpox-based anti-smallpox vaccine and turning into cows. The picture on the wall shows people worshipping a golden cow. Vaccine, in fact, comes from vache (French for cow) and, while inoculation or variolation with actual smallpox was used in the early 18th century, nobody called it "vaccination."

<https://www.cdc.gov/niosh/topics/eye/eye-infectious.html> "Appropriately fitted, indirectly-vented goggles with a manufacturer's anti-fog coating provide the most reliable practical eye protection from splashes, sprays, and respiratory droplets."

¹² <https://www.sciencedaily.com/releases/2021/08/210804123547.htm> Flu shot protects against severe effects of COVID-19, study finds -- ScienceDaily

¹³ <https://www.fda.gov/news-events/press-announcements/fda-approves-first-covid-19-vaccine>