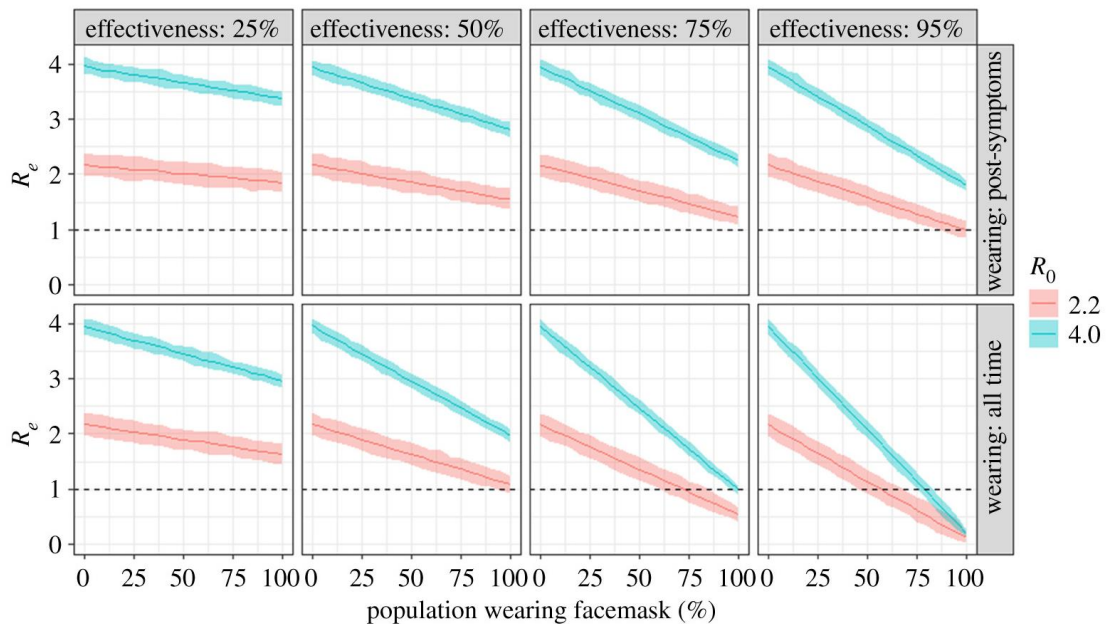




Current Studies on Evidence of Effectiveness of Face Masks

As of 6-29-20

1. **Mathematical model** – Face mask used by the public all the time (not just when symptoms first appear) could significantly reduce the rate of COVID-19 spread, even with imperfect use, varying effectiveness of mask/face coverings, and varying levels of use



Stutt et al. **A modelling framework to assess the likely effectiveness of facemasks in combination with 'lock-down' in managing the COVID-19 pandemic.** Published:10 June 2020
<https://royalsocietypublishing.org/doi/10.1098/rspa.2020.0376>

2. **Systematic review and meta-analysis** - For the general public, evidence shows that physical distancing of more than 1 m is highly effective and that facemasks could reduce risk of infection by about 50% in non-health-care settings, with either disposable surgical masks or reusable 12–16-layer cotton ones.

Chu et al. **Physical distancing, face masks, and eye protection to prevent person-to-person transmission of SARS-CoV-2 and COVID-19: a systematic review and meta-analysis.**

Published:June 01, Lancet, June 1, 2020: [https://doi.org/10.1016/S0140-6736\(20\)31142-9](https://doi.org/10.1016/S0140-6736(20)31142-9)

3. **A rapid systematic review** – For studies in community settings, evidence suggests protection of masks in high transmission settings such as household and college settings. Authors suggest “If masks protect in high transmission settings, they should also protect in crowded public spaces, including workplaces, buses, trains, planes and other closed settings.”

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MacIntyre, Chughtai. **A rapid systematic review of the efficacy of face masks and respirators against coronaviruses and other respiratory transmissible viruses for the community, healthcare workers and sick patients** International Journal of Nursing Studies (2020), <https://doi.org/10.1016/j.ijnurstu.2020.103629>

4. **Review** – “There is modest evidence to support widespread community use of universal masking, which includes cloth masks to help reduce transmission of SARS-CoV-2.’

Sunjaya, et al. Rationale for universal face masks in public against COVID-19. *Respirology*, April 2020 <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7267357/>

5. **Analysis of trends and mitigation measures in the three epicenters** (Wuhan, Italy, NYC) - Face covering reduced the number of infections by over 78,000 in Italy from April 6 to May 9 and by over 66,000 in NYC from April 17 to May 9. Authors conclude social distancing are insufficient by themselves in protecting the public. “Our analysis reveals that the difference with and without mandated face covering represents the determinant in shaping the trends of the pandemic.”

Zhang et al. **Identifying airborne transmission as the dominant route for the spread of COVID-19. Proceedings of the National Academy of Science.** Published June 11, 2020 <https://doi.org/10.1073/pnas.2009637117>

6. **Synthetic control group study of effect of mandatory face mask in Germany** – Concluded daily growth rate of Covid-19 cases falls by around 40% due to mandatory mask-wearing. May have larger protective effect for age group 60 years and above.

Mitze et al. **Face Masks Considerably Reduce COVID-19 Cases in Germany: A Synthetic Control Method Approach.** Institute of Labor Economics. June 2020. <http://ftp.iza.org/dp13319.pdf>

- 7 **Natural Experiment of State Mandates** in 15 US states and DC. States mandating use of face masks in public had a greater decline in daily COVID-19 growth rates compared to states that did not. Statistically significant decrease in daily case rate - 2% after 21 days. These estimates represent nearly 16–19% of the effects of other social distancing measures (school closures, bans on large gatherings, shelter-in-place orders, and closures of restaurants, bars, and entertainment venues). As many as 230K–450K COVID-19 cases may have been averted by 5/22 due to face covering mandates in 15 states and DC. No evidence of declines in daily COVID-19 growth rates with the employee-only mandates.

Lyu and Wehby, **Community Use Of Face Masks And COVID-19: Evidence From A Natural Experiment Of State Mandates In The US.** *Health Affairs*, August 2020 <https://www.healthaffairs.org/doi/full/10.1377/hlthaff.2020.00818>

8. **Experimental study** shows a decrease of forward-moving droplets when breathing through a damp cloth.

Anfinrud et al. **Visualizing Speech-Generated Oral Fluid Droplets with Laser Light Scattering.** *NEJM* May 21, 2020. <https://www.nejm.org/doi/full/10.1056/NEJMc2007800>

9. **Experimental study of surgical masks** worn by symptomatic people - Significantly reduced detection of coronavirus RNA in aerosols, with a trend toward reduced detection of coronavirus RNA in respiratory droplets.

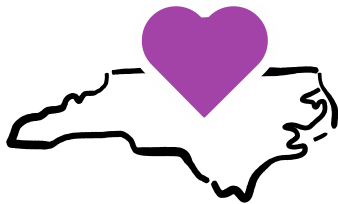
Leung et al. **Respiratory virus shedding in exhaled breath and efficacy of face masks.** *Nat Med* (2020). <https://www.nature.com/articles/s41591-020-0843-2>

10. **Case Study** - Two hairstylists, both were sick and tested positive for COVID, saw over 100 clients while positive but wore masks the entire time and not one client got the virus.

<https://www.washingtonpost.com/business/2020/06/17/masks-salons-missouri/>

11. **Multivariable analysis of 194 countries** - duration of mask-wearing by the public was negatively associated with mortality (all $p < 0.001$). In countries with cultural norms or government policies supporting public mask-wearing, per-capita coronavirus mortality increased on average by just 8.0% each week, as compared with 54% each week in remaining countries.

Christopher T Leffler, et al **Association of country-wide coronavirus mortality with demographics, testing, lockdowns, and public wearing of masks.** Update June 15, 2020.
doi: <https://doi.org/10.1101/2020.05.22.20109231>



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