

SCIENCE NEWS STORY

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**Face Masks and Flattening the Curve**

In countries where facemasks are used by the public all the time—not just from when symptoms first appear—the curve is flattened below the critical reproductive rate of one. A reproductive rate of two means one infected person in turn infects two other people—thus raising the curve.

The authors wanted to explore face masks as pandemic interventions such as contact tracing and medical testing have not reached sustainable levels.

The results shed light on “why some countries, where adoption of facemask use by the public is around 100 percent, have experienced significantly lower rates of COVID-19 spread and associated deaths,” explained the study, which was led by Dr. Richard Stutt with colleagues at University of Cambridge and University of Greenwich, UK. Stutt is a mathematician focusing on population-wide disease spread.

Wide scale facemask wearing, alongside physical distancing or stay-inside periods, could be key to managing the COVID-19 pandemic and re-opening economic activity, the authors conclude.

The researchers used a combination of modeling methods to answer questions
about specifically how effective facemasks are at reducing SARS-CoV-2 infections.
When people breathe or speak, spray droplets containing the virus are emitted from the mouth. These droplets can infect people by being inhaled while the spray is floating in the air or can be deposited on surfaces as "fomites" and cause infection later if touched.

The team used the modeling framework to gauge the effectiveness of facemask wearing *in combination* with critical public health pandemic strategies. The scientists revealed that the timing of lock-down periods and public universal facemask adoption affects positive outcomes.

“Even if facemask use began after the start of the first lock-down period, our results show that benefits could still accrue by reducing the risk of the occurrence of further COVID-19 waves,” the study explained.

In related news, other scientists recently reported findings that one small gap in the perimeter of a face mask can lead to 50% diminished efficiency at filtering virus-size particles. Thus “fitted” masks without gaps are [key](http://www.ScienceNewsService.com).

The new study results are predictive for low-, middle-, and high-income countries and are particularly important for people in resource-poor locations where making effective home-made washable cloth masks is possible.

Data on SARS-CoV-2 continue to grow worldwide. The WHO (World Health Organization) in June updated guidelines recommending all people wear face masks with at least three layers of fabric along with physical distancing and hand hygiene. WHO is actively encouraging research on the science of masks (see chart). And CDC issued more guidance in May on how to safely wear and take off cloth face coverings to help mitigate the pandemic (cdc.gov/coronavirus).

The researchers argue that despite the potential for facemasks to reduce SARS-CoV-2 transmission, more efforts need to be invested in well-designed studies on facemasks—how they are made, from what materials, and safe-usage practices. “My mask protects you, your mask protects me,” the study summarized in brief.

The study was published in the *Proceedings of the Royal Society A*.

*Science News Service (SNS) offers science-based news focused on face mask safety free during the pandemic. News outlets can download the full-quote content at ScienceNewsService.com -- then click on SNS News Releases in the main menu. SNS is a non-profit dedicated to science-based journalism.*

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| WHO UPDATED FACE MASK GUIDELINES JUNE 7, 2020. HERE, KEY POINTS AND LINKS |
| **COMPOSITION OF A NON-MEDICAL FABRIC MASK (assuming no gaps)** | **CARE AND HANDLING** | **CAUTIONS** |
| ● An inner layer of absorbentmaterial such as cotton.● A middle layer of non-woven material such as polypropylene. ● An outer layer of non-absorbent material, such as polyester or polyester blend. | ● Clean your hands after removing the mask. | ● The use of masks should be combined with other key infection prevention and control measures such as hand hygiene and physical distancing of at least 1 meter (3 feet) from others, as they do not protect against COVID-19 on their own. |
| ● Make sure to construct or purchase a mask that lets you breathe while talking and walking briskly. | ● Wash fabric masks in soap or detergent and preferably hot water at least once a day. | ● Above all, stay informed of the progress of the disease, pay attention to local authorities and their recommendations, and follow and encourage best practices. |
| ● More information on the types of materials and their effectiveness can be found in the updated mask guidance document at [WHO](https://www.who.int/emergencies/diseases/novel-coronavirus-2019/question-and-answers-hub/q-a-detail/q-a-on-covid-19-and-masks) | ● More care tips from [WHO](https://www.who.int/emergencies/diseases/novel-coronavirus-2019/question-and-answers-hub/q-a-detail/q-a-on-covid-19-and-masks).. | ● More, including a PDF [here](https://www.who.int/publications/i/item/advice-on-the-use-of-masks-in-the-community-during-home-care-and-in-healthcare-settings-in-the-context-of-the-novel-coronavirus-%282019-ncov%29-outbreak).  |
|  Source: <https://www.who.int/emergencies/diseases/novel-coronavirus-2019/question-and-answers-hub/q-a-detail/q-a-on-covid-19-and-masks> *Chart compilation by* [*www.ScienceNewsService.com*](file:///C%3A%5CUsers%5CRosalie%5CDocuments%5C2020%5C2020%20Website%5CSTUTT%20STUDY%5Cwww.ScienceNewsService.com) |