

Facemasks Ineffective at Mitigating the Spread of Respiratory Viruses

2020	Wang et al 2020	Observational Study "The Massachusetts General Brigham Facemask Study" Cited by the CDC as evidence that mask mandates work to slow the spread of COVID, this study actually suggests the opposite when critically examined.	"This study assessed the association of hospital masking policies with the SARS-CoV-2 infection rate among HCWs." "We believe that our study provides definitive data on the value of universal masking in a healthcare setting during a pandemic, and that the results can be generalized to other settings even where social distancing is not possible." The study authors point out that the timing of the SARS-CoV-2 infection rate peak and downturn in the population of Massachusetts General Brigham hospital employees is consistent with what would be expected if the universal use of facemasks conferred a protective benefit on the population, and state that: The authors neglect to include any kind of control group.	When the findings of this study with regard to the mask-mandated employee population of the Massachusetts General Brigham Hospital System are overlaid onto the course of the SARS-CoV-2 epidemic in the non-mandated overall population of the State of Massachusetts, we see two epidemic curves that follow an identical course - even peaking on the same day - April 13 - with no difference in the timing of the peak and downturn of the infection. When this additional data analysis is extended chronologically to include May of 2020, the general-population mask mandate by Governor Baker produced no beneficial effect on the already downward epidemic curve. Differences in observed infection rates between the hospital employee population and the general population can easily be explained by the hospital eliminating double-counting of cases and testing every symptomatic employee, whereas this was not done in the general population.	Wang, X., E. G. Ferro, G. Zhou, D. Hashimoto, and D. L. Bhatt. "Association between Universal Masking in a Health Care System and Sars-Cov-2 Positivity among Health Care Workers." <i>Jama</i> 324, no. 7 (Jul 14 2020): 703-4. https://doi.org/10.1001/jama.2020.12887 .
2010	Webster et al 2010	Randomized Controlled Trial 811 start-to-finish participants Compared post-surgical infection rates between surgeries where the non-scrubbed staff were and were not masked.	"Overall, 83 (10.2%) surgical site infections were recorded; 46/401 (11.5%) in the Masked group and 37/410 (9.0%) in the No Mask group." "Surgical site infection rates did not increase when non-scrubbed operating room personnel did not wear a face mask."	If having all the non-scrubbed surgical staff not wearing masks did not increase post-surgical infections, this provides good inferential evidence that the use of masks does not have a substantial effect on microbial transmission.	Webster, J., et al. Use of face masks by non-scrubbed operating room staff: a randomized controlled trial. <i>ANZ J Surg</i> . 2010. 80(3): p. 169-73.
2020	Xiao et al. 2020	Systematic Review and Meta-analysis looking specifically at whether the use of masks makes a difference in the transmission of laboratory-confirmed influenza.	"We did not find evidence that surgical-type face masks are effective in reducing laboratory-confirmed influenza transmission, either when worn by infected persons (source control) or by persons in the general community to reduce their susceptibility" "Although mechanistic studies support the potential effect of hand hygiene or face masks, evidence from 14 randomized controlled trials of these measures did not support a substantial effect on transmission of laboratory-confirmed influenza."	If surgical-type facemasks are not effective in reducing influenza transmission, then cloth masks certainly will not be, and when combined with the few studies that have looked at cloth masks, this strongly implies a net detrimental effect from the use of cloth masks.	Xiao, J., et al. Nonpharmaceutical Measures for Pandemic Influenza in Nonhealthcare Settings—Personal Protective and Environmental Measures. <i>Emerging Infectious Diseases</i> . 2020. 26(5): p. 967-975.

Tso, R.V. and B.J. Cowling, *Importance of Face Masks for COVID-19: A Call for Effective Public Education*. *Clin Infect Dis*, 2020. 71(16): p. 2195-2198.

Table 1. Summary of the Earlier Recommendations on Medical Masks Use in the General Community Across Different Credible Health Authorities Prior to 6 April 2020

Source	Encourages Community Use of Face Masks?	Reasons/Further Notes Provided?	Suggestions on the Use of Masks for Healthy Individuals Under Alternative Circumstances?
WHO [2, 3]	No	– Improper use may hamper its use – No evidence to support the effectiveness against COVID-19 of mask-use in the community	Use masks when: – When the culture has been to use masks – When the local government encourages their use – Upon close contact with infected/suspected/high-risk individuals
United States [4]	No	– Spread of SARS-CoV-2 is mainly through close contact – Stockpiling of masks may place a burden on the supply to medical staff	Use masks when [5]: – In workplaces of and upon contact with infected/suspected/high-risk individuals
Canada [6]	No	– Improper use may increase infection risks – May induce a false sense of security that that played down other essential hygiene measures	Use masks when: – When the culture has been using masks – when the local government encourages their use – Upon close contact with infected/suspected/high-risk individuals
United Kingdom [7, 8]	Not explicit ^a	Nil	Use masks when: – Upon close contact with infected/suspected/high-risk individuals
Australia [9]	No	– little evidence supporting the widespread use of surgical masks in healthy people	Use masks when: – Upon close contact with infected/suspected/high-risk individuals
New Zealand [10]	No	– Cited as suggestions from WHO	Use masks when: – In workplaces of contact with infected/suspected/high-risk individuals
France [11]	No	– Facemasks cannot be worn at all times	Use masks when: – Upon prolonged close contact with an infected individual.
Italy [12]	No	– Citing as suggestions from WHO – Increased the risk of infection due to a false sense of security and greater contact between hands, mouth and eyes.	Use masks when: – Upon close contact with infected individuals
Spain [13]	No	– Worn by people who are sick. – An inadequate use of masks can contribute to a shortage of them in those situations for which they are indicated.	Use masks when: – Upon close contact with infected individuals
Germany [14]	No	– Citing as suggestions from WHO	Nil
Singapore [15]	No ^b	– Only for sick individuals	Nil
China [16, 17]	Yes	– The general community should make the judgment of mask-usage based the risk levels. – Masks are recommended in situations which include, going to medical institutions, in crowded open spaces, in a crowded or densely populated indoor environment, and close contact with people of quarantine at home	Masks are not required: – when you are at home (in isolation), engaging in outdoor activities or in well-ventilated indoor places
Hong Kong SAR, China [18, 19]	Yes	– Recommended when taking public transport or staying in crowded place, clinics or hospitals visits. – Face mask provides a physical barrier to fluids and large particle droplets. When used properly, surgical masks can prevent infections transmitted by respiratory droplets.	Nil
Macau SAR, China [20, 21]	Yes	– If it is necessary to go out, wear a mask at all times	Nil
South Korea [22]	Yes	– Wearing a mask can prevent infectious diseases	Nil.
Japan [23]	Yes and No ^b	– If you wear a facemask in confined, badly ventilated spaces, it might help avoid catching droplets emitted from others	Masks are not required: – If you are in an open-air environment, the use of facemask is not very efficient.

Majority of the suggestions issued by governments from various affected regions did not argue that proper use of masks would be ineffective. Health authorities that initially discouraged the use of masks have also cited other valid reasons for its lack of necessity:

1. In open space where people keep a distance from each other.
2. When you are alone.
3. When there is no outbreak in your region.

Health authorities from countries that promoted the use of masks acknowledged that face masks are effective but also explained the importance of their proper use along with other hygiene measures. In contrast, authorities that recommended against the use of masks in the general community mainly cited shortage of supplies as well as the argument that the public do not have the adequate skills to wear them or that wearing masks might reduce compliance with other important behaviors.

Abbreviations: COVID-19, coronavirus disease 2019; SAR, Special Administrative Region; SARS-CoV-2, severe acute respiratory syndrome coronavirus 2; WHO, World Health Organization

^aAlthough the representatives from National Health Service (UK) have previously spoken again the use of masks through the press.

^bDespite ambiguous guidelines on the use of masks, Japan and Singapore ensured all citizens weekly rations of medical masks and banned exports of medical masks.