

Are Face Masks Effective? The Evidence.

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An overview of the current evidence regarding the effectiveness of face masks.

1. Studies on the effectiveness of face masks

So far, most studies found little to no evidence for the effectiveness of cloth face masks in the general population, neither as personal protective equipment nor as a source control.

1. A May 2020 meta-study on pandemic influenza published by the **US CDC** found that face masks had no effect, neither as personal protective equipment nor as a source control. ([Source](#))
2. A July 2020 review by the **Oxford Centre for Evidence-Based Medicine** found that there is no evidence for the effectiveness of cloth masks against virus infection or transmission. ([Source](#))

3. A Covid-19 cross-country study by the **University of East Anglia** found that a mask requirement was of no benefit and could even increase the risk of infection. (Source)
4. An April 2020 review by two US professors in respiratory and infectious disease from the **University of Illinois** concluded that face masks have no effect in everyday life, neither as self-protection nor to protect third parties (so-called source control). (Source)
5. An article in the **New England Journal of Medicine** from May 2020 came to the conclusion that cloth face masks offer little to no protection in everyday life. (Source)
6. An April 2020 **Cochrane review** (preprint) found that face masks in the general population or health care workers didn't reduce influenza-like illness (ILI) cases. (Source)
7. An April 2020 review by the **Norwich School of Medicine** (preprint) found that "the evidence is not sufficiently strong to support widespread use of facemasks", but supports the use of masks by "particularly vulnerable individuals when in transient higher risk situations." (Source)
8. A July 2020 study by **Japanese researchers** found that cloth masks "offer zero protection against coronavirus" due to their large pore size and generally poor fit. (Source)
9. A 2015 study in the British Medical Journal **BMJ Open** found that cloth masks were penetrated by 97% of particles and may increase infection risk by retaining moisture or repeated use. (Source)

Additional aspects

1. There is **increasing evidence** that the SARS-2 coronavirus is transmitted, at least in indoor settings, not only by droplets but also by **smaller aerosols**. However, due to their large pore size and poor fit, cloth masks cannot filter out aerosols (see video analysis below): over 90% of aerosols **penetrate or bypass** the mask and fill a medium-sized room within minutes.
2. The **WHO** admitted to the BBC that its June 2020 **mask policy update** was due not to new evidence but "**political lobbying**": "We had been told by various sources WHO committee reviewing the evidence had not backed masks but they recommended them due to political lobbying. This point was put to WHO who did not deny." (D. Cohen, BBC Medical Correspondent)

3. **Japan**, despite its widespread use of face masks, experienced its **most recent influenza epidemic** with more than 5 million people falling ill just one year ago, in January and February 2019. However, unlike SARS-2, the influenza virus is transmitted by children, too.
4. Many states that introduced mandatory face masks on **public transport and in shops** in spring or early summer, such as **Hawaii, California, Argentina, Spain and Japan**, still saw a strong increase in infections from July onwards, indicating a low effectiveness of mask policies.
5. **Austrian scientists** found that the introduction, retraction and re-introduction of mandatory face masks in Austria **had no influence** at all on the infection rate.
6. In the **US state of Kansas**, the 90 counties without mask mandates had lower coronavirus infection rates than the 15 counties with mask mandates. To hide this fact, the Kansas health department **tried to manipulate** the official statistics and data presentation.
7. Contrary to common belief, studies **in hospitals found that** the wearing of a medical mask by surgeons during operations **didn't reduce** post-operative bacterial wound infections in patients.
8. In **children**, the risk of Covid-19 disease and transmission is **very low** – much lower than for influenza – and face masks for children are therefore, in general, **not indicated**.
9. During the notorious **1918 influenza pandemic**, the use of cloth face masks among the general population was widespread and in some places mandatory, but they **made no difference**.

2. A study in the journal **PNAS** **claimed that** masks had led to a decrease in infections in three global hotspots (including New York City). But the study did not take into account the natural decrease in infections and other simultaneous measures. The study was so flawed that over 40 scientists recommended that the study **be withdrawn**.
3. A **US study** **claimed that** mandatory masks had led to a decrease in infections in 15 states. The study did not take into account that the incidence of infection was already declining in most states at that time. A comparison with other states was not made.
4. A **Canadian study** **claimed that** countries with mandatory masks had fewer deaths than countries without mandatory masks. But the study compared African, Latin American, Asian and Eastern European countries with very different infection rates and population structures.
5. A much-cited meta-study in the journal **Lancet** **claimed that** masks “could” lead to a reduction in the risk of infection, but the studies considered mainly medical masks in a hospital setting, not cloth masks in a community setting, and the strength of the evidence was reported as “low”.

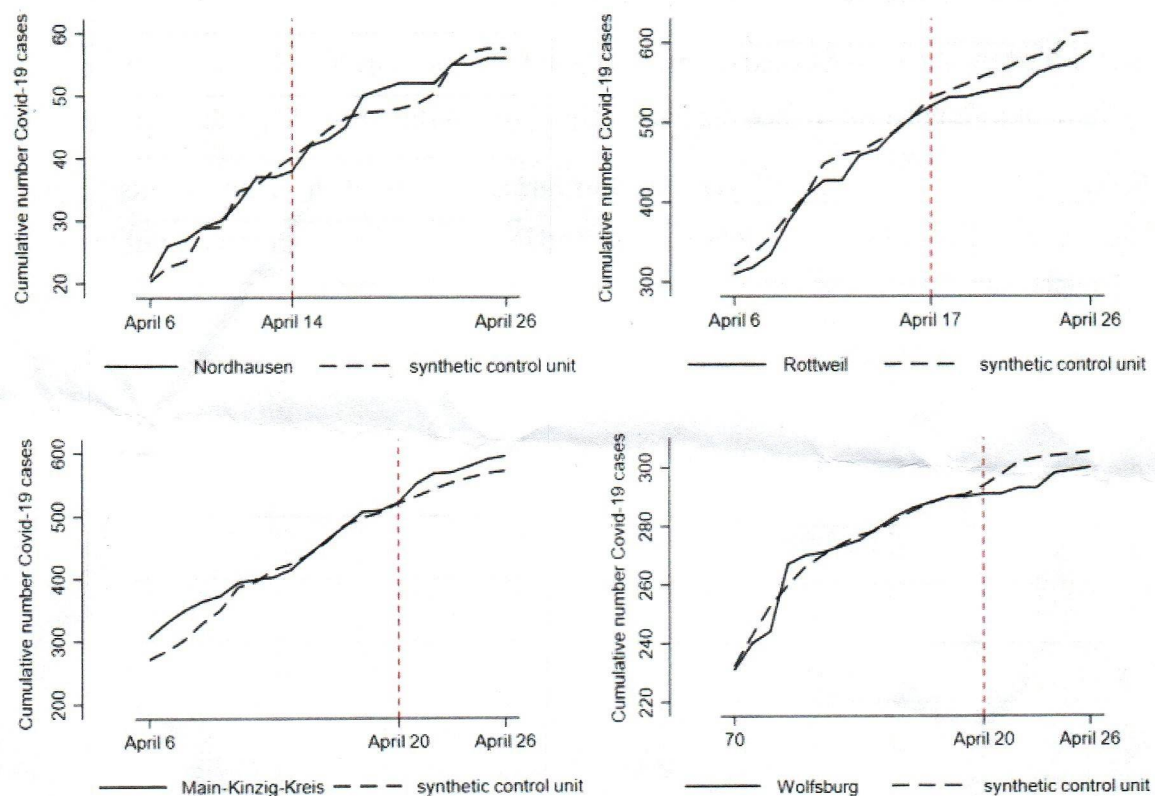


Figure A7: Treatment effects for introduction of face masks in other cities

Mandatory masks in German cities: no relevant impact. (IZA 2020)

3. Risks associated with face masks

Wearing masks for a prolonged period of time is not harmless, as the following evidence shows:

1. The WHO warns of various “side effects” such as difficulty breathing and skin rashes.
2. Tests conducted by the University Hospital of Leipzig in Germany have shown that face masks significantly reduce the resilience and performance of healthy persons.
3. A German psychological study with about 1000 participants found “severe psychosocial consequences” due to the introduction of mandatory face masks in Germany.
4. The Hamburg Environmental Institute warned of the inhalation of chlorine compounds in polyester masks as well as problems in connection with face mask disposal.
5. The European rapid alert system RAPEX has already recalled 70 mask models because they did not meet EU quality standards and could lead to “serious risks”.
6. In China, two boys who had to wear a mask during sports classes fainted and died.
7. In the US, a car driver wearing an N95 (FFP2) mask fainted and crashed into a pole.

Conclusion

Cloth face masks in the general population might be effective, at least in some circumstances, but there is currently little to no evidence supporting this proposition. If the SARS-2 virus is indeed transmitted via aerosols, at least indoors, cloth masks are unlikely to be protective.

See also

- [Facts about Covid-19](#)
- [Studies on Covid-19 lethality](#)
- [On the treatment of Covid-19](#)

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2. Studies claiming face masks are effective

Some recent studies argued that cloth face masks are indeed effective against the new coronavirus and could at least prevent the infection of other people. However, most of these studies suffer from poor methodology and sometimes show the opposite of what they claim.

Typically, these studies ignore the effect of other measures, the natural development of infection numbers, changes in test activity, or they compare countries with very different conditions.

An overview:

1. A **German study** claimed that the introduction of compulsory masks in German cities had led to a decrease in infections. But the data does not support this: in some cities there was no change, in others a decrease, in others an increase in infections (see graph below). The city of Jena was an 'exception' only because it simultaneously introduced the **strictest quarantine rules** in Germany, but the study did not mention this.