

## **BRIEF19**

*A daily review of covid-19 research and policy*

### **RESEARCH BRIEFING**

#### **Randomized clinical trial of mask use in Denmark yields equivocal results.**

*Brief19* has previously [addressed](#) the fact that the utility of masks in the prevention of covid-19 is so obvious, that it might actually be pointless to conduct a randomized clinical trial (RCT) in order to prove their usefulness. Nevertheless, that is just what a recent paper aimed to do. [Published](#) in *Annals of Internal Medicine*, this research examined mask use in Denmark. Let's dive in.

The RCT was conducted between April and May 2020. It included Danish adults who report spending more than three hours outside of the home on a daily basis. Participants included in the study all received regular encouragement and reminders to follow social distancing measures, and then were randomly assigned to one of two groups. In one group, participants were given regular recommendations to wear a mask outside the home and were supplied 50 surgical masks along with instructions for proper use. The other group ("controls") were given neither masks nor mask-related recommendations. The primary outcomes of this study were laboratory evidence of SARS-CoV-2 infection or a diagnosis of covid-19 in the hospital.

A total of 6,024 Danish residents were recruited, of which 19 percent were not included in the final analyses for various reasons (i.e. were considered "lost to follow-up"). Participants self-reported a daily average of 4.5 hours outdoors and near other people during the study period. In the mask group, just 46 percent of participants wore the masks *as recommended*, while 54 percent wore masks, but only occasionally or *not as recommended*.

The primary outcome of infection occurred in 1.8 percent and 2.1 percent of those in the mask group and the control group, respectively. The lower rate of infection in the mask group was not statistically significant.

Does this mean that masks do not in fact prevent personal infection or community spread of the SARS-CoV-2 virus? No. As one discerning observer on Twitter [pointed out](#), the intervention of the study was not *mask wearing* itself, but rather, it was measuring the effect of *supplying and recommending* the use of masks. Stated another way, this study does *not* aim to provide an answer to the mechanistic question of mask effectiveness. The *Brief19* take on what this RCT really shows us is that when citizens are provided masks and national efforts are made to encourage citizens to wear masks, they do not necessarily wear them correctly or don't wear them at all.

The accompanying [editorial](#) in *Annals of Internal Medicine* amounts to a similar viewpoint. "We must first emphasize that this trial does not address the first question about transmission in communities where most people wear masks and does not disprove the effectiveness of widespread mask wearing," they write.

So, was this study bad? Not at all. In fact, it's *superb*. The authors should be commended on a monumental effort to conduct a national randomized clinical trial at the beginning of the pandemic in an attempt to answer an important public health question with potential policy implications. But what they studied was the effectiveness of a public health

campaign, not the intervention itself. The implications are not to toss out our masks, but to go back to the drawing board to find ways to get people to use them properly.

As the *Annals* editors [discuss](#), we still do not know what the statistical effect of rigorous mask adherence in decreasing the transmission of SARS-CoV-2 is. Meanwhile, the US Centers for Disease Control and Prevention has recently amended its messaging, and now states the mask wearing does not just decrease the spread from a contagious person to others; they might even prevent catching the virus among mask wearers on the receiving end of respiratory droplets.

Indeed, we remain uncertain what aspect of mask wearing is the most crucial. Whatever effect they have, their benefits are likely derived from a combination of providing a physical barrier between the mouth and nose and the surrounding environment and serve as an intercept to our hands—which tend to find a way towards our faces, whether we realize it or not. Beyond that, masks are reminders to do be vigilant about other “non-pharmacologic interventions” such as practicing physical distancing and hand hygiene.

—Joshua Niforatos, MD

## **POLICY BRIEFING**

### **Can you test your way out of a second lockdown? Yes.**

When SARS-CoV-2 first made international headlines, I did not think we were headed for a year of disrupted life. I was wrong about that because I believed we could test our way out of systemic lockdowns and long-term alterations in life-as-we-know-it. With aggressive enough testing strategies (a test for [every person](#) in the United States) my hope was that we could isolate the cases we detected, have local lockdowns, and get back to life. We'd do [aggressive](#) surveillance testing of asymptomatic people (random tests, especially among workers who interact with the public) and do mini-shutdowns as needed. We never got there. Why? Because we let the virus spiral out of control before we had enough tests to achieve anything close to this vision.

Not so in China. A [new report](#) out of Qingdao, China in the *New England Journal of Medicine* describes a massive testing strategy that was unrolled in just a matter of days after three cases were detected there following a two-month period without any cases. Nearly *11 million people* were tested at 4,090 testing sites in an approximately five-day period. This led to the identification of 12 total cases. Pooled testing was done for efficiency. (For more on that, [read the CDC's guidance](#) on the topic). Residents were not allowed to use public transit until they were tested and had to wear masks when outside. With so few cases, it is clear that they caught the outbreak early. In fact, contact tracing appears to have been *completely* successful, an unprecedented achievement at this scale during the covid-19 pandemic.

This approach was only possible because the region started with zero cases and had the ability to rapidly scale up testing. At the time of publication, the outbreak had been completely controlled, and—as per the authors—this was accomplished “without a lockdown.” Our expert assessment: *hot damn*.

—Jeremy Samuel Faust, MD MS

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*Brief19 is a daily executive summary of covid-19-related medical research, news, and public policy. It was founded and created by frontline emergency medicine physicians with expertise in medical research critique, health and public policy.*