

## Study Casts Doubt on N95 Masks for the Public

— Singapore experiment suggests few would wear them correctly, even with instructions

by [Molly Walker](#), Associate Editor, MedPage Today

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The lay public may have difficulty wearing N95 respirators properly, a study from Singapore suggested.

Of participants given N95 respirators with an instruction sheet and then asked to put one on, [only about 13% passed the visual mask fit test](#), reported Wesley Yeung, MBBS, of National University Hospital in Singapore, and colleagues writing in a *JAMA Network Open* research letter.

While CDC guidance in the U.S. recommends against [the public wearing face masks meant for healthcare workers](#), both surgical and [N95 masks are recommended for healthcare professionals](#), according to Infectious Diseases Society of America guidelines.

The authors noted mask-wearing has become commonplace in the advent of COVID-19, but "N95 mask use by the general public may not translate into effective protection but instead provide false reassurance."

In 2015, Leung and colleagues gave [3M Vflex N95 masks](#) along with "multilingual pictorial instructions" to randomly selected adults, then performed a visual mask fit test and user seal check. (The study came after Singapore was afflicted by severe haze in mid-2013; the government had [mailed N95 masks to residents](#) the following year as protection against future haze episodes, prompting the researchers' interest in whether people were able to wear them correctly.)

Overall, data were collected from 714 men and women, or 32% of 2,331 households that met the inclusion criteria. About half the sample were women and all adult ages were represented.

Only 90 participants (12.6%, 95% CI 10.3%-15.3%) passed the visual mask fit test. About three-quarters performed strap placement incorrectly, 61% left a "visible gap between the mask and skin," and about 60% didn't tighten the nose-clip.

The authors found younger age and previous mask-fit training were associated with higher pass rates. On the other hand, use of provided instructions, ownership of N95 masks, and previous mask use were not associated with passing the visual mask fit test.

Limitations to the study include non-response and recall bias, though Leung and colleagues also emphasized the importance of assessing "proficiency among the general public in donning surgical masks," and that policies encouraging mask use in the general public should be accompanied with "effective training materials beyond instruction leaflets."



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**Disclosures**

3M Singapore provided 800 N95 masks for use in the study.

Yeung disclosed no conflicts of interest.

Another co-author disclosed support from Boehringer Ingelheim and Wiley Blackwell.

**Primary Source**

JAMA Network Open

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