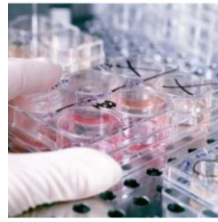




NATIONAL INSTITUTE FOR  
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Division of the National Health Laboratory Service



Wearing fabric (cloth) masks: first we didn't and now we do; what changed?

David Rees



Unlearning in new situations is as important as learning?

*Annals of Work Exposures and Health*, 2017, Vol. 61, No. 9, 1154–1162

doi: 10.1093/annweh/wxx077

Advance Access publication 23 September 2017

Original Article



OXFORD

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Original Article

# **Quantitative Respirator Fit, Face Sizes, and Determinants of Fit in South African Diagnostic Laboratory Respirator Users**

Jeanneth Manganyi<sup>1,2\*</sup>, Kerry S. Wilson<sup>1,2</sup>, and David Rees<sup>1,2</sup>

78% of regular respirator users failed quantitative fit testing while wearing their currently supplied N95 FFR.

*Annals of Work Exposures and Health*, 2019, Vol. 63, No. 8, 930–936

doi: 10.1093/annweh/wxz060

Advance Access publication 27 August 2019

Original Article



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Original Article

# **The Effect on Fit of Multiple Consecutive Donning and Doffing of N95 Filtering Facepiece Respirators**

**Cynthia Danisile Vuma,<sup>1,2</sup> Jeanneth Manganyi,<sup>2,3</sup> Kerry Wilson<sup>2,3</sup> and David Rees<sup>2,3\*</sup>**

Forty-eight percent of study subjects failed at least one fit test after re-donning an N95 FFR. Probably inconsistent adherence to sound donning practices

# And safety of fabric masks? More harm than good?

Three main concerns:

**Increased risk of infection to wearer** by contaminating mask (e.g. fiddling with them during use) and wearing a mask made damp by breath etc

**Increased risk to others** e.g. false sense of security and hence poor adherence to other measures (social distancing)

**Low probability of effective use** (e.g. inadequate donning (nose))



# They will achieve little or nothing

Even if worn properly, ineffective at reducing transmission

May increase risk

No benefit to the wearer

# Negative perceptions changed quickly during pandemic

Many reasons

Two impactful ones:

1. Countries with high pre-pandemic mask use and then extensive uptake in the pandemic had small epidemics
2. Studies showed cloth masks reduced dispersion of droplets from respiratory tract



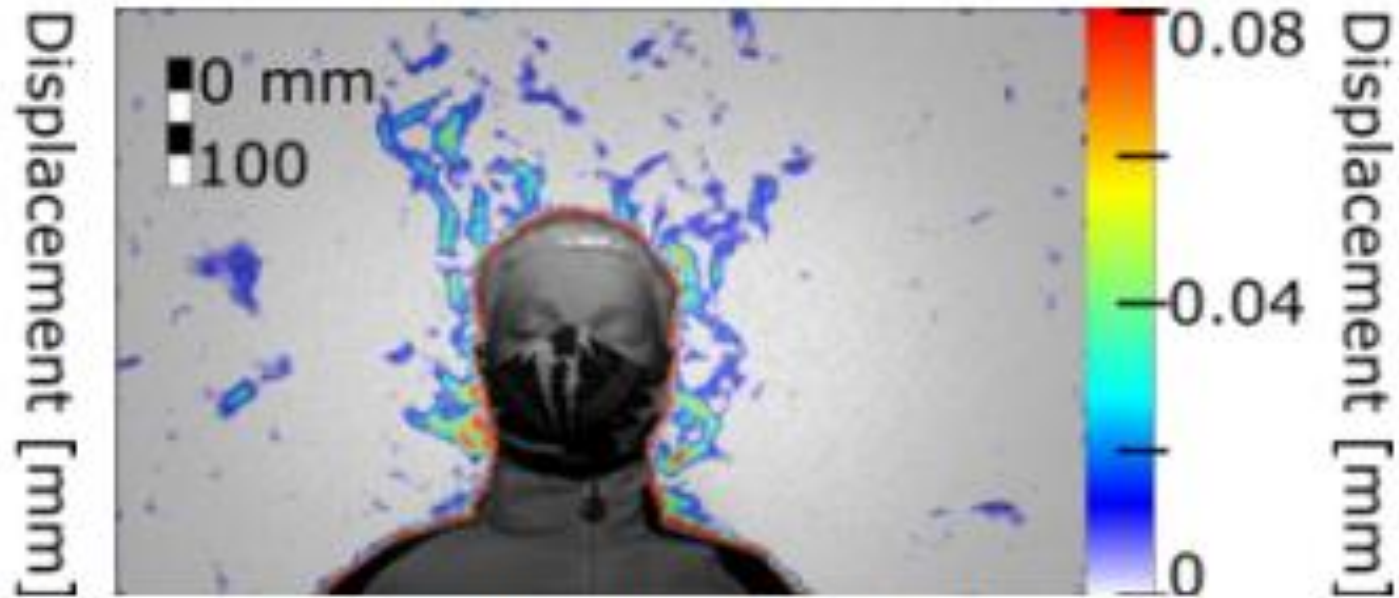


One of many interventions. Others probably more important

Suggestive evidence for : potential benefit; and community safety

## Reduced dispersion of droplets

Viola et al. 2020



by  
ve  
58,  
**Figure 7b.** Cough airflow dispersion partially contained by a hand-made mask allowing significant leakage jets (Test 266, Frame 59).

Recommended and mandatory community  
wearing of cloth masks now commonplace



Centers for Disease Control and Prevention  
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# EMERGING INFECTIOUS DISEASES®

ISSN: 1080-6059

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Volume 26, Number 10—October 2020

*Online Report*

## Effectiveness of Cloth Masks for Protection Against Severe Acute Respiratory Syndrome Coronavirus 2

**Abrar A. Chughtai**✉, **Holly Seale**, and **C. Raina Macintyre**

Author affiliations: University of New South Wales, Kensington, New South Wales, Australia (A. Chughtai, H. Seale, C.R. Macintyre); Arizona State University, Tempe, Arizona, USA (C.R. Macintyre)

On This Page

[Historical Use of Cloth Masks](#)

## Source control ✓

In areas of **high transmission**, mask use as source control may prevent spread of infection from persons with asymptomatic, presymptomatic, or mild infections.

In a **widespread pandemic**, differentiating asymptomatic from healthy persons in the community is very difficult, so at least in high-transmission areas, universal face mask use may be beneficial.

# Recommended and mandatory community wearing of cloth masks now commonplace

World Health Organization, June 5 2020. (12).

*“Many countries have recommended the use of fabric masks/face coverings for the general public. At the present time, the widespread use of masks by healthy people in the community setting is not yet supported by high quality or direct scientific evidence and there are potential benefits and harms to consider.*

**..not yet supported by high quality or direct scientific evidence ....**

but precautionary approach sensible

# Recommended and mandatory community wearing of cloth masks now commonplace

Still many unanswered questions.

Two of them are:

Do cloth masks increase risk of infection in some settings?

Is the wearer protected?

(Important for messaging: altruism vs personal protection + altruism.)

# BMJ Open A cluster randomised trial of cloth masks compared with medical masks in healthcare workers

C Raina MacIntyre,<sup>1</sup> Holly Seale,<sup>1</sup> Tham Chi Dung,<sup>2</sup> Nguyen Tran Hien,<sup>2</sup> Phan Thi Nga,<sup>2</sup> Abrar Ahmad Chughtai,<sup>1</sup> Bayzidur Rahman,<sup>1</sup> Dominic E Dwyer,<sup>3</sup> Quanyi Wang<sup>4</sup>

Increased risk of infection in cloth masks wearers compared to controls and surgical mask wearers

However, as a precautionary measure, cloth masks should not be recommended for HCWs, particularly in high-risk situations, and guidelines need to be updated.

This is health care. Does the increased risk extend to community settings of likely contact with highly infectious people? What are they?



Is the wearer protected?

Scant research (I found no “clinical/community” trials)

Confounding likely?

# Masks Do More Than Protect Others During COVID-19: Reducing the Inoculum of SARS-CoV-2 to Protect the Wearer



*Monica Gandhi, MD, MPH<sup>1</sup> , Chris Beyrer, MD, MPH<sup>2</sup>, and Eric Goosby, MD<sup>1</sup>*

<sup>1</sup>Department of Medicine, Division of HIV, Infectious Diseases and Global Medicine, University of California, San Francisco (UCSF) San Francisco, CA, USA; <sup>2</sup>Desmond M. Tutu Professor of Public Health and Human Rights, Johns Hopkins Bloomberg School of Public Health Baltimore, MD, USA.

J Gen Intern Med

DOI: 10.1007/s11606-020-06067-8

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## Review

Mask wearers get milder disease and more asymptomatic infections than non-wearers by reducing viral dose

FFP-PPE. Masks for everyday use can have a small protective effect for the wearer. MNP offers a greater pro-

Unclear what this is based on

Matuschek et al. *Eur J Med Res* (2020) 25:32  
<https://doi.org/10.1186/s40001-020-00430-5>

European Journal  
of Medical Research

REVIEW

Open Access

Face masks: benefits and risks  
during the COVID-19 crisis



## Advice on the use of masks in the context of COVID-19

Interim guidance  
5 June 2020



WHO  
No evidence of wearer  
protection

preventive measure.<sup>14-23</sup> However, there is currently no evidence that wearing a mask (whether medical or other types) by healthy persons in the wider community setting, including universal community masking, can prevent them from infection with respiratory viruses, including COVID-19.

# Conclusion: protection of the wearer

## Superficial review of the literature

Depends on the mask + wearers

It isn't easy to find quality evidence for important protection of the wearer.  
But equally hard to find evidence that there is no protection.

Mask fabrics and practices are being improved, evidence is evolving.

I will keep an open mind.

Unlearning in new situations is as important as learning?