BMJ 2020;369:m2003 doi: 10.1136/bmj.m2003 (Published 21 May 2020)

LETTERS

FACE MASKS FOR THE PUBLIC DURING COVID-19

Covid-19: Important potential side effects of wearing face masks that we should bear in mind

Antonio Ivan Lazzarino *director*[1], Andrew Steptoe *professor of psychology and epidemiology*[2], Mark Hamer *professor of sport and exercise medicine*[2], Susan Michie *professor of health psychology*[2]

[1]EPISTATA, Agency for Clinical Research and Medical Statistics, London E8 3SY, UK; [2]University College London, UK

In their editorial Greenhalgh et al advise that surgical masks should be worn in public to prevent some transmission of covid-19,[1] adding that we should sometimes act without definitive evidence, just in case. Two side effects of wearing face masks in public have already been highlighted:

- Wearing a mask may give a false sense of security and make people adopt a reduction in compliance with other important infection control measures[1]
- People must avoid touching their masks and adopt other management measures, otherwise masks are counterproductive[2 3]

Other potential side effects that we must consider, however, are:

- The quality and volume of speech between people wearing masks is considerably compromised and they may unconsciously come closer
- Wearing a mask makes the exhaled air go into the eyes. This generates an impulse to touch the eyes. If your hands are contaminated, you are infecting yourself
- Face masks make breathing more difficult.[4] Moreover, a fraction of carbon dioxide previously exhaled is inhaled at each respiratory cycle. Those phenomena increase breathing frequency and deepness, and they may worsen the burden of covid-19 if infected people wearing masks spread more contaminated air. This may also worsen the clinical condition of infected people if the enhanced breathing pushes the viral load down into their lungs
- The innate immunity's efficacy is highly dependent on the viral load.[5] If masks determine a humid habitat where SARS-CoV-2 can remain active because of the water vapour continuously provided by breathing and captured by the mask fabric, they determine an increase in viral load (by re-inhaling exhaled viruses) and therefore they can cause a defeat of the innate immunity and an increase in infections.

The context of the current covid-19 pandemic is very different from that of the "parachutes for jumping out of aeroplanes."[1 6] It is necessary to quantify the complex interactions that may well be operating between positive and negative effects of wearing surgical masks at population level. It is not time to act without evidence.

Competing interests: None declared.

Full response at: www.bmj.com/content/369/bmj.m1435/rr-40.

1 Greenhalgh T, Schmid MB, Czypionka T, Bassler D, Gruer L. Face masks for the public during the covid-19 crisis. *BMJ* 2020;369:m1435. 10.1136/bmj.m1435 32273267
2 WHO. Advice on the use of masks in the community in the context of covid-19. 6 April 2020. www.who.int/publications-detail/advice-on-the-use-of-masks-in-the-community-during-home-care-and-in-healthcare-settings-in-the-context-of-the-novel-coronavirus-(2019-ncov)-outbreak.
3 Desai AN, Aronoff DM. Masks and coronavirus disease 2019 (covid-19). *JAMA* 2020. 10.1001/jama.2020.6437. 32301960
4 Kyung SY, Kim Y, Hwang H, Park JW, Jeong SH. Risks of N95 face mask use in subjects with COPD. *Respir Care* 2020;65:658-64. 10.4187/respcare.06713 31992666
5 Chen Y, Zhou Z, Min W. Mitochondria, oxidative stress and innate immunity. *Front Physiol* 2018;9:1487. 10.3389/fphys.2018.01487 30405440
6 Potts M, Prata N, Walsh J, Grossman A. Parachute approach to evidence based medicine. *BMJ* 2006;333:701-3. 10.1136/bmj.333.7570.701 17008675

Published by the BMJ Publishing Group Limited. For permission to use (where not already granted under a licence) please go to http://group.bmj.com/group/rights-licensing/permissions

a.lazzarino@ucl.ac.uk

For personal use only: See rights and reprints http://www.bmj.com/permissions Subscribe: http://www.bmj.com/subscribe

BMJ: first published as 10.1136/bmj.m2003 on 21 May 2020. Downloaded from http://www.bmj.com/ on 1 May 2021 by guest. Protected by copyright.