



Since January 2020 Elsevier has created a COVID-19 resource centre with free information in English and Mandarin on the novel coronavirus COVID-19. The COVID-19 resource centre is hosted on Elsevier Connect, the company's public news and information website.

Elsevier hereby grants permission to make all its COVID-19-related research that is available on the COVID-19 resource centre - including this research content - immediately available in PubMed Central and other publicly funded repositories, such as the WHO COVID database with rights for unrestricted research re-use and analyses in any form or by any means with acknowledgement of the original source. These permissions are granted for free by Elsevier for as long as the COVID-19 resource centre remains active.



## Letter to the Editor

## Highly efficient respirators are needed for the Omicron variant of SARS-CoV-2



We read with interest the recent letter of Lowe et al.,<sup>1</sup> who concluded that face masks provide an essentially cheaper and straightforward means for minimizing the infection risk of severe acute respiratory coronavirus 2 (SARS-CoV-2),<sup>1</sup> especially now that the new and highly infective Omicron variant has become prevalent and dominant worldwide. Nevertheless, some additional aspects can be brought in support of this conclusion. First, we have recently shown that the nasopharyngeal viral load in patients infected by the Omicron variant is up to fourfold higher compared with those previously infected by other SARS-CoV-2 lineages,<sup>2</sup> which would make the adoption of physical interindividual barriers (such as face masks) more compelling than before. The second important aspect concerns the type of mask used for preventing infections. A recent meta-analysis has estimated that the efficacy of medical or surgical masks against the risk of SARS-CoV-2 infection is around 30%, whereas that of N95 or equivalent masks is as high as 70%.<sup>3</sup> In keeping with recent data attesting that the volume of exhaled viral particles is magnified in patients infected by the Omicron lineage,<sup>4</sup> it seems hence advisable not only to reinforce a mask-wearing advice but also to suggest that more efficient respirators (such as N95 or similar) would be preferable to grant major protection against highly infective SARS-CoV-2 lineages such as Omicron.

## References

1. Lowe S, Xie R, Chen Y, Shen Y, Sun C. It is not the time to relax yet: masks are still needed for the Omicron variant of SARS-CoV-2. *Publ Health* 2022 Feb 2. <https://doi.org/10.1016/j.puhe.2022.01.030>. S0033-33506(22)00037-3. [Epub ahead of print].
2. Salvagno GL, Henry BM, Pighi L, De Nitto S, Montagnana M, Lippi G. SARS-CoV-2 Omicron infection is associated with high nasopharyngeal viral load. *J Infect* 2022 Feb 26. <https://doi.org/10.1016/j.jinf.2022.02.025>. S0163-54453(22)00114-1. [Epub ahead of print].
3. Kim MS, Seong D, Li H, Chung SK, Park Y, Lee M, et al. Comparative effectiveness of N95, surgical or medical, and non-medical facemasks in protection against respiratory virus infection: a systematic review and network meta-analysis. *Rev Med Virol* 2022 Feb 26:e2336. <https://doi.org/10.1002/rmv.2336> [Epub ahead of print].
4. Zheng J, Wang Z, Li J, Zhang Y, Jiang L, Fu Y, et al. High amounts of SARS-CoV-2 in aerosols exhaled by patients with Omicron variant infection. *J Infect* 2022 Feb 17. <https://doi.org/10.1016/j.jinf.2022.02.015>. S0163-54453(22)00075-5. [Epub ahead of print].

C. Mattiuzzi

Service of Clinical Governance, Provincial Agency for Social and Sanitary Services, Trento, Italy

G. Lippi\*

Section of Clinical Biochemistry and School of Medicine, University of Verona, Verona, Italy

R. Nocini

Department of Surgery, Dentistry, Paediatrics and Gynaecology, Unit of Otorhinolaryngology, University of Verona, Verona, Italy

\* Corresponding author. Section of Clinical Biochemistry, University Hospital of Verona, Piazzale L.A. Scuro, 10, 37134, Verona, Italy. Tel. +0039 045 8122970; fax. +0039 045 8124308. E-mail address: [giuseppe.lippi@univr.it](mailto:giuseppe.lippi@univr.it) (G. Lippi).

2 March 2022

Available online 18 March 2022