

## ENVIRONMENTAL SCAN

**(ARCHIVED)** Type of Mask Required or Recommended for the Public to Control Transmission of SARS-CoV-2 with Consideration of Variants of Concern: Rapid Environmental Scan

Published: February 2021

Archived: February 2022

**ARCHIVED DOCUMENT**

This archived content is being made available for historical research and reference purposes only. PHO is no longer updating this content and it may not reflect current guidance.

**Key Points**

- 3 of 14 jurisdictions reviewed changed the type of masks recommended for the public to wear in response to the identification of severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) variants of concern (VOC).
  - Where changes have been made, these jurisdictions currently recommend medical masks or respirators rather than cloth masks.
- When a rationale for a change in type of mask was provided, it was based on minimum standards of filter efficiency and fit characteristics of medical masks and respirators compared to non-medical masks. No clinical or epidemiological evidence was identified from these jurisdictions to support their recommended changes.
- No rationale was reported for the 11 jurisdictions that have either not updated their guidance or recommended no changes.

**Purpose and Scope**

There is interest from the public, policy-makers and researchers regarding the use of masks by the public as it relates to the emergence of new variants (i.e., B.1.1.7, B.1.351, P.1) of SARS-CoV-2. In lieu of published evidence of whether non-medical masks are inferior for public use compared to medical masks or respirators, a rapid environmental scan of policies from areas significantly impacted by new variants of concern and regions beginning to experience spread or anticipating its arrival were reviewed.

## Background

Ongoing review of data surrounding the exponential growth and distribution of the variant B.1.1.7 (also termed Variant of Concern [VOC] 202012/01 or 501Y.V1) throughout England indicates increased transmissibility, and new analyses suggest the variant strain may be associated with increased risk of death compared with non-variant strains.<sup>1-3</sup> Similarly, the variant B.1.351 (also termed 501Y.V2) emerged around the same time as VOC 202012/01, quickly displacing other circulating lineages in South Africa.<sup>4</sup> Based on mathematical modelling and the current evidence that there is a higher viral load associated with B.1.351, it is estimated that this variant is 50% (95% CI: 20-113%) more transmissible than previous circulating strains in South Africa.<sup>5</sup> Insufficient epidemiological data are available to determine effects of mutations in variant P.1 (also termed 501Y.V3), which emerged from Brazil, such as the shared N501Y mutation as in B.1.1.7 and B.1.351 which suggests increased transmissibility is plausible.<sup>6</sup>

The emergence of new variants of SARS-CoV-2 with increased transmissibility (mechanism of increased transmissibility not known) has raised questions about whether non-medical masks used in various jurisdictions are sufficient and if standardized medical masks or respirators should be recommended or required. At this time there is no clinical or epidemiological evidence for medical masks or respirators conferring an increased benefit in preventing transmission of COVID-19 in non-healthcare settings with respect to SARS-CoV-2 or the VOCs.<sup>7</sup>

The purpose of this report is to highlight the recommendations for types of masks to be used by the public in different regions where variants have emerged and select surrounding jurisdictions, as well as the North American jurisdictions. Where possible, any changes or lack of changes in masking recommendations for the public will be highlighted and the rationale summarized.

## Methods

Masking policies in regions with significant VOC community transmission and select surrounding jurisdictions were reviewed on February 2 and 3, 2021. Additionally, Public Health Agency of Canada, World Health Organization and the United States' Centers for Disease Control and Prevention masking policies were reviewed. This review was limited to select jurisdictions and may not be a representative sample of public masking policies around the world.

## Findings

Most jurisdictions (11 of 14) reviewed have not made changes to or updated guidance for the type of mask recommended or required in public masking policies since the emergence of VOC (Table 1), including England where the B.1.1.7 variant is the dominant circulating strain. Jurisdictions that have not made changes to the required or recommended types of masks have also not provided a rationale. Jurisdictions that had not made changes all advise non-medical masks for public use.

Three of 14 jurisdictions (Austria, France and Germany) that made changes to public masking policies are currently requiring or recommending a medical mask or equivalent. The reported rationale is based on filter efficiency and fitting characteristics of the recommended medical masks and respirators compared to non-medical masks (Table 1). Austria and Germany are providing medical grade masks to low income individuals at no cost. At the time of writing no clinical or epidemiological evaluation was reported.

**Table 1. Summary of Public Masking Policies since the Identification of Variants of Concern in Select Regions and the Rationale for Change or Lack of Change**

Region	Type(s) of masks required or recommended for the public	Broad overview of where masks are required or recommended*	Changes to mask recommendations and rationale
Austria <sup>8-10</sup>	<p>Filtering face piece 2 (FFP2) respirators.</p> <p>FFP2 respirators will be provided at cost or for free to people with low income.</p> <p>Suggest to reprocess masks by hanging dry for a week or in an oven for 60 minutes at 80 degrees Celsius.</p>	<p>On public transport, in indoor spaces open to the public, in workplaces and when 2 metres physical distance cannot be maintained.</p>	<p><b>New recommendation</b> Previously, cotton masks or scarves.</p> <p>Changed as of January 25, 2021 in response to theoretical added protection of FFP2 for VOC.</p>
France <sup>11-16</sup>	<p>Medical masks and fabric masks that meet category 1 standards (90% minimum filtration).</p> <p>FFP2 respirators meet category 1 standards and are an option but are not recommended due to difficulty wearing properly unless trained in their use.</p>	<p>On public transport, in indoor spaces open to the public, when 1 metre distance cannot be maintained.</p>	<p><b>New recommendation</b> Previously, category 2 (70% minimum filtration such as home-made fabric masks that have not been tested for filtration capability).</p> <p>Change as of January 27, 2021.</p> <p>Rationale: Insufficient quality standards of category 2 non-medical masks to ensure protection from VOC.</p>
Germany <sup>17,18</sup>	<p>Medical masks or FFP2 respirators.</p> <p>Individuals on social welfare or basic income support were provided FFP2 respirators for free.</p>	<p>On public transport, in indoor spaces open to the public, in workplaces, when 1.5 metres distance cannot be maintained.</p>	<p><b>New Recommendation</b> Previously, fabric masks, other face coverings including scarves and face visors.</p> <p>Change as of January 19, 2021.</p> <p>Rationale: Concerns regarding VOC.</p>
Belgium <sup>19,20</sup>	<p>Generic homemade masks that cover mouth and nose.</p>	<p>On public transport, in indoor spaces open to the public, and where 1.5</p>	<p><b>No change</b> No rationale reported.</p>

Region	Type(s) of masks required or recommended for the public	Broad overview of where masks are required or recommended*	Changes to mask recommendations and rationale
		metres physical distance cannot be maintained. Required in outdoor public spaces in Brussels-Capital Region.	
Denmark <sup>21,22</sup>	Medical mask (Type I) or non-medical fabric mask.	On public transport, in indoor spaces open to the public, in workplaces, when 2 meters distance cannot be maintained.	<b>No change</b> No rationale reported.
England <sup>23</sup>	Tight-fitting, breathable fabric mask of at least 2 layers.	On public transport, in indoor spaces open to the public, in workplaces, or where social distancing may be difficult.	<b>No change</b> No rationale reported.
Ireland <sup>24,25</sup>	Fabric face masks that cover the nose and mouth with no visible gaps.	On public transport, in indoor spaces open to the public, in workplaces, when 2 metres distance cannot be maintained.	<b>No change</b> No rationale reported.
Netherlands <sup>26,27</sup>	Tight-fitting non-medical mask.	On public transport, in indoor spaces open to the public, in workplaces, when 1.5 metres distance cannot be maintained.	<b>No change</b> No rationale reported.
Israel <sup>28-31</sup>	Tight-fitting, breathable, two-layer mask manufactured from approved fabric types.	On public transport, in indoor spaces open to the public, in workplaces, when 2 metres distance cannot be maintained.	<b>No change</b> No rationale reported.
South Africa <sup>32</sup>	Cloth face mask or homemade item that covers the nose and mouth.	On public transport, in any public place, in workplaces, when 1.5 metres distance cannot be maintained.	<b>No change</b> No rationale reported.
Brazil <sup>33-35</sup>	A covering for the face and nose.	On public transport, in indoor spaces open to the public, in workplaces (varies by region).	<b>No change</b> No rationale reported.
Public Health Agency of Canada <sup>36</sup>	Tight-fitting, breathable, three-layer mask that covers the nose, mouth	On public transport, in indoor spaces open to the public, in workplaces,	<b>No change</b> No rationale reported.

Region	Type(s) of masks required or recommended for the public	Broad overview of where masks are required or recommended*	Changes to mask recommendations and rationale
	and chin without gaping wherein two outer layers are a tightly woven fabric, with an inner layer as a filter-type fabric.	when 2 metres distance cannot be maintained.	
United States Centers for Disease Control and Prevention <sup>37,38</sup>	<p>Tight-fitting, breathable, two or more layer mask that covers the nose and mouth without any exhalation valves, punctures or slits.</p> <p>Medical masks or N95 respirators are also acceptable, but N95 respirators are advised only for health care workers.</p>	On public transport, in indoor spaces open to the public, in workplaces, when 2 metres distance cannot be maintained.	<p><b>No change</b></p> <p>No rationale reported.</p>
World Health Organization <sup>39-41</sup>	<p>Tight-fitting, breathable, three-layer non-medical, fabric masks that cover the nose, mouth and chin without any exhalation valves or vents.</p> <p>Inner layer should be an absorbent material, the middle layer a non-woven non-absorbent material, and the outer layer a non-absorbent material.</p>	On public transport, in indoor spaces open to the public, in workplaces, when 1 metre distance cannot be maintained.	<p><b>No change</b></p> <p>No rationale reported.</p>

\*This category is broad in its summary of masking recommendations and requirements for brevity. National, state/provincial and municipal-level documentation have more specific conditions for mask use such as what is defined as public transport, whether workplaces must always require masking, and what are defined as public indoor spaces.

## References

1. Ontario Agency for Health Protection and Promotion (Public Health Ontario). COVID-19 UK variant VOC202012/01– what we know so far [Internet]. Toronto, ON: Queen’s Printer for Ontario; 2020 [cited 2021 Feb 03]. Available from: <https://www.publichealthontario.ca/-/media/documents/ncov/covid-wwksf/2020/12/what-we-know-uk-variant.pdf?la=en>
2. Ontario Agency for Health Protection and Promotion (Public Health Ontario). Lockdown duration and re-opening including considerations for COVID-19 variants of concern [Internet]. Toronto, ON: Queen’s Printer for Ontario; 2021 [cited 2021 Feb 04]. Available from: <https://www.publichealthontario.ca/-/media/documents/ncov/phm/2021/02/covid-19-environmental-scan-lockdowns-reopening-considerations-voc.pdf?la=en>
3. Horby P, Huntley C, Davies N, Edmunds J, Ferguson N, Medley G, et al. NERVTAG paper on COVID-19 variant of concern B.1.1.7 [Internet]. London: Crown Copyright; 2021 [cited 2021 Feb 03]. Available from: <https://www.gov.uk/government/publications/nervtag-paper-on-covid-19-variant-of-concern-b117>
4. Ontario Agency for Health Protection and Promotion (Public Health Ontario). COVID-19 B.1.351 (501Y.V2) variant of concern – what we know so far [Internet]. Toronto, ON: Queen’s Printer for Ontario; 2021 [cited 2021 Feb 04]. Available from: <https://www.publichealthontario.ca/-/media/documents/ncov/covid-wwksf/2021/02/wwksf-covid-19-b1351501yv2-variant-of-concern.pdf?la=en>
5. Mahase E. COVID-19: what new variants are emerging and how are they being investigated? BMJ. 2021;372:n158. Available from: <https://doi.org/10.1136/bmj.n158>
6. European Centre for Disease Prevention and Control. Risk assessment: risk related to the spread of new SARS-CoV-2 variants of concern in the EU/EEA – first update [Internet]. Stockholm: European Centre for Disease Prevention and Control; 2021 [cited 2021 Feb 03]. Available from: <https://www.ecdc.europa.eu/en/publications-data/covid-19-risk-assessment-spread-new-variants-concern-eueea-first-update>
7. Young K, Otten A. Rapid review on the characteristics of effective non-medical face masks in reducing the risk of SARS-CoV-2 [Internet]. Ottawa, ON: Government of Canada; 2021 [cited 2021 Feb 03]. Available upon request from: <https://www.nccmt.ca/covid-19/covid-19-evidence-reviews/261>
8. Österreich Werbung. Current protective measures in Austria [Internet]. Vienna: Österreich Werbung; 2021 [cited 2021 Feb 03]. Available from: <https://www.austria.info/en/service-and-facts/coronavirus-information/protective-measures>
9. The Local. Updated: where is wearing a mask compulsory in Austria? The Local [Internet], 2021 Jan 07 [modified 2021 Jan 25; cited 2021 Feb 03]. Available from: <https://www.thelocal.at/20210107/coronavirus-where-is-wearing-a-mask-compulsory-in-austria>
10. Redl B. FFP2 masks: use correctly and dry in the oven regularly. Der Standard [Internet], 2021 Jan 17 [cited 2021 Feb 03]. Available from: <https://www.derstandard.at/story/2000123331281/ffp2-masken-korrekte-verwendung-gute-qualitaet-und-regelmaessig-im-backofen>



11. Willsher K. France bans certain homemade COVID masks for use in public. The Guardian [Internet], 2021 Jan 25 [cited 2021 Feb 03]; Coronavirus. Available from: <https://www.theguardian.com/world/2021/jan/25/france-bans-homemade-covid-masks-public>
12. Gouvernement du la France. Restrictions and requirements in metropolitan France [Internet]. Paris: Gouvernement du la France; 2021 [cited 2021 Feb 03]. Available from: <https://www.gouvernement.fr/en/coronavirus-covid-19>
13. The Local. France advises against fabric masks due to new COVID variants. The Local [Internet], 2021 Jan 19 [cited 2021 Feb 03]. Available from: <https://www.thelocal.fr/20210119/france-advises-against-fabric-face-masks-due-to-new-covid-variants>
14. France. Ministry of the Economy, Finances and Recovery. COVID-19: information relating to masks for the general public. Paris: Government du la France; 2021 [cited 2021 Feb 05]. Available from: <https://www.entreprises.gouv.fr/fr/covid-19/covid-19-informations-relatives-aux-masques-grand-public>
15. Lécuyer J. Coronavirus: two new mask models soon available from non-health sectors. La Voix du Nord [Internet], 2020 Mar 30 [cited 2021 Feb 03]. Available from: <https://www.lavoixdunord.fr/733516/article/2020-03-30/deux-nouveaux-masques-bientot-disponibles-pour-les-secteurs-hors-sante>
16. The Local. Explained: which types of mask are now recommended for everyday use in France. The Local [Internet], 2021 Jan 19 [cited 2021 Feb 03]. Available from: <https://www.thelocal.fr/20210119/explained-which-types-of-mask-are-now-recommended-for-everyday-use-in-france>
17. Deutschland.de. The Federal Government informs about the corona crisis [Internet]. Berlin: Bundesregierung.de; 2021 [cited 2021 Feb 04]. Available from: <https://www.deutschland.de/en/news/german-federal-government-informs-about-the-corona-crisis>
18. The Local. What you need to know about Germany's new mask rules for public transport and shops. The Local [Internet], 2021 Jan 20 [cited 2021 Feb 03]. Available from: <https://www.thelocal.de/20210120/what-you-should-know-about-germanys-new-mask-rules-for-public-transport-and-shops>
19. The Bulletin. Coronavirus in Belgium: what are the rules on wearing masks? The Bulletin [Internet], 2020 Sep 30 [modified 2020 Oct 12; cited 2021 Feb 03]. Available from: <https://www.thebulletin.be/coronavirus-belgium-should-we-be-wearing-masks-0>
20. Visit.Brussels. Coronavirus: state of play in Brussels [Internet]. Brussels: Visit.Brussels; 2021 [cited 2021 Feb 03]. Available from: <https://visit.brussels/en/article/coronavirus-info-state-of-play-brussels>
21. Danish Health Authority. Face masks [Internet]. Copenhagen: Danish Health Authority; 2021 [cited 2021 Feb 03]. Available from: <https://www.sst.dk/en/English/Corona-eng/Prevent-infection/Face-masks>
22. Max Planck Institute. Status update of January 25, 2021. Tübingen, Germany: Max Planck Campus Tübingen; 2021.

23. United Kingdom. Cabinet Office, Department of Health and Social Care. Face coverings: when to wear one, exemptions, and how to make your own [Internet]. London: Crown Copyright; 2020 [modified 2020 Dec 04; cited 2021 Feb 03]. Available from: <https://www.gov.uk/government/publications/face-coverings-when-to-wear-one-and-how-to-make-your-own/face-coverings-when-to-wear-one-and-how-to-make-your-own#exemptions-to-wearing-a-face-covering-where-they-are-mandated>
24. Ireland. Department of Health. When to wear face coverings and how to make them [Internet]. Dublin: Government of Ireland; 2020 [modified 2021 Jan 29; cited 2021 Feb 03]. Available from: <https://www.gov.ie/en/publication/aac74c-guidance-on-safe-use-of-face-coverings/>
25. Ireland. Department of Health. COVID-19 (coronavirus): posters for public use: HSE face covering guideline poster: screen [Internet]. Dublin: Government of Ireland; 2020 [modified 2021 Jan 26; cited 2021 Feb 03]. Available from: <https://www.gov.ie/en/collection/ee0781-covid-19-posters-for-public-use/>
26. Netherlands. National Institute of Public Health and Environment, Ministry of Public Health, Welfare and Sports. Face masks and gloves [Internet]. Bilthoven: National Institute for Public Health and the Environment; 2021 [cited 2021 Feb 03]. Available from: <https://www.rivm.nl/node/156151>
27. Government of the Netherlands. Rules that apply indoors and outdoors [Internet]. Amsterdam: Government of the Netherlands; 2021 [cited 2021 Feb 03]. Available from: <https://www.government.nl/topics/coronavirus-covid-19/tackling-new-coronavirus-in-the-netherlands/public-life>
28. Municipality of Tel Aviv-Yafo. Coronavirus updates and guidelines [Internet]. Tel Aviv-Yafo: Municipality of Tel Aviv-Yafo; 2021 [cited 2021 Feb 03]. Available from: <https://www.tel-aviv.gov.il/en/Pages/ArticlePage.aspx?WebID=9336473c-1537-4ab6-8a69-d299b5db8bcc&ListID=b4eda22c-a69a-4bef-9479-05d5a832ad16&ItemId=126>
29. Israel. Ministry of Health. Wearing a mask in public settings [Internet]. Jerusalem: Government of Israel; 2020 [modified 2020 Oct 20; cited 2021 Feb 03]. Available from: <https://www.gov.il/en/Departments/General/corona-masks>
30. Israel. Ministry of Health. Manufacturing reusable masks [Internet]. Jerusalem: Government of Israel; 2020 [modified 2020 Oct 20; cited 2021 Feb 03]. Available from: <https://www.gov.il/en/departments/general/masks-production>
31. Israel. Ministry of Health. Reusable face mask [Internet]. Jerusalem: Government of Israel; 2020 [cited 2021 Feb 03]. Available from: [https://www.gov.il/BlobFolder/generalpage/masks-production/en/subjects\\_corona\\_face\\_mask\\_basic.pdf](https://www.gov.il/BlobFolder/generalpage/masks-production/en/subjects_corona_face_mask_basic.pdf)
32. South African Government. Disaster management act: regulations: alert level 3 during coronavirus COVID-19 lockdown [Internet]. Capetown: Government of South Africa; 2020 [modified 2021 Feb 01; cited 2021 Feb 03]. Available from: <https://www.gov.za/covid-19/about/alert-level-3-during-coronavirus-covid-19-lockdown#>
33. CGTN. Brazil makes new law to mandate mask wearing. CGTN [Internet], 2020 Aug 09 [cited 2021 Feb 03]; World. Available from: <https://newsus.cgtn.com/news/2020-08-09/Brazil-makes-new-law-to-mandate-mask-wearing-SNXq2RfDEs/index.html>



34. Rokattoo. Comment on: It\_is\_Matt. Is wearing a face-mask mandatory in Brazil? 2020 Oct 12 [cited 2021 Feb 03]. In: Brazil Travel Forum [Internet]. Needham, MA: TripAdvisor; 2000 – . Available from: [https://www.tripadvisor.com/ShowTopic-g294280-i1045-k13413432-Is\\_Wearing\\_a\\_Face\\_Mask\\_Mandatory\\_in\\_Brazil-Brazil.html](https://www.tripadvisor.com/ShowTopic-g294280-i1045-k13413432-Is_Wearing_a_Face_Mask_Mandatory_in_Brazil-Brazil.html)
35. Freire R. Resumption of tourism: what is open in destinations | February. 2021 Feb [cited 2021 Feb 03]. In: Viaje na viagem blog [Internet]. São Paulo: Organizações da Bóia Conteúdo Digital Ltda; 2004 – . Available from: <https://www.viajenaviagem.com/2021/02/viagens-brasil-o-que-esta-aberto/>
36. Government of Canada. Non-medical masks and face coverings: about [Internet]. Ottawa, ON: Government of Canada; 2020 [cited 2021 Feb 03]. Available from: <https://www.canada.ca/en/public-health/services/diseases/2019-novel-coronavirus-infection/prevention-risks/about-non-medical-masks-face-coverings.html>
37. Centers for Disease Control and Prevention. Your guide to masks [Internet]. Atlanta, GA: Centers for Disease Control and Prevention; 2021 [cited 2021 Feb 03]. Available from: <https://www.cdc.gov/coronavirus/2019-ncov/prevent-getting-sick/about-face-coverings.html>
38. Centers for Disease Control and Prevention. Considerations for wearing masks [Internet]. Atlanta, GA: Centers for Disease Control and Prevention; 2020 [cited 2021 Feb 03]. Available from: <https://www.cdc.gov/coronavirus/2019-ncov/prevent-getting-sick/cloth-face-cover-guidance.html>
39. World Health Organization. Coronavirus disease (COVID-19) advice for the public: when and how to use masks [Internet]. Geneva: World Health Organization; 2020 [cited 2021 Feb 03]. Available from: <https://www.who.int/emergencies/diseases/novel-coronavirus-2019/advice-for-public/when-and-how-to-use-masks>
40. World Health Organization. Coronavirus disease (COVID-19): children and masks [Internet]. Geneva: World Health Organization; 2020 [cited 2021 Feb 03]. Available from: <https://www.who.int/emergencies/diseases/novel-coronavirus-2019/question-and-answers-hub/q-a-detail/q-a-children-and-masks-related-to-covid-19>
41. World Health Organization. Coronavirus disease (COVID-19): masks [Internet]. Geneva: World Health Organization; 2020 [cited 2021 Feb 03]. Available from: <https://www.who.int/emergencies/diseases/novel-coronavirus-2019/question-and-answers-hub/q-a-detail/coronavirus-disease-covid-19-masks>

## Citation

Ontario Agency for Health Protection and Promotion (Public Health Ontario). Type of mask required or recommended for the public to control transmission of SARS-CoV-2 with consideration of variants of concern: rapid environmental scan. Toronto, ON: Queen's Printer for Ontario; 2021.

## Disclaimer

This document was developed by Public Health Ontario (PHO). PHO provides scientific and technical advice to Ontario's government, public health organizations and health care providers. PHO's work is guided by the current best available evidence at the time of publication.

The application and use of this document is the responsibility of the user. PHO assumes no liability resulting from any such application or use.

This document may be reproduced without permission for non-commercial purposes only and provided that appropriate credit is given to PHO. No changes and/or modifications may be made to this document without express written permission from PHO.

## Public Health Ontario

Public Health Ontario is an agency of the Government of Ontario dedicated to protecting and promoting the health of all Ontarians and reducing inequities in health. Public Health Ontario links public health practitioners, front-line health workers and researchers to the best scientific intelligence and knowledge from around the world.

For more information about PHO, visit [publichealthontario.ca](https://publichealthontario.ca).

©Queen's Printer for Ontario, 2021

