



National COVID-19 Health and Research Advisory Committee*

Date of report: 20 August 2020

Evidence for the community use of face masks

Focus

The National COVID-19 Health and Research Advisory Committee (NCHRAC) formed a working group to advise the Chief Medical Officer (CMO) on the evidence for the community use of face masks. The working group addressed evidence in the following specific areas:

- the effectiveness of face mask use in the community to limit community transmission of SARS-CoV-2
- the most effective design of reusable face masks
- alternatives to face masks.

For the purposes of this advice paper, NCHRAC consider the community use of face masks as: wearing of face coverings (in non-health service and care settings) that completely cover the nose, mouth and chin and do not include inhalation and/or exhalation valve(s) (adapted from European Committee for Standardization definition¹).

This advice could be supplemented with insights from stakeholders and/or research on factors related to mask use in the community and could include:

- reported barriers and potential enablers for community mask use
- the community (or specific sections of the community) response to the public health messaging, recommendations or mandate(s) to wear face masks
- consideration of other factors such as equity, affordability, acceptability, adherence, compliance, community engagement and behaviour change communication.

This report was developed by an NCHRAC working group (see membership at [Attachment 1](#)).

Notes

This advice is point in time and may need further review as more evidence becomes available. NCHRAC's conclusions are outlined below. The conclusions represent the expert interpretation of relevant evidence as at 19 August 2020.

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* NHMRC is providing secretariat and project support for the Committee, which was established to provide advice to the Commonwealth Chief Medical Officer on Australia's health response to the COVID-19 pandemic. The Committee is not established under the NHMRC Act and does not advise the NHMRC CEO.

Conclusions

Community use of face masks

NCHRAC conclusion 1: There is reasonable evidence for the effectiveness of face mask use in the community to prevent or reduce transmission of SARS-CoV-2 and the evidence suggests that face masks should be used in combination with other non-pharmacological measures such as physical distancing and hand washing when there is significant community transmission. The WHO currently recommends the use of community masks in settings of high transmission. In addition, until further direct evidence is available, it is prudent to adopt the precautionary principle to support decisions using available evidence, rather than waiting for scientific certainty.

An analysis of the impact of the compulsory introduction of masks in metropolitan Melbourne and Mitchell Shire (from 22 July 2020) found that the introduction of masks was associated with a significant reduction in the COVID-19 epidemic growth rate ($p=0.04$) and a 23% reduction in effective reproduction number (R_{eff}), from 1.18 to 0.92, after their introduction.² This reduction in epidemic growth is also reflected in a study from Germany showing the introduction of masks in Jena city (from 6 April 2020) reduced the number of new COVID-19 cases by 23% over the first 20 days (a decrease of 1.32 percentage points per day), when compared to the synthetic control group.³

On 5 June 2020, the World Health Organization (WHO) updated its advice on the use of masks in response to evolving knowledge and emerging evidence. In its updated advice, the WHO recommended community mask use in settings of high transmission, especially when physical distancing cannot be practiced.⁴ More information about the WHO advice, and that of other international bodies, can be found in the Background section of this document.

Underpinning the change in WHO advice was a systematic review and meta-analysis of data from 172 observational studies (across 16 countries) investigating mask use in health care and non-health care settings for transmission of SARS-CoV, MERS-CoV or SARS-Cov-2.⁵ Chu et al found that the use of masks in general (N95 respirator, medical, surgical or similar reusable masks e.g. 12–16 layer cotton masks) were associated with an 85% reduction in infection risk (adjusted studies, $n=2647$; aOR 0.15, 95% CI 0.07 to 0.34, RD -14.3% , -15.9 to -10.7 ; low certainty). The protective effect was found to be equal in both community and health care settings.⁵ Evidence for effectiveness was further demonstrated in a retrospective cohort study specific to SARS-CoV-2 by Wang et al in Beijing that showed that universal mask use within families with an index case was 79% effective in reducing secondary transmission of SARS-COV-2 (OR 0.21, 95% CI 0.06 to 0.79) if masks were worn by all family members prior to symptom onset in the index case. Wang et al also concluded that wearing a mask after the onset of the primary case's illness was not significantly protective.⁶

A randomised controlled trial (RCT) investigating seasonal coronaviruses and other seasonal viruses such as influenza and rhinoviruses demonstrated the efficacy of face masks. It found that seasonal human coronaviruses tended to be more aerosolised than other viruses and could be detected in exhaled breath (without a surgical mask). With the use of a surgical mask the coronavirus RNA in aerosols were not detectable (significantly reduced, $p=0.04$), and the blocking of exhaled virus was greater for coronaviruses than other viruses.⁷

The working group considered a range of evidence for the effectiveness of face masks drawing on relevant RCTs, systematic reviews and meta-analyses where possible. To date there are no RCTs of mask use on COVID-19 and the limitations of available evidence have been recognised⁴, though trial registries indicate that RCTs of masks for COVID-19 are underway to inform the optimum use of face masks.^{8,9} However, RCTs on the effectiveness of face masks have been completed for other respiratory viruses such as influenza that support community use of face masks. Whilst data from RCTs of other respiratory viruses may not be directly applicable to SARS-CoV-2, the respiratory route of transmission is common to these viruses, and therefore the data are relevant. Analysis of available evidence also found that there are more and larger RCTs of mask use in the community by well people than by sick people, and both types show evidence of effectiveness and that there is no evidential basis to advise people to only wear a mask if sick. Until direct evidence emerges, the working group concluded it is prudent to adopt the precautionary principle to support decisions using available evidence, rather than waiting for scientific certainty. This view is supported by others.^{10,11}

WHO recommends that to prevent COVID-19 transmission in areas of community transmission, governments should encourage the general public to wear masks in specific situations and settings as part of a comprehensive approach to suppress SARS-CoV-2 transmission.⁴ WHO's position takes into account the limitations and findings of available studies and factoring the body of evidence evaluating pre- and asymptomatic transmission; a growing compendium of observational evidence on the use of masks by the general public in several countries; and individual values and preferences, as well as the difficulty of physical distancing in many contexts.

The working group supports the WHO rationale, but strongly notes that qualifiers such as “only wear a mask when physical distancing is not possible” are difficult to implement and may be confusing, as people cannot readily predict such situations. It also contradicts the advice that a mask is not a replacement for other measures, and that all non-pharmaceutical measures need to be used together for maximal effectiveness. We suggest a more positive and less confusing message that encourages mask use in the community.

In summary, the working group concluded that there is reasonable evidence indicating that the community use of face masks is effective in protecting well people from infection and reducing transmission from sick people. Face masks should be used in combination with other measures such as physical distancing and handwashing. This finding is consistent with the WHO advice. Research shows that no non-pharmaceutical intervention on its own is enough for control of COVID-19, and they must be used together for maximal effectiveness.^{6,12,13} This is an important message and contradictory messages such as “only wear a face mask when physical distancing is not possible” should be avoided.

NCHRAC conclusion 2: There is evidence indicating that face mask use in specific settings in the community is effective.

The working group considered evidence for the effectiveness of face mask use in different community settings.

The cohort study by Wang et al mentioned above, showed universal mask use within families with an index case was effective in reducing onward transmission of SARS-COV-2 if masks were worn by all family members prior to symptom onset in the index case (OR 0.21, 95% CI 0.06 to 0.79).⁶ The same study reported that wearing a mask after the onset of the primary case's illness was not significantly protective and that precautionary community face mask use is likely to be the most effective inside the household during high epidemic growth.⁶ Another clustered RCT investigating the role of face masks and hand hygiene in the prevention of influenza transmission found that in households where face masks and hand hygiene were practiced within 36 hours after symptom onset of the index case, secondary infection was significantly lower compared to the control group (adjusted OR 0.16, 95% CI, 0.03-0.92).¹⁴ It is important to note that most transmissions happen in the household, because of close contact of household members.¹⁵ Household RCTs of other respiratory viruses show that masks protect if worn early, if people adhere with mask use and, in one trial, in combination with hand hygiene.^{16,17} Transmission is not limited to interactions or circumstances outside households, but out-of-home transmission is most likely in indoor settings, especially with poor ventilation.¹⁸

A case study in the US reported two SARS-COV-2 infected hairdressers who served 139 clients while infectious. Stylists and customers all wore either surgical or cloth masks, and no customers were infected. However, one stylist infected her household contacts, as masks were not worn at home.¹⁹

Two randomised intervention trials by Aiello et al in the US investigating masks and hand hygiene to prevent influenza showed some benefit of face masks in college dormitories, especially during periods of influenza activity and when used early after symptom onset.^{20,21}

Current WHO guidance includes a range of examples of where the general public should be encouraged to use masks in combination with other non-pharmacological measures such as physical distancing and practicing good hygiene.⁴ Where there is known or suspected widespread transmission and limited or no capacity to implement other containment measures, the WHO identifies schools as an example of a setting where masks should be encouraged. Settings with high population density where physical distancing cannot be achieved are also examples provided in the WHO advice. However, modelling studies suggest that precautionary, early and universal mask use in public can flatten the curve and prevent community transmission.^{22,23}

NCHRAC conclusion 3: Available evidence suggests that the type of face mask and the way it is used is an important factor contributing to its effectiveness in limiting transmission of SARS-CoV-2 or other viruses.

The WHO provides advice on the use of both surgical and cloth masks, which several countries have adopted (as summarised in [Attachment 2](#)). While N95ⁱ and surgical masks may be more effective in preventing transmission of the virus, issues such as cost, availability

ⁱ N95 and P2 respirators are the same, in Australia they are known as P2 respirators.

and impact on the environment are reasons why alternatives such as cloth masks should be used in the community.

Evidence of the effectiveness of different mask types varies. A systematic review of N95, surgical and cloth masks identified only one trial that evaluated different mask types in the community setting and found no difference between P2 respirators and masks.²⁴ However, the trial authors note that mask adherence was low and the numbers probably too small to detect a difference.¹⁶ One study showed that the best filtration is achieved by N95, followed by a surgical mask with ties, and then a surgical mask with ear loops, which had the worst performance.²⁵

There has been only one published RCT on the use of cloth masks for respiratory diseases, conducted in the health care setting (in Vietnam), which showed no efficacy.²⁶ This is not generalisable to all cloth masks, or to the community. In a systematic review of SARS, MERS-CoV and SARS-CoV-2, some observational studies show effectiveness of cloth masks.⁵ The authors note that the use of N95 respirators may be associated with a greater reduction in viral infections than a surgical mask or a reusable 12–16 layer cotton mask; they did not rate the certainty of effect as high due to limitations with the data.⁵ There are numerous systematic reviews on influenza and other respiratory viruses. One review found no difference between N95 respirators and surgical masks for protection in the hospital setting against influenza.²⁷ Another review of the same studies did show superiority of N95 respirators.²⁸ The contradictory interpretation of data between different reviews is likely due to the varying endpoints in different trials, and consideration of some of the nuances of influenza transmission. Most of the studies only examined influenza or clinical case definitions of influenzas as outcomes. Influenza is a seasonal disease, and varies from year to year, with high incidence in some years and extremely low incidence in others. Further, the short incubation period of influenza and the possibility of pre-symptomatic transmission make it complex to study. This makes it important to consider the findings of the RCTs in the sub-analyses such as by timing and compliance. Meanwhile the best available data are from the meta-analysis of SARS, MERS-CoV and SARS-COV-2, which shows masks are clearly protective against beta-coronaviruses, reducing infection risk by 85%, and equally in the community and healthcare setting.⁵

A systematic review on the efficacy and safety of homemade cloth masks found no RCTs for their use in the general population but looked at seven studies examining the efficacy of different fabric types to act as a barrier against droplets in laboratory experiments.¹³ The review shows that N95 respirators are superior at stopping droplets, with surgical masks being more effective than cloth masks, although cloth masks did provide protection to droplet dispersal. The authors conclude that the use of any type of face mask can serve as an additional measure to limit disease transmission but must be used in conjunction with appropriate hygiene and physical distancing measures.¹³ Historically the use of reusable cotton masks by health care workers has been associated with low infection rates, such as during the 1918 influenza pandemic.²⁹ It is also important to recognise that N95 respirators are designed for specialist use and need to be fitted correctly, and the wearer needs to

undergo fit testing to ensure effective use. The working group concurs with recommendations that N95 respirators not be used by the general community.

Internationally there is varying advice on the appropriate construction of cloth face masks (Attachment 2). The WHO provides advice on the type of fabric and construction of a fabric mask in order for it to be effective.⁴ A recently released standard by the European Committee for Standardization (CEN) similarly provides advice on materials, construction and use of face masks.¹ The Victorian Department of Health and Human Services (DHHS) also provides instructions on making a three layered cloth mask noting that a fine weave fabric with a high thread count is preferable, at least two to three layers with wadding between them and at least one water resistant layer.³⁰ The use of ties instead of ear loops will provide a better fit, as will the addition of fine nylon, such as a stocking over the mask.²⁹

There is an increasing range of reusable face masks available to purchase made from a diverse range of materials and designs. Experimental studies on the use of different fabrics in reusable masks seem to support the advice provided by the Victorian DHHS.^{31,32,33,34} One study showed that even a single layered cloth mask reduced respiratory emissions, but a double layered mask did so more effectively and a surgical mask more so.³³ Importantly a recent study has shown that some face covers, such as a neck fleece, can disperse droplets produced when the wearer speaks into a multitude of smaller droplets.³⁵ The authors suggest that the use of this type of covering may be counterproductive causing dispersal of fine droplets containing virus particles. The use of a bandana as a face covering also did not reduce the total number of droplets dispersed through speech and offers little protection.³⁵ The working group discussed mask design with the coordinator of the Masks for Aussies project. Masks for Aussies provide information on making your own cloth mask and places to purchase a cloth mask and are an example of local mask community group. They also provide advice on how to wear and care for a reusable mask.³⁶

For any type of mask, appropriate use and disposal are essential to ensure that they are as effective as possible and to avoid any increase in transmission. The WHO and the Victorian DHHS provide detailed guidance on the correct use of masks including, performing hand hygiene, fitting the mask properly and disposal or washing and reusing the mask.^{4,37} Internationally there is also a wealth of advice on the design, use and reuse of face masks (see Attachment 2).

NCHRAC conclusion 4: While face shields may be considered an alternative to wearing a mask in limited circumstances, current evidence suggests that face shields do not protect as well as a mask against SARS-CoV-2 transmission.

There may be groups of people, such as people who have a history of trauma, who live with mental illness, intellectual disability, physical disability, autism or respiratory conditions, or children under the age of two years, who may have difficulty wearing a mask. There are various sensory and behavioural issues that may occur among people with autism that makes mask wearing difficult (A. Kavanagh, personal communication, 8 August 2020). It is acknowledged that masks should not be worn by people who cannot safely remove them. In some countries where masks are mandatory, such as Singapore, the United Kingdom, France

and Spain, a medical exemption can be provided by a registered medical practitioner or psychologist (see [Attachment 2](#)). Victoria DHHS has developed exemptions to mask use that address reasons why it may not be suitable for a person with disability or a person who has experienced trauma to wear a mask or face covering.³⁸

The WHO recognises that face shields may be considered an alternative to wearing a mask for people who are unable to wear face masks or where there is a shortage of non-medical face masks. Their advice notes that if face shields are used then they need to cover the sides of the face and below the chin.⁴ NCHRAC noted that there is some non-peer reviewed evidence that face shields are not as effective as masks. This may be due to aerosol transmission, as air can travel upward from the bottom of the face shield.³⁹ A case study of a small outbreak in a Swiss hotel found that the only people infected had been wearing face shields and no face mask, prompting the local health officials to note that face shields should only be worn as an additional measure with a mask and other hygiene practices.⁴⁰

The US Centers for Disease Control and Prevention (CDC) does not recommend that face shields be used as a substitute for masks.⁴¹ However, if someone cannot wear a mask, a face shield may provide a barrier to some of the droplets expelled by the wearer through speech and breath. For lip-reading, a mask with a clear face piece may be used in preference to a face shield.

NCHRAC conclusion 5: Evidence of any adverse effects of mask use in the community setting is largely anecdotal. Studies that have investigated adverse effects of mask use indicate that the adverse effects reported are not serious or significant.

Adverse effects of mask use include discomfort, skin irritation, difficulty breathing or communicating or be psychological in nature and have been largely anecdotal or self-reported in health worker studies. Two clustered RCTs investigating the use and fit of medical and N95 respirator masks found that adverse effects were more common with N95 respirators than surgical masks.^{42,43} A (pre-print) systematic review and meta-analysis of 37 studies that aimed to identify and summarise the downsides of mask use to assist policy makers, reported discomfort and irritation were most commonly reported across studies (20/37 studies) and also found that there is no evidence masks reduce oxygen levels or increases CO₂ levels with normal use.⁴⁴ In many studies the discomfort did not affect compliance or use of masks. The WHO advice includes a list of the potential harm/disadvantages of the use of face masks by members of the community.⁴ There is no evidence of increased risk behaviour such as touching of the face or contamination.⁴⁴ A living evidence review of masks for the prevention of respiratory viruses includes looking at harms. Initially the review has reported that, although the reporting of harms in RCTs is suboptimal, there is no indication of serious harms or risks from mask use. The review will be updated as further evidence becomes available.²⁴

Background

National and international context for community use of face masks

The CDC updated its advice in early April 2020, the WHO updated its advice on 5 June and the UK in July 2020.^{4,45,46} Prior to this, the WHO, governments and other public health and regulatory agencies were not recommending the community use of masks. This has been attributed in part to the need to protect existing stocks of masks for health care and other essential workers earlier in the COVID-19 pandemic until additional supply could be secured.^{10,11,45}

The wearing of a face covering (preferably a 3 layered face mask) outside the home was mandated in metropolitan Melbourne and Mitchell Shire on 22 July 2020 and across Victoria from 2 August 2020, with provisions for lawful exemptions.³⁷ Face mask use has been encouraged in New South Wales (NSW) as the level of community transmission has increased. For example, the NSW Government has progressively strengthened its advice since 2 August to strongly recommend the use of face masks (at least 2–3 layers) in indoor settings where physical distancing is difficult, in settings with higher risk of transmission, and in places where people congregate.⁴⁷ Queensland Government does not currently make recommendations on face mask use as it is not experiencing sustained community transmission.⁴⁸ National and state health departments mandating or recommending use of face coverings or masks have information available on the type/design and use of masks where indicated, notably most of this information is derived directly from the CDC and WHO websites.

Multiple countries that have experienced high levels of community transmission have recommended the use of masks in indoor and outdoor settings where physical distancing is not possible as a measure to prevent the spread of SARS-CoV-2 in conjunction with other non-public health measures, physical distancing and regular handwashing. [Attachment 2](#) provides a summary on the use of masks in a range of countries. Minimum age recommendations are referenced, however there is a degree of variation. The one unifying position is that children under the age of two years should not wear a face mask or other face covering. In Victoria, children under the age of 12 years are not required to wear a face covering. Several international jurisdictions have implemented penalties (fines) for non-compliance, which vary greatly in value from between AUD\$120-\$1500 (see table at [Attachment 2](#)).

Other considerations

In the course of developing this advice, NCHRAC consulted with, and is grateful for, the input of several experts and stakeholders. These consultations identified several factors associated with mask use:

- Equity, affordability, acceptability and compliance in the community
- Barriers and enablers to uptake or compliance among the community importantly including cost
- Community engagement and behaviour change communication

- Waste and sustainability issues rising from community use of disposable, single-use face masks.

The committee could provide a separate piece of advice addressing these topics, based on further consultations, if required.

Attachments

Attachment 1: Membership of the NCHRAC face mask working group

Attachment 2: A summary of the government advice on the use of masks in a range of countries

References

Note: Research papers shared before peer review are identified as pre-prints and are marked with a § in the reference list. Accordingly, they should be interpreted with caution.

- ¹ European Committee for Standardization (CEN) new workshop agreement on community face coverings. Retrieved 17 Aug 2020 from https://www.cencenelec.eu/news/press_releases/Pages/PR-2020-004.aspx
- ² Burnet Institute Know C-19. Report on the impact of masks in Victoria: 18th August 2020 (unpublished) [cited 19 Aug 2020].
- ³ Mitze T, Kosfeld R, Rode J, Walde K. Face masks considerably reduce COVID-19 cases in Germany: A synthetic Control Method Approach. IZA Institute of Labor Economics – Initiated by Deutsche Post Foundation. June 2020. <https://www.iza.org/publications/dp/13319/face-masks-considerably-reduce-covid-19-cases-in-germany-a-synthetic-control-method-approach>
- ⁴ World Health Organization (2020). Advice on the use of masks in the context of COVID-19: interim guidance, 5 June 2020. World Health Organization. <https://apps.who.int/iris/handle/10665/332293>. License: CC BY-NC-SA 3.0 IGO (accessed 5 August)
- ⁵ Chu DK, Akl EA, Duda S, et al. Physical distancing, face masks, and eye protection to prevent person-to-person transmission of SARS-CoV-2 and COVID-19: a systematic review and meta-analysis [published online 1 Jun 2020]. *Lancet*. 2020;395(10242):P1973-1987. DOI: [https://doi.org/10.1016/S0140-6736\(20\)31142-9](https://doi.org/10.1016/S0140-6736(20)31142-9)
- ⁶ Wang Y, Tian H, Zhang L, et al. Reduction of secondary transmission of SARS- CoV-2 in households by face mask use, disinfection and social distancing: a cohort study in Beijing, China. *BMJ Glob Health*. 2020;5:e002794. DOI: 10.1136/bmjgh-2020-002794
- ⁷ Leung NHL, Chu DKW, Shiu EYC, et al. Respiratory virus shedding in exhaled breath and efficacy of face masks. *Nat Med* 26, 676–680 (2020). DOI: <https://doi.org/10.1038/s41591-020-0843-2>
- ⁸ ClinicalTrials.gov [internet] Bethesda (MD): National Library of Medicine (US). 2000 Feb 29 - . Identifier NCT04337541, Reduction in COVID-19 Infection Using Surgical Facial Masks Outside the Healthcare System, 2020 Apr 2 [cited 2020 Aug 13]; about 7 screens. Available from: <https://clinicaltrials.gov/ct2/show/NCT04337541>
- ⁹ ClinicalTrials.gov [internet] Bethesda (MD): National Library of Medicine (US). 2000 Feb 29 - . Identifier NCT04296643, Medical Masks Versus N95 Respirators to Prevent 2019 Novel Coronavirus Disease (COVID-19) in Healthcare Workers: A Randomized Trial, 2020 Mar 3 [cited 2020 Aug 13]; about 4 screens. Available from: <https://clinicaltrials.gov/show/NCT04296643>
- ¹⁰ Greenhalgh T, Schmid MB, Czypionka T, et al. Face masks for the public during the covid-19 crisis. *BMJ*. 2020 Apr 09; 369: m1435. DOI: <https://doi.org/10.1136/bmj.m1435>
- ¹¹ Schunemann HJ, Akl EA, Chou R, et al. Use of facemasks during the COVID-19 pandemic [published online 3 Aug 2020]. *Lancet Respir Med* 2020. [https://doi.org/10.1016/S2213-2600\(20\)30352-0](https://doi.org/10.1016/S2213-2600(20)30352-0)
- ¹² Kucharski AJ, Klepac P, Conlan AJK, et al. Effectiveness of isolation, testing, contact tracing, and physical distancing on reducing transmission of SARS-CoV-2 in different settings: a mathematical modelling study. [published online 16 Jun 2020]. *Lancet Infect Dis*. 2020;S1473-3099(20)30457-6. DOI: [https://doi.org/10.1016/S1473-3099\(20\)30457-6](https://doi.org/10.1016/S1473-3099(20)30457-6)
- ¹³ Taminato M, Mizusaki-Imoto A, Saconato H, et al. Homemade cloth face masks as a barrier against respiratory droplets - systematic review. *Acta Paul Enferm*. 2020:eAPE20200103. DOI: <https://doi.org/10.37689/acta-ape/2020ar0103>
- ¹⁴ Suess T, Remschmidt C, Schink SB, et al. The role of facemasks and hand hygiene in the prevention of influenza transmission in households: results from a cluster randomised trial; Berlin, Germany, 2009-2011. *BMC Infect Dis*. 2012;12:26. DOI: <https://doi.org/10.1186/1471-2334-12-26>

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- ¹⁵ Zhang W, Cheng W, Luo L, et al. Secondary Transmission of Coronavirus Disease from Presymptomatic Persons, China. *Emerg Infect Dis*. 2020;26(8):1924-1926. DOI: <https://dx.doi.org/10.3201/eid2608.201142>.
- ¹⁶ MacIntyre CR, Cauchemez S, Dwyer DE, et al. Face mask use and control of respiratory virus transmission in households. *Emerg Infect Dis* 2009;15:233-41. DOI: 10.3201/eid1502.081167
- ¹⁷ Cowling BJ, Chan K-H, Fang VJ, et al. Facemasks and hand hygiene to prevent influenza transmission in households: a cluster randomized trial. *Ann Intern Med*. 2009;151:437-46. DOI: 10.7326/0003-4819-151-7-200910060-00142.
- ¹⁸ Morawska L, Milton DK. It is Time to Address Airborne Transmission of COVID-19 [published online 6 Jul 2020]. *Clin Infect Dis*. 2020. DOI: <https://doi.org/10.1093/cid/ciaa939>
- ¹⁹ Hendrix MJ, Walde C, Findley K, et al. Absence of Apparent Transmission of SARS-CoV-2 from Two Stylists After Exposure at a Hair Salon with a Universal Face Covering Policy — Springfield, Missouri, May 2020. *MMWR Morb Mortal Wkly Rep* 2020;69:930-932. DOI: <http://dx.doi.org/10.15585/mmwr.mm6928e2>
- ²⁰ Aiello AE, Murray GF, Perez V, et al. Mask use, hand hygiene, and seasonal influenza-like illness among young adults: a randomized intervention trial. *J Infect Dis*. 2010;201(4):491-8. DOI: 10.1086/650396
- ²¹ Aiello AE, Perez V, Coulborn RM, et al. Facemasks, hand hygiene, and influenza among young adults: a randomized intervention trial. *PLoS One*. 2012;7(1):e29744-e. DOI: 10.1371/journal.pone.0029744
- ²² Ngonghala CN, Iboi E, Eikenberry S, Scotch M, MacIntyre CR, Bonds MH, et al. Mathematical assessment of the impact of non-pharmaceutical interventions on curtailing the 2019 novel Coronavirus. *Math Biosci*. 2020;325:108364. DOI: <https://doi.org/10.1016/j.mbs.2020.108364>
- ²³ Eikenberry SE, Mancuso M, Iboi E, et al. To mask or not to mask: Modeling the potential for face mask use by the general public to curtail the COVID-19 pandemic. *Infect Dis Model*. 2020;5:293-308. DOI: <https://doi.org/10.1016/j.idm.2020.04.001>
- ²⁴ Chou R, Dana T, Jungbauer R, et al. Masks for Prevention of Respiratory Virus Infections, Including SARS-CoV-2, in Health Care and Community Settings: A Living Rapid Review [published online 24 Jun 2020]. *Ann Intern Med*. 2020; M20-3213. DOI: <https://doi.org/10.7326/M20-3213>
- ²⁵ Sickbert-Bennett EE, Samet JM, Clapp PW, et al. Filtration Efficiency of Hospital Face Mask Alternatives Available for Use During the COVID-19 Pandemic [published online 11 Aug 2020]. *JAMA Intern Med*. DOI:10.1001/jamainternmed.2020.4221
- ²⁶ MacIntyre CR, Seale H, Dung TC, et al. A cluster randomised trial of cloth masks compared with medical masks in healthcare workers. *BMJ Open*. 2015;5:e006577. DOI: 10.1136/bmjopen-2014-006577
- ²⁷ Long Y, Hu T, Liu L, et al. Effectiveness of N95 respirators versus surgical masks against influenza: A systematic review and meta-analysis. *J Evid Based Med*. 2020 May;13(2):93-101. DOI: <ps://doi.org/10.1111/jebm.12381>
- ²⁸ Offeddu V, Yung CF, Low MSF, et al. Effectiveness of Masks and Respirators Against Respiratory Infections in Healthcare Workers: A Systematic Review and Meta-Analysis. *Clin Infect Dis*. 2017;65(11): 1934-1942. DOI: <https://doi.org/10.1093/cid/cix681>
- ²⁹ Chughtai AA, Seale H, Macintyre CR. Effectiveness of cloth masks for protection against severe acute respiratory syndrome coronavirus 2. *Emerg Infect Dis*. 2020 Oct. DOI: <https://doi.org/10.3201/eid2610.200948>
- ³⁰ Department of Health and Human Services Victoria. 2020. How to make a cloth mask: Instructions for making a cloth face mask. Retrieved 13 Aug 2020 from: https://www.dhhs.vic.gov.au/sites/default/files/documents/202007/Design%20and%20preparation%20of%20cloth%20mask_0.pdf
- ³¹ Rengasamy S, Eimer B, Shaffer RE. Simple Respiratory Protection—Evaluation of the Filtration Performance of Cloth Masks and Common Fabric Materials Against 20–1000 nm Size Particles. *Ann Occup Hyg*. 2010;54(7):789-98. DOI: <https://doi.org/10.1093/annhyg/meq044>

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- ³² Konda A, Prakash A, Moss GA, et al. Aerosol Filtration Efficiency of Common Fabrics Used in Respiratory Cloth Masks. *ACS Nano*. 2020 14 (5), 6339-6347. DOI: 10.1021/acsnano.0c03252. Correction published 18 June 2020. DOI: <https://doi.org/10.1021/acsnano.0c04676>
- ³³ Bahl P, Bhattacharjee S, de Silva C, et al. Face coverings and mask to minimise droplet dispersion and aerosolisation: a video case study [published online 24 Jul 2020]. *Thorax*. 2020. DOI: <http://dx.doi.org/10.1136/thoraxjnl-2020-215748>
- ³⁴ Lustig SR, Biswakarma JJH, Rana D, et al. Effectiveness of Common Fabrics to Block Aqueous Aerosols of Virus-like Nanoparticles. *ACS Nano* 2020 14 (6), 7651-7658. DOI: 10.1021/acsnano.0c03972
- ³⁵ Fischer EP, Fischer MC, Grass D et al. Low-cost measurement of facemask efficacy for filtering expelled droplets during speech [published online 7 Aug 2020]. *Science Advances*. 2020; eabd3083. DOI: 10.1126/sciadv.abd3083
- ³⁶ Masks for Aussies. Retrieved 13 Aug 2020 from: <https://www.masksforaussies.com/>
- ³⁷ Department of Health and Human Services Victoria. Face coverings: whole of Victoria. Retrieved 13 Aug 2020 from <https://www.dhhs.vic.gov.au/face-coverings-covid-19#what-does-wearing-a-face-covering-mean>.
- ³⁸ Department of Health and Human Services Victoria. Exceptions for not wearing a face covering. Retrieved 13 Aug 2020 from: <https://www.dhhs.vic.gov.au/face-coverings-covid-19#i-have-a-medical-condition-that-prevents-me-from-wearing-a-face-covering-do-i-need-a-medical-certificate-stating-i-dont-need-to-wear-a-face-covering>
- ³⁹ BBC Future. Why a face shield alone may not protect you from coronavirus. Retrieved 13 Aug 2020 from: <https://www.bbc.com/future/article/20200806-are-face-shields-effective-against-covid-19>
- ⁴⁰ Insider. Face shields did not protect people from the coronavirus in an outbreak in Switzerland, but masks did, health officials say. Retrieved 10 Aug 2020 from <https://www.insider.com/face-shields-did-not-protect-people-from-coronavirus-swiss-outbreak-2020-7>
- ⁴¹ Centers for Disease Control and Prevention. Considerations for Wearing Masks. Retrieved 13 August 2020 from: <https://www.cdc.gov/coronavirus/2019-ncov/prevent-getting-sick/cloth-face-cover-guidance.html>
- ⁴² MacIntyre C, Wang Q, Cauchemez S, et al. A cluster randomized clinical trial comparing fit-tested and non-fit-tested N95 respirators to medical masks to prevent respiratory virus infection in health care workers. *Influenza Other Resp*. 2011;5(3):170-9. DOI: <https://doi.org/10.1111/j.1750-2659.2011.00198.x>
- ⁴³ MacIntyre CR, Wang Q, Seale H, et al. A randomized clinical trial of three options for N95 respirators and medical masks in health workers. *Am J Respir Crit Care Med*. 2013;187(9):960-6. DOI: <https://doi.org/10.1164/rccm.201207-1164OC>
- ⁴⁴ § Bakhit M, Krzyzaniak N, Scot AM, et al. Downsides of face masks and possible mitigation strategies: a systematic review and meta-analysis. medRxiv [Pre-print]. 19 June, 2020 [cited 12 August 2020]. Available from: <https://doi.org/10.1101/2020.06.16.20133207>
- ⁴⁵ John Hopkins University. Understanding Changing Guidance on Mask Use. Retrieved 13 Aug 2020 from: <https://hub.jhu.edu/2020/04/24/covid-19-mask-glove-use/>
- ⁴⁶ UK Parliament Post. COVID-19: July update on face masks and face coverings for the general public. Retrieved 12 Aug 2020 from: <https://post.parliament.uk/analysis/covid-19-july-update-on-face-masks-and-face-coverings-for-the-general-public/>
- ⁴⁷ New South Wales Government. Face masks. Retrieved 14 Aug 2020 from: <https://www.nsw.gov.au/covid-19/face-masks>
- ⁴⁸ Queensland Government. Protect yourself and others – coronavirus (COVID-19). Retrieved 12 Aug 2020 from: <https://www.qld.gov.au/health/conditions/health-alerts/coronavirus-covid-19/protect-yourself-others/coronavirus-prevention>



About the Committee and the Working Group

About the National COVID-19 Health and Research Advisory Committee

The National COVID-19 Health and Research Advisory Committee (NCHRAC) was established in April 2020 to provide advice to the Commonwealth Chief Medical Officer on Australia's health response to the COVID-19 pandemic. NCHRAC provides rapid and evidence-based advice (or expert advice in the absence of evidence) on Australia's health response to the COVID-19 pandemic with the aim of preventing new cases, optimising the treatment of current cases, and assisting in optimising overall health system readiness to deal with the pandemic as it progresses.

Further information on the terms of reference and membership of the Committee is available at: www.nhmrc.gov.au/nchrac. NHMRC is providing secretariat and project support for the Committee. The Committee is not established under the NHMRC Act and does not advise the NHMRC CEO.

Working Group Membership

NCHRAC convenes working groups of its members and external experts to deliver its reports. The following NCHRAC members were involved in the development of this advice:

Committee Members

Professor Raina MacIntyre – Chair

Dr Katie Allen MP

Professor Fran Baum AO

Dr Michael Freeland MP

Ms Georgie Harman

Ms Christine Morgan

Professor Bruce Robinson

Dr James Muecke AM

Mr Daniel Zou

Additional experts

Professor Sharon Chen

Professor Julie Leask

Dr Holly Seale



Australian Government

National Health and Medical Research Council



Guidelines and Advice for Community Use of Face Masks

Since the World Health Organisations (WHO) guideline amendment of June 5 2020 regarding the use on non-medical face masks as a public health intervention a myriad of administrations (city, state and national) have introduced guidelines pertaining to the wearing of face masks. Below is a summary of some, though this list is not exhaustive, of international guidelines for mask wearing.

The summary is broken down into three categories:

- Global Guidelines
- International Health Authority recommendations and guidelines
- Australian State and Territory guidelines

Where masks are recommended or mandatory a series of similarities can be seen across the fields of age limits, the evidence used to support the decision, exemptions and financial implications as a means to ensuring compliance (fines):

Age Limits: the WHO guidelines recommend that children under 2 years of age not wear face masks as it poses significant risks of choking and other hazards.

Exemptions: many jurisdictions have provided a series of exemptions to wearing masks including medical conditions and situations where the wearing would be unable to remove the mask themselves.

Evidence: there are three leading sources of health authority recommendations most oft cited when face mask guidelines are introduced. These are the 5 June 2020 WHO's amended advice on the use of non-medical face masks; the Center for Disease Control and the European Centre for Disease Control. Occasionally a national health authority is referred to as is the case in Canada, however even in these instances the information is caveated with reference one of the three leading authorities.

Fines: these vary greatly in cost and have been provided in local currency costs. The average is approximately AUD\$150 (€100) but in some regions, notably in countries or regions of high incidence of infection the fines can be as high as approximately AUD\$10,000 (€6000) in Extremadura region of Spain.

1: Summary of Global Face Mask Guidelines

Please note this information is accurate as of Tuesday 18 August 2020, we acknowledge that information is changing daily at present.

Country/City	Implementation date	Guidelines overview	Evidence used	Age limits	Fines
Austria	Updated 21 July 2020; requirement for <i>Maskenpflicht</i> had been reduced on 15 June 2020	<p>The rules pertaining to wearing face masks were relaxed in June however due to the increased incidence of Covid-19 transmission new guidelines were introduced on 21 July for implementation from 24 July.</p> <p>Masks must now be worn, nationally, in the following circumstances:</p> <ul style="list-style-type: none"> • Supermarkets • Banks • Post offices and agencies • Public transport and taxis • When visiting nursing homes and rehabilitation facilities • Tour busses • In the workspace where a physical distancing of at least one meter is not possible (eg: hairdressers) • At indoor events except where the event is seated 	<p>WHO</p> <p>https://orf.at/corona/stories/3160118/</p>	Under 6 it is not mandatory	
Belgium	10 July 2020	<p>Obligation to wear a mask which covers the mouth and nose in indoor spaces including shops, indoor shopping centres, cinemas, theatres, concert halls, conference spaces; museums and places of worship</p> <p>Further movement restrictions were reintroduced in early August</p>	European Centre for Disease Control recommendations	Under 12 it is not mandatory with the exception of visiting doctors surgeries	Fine €felicity250 for failing to wear a mask in certain areas

Country/City	Implementation date	Guidelines overview	Evidence used	Age limits	Fines
Canada	20 May 2020	<p>Canada is a federated nation and there is no national mandate to wear masks although there are national guidelines. The decision to implement face masks is up to the province or city. Noting that many have introduced face masks as a public health intervention</p> <p>Wearing a homemade non-medical mask/facial covering in the community is recommended for periods of time when it is not possible to consistently maintain a 2-metre physical distance from others, particularly in crowded public settings, such as stores, shopping areas and public transportation</p> <p>Public health officials will make recommendations based on a number of factors, including the rates of infection and/or transmission in the community. In some jurisdictions, the use of masks in many indoor public spaces and on public transit is now mandatory. Masks are recommended along with adherence to good hygiene, frequent hand washing and physical distancing.</p>	<p>Public Health Authority of Canada.</p> <p>The Federal-Provincial-Territorial (FPT) Special Advisory Committee on COVID and the Public Health Agency of Canada (PHAC).</p> <p>https://masques-barrieres.afnor.org/home/telechargement?culture=en-GB&_ga=2.57268650.1031416587.1593103600-1710378353.1593103600</p> <p>https://www.canada.ca/en/public-health/services/diseases/2019-novel-coronavirus-infection/prevention-risks/about-non-medical-masks-face-coverings.html</p>	Not recommended for children under 2.	None indicated
Czech Republic	12 March 2020 Eased 24 May; reintroduced 1 September 2020	<p>Government introduced the measure in an attempt to curb the spread of the pandemic. It called upon citizens to make their own masks.</p> <p>Citizens headed the call with collection points being established across the country to ensure the vulnerable and disadvantaged communities could access the home made masks.</p>	None provided	N/A	N/A

Country/City	Implementation date	Guidelines overview	Evidence used	Age limits	Fines
		<p>Masks were designed in 100% cotton so they could be sterilised and reused.</p> <p>As the strict lockdown rules were relaxed in May, the mandate for mask wearing was also lifted however as Europe has recently witnessed increased infection rates the Government has reintroduce the mandate for mask wearing.</p> <p>Masks will be again be mandatory on public transport, shops, the common areas in schools and public buildings.</p> <p>Masks will not be mandatory in restaurants or bars.</p>			
Denmark	Effective 22 August 2020	<p>Announced on 14 August the Danish government advised all citizens that effective 22 August face masks would be mandatory on public transport.</p> <p>At the end of July the Danish Government started recommending the use of face masks on public transport.</p>	WHO guideline amendments of June 5 2020	N/A	N/A
France	Updated 10 August 2020	<p>Masks to be worn in all shops, indoor markets, banks, museums, monuments, indoor car parks, hotel lobbies, train stations, university amphitheatres</p> <p>Major cities including Paris, Lille, Nice and Biarritz have now implemented new face mask rules for open spaces where physical distancing is not possible.</p> <p>The Paris order applies to everyone aged 11 and over and covers places where physical distancing is difficult, including open-</p>	No evidence provided to support this decision	Paris 11 and up	Fines apply €135 for failure to wear mask in defined public space.

Country/City	Implementation date	Guidelines overview	Evidence used	Age limits	Fines
		markets, shopping streets and areas with large numbers of cafes.			
Germany	27 April 2020	<p>As a federated country each of the 16 States are able to set their own guidelines</p> <p>In all States except, Lower Saxony (LS) and Berlin, everyone over the age of 6 needs to wear a face mask, in LS all those over the age of 2 must wear a mask, Berlin has no lower limit.</p> <p>Masks must be worn on public transport and whilst in the supermarket across the nation, many other stores have introduced the mask requirement. Masks should also be worn in gyms except when using the exercise equipment.</p>	WHO and European Centre of Disease Control (ECDC) guidelines	Varies depending on the state but generally over the age of 6 except for Lower Saxony (2+) and Berlin no limit	Yes – varies between jurisdiction
Italy		<p>Regional governments are enforcing as per their own decisions</p> <p>Masks remain compulsory out of the home until August 15</p> <p>Masks are compulsory in enclosed areas, whether public buildings, supermarkets, places of worship, etc</p> <p>Mandatory use of masks between 6pm and 6am</p>			Up to €1000 (in Campania)
Los Angeles		<p>Local LA counties can choose to introduce policies promoting face coverings for their residents. They should ensure that these policies do not put increased demand on medical grade respirators, such as N95 and surgical masks.</p> <p>Counties should emphasize the use of face coverings in conjunction with evidence-</p>	Zhang et al Texas A&M University; CDC public health guidelines	None indicated	N/A

Country/City	Implementation date	Guidelines overview	Evidence used	Age limits	Fines
		<p>based interventions such as staying at home, physical distancing when completing essential activities and washing hands.</p> <p>Citizens are reminded that face coverings are not a replacement for other evidence-based measures such as physical distancing, frequent hand washing practices, and remaining at home when not doing essential activities.</p> <p>Cloth face coverings are not a substitute for physical distancing and washing hands and staying home when ill, but they may be helpful when combined with these primary interventions.</p>			
New York, New Jersey and Maryland	15 April 2020	<p>New York, New Jersey and Maryland were the first states to mandate the use of masks outside the home including public transport; strongly recommend indoors where social distancing is not possible.</p> <p>New York and New Jersey have worked in unison since the outbreak to attempt to manage the crisis.</p> <p>Exemptions for health complications.</p> <p>Employers must provide face masks for employees for free.</p> <p>Specifies not to use P95 masks due to shortage and they are prioritised for health care workers.</p>	None provided outside of link to CDC page with mask making instructions	Over the age of 2	None identified
Singapore	2 June 2020	The use of masks will continue to be mandatory when people go outside their homes. The use of masks that closely and completely cover the nose and mouth will be	None provided	Masks not recommended for 2 yrs and under	None indicated

Country/City	Implementation date	Guidelines overview	Evidence used	Age limits	Fines
		<p>required as a default. With effect from 2 June, face shields will be treated differently from masks, and will be allowed only for specific exempt groups or settings.</p> <p>In some situations, the wearing of masks may not be practical. In such situations, face shields may be worn. The face shields must be worn properly so that it covers the entire face, from the forehead to below the chin, wrapping around the sides of the face. The groups which can wear face shields are as follows:</p> <ul style="list-style-type: none"> • Children twelve years and below, who may have difficulty wearing and keeping face masks on for a prolonged period of time; • Persons who have health conditions that may result in breathing or other medical difficulties when a mask is worn for a prolonged period of time; and • Persons who are speaking to a group in a classroom or lecture-style setting, where they largely remain at the spot from which they are speaking, and are able to maintain a safe distance away from any other persons <p>In certain settings, face shields may be worn on top of a mask to provide additional protection. For example, wearing a shield can help to protect one's eyes from droplets that may contain virus particles, and can also</p>		Face shields permitted for children under 12	

Country/City	Implementation date	Guidelines overview	Evidence used	Age limits	Fines
		<p>prevent the mask from getting wet. It may also help to stop people from adjusting their masks or touching their faces.</p> <p>The general public are still advised to stay at home and avoid going out where possible. However, for those who need to go out, the wearing of masks, in combination with other preventive measures such as hand hygiene and safe distancing, remain important to help reduce and prevent the spread of COVID-19. We will continue to exercise flexibility in enforcement for groups that may have difficulties wearing a face mask or shield, including children with special needs and young children aged two and above. In particular, mask-wearing is not recommended for young children below the age of two for safety reasons.</p>			
South Korea	25 May 2020	<p>South Koreans are required to wear masks when using public transportation and taxis nationwide as health authorities look for more ways to slow the spread of the coronavirus as people increase their public activities.</p> <p>The Health Ministry advised that masks also will be enforced on all domestic and international flights from Wednesday 27 May. From June, owners of "high-risk" facilities such as bars, clubs, gyms, karaoke rooms and concert halls will be required to use smartphone QR codes to register customers so they can be tracked down more easily when infections occur.</p>	None provided	None provided	None provided

Country/City	Implementation date	Guidelines overview	Evidence used	Age limits	Fines
Spain	In most regions since 12 July	Spain introduced the obligatory use of face masks in public spaces. It should be noted that rules and fines vary from region to region. Most regions require the wearing of masks both in- and outdoors with exemptions in place for medical reasons, swimming, eating and drinking and playing sport	No evidence provided to support decision	Mandatory for all over the age of 6	Fines apply €100 , \$600 and up to \$6000
Taiwan	January 2020	The wearing of face masks is common practice with elevated use due to their proximity to China and the pandemic. Taiwan was a global leading in the introduction on purchasing limits, price setting (to prevent gouging) as well as face mask production and export limits in an effort to ensure domestic mask supply. In January 2020 due to regional proximity to China the Taiwanese Government, acknowledged that there was increased demand for masks coming from Europe and the Americas, introduced daily production and export limits for face masks. This measure was introduced to ensure sufficient domestic resources for the prevention and control of the epidemic. The Government of Taiwan has imposed a ban on exports of face masks on 24 January as well as imposing strict purchasing limits. To ensure an adequate supply of face masks, Thailand, South Korea, and France announced the implementation of export controls on face masks starting from 4 February, 26 February and 3 March,	National Health Command Center and Central Epidemic Command Center https://www.cdc.gov.tw/En https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7270822/	None provided	None indicated

Country/City	Implementation date	Guidelines overview	Evidence used	Age limits	Fines
		respectively. Germany and Russia also announced a ban on exports of face masks on 4 April.			
The Netherlands	N/A	Government resisting calls to introduce guidelines beyond existing requirement that masks be worn when using public transport	N/A	N/A	N/A
UK - England	8 August 2020 (indoors)	<p>Masks to be worn indoors and on public transport from August 8.</p> <p>There are different guidelines for each of the countries in the United Kingdom, those for England have been provided for your information.</p> <p>In England, you must wear a face covering in the following indoor settings (a list of examples for each is included in the brackets):</p> <ul style="list-style-type: none"> • public transport (aeroplanes, trains, trams and buses) • transport hubs (airports, rail and tram stations and terminals, maritime ports and terminals, bus and coach stations and terminals) • shops and supermarkets (places which offer goods or services for retail sale or hire) • shopping centres (malls and indoor markets) • auction houses • premises providing professional, legal or financial services (post offices, banks, building societies, high-street solicitors and accountants, credit unions, short- 	<p>CEN standards</p> <p>ANCOR standards</p> <p>Guidelines on textiles to use in homemade masks provided</p> <p>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</p>	Under 11 it is not mandatory	Fine €110 for being caught shopping without a mask; Transport for London can issue separate fines

Country/City	Implementation date	Guidelines overview	Evidence used	Age limits	Fines
		<p>term loan providers, savings clubs and money service businesses)</p> <ul style="list-style-type: none"> • premises providing personal care and beauty treatments (hair salons, barbers, nail salons, massage centres, tattoo and piercing parlours) • premises providing veterinary services • visitor attractions and entertainment venues (museums, galleries, cinemas, theatres, concert halls, cultural and heritage sites, aquariums, indoor zoos and visitor farms, bingo halls, amusement arcades, adventure activity centres, funfairs, theme parks) • libraries and public reading rooms • places of worship • funeral service providers (funeral homes, crematoria and burial ground chapels) • community centres, youth centres and social clubs • public areas in hotels and hostels • storage and distribution facilities <p>Citizens are expected to wear a face covering before entering any of these settings and must keep it on until you leave unless there is a reasonable excuse for removing it. More detailed advice on the application of these requirements in different settings can be found in the Government's guidance for working safely.</p> <p>Face coverings should be worn in indoor places not listed here where social</p>			

Country/City	Implementation date	Guidelines overview	Evidence used	Age limits	Fines
		<p>distancing may be difficult and where you will come into contact with people you do not normally meet.</p> <p>Face coverings are needed in NHS settings, including hospitals and primary or community care settings, such as GP surgeries. They are also advised to be worn in care homes.</p>			

Table 2: International Health Authority Face Mask Guidelines

Authority	Implementation date	Guidelines overview	Evidence used	Age limits	Fines
CDC	Updated 16 July 2020	<p>CDC recommends that people wear masks in public settings and when around people who don't live in your household, especially when other social distancing measures are difficult to maintain.</p> <p>Masks may help prevent people who have COVID-19 from spreading the virus to others.</p> <p>Masks are most likely to reduce the spread of COVID-19 when they are widely used by people in public settings.</p> <p>Masks should NOT be worn by children under the age of 2 or anyone who has trouble breathing, is unconscious, incapacitated, or otherwise unable to remove the mask without assistance.</p>	<p>https://www.cdc.gov/coronavirus/2019-ncov/prevent-getting-sick/cloth-face-cover-guidance.html</p>	Advised that children under 2 should not wear masks	N/A
European Centre for Disease Prevention and Control (ECDC)	8 April 2020	<p>The use of medical face masks by healthcare workers must be given priority over the use in the community.</p> <p>The use of face masks in public may serve as a means of source control to reduce the spread of the infection in the community by minimising the excretion of respiratory droplets from infected individuals who have not yet developed symptoms or who remain asymptomatic. It is not known how much the use of masks in the community can contribute to a decrease in transmission in addition to the other countermeasures.</p>	<p>https://www.ecdc.europa.eu/en/publications-data/using-face-masks-community-reducing-covid-19-transmission</p>	None provided	N/A

Authority	Implementation date	Guidelines overview	Evidence used	Age limits	Fines
		<p>The use of face masks in the community could be considered, especially when visiting busy, closed spaces, such as grocery stores, shopping centres, or when using public transport, etc.</p> <p>The use of non-medical face masks made of various textiles could be considered, especially if - due to supply problems - medical face masks must be prioritised for use as personal protective equipment by healthcare workers.</p> <p>The use of face masks in the community should be considered only as a complementary measure and not as a replacement for established preventive measures, for example physical distancing, respiratory etiquette, meticulous hand hygiene and avoiding touching the face, nose, eyes and mouth.</p> <p>Recommendations on the use of face masks in the community should carefully take into account evidence gaps, the supply situation, and potential negative side effects.</p> <p>Wearing a face mask could be considered, especially</p> <ul style="list-style-type: none"> • when visiting busy, closed spaces, such as grocery stores, shopping centres, etc.; • when using public transport; and • for certain workplaces and professions that involve physical proximity to many other people (such as members of the police force, 			

Authority	Implementation date	Guidelines overview	Evidence used	Age limits	Fines
		<p>cashiers – if not behind a glass partition, etc.) and when teleworking is not possible</p> <p>For communication purposes, it is important to emphasise that the people who use face masks in the community want to protect their fellow citizens in case they are infected. They do not want to unknowingly spread the virus, and wearing a mask should not be misconstrued that they want to protect themselves from others. Wearing a mask is not an act of selfishness and should be promoted as an act of solidarity.</p>			
WHO	Updated advice on 5 June 2020	<p>On June 5 2020 the WHO revised its advice pertaining to the community use of face masks.</p> <p>Whilst acknowledging that, 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. Based on this and emerging data on a- and pre-symptomatic COVID-19 patients the following advice was published as guidelines to public health officials and decision makers globally.</p> <p>Decision makers should apply a risk-based approach focusing on the following criteria when considering or encouraging the use of masks for the general public:</p> <p>Purpose of mask use: if the intention is preventing the infected wearer transmitting the virus to others (that is, source control) and/or to offer protection to the healthy wearer against infection (that is, prevention).</p>	https://www.who.int/emergencies/diseases/novel-coronavirus-2019/advice-for-public/when-and-how-to-use-masks	WHO recommends that children under 2 years of age not wear masks	N/A

Authority	Implementation date	Guidelines overview	Evidence used	Age limits	Fines
		<p>Risk of exposure to the COVID-19 virus due to epidemiology and intensity of transmission in the population: if there is community transmission and there is limited or no capacity to implement other containment measures such as contact tracing, ability to carry out testing and isolate and care for suspected and confirmed cases.</p> <p>Vulnerability of the mask wearer/population: for example, medical masks could be used by older people, immunocompromised patients and people with comorbidities, such as cardiovascular disease or diabetes mellitus, chronic lung disease, cancer and cerebrovascular disease.</p> <p>Setting in which the population lives: settings with high population density (e.g. refugee camps, camp-like settings, those living in cramped conditions) and settings where individuals are unable to keep a physical distance of at least 1 metre (3.3 feet) (e.g. public transportation).</p> <p>Feasibility: availability and costs of masks, access to clean water to wash non-medical masks, and ability of mask wearers to tolerate adverse effects of wearing a mask.</p>			

Table 3: Australian State and Territory Face Mask Guidelines Overview

State	Implementation date	Guidelines overview	Evidence used	Age limits	Fines
Australian Capital Territory		<p>Face masks are not required in the ACT; health guidelines recommend wearing one:</p> <ul style="list-style-type: none"> have COVID-like symptoms such as coughing and sneezing, and need to leave your home for an essential reason (like getting tested, seeking medical help or shopping for essential items like food or medication) are in quarantine or self-isolation and need to leave your home for medical attention are over 60 with underlying health problems and are unable to stay 1.5 metres away from others have underlying health issues and are unable to stay 1.5 metres away from others 	N/A	N/A	N/A
Victoria	2 August 2020	<p>Mandatory outside the home, some exceptions including:</p> <ul style="list-style-type: none"> • The rules don't apply to kids under 12. • Teachers don't have to wear masks when teaching in class (but students do). All Victorian schools are returning to remote learning, however, so this exception is no longer broadly relevant. • If you have a medical condition that precludes wearing a mask, you don't need one (but you'll want a letter from your doctor confirming that if you do venture out in public). 	https://www.dhhs.vic.gov.au/coronavirus/updates	Under 12 not mandatory; under 2 not recommended	Various start at \$200 and can go as high as \$5000 and prosecution

State	Implementation date	Guidelines overview	Evidence used	Age limits	Fines
		<ul style="list-style-type: none"> If it's not practical to wear a mask (e.g. while running), you don't need one, but you should still be carrying a face covering. 			
New South Wales	2 August 2020	<p>NSW Guidelines recommend wearing a mask:</p> <ul style="list-style-type: none"> If it is hard to maintain 1.5 mtrs of physical distance In areas where there has been community transmission In high risk indoor areas including public transport, supermarkets, shops, churches and other places of worship When caring for vulnerable people If working in a café, restaurant, pub, club or other high-risk indoor setting. <p>** wearing a mask in any of these settings is not mandatory, it is highly recommended</p>	N/A	N/A	N/A
Queensland	Current	Not necessary to wear a face mask unless advised by a medical professional or you are caring for someone who might be infected with Covid	N/A	N/A	N/A
South Australia	N/A	N/A	N/A	N/A	N/A
Western Australia	Current	No guidelines provided	N/A	N/A	N/A
Tasmania	Current	Do not need to wear a facemask, unless caring directly for someone suspected of being infected with COVID-19. This advice may change should there be increased risk of infection in Tasmania.	https://coronavirus.tas.gov.au/keeping-yourself-safe/what-you-can-do/facemasks	N/A	N/A

State	Implementation date	Guidelines overview	Evidence used	Age limits	Fines
Northern Territory		N/A	N/A	N/A	N/A