

## In brief

### Surgical masks, eye protection and PPE guidance

27 January 2022

#### Summary

- No evidence was found for or against the use of surgical masks in hospitals specifically during the endemic phase of the pandemic.
- There is some debate on how best to develop transmission-based precautions that are effective as changes to universal precautions are made in the wake of COVID-19. <sup>1</sup>
- While ocular transmission has been proposed as a transmission route for SARS-CoV-2, via the nasolacrimal duct into the respiratory tract, there is no evidence of definite ocular transmission of SARS-CoV-2. <sup>2-4</sup>
- There is limited evidence on the effectiveness of eye protection in preventing SARS-CoV-2 infections. A recent systematic review published in November 2021 found four of the five included studies showed statistically significant and substantial reductions in SARS-CoV-2 infections favouring eye protection. <sup>5</sup>
- The Clinical Excellence Commission (CEC) in NSW and the Australian Government recommends that eye protection be worn when providing direct care for patients with suspected SARS-CoV-2, close contacts, or when there is risk of body substances splashing or spraying into the conjunctiva. <sup>6-10</sup>
- Some organisations have advice based on risk assessment, which generally considers COVID-19 status, personal protective equipment (PPE) type and situation. <sup>11-14</sup>

#### Evidence

##### Surgical masks in the endemic phase in hospitals

- Since the start of the pandemic, numerous guidelines and policies have been developed internationally to provide guidance on PPE in the wake of COVID-19.
- There is some debate on how best to develop transmission-based precautions that are effective as [changes to universal precautions](#) are made in the wake of COVID-19. <sup>1</sup>
- No evidence was found for or against the use of surgical masks in hospitals, specifically during the endemic phase of the pandemic.

##### Eyewear to protect against COVID-19

###### Background

- While [ocular transmission](#) has been proposed as a transmission route for SARS-CoV-2, via the nasolacrimal duct into the respiratory tract, there is no evidence of definite ocular transmission of SARS-CoV-2. <sup>2-4</sup>

###### Evidence

- A [systematic review](#) published in November 2021 included five observational studies testing face shields, goggles, and wraparound eyewear on 7,567 healthcare workers. Four of the studies showed statistically-significant and substantial reductions in SARS-CoV-2 infections favouring eye protection, whilst one favoured no eye protection. There was high heterogeneity in the studies, and none adjusted for potential confounders. <sup>5</sup>
- An earlier systematic review from June 2020 found the use of [eye protection](#) was associated with fewer SARS-CoV-2 infections; however there have been some criticisms with the inclusions criteria of the meta-analysis with [alternatives showing](#) non-statistically-significant results for eye protection. <sup>15, 16</sup>

- A [Lancet commentary](#) outlines that there is circumstantial evidence that person-to-person transmission can be mediated via viral-laden particles that access the eyes and tear film, and advocates eye protection.<sup>17</sup> A letter supports this suggesting [eye protection](#) has been associated with fewer infections.<sup>18</sup> Whilst [another commentary](#) advocates for the omission of goggles.<sup>19</sup>
- A [simulation study](#) found safety glasses and goggles performed equally, and both brought the number of droplets/aerosols reaching the eye down to 0 after a simulated cough.<sup>20</sup>

### Grey literature

- The [Clinical Excellence Commission](#) in NSW and the [Australian Government](#) recommends that eye protection should be worn when [providing direct care](#) for patients with suspected SARS-CoV-2, close contacts, or when there is risk of body substances splashing or spraying into the conjunctiva.<sup>6-10</sup>
- The World Health Organization, Australian National COVID-19 Clinical Evidence Taskforce and the Australian Commission on Safety and Quality in Health Care recommend that healthcare workers wear goggles or face shields to avoid contamination of mucous membranes, especially when performing [aerosol-generating procedures](#), [procedures generating splashes or sprays of blood and body substances](#), or [collecting laboratory specimens](#).<sup>8, 21-24</sup>
- Some organisations have advice based on a risk assessment. They are as follows:
  - The Clinical Excellence Commission (CEC) in NSW have a [risk assessment guide](#) for PPE for the care of patients with COVID-19, which includes eye protection in patients with confirmed COVID-19 or acute respiratory infection.<sup>11</sup>
  - A [decision aid](#) by the Australian National COVID-19 Clinical Evidence Taskforce recommends protective eye wear based on a risk assessment. It is recommended for higher risk and can be used as per standard and transmission-based precautions in lower risk groups.<sup>12</sup>
  - A [BMJ visual summary](#) of PPE guidance (April 2020) with advice on type of eye protection by situation.<sup>13</sup>
  - South Australia government recommends eye protection according to risk factors and aerosol-generating procedures.<sup>14</sup>
- The United States Occupational Safety and Health Administration (OSHA) recommends [goggles as primary eye protection](#) as they form a complete seal around the eyes.<sup>25</sup> Eye protection is worn in combination with other PPE and face shields are [not recommended as a substitute for face masks](#).<sup>26, 27</sup> Most other recommendations do not generally distinguish between the primary and secondary types of eye protection.

### PPE guidance in NSW

- The [Clinical Excellence Commission](#) has COVID-19 infection prevention and control guidance for healthcare settings in NSW, including advice on PPE.<sup>28</sup>
- [Australian infection control guidance](#) from healthcare workers in the context of COVID-19 generally aligns with that of the CEC.<sup>9</sup>
- A [Cochrane review](#) on PPE for preventing highly infectious diseases in healthcare staff found low- to very low-certainty evidence that covering more parts of the body leads to better protection. Modifications to PPE design, such as tabs to grab, may decrease the risk of contamination. For donning and doffing procedures, following CDC doffing guidance may reduce contamination and increase compliance. Face-to-face training in PPE use may reduce errors more than folder-based training.<sup>29</sup> Other systematic reviews have shown PPE reduces the risk of infection, varying for type of PPE.<sup>30-33</sup>

To inform this brief, the PubMed and Google searches were conducted using terms related to COVID-19 AND (eye protection OR goggle OR glasses) OR (endemic AND mask\* AND hospital) OR (personal protective

equipment) on 18 January 2021. The Critical Intelligence Unit maintains a living evidence table on [COVID-19 transmission](#) and published an [evidence brief on ocular transmission](#).

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