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A global perspective on glasses fogging



INTRODUCTION

Along with ‘COVID-19’, ‘lockdown’ and ‘physical’ or ‘social’ distancing, the phrase ‘glasses fogging’ has become all too familiar in 2020.

Early in the pandemic, frontline healthcare workers reported experiencing blurred vision resulting from glasses steaming up when they are worn together with a facemask. It is reasonable to assume that as mask-wearing mandates have increased worldwide, so has the incidence of glasses fogging among the public.

A recent survey, commissioned by CooperVision and conducted by YouGov, was designed to better understand this phenomenon, establishing how often the problem is experienced, and how people are coping with it.

The insights gathered from eight different countries are shared in this report, along with information that eye care professionals (ECPs) can use to help their patients who are struggling to achieve comfortable clear vision when wearing masks.

Background

Transfer of droplets from the mouth and nose of a person infected with coronavirus disease (COVID-19) is understood to be the most common route of infection.^{1,2} Reducing exposure to exhaled air from people by wearing a mask is one of the key strategies that has been widely adopted to help limit the spread of the virus.

Directives for mask wearing by the public vary between countries, and as seen in the US, within countries, too. The regions chosen to participate in the survey were broadly representative of the different approaches in place around the world at the time of the survey. This ranged from Italy, where they are mandated to be worn in outdoor spaces across the country, and indoors everywhere except in private homes,³ through to Sweden where, at the time of the survey, there was no recommendation for anyone other than healthcare workers to use them (Table 1).⁴

Mask-wearing habits have also changed over time. For example, between June and October, a 30% increase in use at work was reported in Canada, with both Canada and the UK showing the greatest increase in wearing in shops and on public transport.⁵ A recent online survey of seven European countries found that while just over half of glasses wearers report not liking wearing a mask (56%), they were aware it is the right thing to do.⁶

Table 1: Summary of mask wearing instructions in each country at the time of the YouGov survey (October 2020)

Mask wearing directives at the time of the survey

(when in public or indoors where social distancing not possible)

AUSTRALIA

Mandatory in states with higher COVID-19 rates (Victoria); recommended in other states only

CANADA

Mandatory in some provinces, and strongly advised by Health Canada country wide

ITALY

Mandatory to wear everywhere except in private homes

JAPAN

Widespread wear and is considered the social norm

THE NETHERLANDS

Mandatory on public transport, in taxis and at the airport, strongly advised indoors in public spaces

SWEDEN

No mandated mask wearing unless frontline healthcare workers treating COVID-19 positive patients

UNITED KINGDOM

Mask wearing mandatory indoors in public spaces

UNITED STATES

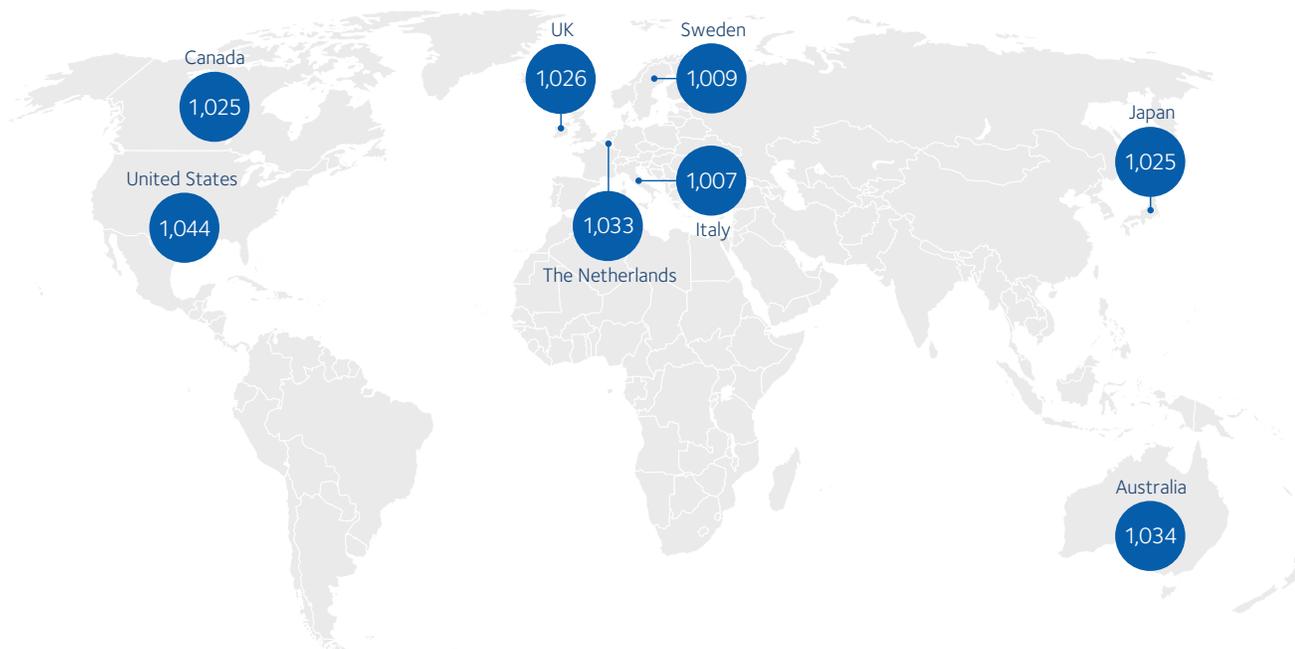
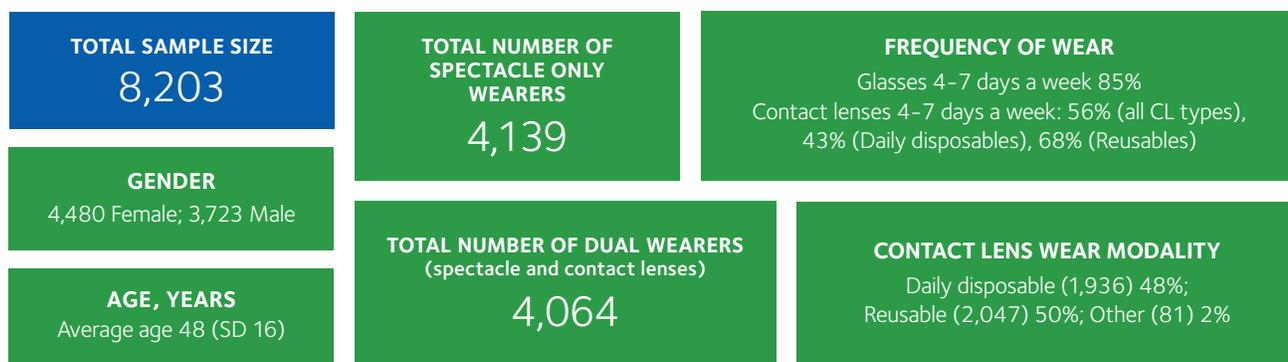
Mandatory in 34 states while in public spaces



Survey demographics

The online survey was conducted in October 2020 in eight countries (Table 2).⁷ The total sample size was 8,203 adults aged 18 or over, split equally into glasses only wearers (n=4,139) and **dual users of both glasses and contact lenses** (n=4,064) (referred to henceforth in this report as dual wearer). Just over one thousand responses were received from each country, evenly split between glasses only and dual wearers (circa 500 in each group in each country). Of the dual wearers, 50% wore reusable and 48% daily disposable contact lenses, with just over half wearing them between 4-7 days a week (56%). Reusable lenses were worn every day of the week by 43% of wearers, compared to daily disposables where a more even split in frequency of use was reported: 22% everyday, 22% 4-6 days and 23% 2-3 days.

Table 2: Glasses fogging YouGov survey demographics⁷



Results

The majority of respondents reported glasses fogging when wearing a facemask.

More than 8 out of 10 people had experienced glasses fogging, with the same incidence in both the glasses only and dual wearer groups.

This result echoes a European study, where 86% glasses wearers agreed wearing them with a mask created problems for them as their glasses tend to fog up.⁶

86%

of people who **only wear glasses** have experienced fogging when wearing their glasses and mask together n=3,461

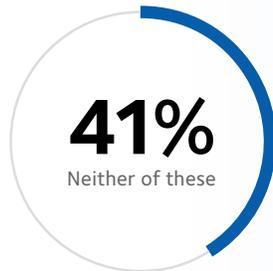


87%

of people who **wear both glasses and contact lenses** for their vision correction have experienced fogging when wearing their glasses and mask together n=3,347



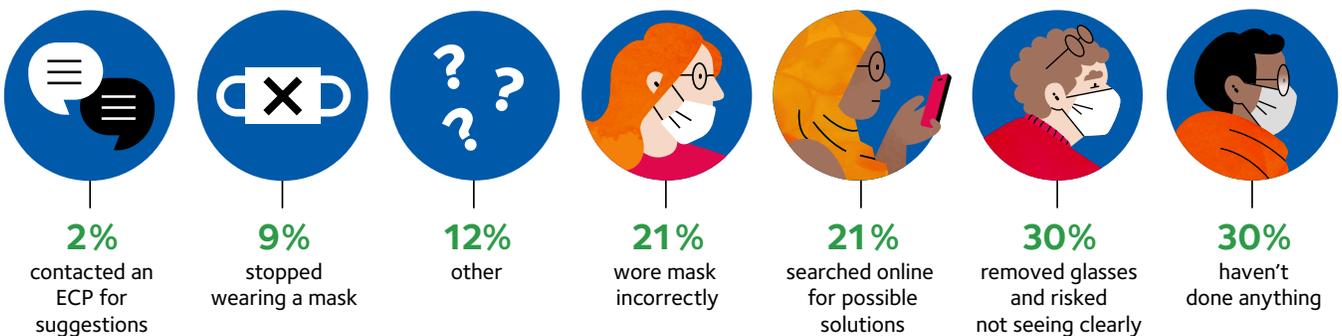
Action taking by dual wearers to avoid fogged glasses when wearing mask, n=2,906



While there was an equally common experience of glasses fogging between both glasses only and dual wearers, the action taken to alleviate the issue was quite different. **Nearly four out of ten** (38%) dual wearers said they had worn their **contact lenses more frequently**, and three out of ten (31%) had worn contact lenses in situations or for activities where they previously (pre COVID-19) wore glasses.

Glasses only wearers reported a wide variety of actions they had taken to help reduce fogging. Thirty percent had taken no action at all. A further **30% had removed their glasses** and risked not seeing clearly, an action that was significantly more common in both Australia (39%, $p < 0.001$) and the UK (41%, $p < 0.001$). Commitment to mask wearing was evident, with just 9% reporting that they had removed their mask to stop fogging issues. Rather than remove it completely, people were **more likely to have worn their mask incorrectly**, for example not covering their nose, in an effort to reduce fogging (21%).

Action taking by glasses wearers to avoid fogged glasses when wearing a mask, n=2,978



Behavior driven by different experiences

Incorrect mask wearing was significantly higher than average in Japan (35%, $p < 0.001$) **and Italy** (26%, $p < 0.01$), both countries with some of the highest rates of mask wearing in the world. Most interesting was a difference between these two regions in attitudes to mask removal: in Japan, 21% had removed their mask due to fogging, significantly higher than the 9% survey average ($p < 0.001$), but in Italy, despite high rates of wearing and fogging issues, only 3% elected to remove their mask ($p < 0.001$). The fact that mask wearing is socially 'expected' in Japan, but legally mandated in Italy may partially explain this difference.

In terms of information, around **one in five** survey respondents had searched for solutions to glasses fogging **online**, but **only 2% had contacted their ECP for advice**. Given the direct connection between vision and glasses it is perhaps surprising that so few sought professional advice. A relatively low proportion of glasses only wearers were found to have considered contact lenses as a solution to fogging (11%), although this option was significantly more popular in the **younger age group**, 18–34 years, with **one quarter** (24%, $p < 0.001$) thinking of contact lenses.

Overall, the level of contact lens consideration was lower than that reported in a recent survey of seven European countries, where nearly half (47%) agree they would be interested to try contact lenses as a solution to glasses fogging up when they wear a face mask.⁶ Given the increased use of contact lenses reported by dual wearers, it appears they are a useful option to help combat glasses fogging, and should be part of the discussion the ECP holds with patients when advising on the issue.

Refractive surgery is an alternative being sought by some patients with significant increases in procedures being reported in the US, some of which are related to glasses fogging issues, some of which simply due to patients having the time with changes in their lives to be able to consider it more seriously.⁸ While this may be the right solution for some patients, for others, the ECP is well-placed to offer the flexible correction of dual wear, including contact lenses.

Using this in practice

The combined experience of more than eight thousand people demonstrates how widespread the issue of glasses fogging is. Whilst it is reassuring to see broad commitment to mask wearing, it is concerning to note the number of people wearing their mask incorrectly, or leaving themselves with uncorrected vision to try to alleviate the issue. Recognizing these issues is helpful and enables steps to be taken to support patients. Three key tips are outlined below:



Be proactive

A key insight from the survey relates to the extremely low number of people who thought to ask their ECP for advice to help with glasses fogging. Recognizing that just 2% did this, it is crucial for ECPs to appreciate the need to be **proactive in offering advice**. During routine checks the **ECP should always ask about the issue of glasses fogging**. For those patients who are not due to be seen, it would be helpful to reach out with advice via regular practice communications and by placing information on the practice website. That information could share tips to help reduce the issue, along with recommendation of arranging an appointment to discuss contact lenses as a way to eliminate fogging completely (*Figure 1 shown on next page*).



Provide tips on reducing glasses fogging

Patients can be advised to use anti-fogging wipes or sprays. Reducing the flow of exhaled air out of the top of the mask is helpful and can be achieved by improving the fit of the mask against the face, and if required, using medical tape to seal the top edge (*Figure 1 shown on next page*). Taking these steps also helps to reduce another related issue, mask associated dry eye (MADE).^{9,10} Reducing the upward flow of air helps to minimize both condensation forming on glasses lenses, and the drying effect of air being forced over the ocular surface, which can result in dry eye symptoms.



Consider contact lenses

The survey highlights the **extra flexibility** dual wearers benefit from, with nearly four in ten wearers choosing to avoid fogging by wearing their contact lenses more. When seeing contact lens wearers for routine checks, ECPs should bear in mind that wear habits may have changed. Remember to ask the patient if that is the case, and check if their current lens type and modality still suit their pattern of use, as a move to daily disposables may be more applicable for their current wear patterns. **Proactive recommendation of contact lenses to glasses only wearers** is also advisable to help offer a way to eliminate glasses fogging completely.

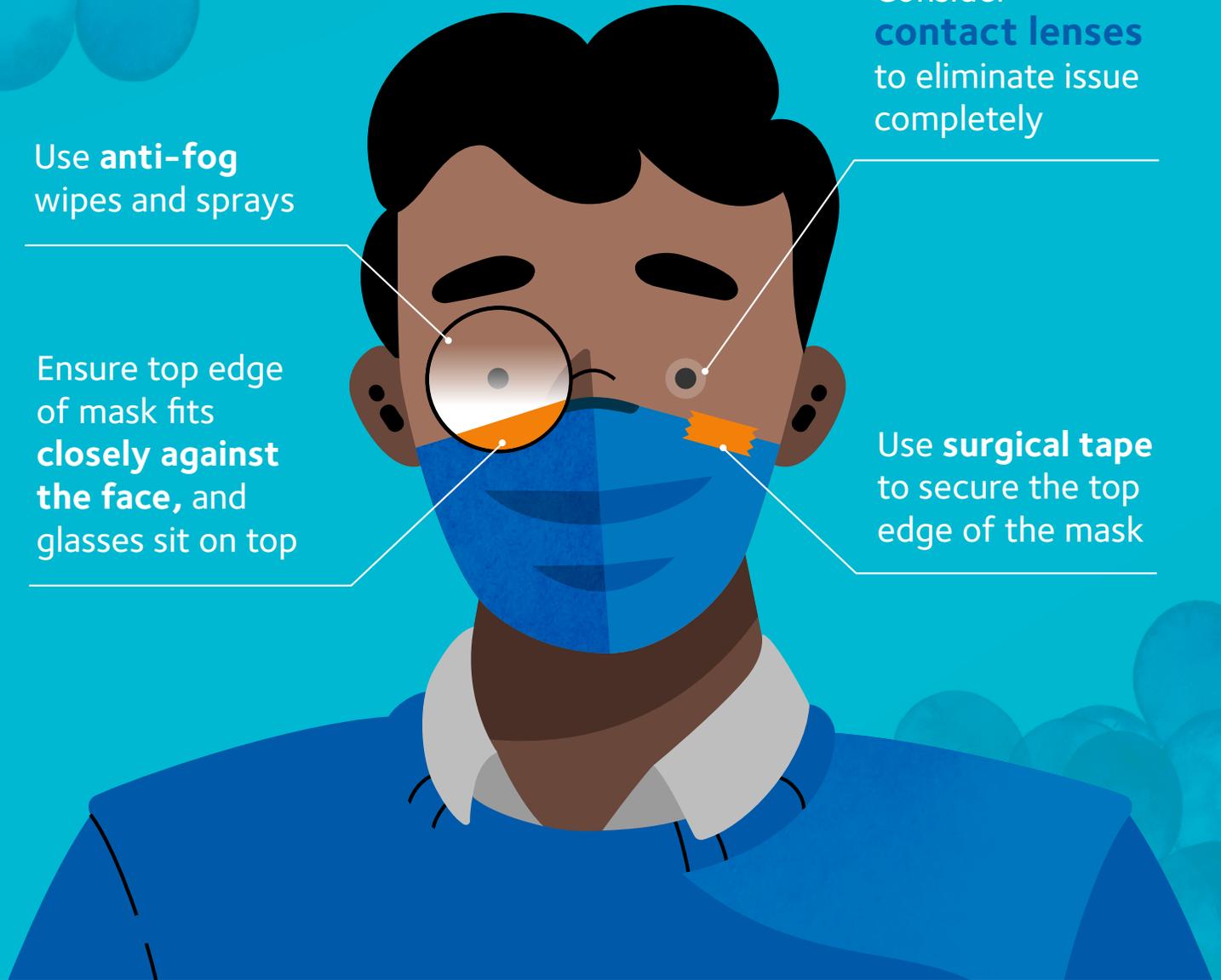
Figure 1

Consider **contact lenses** to eliminate issue completely

Use **anti-fog** wipes and sprays

Ensure top edge of mask fits **closely against the face**, and glasses sit on top

Use **surgical tape** to secure the top edge of the mask



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