

How to avoid getting COVID-19: a guide for the perplexed

John Launer 

In some countries including the United Kingdom and United States, much of the population has effectively stopped taking any precautions against COVID-19. Collectively, people have decided to 'live with COVID-19' – as if this means making no attempts to mitigate it. Doctors appear to be no exception. I attended a medical conference in June where fewer than five per cent of the audience wore masks. Emergency doors were shut rather than kept open for ventilation. Because of this I only entered the auditorium for my own presentation, which was on a stage at a distance from the audience. I asked if the other presentations could be streamed so I could watch them on a screen in another room. I wore an N95 mask in the foyer and held an interactive workshop outdoors. Although I went to two dinners for the speakers, I asked to sit near an open door or window. Everyone was kind and obliging about my requests, but I was the only person among several hundred doctors to behave in this way. Many participants came away with COVID-19. I did not. Although luck probably played a part, I doubt if it was the only factor. Afterwards, I discovered that a conference organisation in California now requires indoor masking and provides catering outdoors, as well as doing case tracing. After an event in February when they followed these rules, they evidently had no cases of COVID-19.¹

My experience led me to think there is a need for simple guidance to support anyone who is unhappy about 'living with COVID-19' and wants to avoid it if possible without becoming a hermit. Many people, even doctors, seem have become defeatist about COVID-19 and expect they will catch it anyway, or they are perplexed by contradictory information and advice. Public health authorities and governments have probably contributed to this by sometimes putting out inaccurate guidance. This includes emphasising the spread of the virus by droplets rather than airborne transmission,² downplaying the importance of indoor ventilation,³ or promoting a false

dichotomy between infection control and economic prosperity.⁴ More confusion has been generated by broadcasters and social media, with a tendency to polarise views, amplify conspiracy theories, and privilege controversy over established facts. A digest of simple and accurate guidance is surprisingly hard to find, so what follows is my own version. It is meant not only for colleagues planning to attend conferences or other gatherings, but for passing on to anyone who thinks it is better to try and avoid COVID-19 than to catch it.

SETTING BOUNDARIES

First, you should have your vaccinations, not because they will necessarily prevent you from getting COVID-19, but because they will reduce your risk of hospitalisation and death if you do.⁵ Second I would encourage people to set their own boundaries wherever possible, ignoring the pressure of what everyone else is doing. This is especially the case if you are at risk of serious complications (for example, older, immunosuppressed or clinically vulnerable, Black or south Asian).⁶ Embarrassment should not stop you from being the only person who is wearing a mask, for example, or asserting your right to do so. I have never been challenged for being the 'odd one out.' If I was, I would say that I am averse to risk or explain it is because of a medical condition.

Next, it is worth checking two figures at any time. One is the percentage of the population in your country or region who are estimated to be carrying the virus. The other figure is how transmissible the dominant variant is (the so-called R0 or basic reproduction number). This represents how many others each infected individual is likely to pass the virus on to. These figures are readily available in many places and usually reported in the press. For example, at the time of writing, an estimated four per cent of the population of England has COVID-19, and the dominant Omicron variant has an R0 of around 8. For comparison, the same figures a year ago in relation to the Delta variant were 1.5 per cent and 5, respectively. Put simply, if I went into a room today with 100 people, four of them would be likely to have COVID-19. which is over twice the number on this day last

year. My chance of catching it from any of them would also be more than 50 per cent higher than a year ago.

Knowing these statistics does not tell you exactly how to behave but allows you to adjust your activities according to the facts and not in response to the latest tweet or post on Facebook. If the conference had happened a year ago, for example, I might have been happier to spend more time in the auditorium. If it took place during the surge in the pandemic that arrived afterwards, I would not have gone. Personally, I will not go to another event until the estimated rate in the population falls below 2 again or (improbably) a less transmissible variant emerges. Although anyone's threshold for risk must be arbitrary to some extent, you can select a figure of 'prevalence times transmissibility' for yourself, such as 10, and say that you will avoid social mixing above that level. Those who have already had COVID-19 can factor in the period of protection this may have given them, although this may be reducing to only a few weeks as variants evolve.⁷

MASKS AND VENTILATION

Wearing masks and keeping your distance from other people are definitely worthwhile. The evidence for these is more convincing than for handwashing.⁸ Well-fitting respirator masks like N95 provide better protection than surgical masks. Cloth masks are less protective but better than no mask at all. You can wear an N95 mask several days running if you keep it clean and dry. There does not seem to be evidence supporting the use of visors or perspex screens, nor would you expect any, since air gets round these, bearing the virus with it.

A team at Oxford University has produced an excellent chart showing the relative risks of catching the virus from someone who is carrying it, according to the setting you are in and what precautions you are taking. (see [figure 1](#))⁹ Overall, it offers a simple message: you would be unlucky to catch COVID-19 by spending a short time outdoors with a few people even if unmasked, but you are at high risk if you spend a long time in a crowded and poorly ventilated indoor space. In-between scenarios are proportionate in the risk they present. If you also take account of the current rate of infection in the population and R0, the chart can give you a good idea of the risk of any activity you are thinking of doing. This will obviously not be an exact figure but can inform a rational decision about what to do.

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Type and level of group activity	Low occupancy			High occupancy		
	Outdoors and well ventilated	Indoors and well ventilated	Poorly ventilated	Outdoors and well ventilated	Indoors and well ventilated	Poorly ventilated
Wearing face coverings, contact for short time						
Silent	Low	Low	Low	Low	Low	Medium
Speaking	Low	Low	Low	Low	Low	Medium
Shouting, singing	Low	Low	Medium	Medium	Medium	High
Wearing face coverings, contact for prolonged time						
Silent	Low	Low	Medium	Low	Medium	High
Speaking	Low	Low*	Medium	Medium*	Medium	High
Shouting, singing	Low	Medium	High	Medium	High	High
No face coverings, contact for short time						
Silent	Low	Low	Medium	Medium	Medium	High
Speaking	Low	Medium	Medium	Medium	High	High
Shouting, singing	Medium	Medium	High	High	High	High
No face coverings, contact for prolonged time						
Silent	Low	Medium	High	Medium	High	High
Speaking	Medium	Medium	High	High	High	High
Shouting, singing	Medium	High	High	High	High	High

Risk of transmission
 Low ■ Medium ■ High ■

* Borderline case that is highly dependent on quantitative definitions of distancing, number of individuals, and time of exposure

Figure 1 COVID-19 risk chart. From: Jones NR, Qureshi ZU, Temple RJ et al 2020⁹

You can supplement this information by estimating the level of carbon dioxide in any situation. This is a measure of the exhaled breath of others, which will contain their active viral particles. It is therefore a good proxy for the concentration of COVID-19 in the air. Outside air has a carbon dioxide concentration of 412 ppm. A safe level from the point of view of COVID-19 transmission is reckoned to be up to 800–1000 ppm. One informal study in New Zealand has measured levels in various settings including public transport.¹⁰ In a crowded bus this went up to nearly 6000 ppm. In other words, the equivalent of one in seven breaths you took while there would consist of other people’s possibly infected breath. If you are really keen, you can even measure carbon dioxide concentration by using a monitor, similar to the carbon monoxide detector you may keep near your gas boiler. Portable and quite cheap, it will give you an almost instant reading of how much air quality improves when you open a door.

REALISM AND TOLERANCE

The guidance above is not meant as encouragement to become obsessive about the risks of COVID-19. Its aim is to

demonstrate how most people can probably lessen the risk of catching the illness to some degree if they equip themselves with some fairly simple information and possibly a monitor. Almost anyone can choose to avoid large indoor gatherings, especially when the numbers of people affected in the population are high. Even those who have to work in such spaces can choose to wear masks and encourage others to do so, as well as opening doors and windows. People who live with others who cannot avoid COVID-19 – like parents and grandparents sharing a house with schoolchildren – can spend as much time with them outdoors as they can, not to mention lobbying schools to instal carbon dioxide monitors and better ventilation.

The guidance is also not meant as a panacea. I have no illusions that I can protect myself from COVID-19 completely, although I pursue every easy way of avoiding it. There are many less fortunate people whose circumstances limit how much control they have. Clinically extremely vulnerable (CEV) people will still feel alarmed at the risks presented by others who take no precautions. Equally, there are many who feel that the effects on society of any collective

restrictions are too high a price to pay, either to protect themselves or others. There are wider political issues, like the need for governments to protect their health service and its workforce. However, as far as decision-making for individuals is concerned, the situation is summed up by the favourite motto of our time: we are where we are. After two and a half years of the pandemic, we are probably at the stage where everyone needs to exercise more realism and tolerance about the diversity of views and behaviour in relation to COVID-19, especially in countries that are no longer mandating restrictions. I hope those of us who make an active choice to minimise our risks can continue to do so.

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