

Paper for SAGE – distance, time, handshakes

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12 March 2020

Safe distance from a case

1. PHE COVID-19 contact tracing guidance uses ‘ ≤ 2 metres of the case for >15 minutes’ as one of the criteria for contact tracing.
2. Experimental data suggest that few droplets will be expelled beyond 2m:
 - a. *“substantial increase in airborne exposure to droplet nuclei exhaled by the source manikin when a susceptible manikin is within about 1.5 m of the source manikin”*. Indoor Air, 2017, 27 (2), 452-462
 - b. Talking: *“Almost 90 per cent fell within a distance of 0.3 m.”* Coughing: *“Fifteen per cent of the droplets could reach the back wall, which is more than 0.5 m away.”* [J R Soc Interface](#). 2009 Dec 6; 6(Suppl 6): S703–S714.
 - c. *“Fewer than 10 per cent of these large droplets travelled as far as 5 ½ feet.”* Am J Med 1948;4:690.
3. Epidemiological data suggest that transmission at a distance of >1 m is possible, although this is in a sick patient in a health care setting.
 - a. *“four of eight students who were in the same cubicle but were not within 1 m of the index case-patient, contracted SARS.”* Emerg Infect Dis 2004;10(2):269-76.
4. Therefore, in terms of risk of transmission via close contact in the community, 1 metre is a minimum, 2 metres is precautionary.

Time in proximity to a case:

5. Transmission can occur quickly therefore there is no entirely safe minimum duration.
6. Epidemiological data from SARS suggest, unsurprisingly, that risk increases with duration of exposure.

a. *“Exposure for ≥ 30 min at a distance of ≤ 1 m was the strongest risk factor”*
Epidemiol Infect. 2007 Aug; 135(6): 914–921.

7. THE PHE guidance for COVID-19 contact tracing that specifies ‘>15 minutes’ is therefore a pragmatic and possibly conservative threshold for the purposes of contact tracing.

Handshakes

8. There is no evidence that avoiding handshakes reduces the risk of infection but on first principles it may result in a minor reduction in risk.
9. Shaking hands may pose a risk of transmission if the hands of one party are contaminated and the virus is subsequently transferred to eyes, nose or mouth by your hands.
10. A handshake is only one of many ways that hands might become contaminated. Touching door handles, desks, handrails and other surfaces is much more frequent
11. If hands of both parties are clean, shaking hands poses no risk.
12. Therefore, frequent hand washing and avoidance of touching your eyes, nose and mouth are more important measures than avoiding handshakes.
13. If people wish to avoid handshakes, it is reasonable.