

Understanding COVID19
tests and what it means...

How does the COVID19 test work?

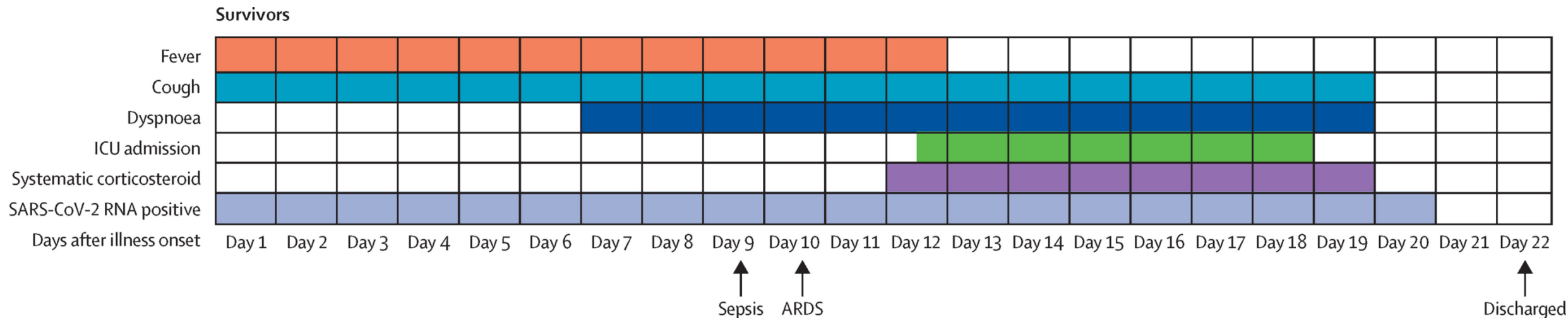
- The COVID19 test uses a technique called PCR (Polymerase Chain Reaction)
- It works by testing for viral genetic material called RNA
- The tests use samples taken from the nose and throat
- A positive test means viral genetic material is present, but it will not tell you if the virus is viable (live) or not (dead).
- The test is most accurate when done within 7 days of symptoms starting. A positive test result taken at that time indicates infection.



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How long do infected persons shed virus?

- Most patients shed virus for 13-24 days
 - Xu et al, Clinical Infectious Diseases, 2020
 - Zhou et, The Lancet, 2020
- A few cases known to shed virus for 60 days
 - Li et al, American Journal of Tropical Medicine and Hygiene 2020)
 - Liu et al, Journal of infection, 2020
- Detecting viral genetic fragments is of no value. There are patients that keep shedding viral fragments, but are not infectious any more.



How long are patients infectious for?

- Studies suggest infected persons are infectious possibly 2 days before they start having symptoms, and in the first 7-10 days of symptoms.
- Study from Singapore reported that patients are no longer infectious after 11 days.

[https://www.ams.edu.sg/view-pdf.aspx?file=media%5c5556_fi_331.pdf&ofile=Period+of+Infectivity+Position+Statement+\(final\)+23-5-20+\(logos\).pdf](https://www.ams.edu.sg/view-pdf.aspx?file=media%5c5556_fi_331.pdf&ofile=Period+of+Infectivity+Position+Statement+(final)+23-5-20+(logos).pdf)

They also state:

“viral RNA detection by PCR does not equate to infectiousness or viable virus”

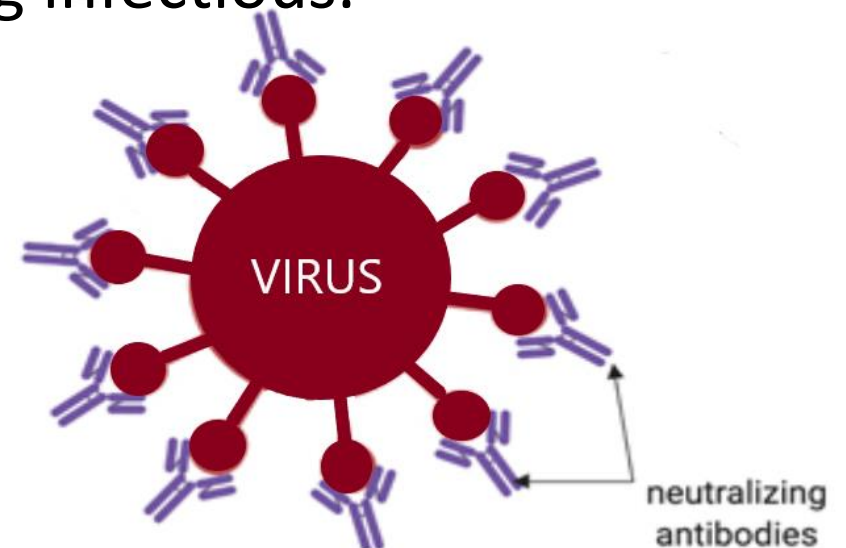
“viable virus was not found after the second week of illness despite the persistence of PCR detection of RNA.”

- So: If a person has no symptoms for at least 2 days and their illness started more than 10 days ago, they are no longer infectious.

Is re-testing required?

No

- Because there is a high chance you will detect viral genetic fragments.
- A positive result only tells you there is still viral genetic fragments being shed. It does not tell you if the person is still infectious.
- Also, in recovering patients, any virus that is shed is covered with neutralizing antibodies which stops them being infectious.



How can we tell if a person is infectious?

- It is not easy to tell if a person is infectious.
- The commonest symptoms are fever and cough, but only 83% have a cough and 67% have a fever! ([Chan et al., 2020](#))
- Proportion of people who have no symptoms varies between
 - 31.2% ([Japan Ministry of Health, Labor and Welfare, 2020](#))
 - 65.2% ([Nishiura et al., 2020](#))
 - 70.0% ([Dorigatti et al., 2020](#))
- That's why hygiene measures, PPE and physical distancing are very important. Have a low threshold to suspect infection.