

A basic guide to Understand your COVID-19 test results

The standard test for SARS CoV-2, also known as COVID-19, is the RT-PCR test. This test is very sensitive and specific for the viral genetic markers.

How are samples collected

There are 3 manners in which a swab is conducted:

- Nasopharyngeal swab,
- Oropharyngeal swab or
- Nasopharyngeal aspirate (collecting a sample through the lower respiratory tract
- LUKI or via tracheostomy tube.

Factors causing false negatives

It is possible that a patient is infected, but test results are negative. This is referred to as false negatives. A **false negative, gives us a false sense of security** and the individual can continue shedding the virus and infect others without knowing it.

The following factors may cause false negatives:

Phase of infection: The virus is detected in the airway secretions of symptomatic and asymptomatic individuals.

The viral load or amplification of the genetic material can be in high or low concentrations depending if the infection is in its *early or late phase* of the infection giving a low amplification or during the peak of the infection, providing a high amplification.

Time of day: The patient may have a lot of secretions containing the virus at certain times of the day which will lead to a positive test result. At other times of the day, a

patient may have very little secretions with no detectable viral particles at other times which may lead to a negative result.

Swab area influences: The swab area could be influenced when a person gargled, flushed their noses with a nasal spray, had a cup of coffee or tea or taking anything that can sterilise the throat or nasopharyngeal passages. *This results in no viral particles picked up on the swab* and may then result in a **false negative** despite the quality of the swab performed by the healthcare worker being excellent.

But what about contamination?

Laboratories take the utmost care to prevent contamination. It is highly unlikely that a swab can be contaminated because the amplification curve will differ if a sample has been contaminated. In the event where this could have occurred the laboratory will ask the patient for a re-swab to confirm or exclude contamination.

A positive result, is 100% positive.

Patients are regarded as positive if a swab, irrespective of technique, time or phase of infection, tested positive for any of SARS CoV-2 infection particles.

If viral particles are DETECTED at any stage or at any time of swabbing, it means the PCR did pick up viral genetic material consistent with a SARS CoV-2 infection.

When you test positive, it is acted upon by the Department of Health or National Institute of Communicable Diseases as well as the treating physician.

In the case of a positive result, the contacts can be traced and followed up and the person's behaviour can protect others from infection.

The variety of swab techniques combined with any of the above factors may lead to viral particles being detected or not during the swab.

Repeating a COVID-19 test.

It is unnecessary to repeat a positive test result.

A false negative however, has a devastating impact on your family, colleagues, a hospital or any other facility if a person sheds the virus unknowingly.

Rather isolate for 14 days and retest if your symptoms worsen.

Appropriate response

At our facility we prefer the nasopharyngeal method to exclude the possibility of false negative results.

At ZAH we regard a positive result as *positive*. If you tested positive in the last 14 days, please follow the correct and current protocols regarding self-isolation and quarantine to protect yourself and your loved ones.

For more information on COVID-19 consult www.sacoronavirus.co.za or call the hospital on 012 343 0300 and speak to our ED Practitioners.