



Message from the NSTF Executive Director

FAQs about COVID-19

After almost two years of writing about COVID-19, the SARS-CoV-2 virus (which causes COVID), and the vaccines, I felt that it was time to take a break from it all... However, questions and misconceptions continue, experts are still stressing the importance of communicating clearly, and that it's crucial to spread evidence-based knowledge.

So, this December 2021 edition of the NSTF eNews brings you a brief Frequently Asked Questions (FAQ) overview with the latest advice:

1. How do people get COVID-19?

By inhaling the air that other people have exhaled. In other words: by sharing the same air. To avoid breathing the same air, meet outside or open the windows. Good ventilation is very important.

2. Why should I wear a mask?

The main reason to wear a mask is to protect other people from your breath, which may possibly contain COVID viruses. During a pandemic millions of people will have viruses in their breath. **Note:** most people do not know if they have the virus in their bodies. Most people don't have symptoms when they have the virus. You can spread the virus even just by breathing. More viruses are transferred to other people when talking, coughing, sneezing, shouting or singing. So you should wear a mask to stop the microscopic droplets from your mouth and nose from going into the air around you. Many masks don't stop this 100%, but most of the viruses will be caught by the mask. The main ways to stop the spread of COVID are: to wear a mask, keep away from people and get vaccinated.

3. Are COVID-19 vaccines safe?

Yes, the medically approved vaccines for COVID-19 are very safe. Many scientific tests have been done to ensure their safety. 55.4% of the world's population has now been vaccinated. 8.31 billion vaccine doses have been administered. On average 31.5 million vaccines are given every day. Only a tiny percentage of people have had bad side effects, and those have been treated. [Coronavirus \(COVID-19\) Vaccinations - Statistics and Research - Our World in Data](#)

4. Are COVID-19 vaccines effective?

Yes, they are very effective. All over the world, the people who are now hospitalised or die are those people who have not been vaccinated. The COVID-19 vaccines are keeping people out of hospital and preventing them from dying. **Note:** Vaccines do not prevent COVID, but they DO save lives! [How do death rates from COVID-19 differ between people who are vaccinated and those who are not? - Our World in Data](#)

5. How do the COVID-19 vaccines work?

The COVID-19 vaccines use your natural immune system to fight the virus in your body. This is how all vaccines have worked for more than 200 years. With a virus like the COVID-19 virus, your body's immune system needs a lot of help. Some people get extremely ill and die if they have to rely only on their natural immune system. So far more than five million people have died from COVID-19 across the world. The vaccine stimulates your immune system by injecting dead copies or parts of the

COVID virus into your body. The immune system then fights (what it thinks is) the virus. That is why you can experience COVID-19 symptoms after you get vaccinated. The body's immune system thinks that it is the real thing. But the symptoms pass without killing you because the injected stuff is not the real live virus, and cannot cause you harm by itself. When the body fights a virus (or the injected material) it produces anti-bodies which will allow the body to fight more strongly in future. [History of vaccination \(nih.gov\)](#)

6. What is the difference between mRNA vaccines and other vaccines?

mRNA vaccines are 'messenger RNA' vaccines. They contain genetic material (RNA) from the COVID virus. The RNA then produces proteins that are perceived by the body's immune system as being the virus itself. As in the previous answer, your natural immune system then fights these proteins as it would fight the virus, and produces anti-bodies for future use. mRNA vaccines are easier to produce, so they could be rolled out quickly to fight the pandemic.

7. Can COVID-19 vaccines change people's DNA?

No, they can't. The DNA in your body's cells is safely inside the nucleus of every cell. The vaccines do not enter the nucleus and cannot change anything inside there. Maybe you are suspicious of vaccines because they contain RNA? RNA and DNA are both genetic material. Both DNA and RNA make it possible to reproduce cells that are exactly the same as the current cells. We have DNA, but viruses have RNA instead.

In humans, when new cells are made (for your body to grow or to replace old cells) it happens like this: The DNA is the body's blueprint, which is inherited from your parents. The DNA (inside the nucleus) of each cell in your body is a double helix, which means it is two strands twisted together. The two strands are identical (the same) and are filled with the same genes on both strands. When a new cell has to be formed, the two strands separate and the cell is split into two cells. The two cells then contain a single DNA strand each. Each strand re-produces the same genes, so that each cell again has two identical strands, twisted into a double helix.

The pieces of virus RNA that enter the body via the vaccines cannot disturb this process of cell division, which happens naturally in the human body, and continues as normal even after being vaccinated, and even after being infected with the virus.

8. How does COVID-19 make people ill and kill them?

The virus's RNA reproduces viruses inside your body, and at great speed. Unlike human DNA, the reproduction of the virus RNA happens outside of the cells of the body. When a person becomes severely ill from COVID-19, billions of viruses are breaking down the tissues of your lungs until body fluid leaks into the lungs. The lungs become filled with fluid and eventually, your body is no longer able to get rid of the fluid or to patch up the leaking lungs. If this process goes on too long, it is no longer possible to reverse the damage, and the patient dies.

9. What is Omicron?

Omicron is a COVID-19 virus that has mutated. (A mutated virus is called a variant.) The mutation makes it very infectious and easy to spread the virus. Mutations happen naturally in the RNA of any virus. It is simply a 'copying error' when the virus reproduces. If the copying error leads to a new variant of the virus that is more infectious, then this new version of the virus will spread faster. The COVID-19 vaccines are very effective against Omicron just like the other variants - meaning that they prevent severe illness and death. As with all COVID-19 variants, it causes respiratory (lung) disease, which can potentially lead to death. It seems that Omicron causes milder symptoms and is less deadly, but we have to wait and see. It is too early at this stage to be sure that Omicron doesn't kill.

10. The latest news:

The South African Health Products Regulatory Authority (SAHPRA) approved a third booster shot of the Pfizer vaccine on Wednesday 8 December. Adults over the age of 18 look set to be able

to get the optional third dose. Children aged 12 and older who are severely immuno-compromised have also been approved for the shot.

A South African biotechnologist created Africa's first COVID-19 test. SAHPRA has approved the new antigen test developed by Ashley Uys, 39, from Belhar in Cape Town, with his team of six scientists and four technicians. Their hard work has paid off after 18 months. The test will be more affordable than those that are imported. Results from the test are ready in 15 minutes. Uys is the founder of Medical Diagnostech (Pty) Ltd in 2010 as a developer and manufacturer of lateral flow rapid diagnostic test kits.

Further reading:

See these lists of COVID words in 10 South African languages: [Covid Glossary \(covidcomms.org.za\)](https://covidcomms.org.za). These are not perfect, but might assist you in understanding more about COVID and to communicate the facts.

[21OutbreaksMediaRelease.pdf \(nsthf.org.za\)](https://nsthf.org.za): The NSTF online discussion forum in February 2021 on the topic of *Preparing for epidemics in South Africa – human and animal | National Science and Technology Forum (nsthf.org.za)*

[Coronavirus \(COVID-19\) Vaccinations - Statistics and Research - Our World in Data](https://ourworldindata.org/coronavirus-covid-19-vaccinations)

[Everything you need to know about vaccines — our only viable strategy for living with Covid-19 - L Allais, S Madhi, I Valodia, A van den Heever, M Veller and F Venter \(Daily Maverick, 26 July 2021\)](https://www.daily-maverick.co.za)

[Explained: How Genome Sequencing Confirms The Presence Of Covid'S Omicron Variant \(cnbctv18.com\)](https://cnbctv18.com)

[Scientists sharing Omicron data were heroic. Let's ensure they don't regret it | Jeffrey Barrett | The Guardian](https://www.theguardian.com)

[Essential facts about Covid-19: the disease, the responses, and an uncertain future. For South African learners, teachers, and the general public \(assaf.org.za\)](https://assaf.org.za) by Bucher, Martin (ed); Mall, Anwar Suleman (ed); Academy of Science of South Africa (ASSAf) (2021)

Sources

[COVID infections increase by 19,842 with 36 more deaths in SA \(msn.com\)](https://www.msn.com) (EWN news)

[Cape Town based biotechnologist produces Africa's first Covid-19 antigen tests \(msn.com\)](https://www.msn.com)

The opinions expressed above are those of the Executive Director, Ms Jansie Niehaus, and do not necessarily reflect the views of the [Executive Committee](#) or [members](#) of the NSTF.