World Health Organization
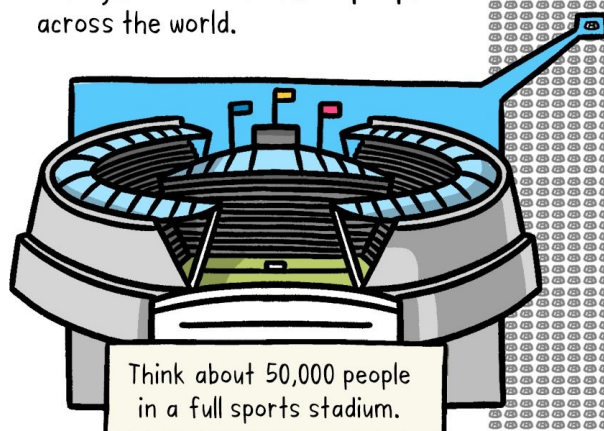
Safety of COVID-19 Vaccines

31 March 2021

This article is part of a series of explainers on vaccine development and distribution. Learn more about vaccines – from how they work and how they're made to ensuring safety and equitable access – in WHO's Vaccines Explained series.

Countries around the world are rolling out COVID-19 vaccines, and a key topic of interest is their safety. Vaccine safety is one of WHO's highest priorities, and we're working closely with national authorities to develop and implement standards to ensure that COVID-19 vaccines are safe and effective.

Ensuring safety

As of 10 March 2021, Over **300 million doses** of vaccine have been administered safely to over **150 million people** across the world.

Think about 50,000 people in a full sports stadium.

Now imagine there are this many stadiums (3,000) all filled with people.

That's roughly how many people have already received their vaccine.

Millions of people have safely received COVID-19 vaccines. All of the approved COVID-19 vaccines have been carefully tested and continue to be monitored.

Like all vaccines, COVID-19 vaccines go through a rigorous, multi-stage testing process, including large clinical trials that involve tens of thousands of people. These trials are specifically designed to identify any safety concerns

An external panel of experts convened by WHO analyses the results from clinical trials and recommends whether and how the vaccines should be used. Officials in individual countries decide whether to approve the vaccines for national use and develop policies for how to use the vaccines based on WHO recommendations.

The road to a COVID-19 vaccine

▶

After a COVID-19 vaccine is introduced, WHO supports work with vaccine manufacturers, health officials in each country and other partners to monitor for any safety concerns on an ongoing basis.

New vaccine technology

Some COVID-19 vaccines have been developed with an approach that uses messenger RNA (mRNA). The mRNA vaccine technology has been studied for over a decade, including in the development of vaccines for Zika, rabies and influenza.

These mRNA vaccines have been rigorously assessed for safety, and clinical trials have shown

that they provide a long-lasting immune response. mRNA vaccines are not live virus vaccines and do not interfere with human DNA. For more information on mRNA vaccines, see WHO's explainer on the different types of COVID-19 vaccines.

Safety of COVID-19 vaccines for different groups

COVID-19 vaccines have been tested in large, randomized controlled trials that include people of a broad age range, both sexes, different ethnicities, and those with known medical conditions. The vaccines have shown a high level of efficacy across all populations. Vaccines have been found to be safe and effective in people with various underlying medical conditions that are associated with increased risk of severe disease. These include high blood pressure; diabetes; asthma; pulmonary, liver or kidney disease; and chronic infections that are stable and controlled.

Those who should consult with a doctor before vaccination include people with a compromised immune system, older people with severe frailty, people with a history of severe allergic reaction to vaccines, people living with HIV, and those who are pregnant or breastfeeding.

Pregnancy

While pregnancy brings a higher risk of severe COVID-19, at present, very little data is available to assess vaccine safety in pregnancy. However, people at high risk of exposure to the COVID-19 virus (such as health workers), or who have a history of underlying medical conditions that increase their risk of severe disease, may be vaccinated during pregnancy after consultation with their health care provider. There is no evidence that suggests vaccination would cause harm during pregnancy.

Breastfeeding

The vaccine can be offered to those who are breastfeeding if they are part of a group recommended for vaccination (health workers, for example).

Safety of COVID-19 vaccines for children

COVID-19 vaccine trials for children are currently under way, and when results become available, WHO will provide updated guidance for vaccination in children. Vaccine trials targeting adults were prioritized because COVID-19 has proven to be a more serious and dangerous disease among older populations.
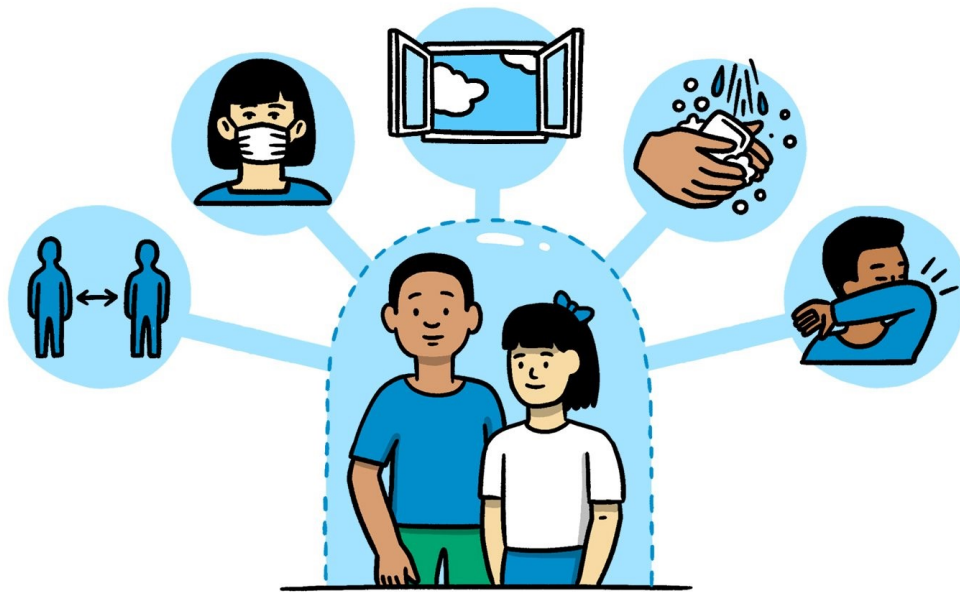
COVID-19 vaccine trials for children are still under way.
For now, following proven health measures is the best way to keep them safe.

Following proven health measures is still the best way to keep everyone, including children, safe from COVID-19. This includes keeping hands clean, practising sneezing and coughing into bent elbows, opening windows, wearing a mask if age-appropriate, and continuing physical distancing.

Want to read more?

Subscribe to newsletter →