

# All you need to know about **COVID19** vaccines but were afraid to ask!

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## What is COVID19?

In 2019 a new Coronavirus appeared in December 2019 in China. Coronaviruses are a large group of viruses, which are already known. The virus consists in genetic material surrounded by an envelope with protein spikes, which gives it the appearance of a crown (corona in latin).<sup>1</sup>

There are different type of coronaviruses. They can cause respiratory or gastrointestinal disorders. In most cases, they cause a mild diseases. However, they can sometimes lead to severe disease. That is the case of SARS-CoV-1, which also caused a pandemic in 2003 (yet smaller in scale).<sup>2</sup>



## Why is it important to get vaccinated?

COVID-19 can cause severe disease and death with yet unknown long-term consequences in people of all ages, including in otherwise healthy people. Safe and effective vaccines protect all individuals, especially healthcare professionals and vulnerable individuals, such as those affected by a chronic disease or older people.<sup>3</sup>

In addition, if a very high percentage of the population is vaccinated, the so-called 'herd immunity' is achieved, meaning that vulnerable groups who cannot be vaccinated due to health conditions are also safe and protected from the disease. It is a matter of collective responsibility and solidarity. COVID19 has lead countries to take strict measures, requiring populations to lock down and to apply social distancing, closing non-essential stores, etc. Vaccination will also allow societies to get back to a 'new' normal.

## How many vaccines are available?

At the moment, the European Commission has established contracts with 6 pharmaceutical companies: CureVac (405 million doses), AstraZeneca (400 million doses), Johnson & Johnson (400 million doses), BioNTech & Pfizer (600 million doses), Sanofi - GSK (300 million doses) and Moderna (460 million doses). It has also concluded exploratory talks with Novavax with a view to purchasing up to 200 million doses and with Valneva with a view to purchase up to 60 million doses.<sup>4</sup>

The vaccines will be distributed in the Member States at the same time on the basis of population size. The overall number of vaccine doses will be limited during the initial stages of deployment and before production can be ramped up.



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## **How do vaccines work?**

Different approaches can be used. Vaccines can contain a part of the germ (in this case the spike protein) that a body can recognize and develop an immune response to. In this case, the vaccine contains just the spike protein. The Sanofi-GSK vaccine follows that approach.

The AstraZeneca and Johnson & Johnson vaccines contain a different, harmless virus which delivers the 'instructions' from the virus that causes COVID-19.<sup>5</sup>

The other approach consists in giving instructions to an individual's body on how to make the spike protein (messenger RNA approach). It is a quicker and more efficient way of developing vaccines, which uses the body's own ability to produce proteins.<sup>6</sup> That option is the one followed by the CureVac, Moderna and the BioNTech & Pfizer vaccines.<sup>7</sup>

mRNA vaccines are new but they have been tested in humans before for flu, Zika, rabies, and cytomegalovirus (CMV).<sup>8</sup>



## **How many shots are necessary?**

As the virus is quite new, there is currently not enough knowledge on how long the immunity conferred by the vaccines will last after vaccination, or whether there will be a need for periodic booster doses.

The AstraZeneca, Moderna and BioNTech & Pfizer vaccines require 2 shots.<sup>9</sup> Sanofi-GSK will also need two doses<sup>10</sup>, but the vaccine is not expected before end 2021.

## **Do I have to choose?**

At first, as few doses are available, choice will not be possible. The vaccine which is available is the one that will be administered. At this stage it is not clear whether a choice will be possible in the future.

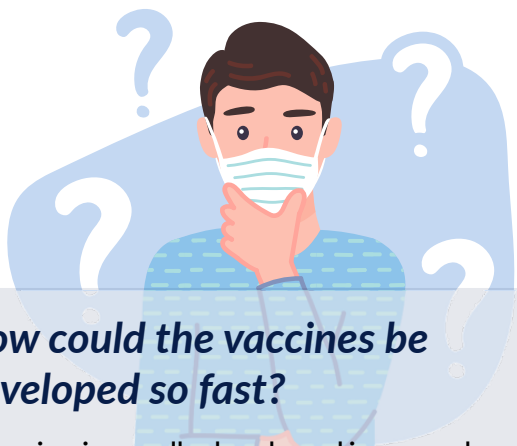


## **I have had COVID19. Do I still need to get vaccinated?**

Yes, it is recommended. There have been cases of reinfection with COVID19. On top of that, we do not know at this stage how long natural immunity lasts. Getting the vaccine helps prevent reinfection.<sup>11</sup>



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## How could the vaccines be developed so fast?

A vaccine is usually developed in several successive phases and it can take up to 10 years before it is marketed. Given the emergency, for the COVID-19 vaccine, the different phases of development and evaluation were respected, but they were conducted in parallel instead of successively. The same safety and efficacy requirements were applied. Additionally, guaranteed funding and the provision of financial resources from both the public and private sector, as well as unprecedented collaboration between scientists worldwide has allowed to speed up the process and begin the production of vaccines much more quickly. As the virus is widespread, more volunteers are also participating in the various clinical trials, providing a larger sample of people on which to test the vaccine and also to observe possible adverse effects. All these factors have made it possible to develop several reliable vaccines in a very short time.<sup>12</sup>

## Are there any risks and/or side effects?



As for any other medicine, side effects can occur. Those vary depending on the vaccine. The most common consist in fever, chills, tiredness, headache, nausea and pain or swelling on the arm where the vaccine was administered. Rarely, serious adverse effects such as serious allergic reactions can occur. Those side effects are closely monitored by the European Medicines Agency (EMA).<sup>13</sup> Safety requirements for COVID-19 vaccines are not lowered in the context of the pandemic. They are the same as for any other vaccine.<sup>14</sup> Vaccines go through extensive trials before they can be marketed. Strict international standards are applied when deciding whether or not to approve a vaccine.<sup>15</sup> EU law requires that the safety of the vaccine as well as its effectiveness be monitored also after the vaccine is deployed for widespread use.<sup>16</sup> Special measures are also in place to quickly collect and evaluate new information. For example, manufacturers must usually send a safety report to the European Medicines Agency every six months. For COVID-19 vaccines, safety reports must be sent every month.<sup>17</sup>

## Where and when should I get vaccinated?

Information on when and where to get the vaccine will be provided by national authorities. The European Commission has provided examples of priority groups to be considered by countries once COVID-19 vaccines become available, including: healthcare and long-term care facility workers; people over 60 years of age; people whose state of health makes them particularly at risk; essential workers; people who cannot socially distance; and more disadvantaged socio-economic groups. Most countries have defined priority groups and are further refining who should get priority in these priority groups.<sup>18;19</sup>

These groups will be vaccinated first, large scale vaccination roll outs will follow later. If you have any doubts on whether you are part of the priority groups, ask a healthcare professional.



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## Still hesitant?

We recommend you to refer to official sites with trustful information based on science to answer any remaining questions, such as the [WHO's](#) or the [European Commission's](#). You can also speak to your healthcare provider.

You have the right to choose not to get vaccinated. If you decide so, please discuss with a healthcare professional about the reasons of your decision, make sure that you are properly informed, and, above all, do not spread fear of vaccination around you.

## Sources

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