

How does the Astra Zeneca Vaccine work?

The AstraZeneca vaccine is a [viral vector vaccine\(external link\)](#). Unlike the Pfizer-BioNTech and Moderna vaccines which store the instructions to build spike proteins in RNA, the AstraZeneca vaccine uses DNA. The vaccine uses a harmless virus (called an adenovirus) as a delivery system. This is called a viral vector. Once the vaccine containing the viral vector enters the body, the vector virus produces the SARS-CoV-2 spike protein. Just like with the mRNA vaccines, the immune system responds to the spike proteins by making antibodies. These new antibodies will break down the spike proteins and get rid of them. The new antibodies will protect against COVID-19 infection in the future.

DNA is not as fragile as RNA. The viral vector (adenovirus) has a tough protein coat which protects the DNA inside. Therefore, the AstraZeneca vaccine does not need to be kept frozen.

Viral vector technology has been used for over ten years to produce many of the vaccines approved in Canada.

None of the COVID-19 vaccines currently approved by Health Canada use the live virus that causes COVID-19. You cannot get COVID-19 from a vaccine.

How is the vaccine administered?

Two doses of the vaccine are required, given up to 16 weeks apart. It is currently recommended for people aged 55 years or older. After completing the two-doses, it may take another 14 days to achieve maximum protection against COVID-19. In trials, the vaccine was 81.6% effective.

What are the potential side effects?

[Health Canada reported that side effects that followed administration of the AstraZeneca vaccine were mild or moderate and are common of many vaccines\(external link\)](#), including:

- pain at the site of injection
- body chills
- feeling tired
- feeling feverish

On March 24, 2021 Health Canada issued a label change and guidance on the AstraZeneca COVID-19 vaccine following reports of a very rare [combination of thrombosis and thrombocytopenia\(external link\)](#) following vaccination with the AstraZeneca COVID-19 vaccine. These blood clots have two important features: they occur four to 20 days after vaccination, and they are associated with low platelets (tiny blood cells that help form blood clots to stop bleeding). Individuals should seek medical attention if they develop the following symptoms after receiving the AstraZeneca COVID-19 vaccine:

- shortness of breath
- chest pain
- leg swelling
- persistent abdominal pain
- neurological symptoms (such as sudden onset of severe or persistent worsening headaches or blurred vision)
- skin bruising
- petechiae (small, red or purple spots on the skin)

While there are rare reports of side effects from AstraZeneca, it is important to note that to date, there have been no cases of these events reported in Canada. A summary of the reported information is available on [Canada.ca/coronavirus\(external link\)](#). Cases reported have primarily been women under the age of 55 years. The rate of the adverse event is still to be confirmed, though it is estimated to be 1 in 100,000 to 1 in 1,000,000 people vaccinated. As a safety precaution, use of [AstraZeneca COVID-19 vaccine for individuals under age 55\(external link\)](#) is currently paused in Ontario while this investigation is underway.

[Health Canada has determined that the benefits of the AstraZeneca/COVISHIELD vaccine in protecting Canadians from COVID-19 continue to outweigh the risks\(external link\)](#). Adults over the age of 55 and older will be offered the AstraZeneca vaccine as there is an increased risk of hospitalization and death due to COVID-19 in this population and there have been fewer reports of Vaccine-Induced Prothrombotic Immune Thrombocytopenia (VIPIT) events in this age group.

COVID-19 has been associated with causing blood clots, so all COVID-19 vaccines continue to be recommended for people who have had a blood clot in the past, or who have a family history of blood clots and who are receiving blood thinning medications.

Speak with your health care professional about any serious allergies or health conditions before receiving the AstraZeneca COVID-19 vaccine.

Vaccine side effects will continue to be monitored as people receive the vaccine. If you get a reaction to the vaccine, contact your health care provider who will report the side effect directly to public health. Public health will keep track of the reported side effects to make sure the vaccine continues to be safe.

Who should get this vaccine?

On March 29, 2021 the National Advisory Committee on Immunization (NACI) recommended that [AstraZeneca COVID-19 vaccine should not be used in adults under 55 years of age at this time\(external link\)](#). NACI is currently investigating a rare adverse event being referred to as Vaccine-Induced Prothrombotic Immune Thrombocytopenia (VIPIT) reported in Europe. Cases have primarily been women under the age of 55 years. The rate of the adverse event is still to be confirmed, though it is estimated to be 1 per 1,000,000 people vaccinated. As a safety precaution, use of AstraZeneca COVID-19 vaccine for individuals under age 55 is currently paused in Ontario while this investigation is underway.

Additional information will be posted as it is released from Health Canada.