

## ARE THERE RISKS OF PARTICIPATING?

All research studies involve some risks. Common side effects of all vaccines, even licensed ones, include soreness from the injection, having a low fever, headaches, feeling tired, or having body aches. These usually go away on their own after a day or two. People who are interested in joining a study will be told about all of the risks that researchers know about.

## HOW DO HIV VACCINES FIT INTO THE BIG PICTURE OF HIV PREVENTION?

There are a number of ways to prevent HIV. Most recently, antiretroviral medications used for HIV treatment have also been approved to use for prevention, known as pre-exposure prophylaxis or PrEP. PrEP can be taken as pills, a vaginal ring, or as long-acting injections. An HIV vaccine would help to simplify prevention because vaccines require far less maintenance for those who are willing to get vaccinated. We need a variety of HIV prevention tools to meet the needs of all people, and having a vaccine against HIV is the best long-term solution to ending the HIV epidemic.



## WHY ARE HIV VACCINES SO IMPORTANT?

Around the world, there are still over 1 million people who acquire HIV each year. No matter how many people get diagnosed, get HIV care, or use treatment, we cannot keep up with the pace of new cases. The search for an effective HIV vaccine is as important as ever if we want to end HIV.



[rochestervictoryalliance.org](http://rochestervictoryalliance.org)  
(585) 756-2329



**HIV VACCINE**  
TRIALS NETWORK

©2022 HIV Vaccine Trials Network. All rights reserved.

The HVTN is supported through a cooperative agreement with the National Institute of Allergy and Infectious Diseases. The photos used in this brochure are of models being used for illustrative purposes only.

HVTN\_Understanding\_Vaccines\_Brochure\_V1.2022\_ENG

## UNDERSTANDING HIV VACCINES



## HOW DO VACCINES WORK?

Vaccines protect people by blocking a specific germ, like a virus or bacterium, or help prevent that germ from causing a disease in the future. Vaccines work by teaching the body's immune system to recognize these invaders and prepare to fight against it. Vaccines have eliminated smallpox and greatly reduced many other harmful diseases such as polio. Because of vaccines, millions of lives have been saved, and we have been able to protect the health of our communities.

## HOW ARE VACCINES DEVELOPED?

Developing vaccines can take a long time. Once scientists create a possible vaccine, it must be tested in a laboratory and then in animals to see if it is safe and if there are side effects. Studies in people only happen after this early research is complete and the results look promising, because the safety of study participants is our top priority. Before a vaccine can be licensed and made available for use by the public, it must go through at least 3 stages of testing in people. The pace of vaccine research can move slower or faster depending on many factors such as the germ itself, funding, and how scientists are able to build on the results of previous studies.



## WHAT HAVE WE LEARNED FROM VACCINE STUDIES IN THE PAST?

Studies of HIV vaccines started in the 1980s. There have been over 100 small studies to test for safety, and several large studies to test if a vaccine could prevent HIV. One major study called RV144 was done in Thailand, involving more than 16,400 study participants. In 2009, RV144 showed that a 2-vaccine combination lowered the number of new HIV cases by about 32%. This was the first study to prove that a vaccine against HIV is possible, even though it wasn't enough protection to approve the vaccine. Other studies have shown the importance of different kinds of immune responses, such as antibodies and T-cells. Researchers are now using these lessons to create new vaccines, which will hopefully work even better.

## HOW ARE PREVENTIVE HIV VACCINES DIFFERENT FROM HIV TREATMENT?

Vaccines teach the body to recognize and fight a disease. Antiretroviral medications used to treat HIV help control the virus but do not teach the body to fight it. Because of this, treatment must be taken for a lifetime, while preventive vaccines are usually given as a small number of doses. We hope that when we find an effective HIV vaccine, the protection will last for a long time.

## CAN I GET HIV BECAUSE OF GETTING AN HIV VACCINE?

The HIV vaccines being tested cannot cause HIV infection because they do not contain HIV. Instead, the vaccines contain copies of pieces of HIV that are made in a laboratory. The study vaccines contain molecules that may look like the real virus, but they are not the real thing and cannot cause infection. Instead, the vaccines teach the body's immune system to recognize the structure of HIV to help the body fight back if it ever encounters the real virus.

# Typical Vaccine Development Timeline

About 10 Years

