



HIV Vaccines—Key Messages

HIV Vaccine Awareness Day

18 May 2018

The sustained control and eventual end of the HIV epidemic will depend on methods that provide long-lasting protection, including an HIV vaccine.

- The dramatic increase in global coverage of HIV treatment, care and existing prevention options must be sustained and expanded to further bring down new HIV infections and deaths from AIDS. At the same time, research to find additional options to meet people’s diverse needs and desires must continue.
- A safe, effective, long-acting HIV vaccine that is accessible to those who need it the most would make a real impact as part of a comprehensive strategy to end the epidemic. An ideal vaccine would require few shots and last for years, which would be easier to use than many of today’s most effective HIV prevention methods that require daily use or regular adherence.
- In 2009, the Thai vaccine trial, also known as RV144, showed proof-of-concept that a preventive HIV vaccine is possible. Researchers have continued to build on the results of that trial to refine and develop potentially effective vaccine strategies.
- Vaccine research is a long-term endeavor. HIV vaccine research has been underway for more than 35 years, but vaccines for other diseases that are in use today also took decades to develop.

This is a time of tremendous progress in vaccine research. Vaccine development is always a long-term process, but we’ve seen unprecedented advances in recent years and several promising concepts are being tested in large-scale trials.

- At present, two vaccine candidates and a vaccine-related approach are being studied in large-scale efficacy trials:
 - The HVTN 702 trial, also known as “Uhambo”, ongoing in South Africa, is building on the RV144 trial mentioned above. Results of HVTN 702 are expected in 2021.
 - The HVTN 705/HPX2008 trial, also known as “Imbokodo”, underway in multiple countries in southern Africa, is a proof-of-concept study using a novel vaccine with “mosaic” immunogens. Led by the pharmaceutical company Janssen in partnership with a number of public and philanthropic global vaccine development partners, the study’s results are expected in 2021.
 - HVTN 703/HPTN 081 in Africa and HVTN 704/HPTN 085 in the Americas and Europe are two efficacy studies testing antibody-mediated prevention (AMP). In a strategy known as passive immunization, this research is investigating whether direct intravenous infusions of a broadly neutralizing antibody (bNAb) called VRC01 can prevent HIV infection. The AMP trials will also provide insights that can be applied to both passive immunization as a preventive strategy as well as to vaccine development. Study results are expected in 2020.
- As large-scale efficacy trials move forward, researchers, advocates and communities are working together to ensure that trials are well-conducted, conform to Good Participatory Practice Guidelines (GPP) and adapt to the changing realities of the HIV response. This includes

adding new prevention options, such as oral pre-exposure prophylaxis (PrEP), into the standard prevention package of ongoing and planned trials.

- Researchers and stakeholders must also plan together now for acting on the results of these trials. It is important to understand and clearly communicate potential next steps for each of the products and concepts after trials end and results are disseminated. Regardless of results, these efficacy trials will produce data that will move the vaccine field forward.
- Early-stage research and trials are focusing on improving existing concepts and products, as well as developing and testing new ones.
- BNABs have the ability to neutralize, or block, many strains of HIV, and potentially prevent the virus from establishing a lasting infection. By blocking many different strains of HIV, bNABs may help address one of the greatest challenges in HIV vaccine development: the virus's ability to mutate rapidly.
 - Understanding how bNABs block HIV infection when delivered as passive immunization could inform the development of preventive vaccines. Understanding how much antibody is required to achieve protection provides a target for future vaccines.
 - Additional clinical trials are now testing additional and modified bNABs, as well as bNAB combinations. If researchers can identify individual bNABs, or combinations of them, that provide protection against infection in small enough doses that last long enough in the body, passive immunization with bNABs could become a prevention intervention itself.

Global partnerships are moving the science forward. Success in HIV vaccine development and eventual delivery depends on global partnerships, sustained funding, political will and continued community support.

- Over 35 years of research have proven that developing an HIV vaccine is not easy. Success depends on maintaining momentum and working together. The field has seen unprecedented global cooperation among governments, industry and academic researchers working together. As the field evolves, researchers and funders must prioritize evidence, information-sharing and rational decision-making about which candidates get tested.
 - The current large-scale clinical trials have all been designed and implemented by international groups involving trial networks, funders, individual trial sites, academic researchers, industry partners, government officials, advocates and community members around the world.
 - These partnerships have made a positive impact on the HIV vaccine field and set new standards for biomedical research generally.
- HIV vaccine development requires sustained financial support and is a wise investment. A safe, effective, accessible and affordable HIV vaccine would lead to huge and lasting savings in the long run. Modeling research estimates that in some parts of the world, an effective HIV vaccine could reduce new annual HIV infections by nearly half in its first 10 years.
- Funding product development and clinical trials is not enough. It will take many partners working together to develop and deliver an effective HIV vaccine, and to ensure that planning for delivery begins well in advance of the results of efficacy trials.
- Researchers, advocates, donors, governments, funders and communities all have a role to play in the successful development, testing and distribution of a safe, effective, licensed and accessible HIV vaccine. We can't afford to slow down promising and urgently needed research.

For more on the state of HIV vaccine research and advocacy, please visit: www.avac.org/hvad.