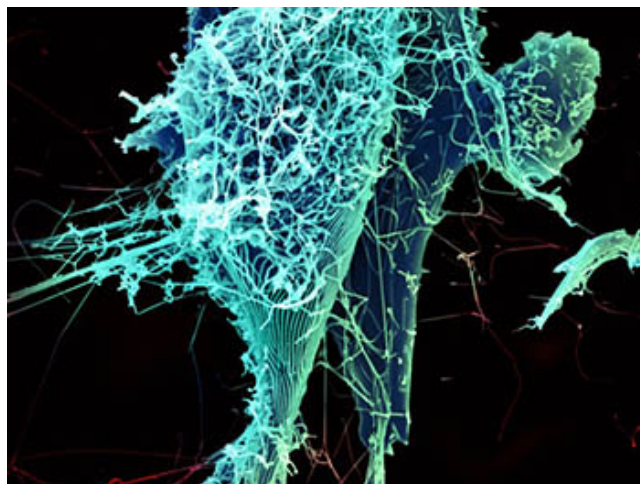


Pap tests, a widely used cervical-cancer screening approach, the algorithm was better at identifying precancer. Moreover, this new method could potentially improve cervical-cancer screening in low-resource settings where cervical-cancer is a leading cause of death. Health workers in these types of settings need only minimal training to use a cell phone or camera for cervical screening and treatment. The investigators are planning to use a wide variety of cameras to further train the algorithm on images of normal and precancerous cervical tissue that are collected from women around the world. These studies are important to identify subtle differences in the appearance of the cervix and precancer among women in different geographical areas. The goal of this research is to create an optimal artificial-intelligence-based screening method for cervical precancer that is publicly available for use and can be used to improve the control of cervical cancer worldwide. (NIH authors: S. Antani, Z. Xue, K. Yu, L.R. Long, M. Demarco, J.C. Gage, A.C. Rodriguez [consultant to NCI], N. Wentzensen, and M. Schiffman, *J Natl Cancer Inst* 2019 (<https://academic.oup.com/jnci/advance-article/doi/10.1093/jnci/djy225/5272614>); DOI:10.1093/jnci/djy225)

[BY CLAIRE MCCARTHY, NCI]

NIAID (VRC): INVESTIGATIONAL MONOCLONAL ANTIBODY TO TREAT EBOLA IS SAFE

In May 2018, NIAID investigators at the institute's Vaccine Research Center (VRC) and their collaborators began a phase 1 clinical trial examining the safety and efficacy of an investigational Ebola treatment with the monoclonal antibody mAb114. The trial revealed that intravenous mAb114 is safe, well-tolerated, and easy to administer. The participants in the trial, which was conducted at the NIH Clinical Center, were 18 healthy human volunteers. The



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treatment is also being offered to Ebola patients in the Democratic Republic of Congo (DRC) under compassionate use and as a [phase 2/3 clinical trial](https://www.niaid.nih.gov/news-events/clinical-trial-investigational-ebola-treatments-begins-democratic-republic-congo) (<https://www.niaid.nih.gov/news-events/clinical-trial-investigational-ebola-treatments-begins-democratic-republic-congo>) of multiple investigational treatments.

After multiplying inside a host cell, the stringlike Ebola virus is emerging to infect more cells. Ebola is a rare, often fatal disease that occurs primarily in tropical regions of sub-Saharan Africa.

The mAb114 binds to the core-receptor-binding domain of the Ebola virus glycoprotein, preventing the virus from infecting human cells. Until the discovery of mAb114—which scientists derived from antibodies isolated from the blood of a survivor from the 1995 Ebola outbreak in DRC—there had been no molecules reported to target this well-hidden core. Studies showed that mAb114 was able to protect nonhuman primates from lethal Ebola virus when given as late as five days after infection. The VRC developed mAb114 in collaboration with scientists in the DRC, Switzerland, and the U.S. Army Medical Research Institute of Infectious Diseases at Fort Detrick, Maryland. (NIH authors: M.R. Gaudinski, E.E. Coates, L. Novik, A. Widge, K.V. Houser, E. Burch, L.A. Holman, I.J. Gordon, G.L. Chen, C. Carter, M. Nason, S. Sitar, G. Yamshchikov, N. Berkowitz, C. Andrews, S. Vazquez, C. Laurencot, J. Misasi, F. Arnold, K. Carlton, H. Lawlor, J. Gall, R.T. Bailer, A. McDermott, R.A. Koup, J.R. Mascola, B.S. Graham, N.J. Sullivan, and J.E. Ledgerwood, *Lancet* ([https://www.thelancet.com/journals/lancet/article/PIIS0140-6736\(19\)30036-4/fulltext](https://www.thelancet.com/journals/lancet/article/PIIS0140-6736(19)30036-4/fulltext))2019 ([https://www.thelancet.com/journals/lancet/article/PIIS0140-6736\(19\)30036-4/fulltext](https://www.thelancet.com/journals/lancet/article/PIIS0140-6736(19)30036-4/fulltext)); DOI:10.1016/S0140-6736(19)30036-4)

[BY MOHOR SENGUPTA, NEI]

NIAID (ROCKY MOUNTAIN LABS): TICK SALIVARY GLANDS MAY HOLD SECRET FOR HOW VIRUSES ARE TRANSMITTED

The salivary glands of *Ixodes scapularis* (more commonly known as black-legged ticks or deer ticks) may hold the secret to preventing tick-borne infections. Tick-borne flaviviruses (TBFVs) have been on the rise in North America for the last two decades and cause roughly 15,000 infections each year.