

Ebola detected in semen of survivors two years after infection

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The Ebola virus, isolated in November 2014 from patient blood samples obtained in Mali. The virus was isolated on Vero cells in a BSL-4 suite at Rocky Mountain Laboratories. Credit: NIAID

Ebola virus RNA can persist in the semen of survivors more than two years after the onset of infection researchers at the University of North

Carolina at Chapel Hill have found. The research team, which included investigators from Ohio-based Clinical Research Management and the ELWA Hospital in Liberia also observed the detection of Ebola virus RNA in the semen of men who had previously had a negative test of their semen in some cases.

These findings led the study team to suggest revision of the 2016 World Health Organization guidelines relating to the sexual transmission of Ebola, which calls for men who survive Ebola virus disease (EVD) to undertake measures such as abstinence and the use of condoms for at least 12 months after the onset of EVD or until their semen has tested negative for Ebola virus RNA twice. The study results were published in *Open Forum Infectious Diseases*.

Male participants enrolled in a longitudinal cohort study of Ebola survivors in Monrovia, Liberia, consented to donating semen. Of the 149 men who provided samples, 13 tested positive for Ebola virus RNA. Of these 13 men, 11 had positive results even two years after the onset of Ebola infection.

"Our finding of long term persistence and intermittent detection of viral RNA in semen suggests we need to change how we think about Ebola as it is no longer only an acute illness, but also one with potential long-term effects," said William A. Fischer II, M.D., an assistant professor in the UNC Division of Pulmonary and Critical Care Medicine and the study's co-author. "It is becoming clear that in some survivors, evidence of the virus can linger in the male genital tract for long periods of time with important potential implications for transmission."

Fischer notes that while there has been documented sexual transmission of Ebola earlier after acute infection, it is not known whether the presence of RNA serves as a correlate for infectious virus and if transmission this far out is possible.

The study team also reports that the men whose samples tested positive for Ebola virus RNA were more likely to be older than those with a negative result. Those who had Ebola virus RNA detected in their semen also complained of vision problems at a higher rate than male survivors without evidence of Ebola virus RNA in their [semen](#). The researchers recommend future studies investigate the source of viral persistence and whether the detection of viral RNA signifies the presence of infectious virus.

The large Ebola outbreak in West Africa in 2014 to 2015 was devastating to the people in West Africa and beyond, said David A. Wohl, M.D., professor of Infectious Diseases at UNC and study co-author.

"However, the scale of the epidemic has allowed for researchers to gain better insights into the Ebola virus, including the potential persistence of the virus in certain compartments of the body, such as the [genital tract](#)," Wohl said.

The researchers stress that such studies must be conducted in a way that empowers the Ebola survivor community and avoids further stigmatization.

More information: William A Fischer et al. Ebola Virus RNA Detection in Semen More than Two Years After Resolution of Acute Ebola Virus Infection, *Open Forum Infectious Diseases* (2017). [DOI: 10.1093/ofid/ofx155](https://doi.org/10.1093/ofid/ofx155)

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