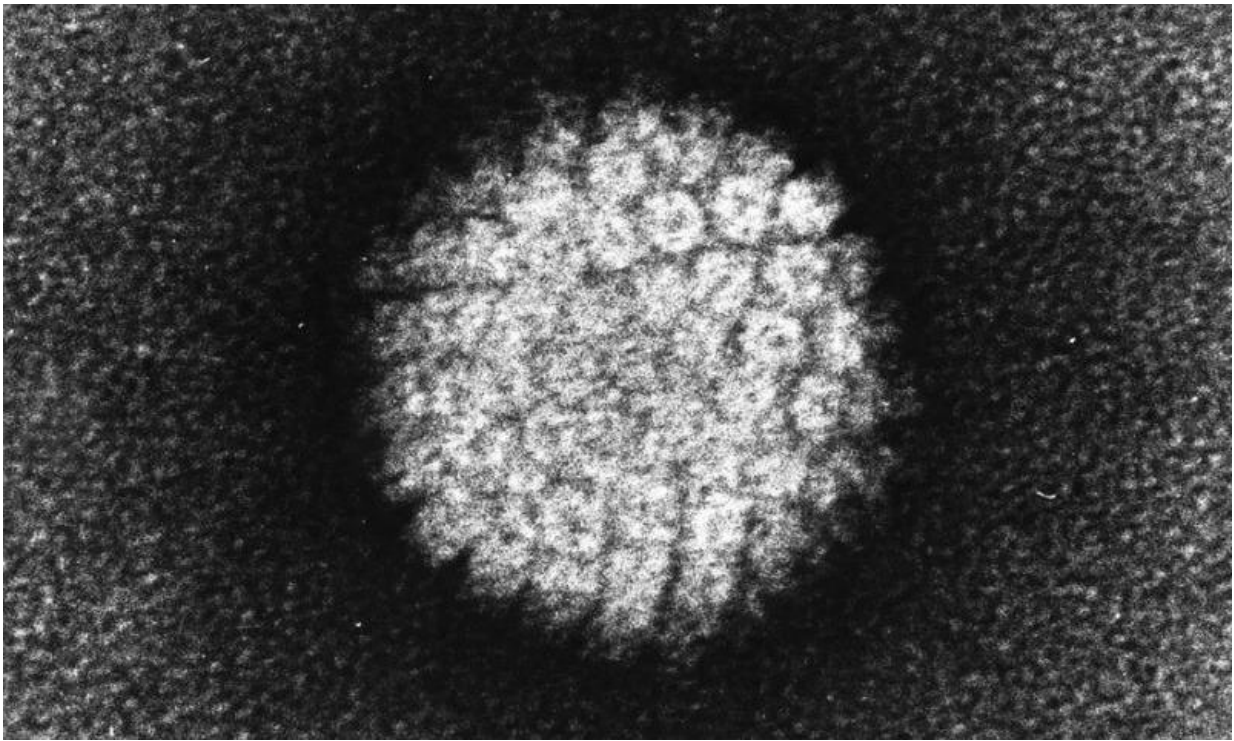


New study finds improved vaccine that protects against nine types of HPV is highly effective

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Electron micrograph of a negatively stained human papilloma virus (HPV) which occurs in human warts. Credit: public domain

Cervical cancer is the second most common cause of cancer-related death worldwide, with almost 300,000 deaths occurring each year. More

than 80 percent of these deaths occur in developing nations. The advent of human papillomavirus (HPV) vaccines has significantly reduced the number of those who develop and die from cervical cancer. And thanks to an international effort to improve the vaccine, the medical community is one step closer to preventing more HPV-associated diseases. The researchers, including those from Moffitt Cancer Center, published the final results of a study showing the newest vaccine is highly effective at preventing HPV infection and disease. The study was published this week in *The Lancet*.

HPV is an extremely common virus. It is estimated that by age 50, four out of five women have been infected with the virus at one point throughout their lifetimes. HPV causes ailments such as genital and anal warts and, in some instances, continued infection can lead to the development of benign or cancerous growths of the cervix, vulva, vagina, anus, penis, tonsils, and base of the tongue. There are more than 100 types of HPV, but only approximately 13 types are associated with cancer development. HPV 16 and 18 alone are estimated to cause 70 percent of all cervical cancers.

Two existing HPV vaccines, Cervarix and Gardasil, are effective at preventing disease caused by HPV types 16 and 18, while Gardasil also protects against genital warts caused by HPV 6 and 11. However, these vaccines do not protect against all HPV types that are associated with cancer. Scientists developed an improved [vaccine](#) called 9vHPV that targets HPV 16, 18, 6, and 11, and an additional 5 HPV types that are the next most commonly associated with [cervical cancer](#) (HPV 31, 33, 45, 52 and 58).

"Based on epidemiological studies, the 9vHPV vaccine could prevent approximately 90 percent of cervical cancer, 90 percent of HPV-related vulvar and vaginal cancer, 70 to 85 percent of high-grade cervical disease in females, and approximately 90 percent of HPV-related anal

cancer and genital warts in males and females worldwide," explained Anna R. Giuliano, Ph.D., Director of the Center for Infection Research in Cancer at Moffitt.

Researchers from 18 countries and 105 study sites conducted a phase 3 study to compare the activity of the new 9vHPV vaccine against the older vaccine that protected against four HPV types (Gardasil). The study randomized 14,215 women 16 to 26 years of age to either 9vHPV or Gardasil, and the study participants were medically followed for 6 years after vaccination.

The study found that the 9vHPV vaccine has long-term activity against HPV infection and disease. The 9vHPV vaccine reduced the risk of developing HPV 31/33/45/52/58-related cervical, vulvar, and vaginal disease by 97.7 percent when compared to Gardasil, and the two vaccines had similar activity at preventing HPV 6/11/16/18-associated disease. The 9vHPV vaccine was also highly effective at reducing the risk of having HPV 31/33/45/52/58-associated cervical cell abnormalities, biopsies, and definitive therapies.

9vHPV, known as Gardasil 9, became available in 2015 to protect females and males ages 9 through 26 years against HPV-associated cancers and genital warts. Scientists hope its continued use will greatly reduce the incidence and mortality of HPV-associated diseases.

"The 9vHPV vaccine is licensed in over 40 countries for the prevention of HPV-related anogenital cancers and pre-[cancer](#), and [genital warts](#). The results of this study support comprehensive vaccination programs and inform public health decision related to implementation," said Giuliano.

Provided by H. Lee Moffitt Cancer Center & Research Institute

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