

HIV status may affect the progression of HPV infection to cervical pre-cancer

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A study of Senegalese women showed that human papillomavirus (HPV) infection was more likely to develop into cervical pre-cancer in women living with human immunodeficiency virus.

The study is published in *Cancer Epidemiology, Biomarkers & Prevention*, a journal of the American Association for Cancer Research, by Hilary K. Whitham, PhD, MPH, a research associate at the University of Minnesota in Minneapolis.

While most HPV infections are cleared by the body's immune system, persistent HPV [infection](#) can lead to the development of [precancerous lesions](#) and [cervical cancer](#). Previous research has indicated that HIV-positive women face an increased risk of HPV infection, precancerous lesions, and cervical [cancer](#) compared with HIV-negative women.

In order to increase understanding of the way HPV infection progresses, and to compare its progression in HIV-negative and HIV-positive women, Whitham and colleagues analyzed data from six studies conducted from 1994 to 2010 in Senegal, where HIV is endemic. They followed 1,320 women for an average of two years, testing them for HPV and cervical abnormalities approximately every four months. At each clinic visit, women were characterized as normal, HPV-positive, or HSIL (HPV-positive with high-grade squamous intraepithelial lesions, a precancerous lesion that may progress to cervical cancer if untreated).

The study showed that HIV-positive women had higher rates of acquiring HPV, and lower rates of clearing HPV infection, than HIV-negative women.

Women whose immune systems were compromised by HIV were also more likely to have HPV infection progress to pre-cancer, the study indicated. For instance, HIV-positive women were

2.55 times more likely to have their HPV infection progress to HSIL than HIV-negative women.

Whitham explained that as HIV ravages the body's immune system, "HPV goes unchecked, replicating quickly and developing abnormal lesions which can progress to cancer."

"The study suggests that in countries like Senegal in West Africa, where cervical cancer screening is not widely available, HIV-positive women may benefit from targeted cervical cancer prevention efforts," Whitham said.

"In areas where cervical cancer screening is not widely available and HIV prevalence is high, these findings highlight that targeted screening of the high-risk HIV-positive population may provide an important step in cervical cancer prevention," Whitham said. "These results also highlight that HPV vaccination of young women prior to HIV infection is an important preventive measure."

Whitham said she expects that the results of this study would be similar in women from other countries, especially other sub-Saharan African nations with high HIV rates. However, she said, further studies would be required to confirm the findings and to account for behavioral differences between populations such as smoking, birth control use, and age at first sexual activity.

Whitham said a limitation of the study is that much of the data predated the widespread use of anti-retroviral therapy, which limited the researchers' capacity to analyze the effects of those treatments on HPV progression. She added that as HIV-positive [women](#) now live longer due to anti-retroviral therapy, they may face further increased risk of cervical cancer due to additional time to acquire HPV and for pre-cancerous lesions to progress to cervical cancer. This highlights the importance of developing cervical cancer prevention strategies in areas where HIV is endemic, Whitham said.

Provided by American Association for Cancer
Research

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