Many People Don’t Know HPV Causes Cancer

Vaccines could potentially eliminate cervical, anal, oral and other cancers caused by human papillomavirus.

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More than a quarter of Americans are unaware that human papillomavirus (HPV) causes cervical cancer, and even fewer know that the virus also causes anal, penile and oral malignancies, according to a study presented this week at the AACR Annual Meeting 2023. The findings suggest that education and awareness campaigns are needed to encourage HPV vaccination.

“Given the connections between HPV-associated cancer awareness and HPV vaccination uptake, it is important we increase the population’s awareness of this link, as it may help increase vaccine uptake,” said presenter Eric Adjei Boakye, PhD, of Henry Ford Health in Detroit.

HPV is among the most common sexually transmitted infections. The virus triggers abnormal cell growth that can lead to genital and anal warts, precancerous cell changes and, if left undetected and untreated, cancer of the cervix, anus, vulva, vagina, penis, mouth and throat. People living with HIV and other immunocompromised individuals are more likely to experience disease progression.

Adjei Boakye and colleagues analyzed HPV awareness among Americans between 2014 and 2020 using data from the Health Information National Trends Survey. Participants were asked whether they think HPV can cause cervical, anal, penile and oral cancer. Awareness was assessed at five time points, each of which included some 2,000 respondents.

The researchers found that the proportion of people who know that HPV causes cervical cancer has been declining for half a decade. In 2020, 70.2% of respondents said HPV can cause cervical cancer, down from 77.6% in 2014. The proportion of people who know that HPV causes anal, penile and oral cancers was substantially lower and mostly unchanged at around 30%.

“The talk about HPV was very female-centric when the vaccine was first approved and recommended,” Adjei Boakye said in an AACR news release. “As a result, a lot of people know about HPV causing cervical cancer, but not the other cancers.”

HPV Vaccine Prevents Cancer

Most people acquire some of the more than 100 known types of HPV soon after they become sexually active. Routine screening using Pap smears and HPV tests can detect abnormal cell changes before they progress to invasive cancer. Screening followed by early treatment has dramatically lowered the incidence of invasive cervical cancer since it was implemented in the 1950s, and recent research shows that the same approach can work for anal cancer.

But it's even better to avoid acquiring HPV in the first place. Studies show that vaccines prevent HPV infection and lower the risk for cervical cancer. A recent analysis by the American Cancer Society found that cervical cancer incidence fell by 65% between 2012 and 2019 among women in the first age group to receive the vaccine. Studies of other HPV-related malignancies have shorter follow-up, but evidence to date suggests that vaccines will prevent anal and oral cancer as well.

The Gardasil 9 vaccine, approved by the Food and Drug Administration (FDA) in 2014, protects against the two main cancer-causing HPV types (16 and 18), five other high-risk types and two types (6 and 11) that cause genital and anal warts. The FDA approved the original quadrivalent Gardasil vaccine, which targeted four HPV types, for young women in 2006 and for young men in 2009.

HPV vaccines are most effective before a person becomes sexually active. While the vaccine prevents HPV infection, it doesn't clear existing virus. The Centers for Disease Control and Prevention (CDC) recommends Gardasil 9 vaccination for girls and boys at ages 11 or 12—though it can be done as young as 9—with catch-up vaccines for those up to age 26. The FDA has approved the vaccine for women and men up to age 45, and the CDC advises that people between 27 and 45 should discuss vaccination with their doctor. Some older individuals may not have acquired all the HPV types covered by the newer vaccine and could still stand to benefit.

Just over half of adolescents ages 13 to 15 had received both recommended HPV vaccine doses in 2020, according to the Department of Health and Human Services. But vaccination rates declined during the first year of COVID-19 pandemic, and some fear that dissension around COVID vaccines could spill over into resistance to HPV and other immunizations.

"Our results suggest that interventions to increase awareness of all HPV-associated cancers would benefit public health," Adjei Boakye said. "[P]roviders should use every clinical visit as an opportunity to educate patients about the causal link between HPV and HPV-associated cancers, and also about the cancer prevention benefits of the HPV vaccine."

Barriers to HPV vaccination include cost and availability, socioeconomic and racial disparities, concerns about side effects and the belief that adolescents who are not sexually active do not need the vaccine—or that the vaccine will make teens more likely to have sex.

One step toward making HPV vaccines less costly and more convenient would be reducing the number of doses. Currently, the CDC recommends two doses for people who start the series before age 15 and three doses for those who do so later. But studies have shown that one vaccine dose offers good protection for teens and young adults. The World Health Organization now says that either one-dose or two-dose vaccine schedules can be used for people ages 9 through age

20. A recent analysis suggests that moving the recommended age to 9 or 10 instead of 11 or 12 could result in more adolescents completing vaccination.

A recent modeling study projected that with stepped-up vaccination, cervical cancer could be virtually eliminated in more affluent communities in the United States within the next decade, though it would take longer in communities with high poverty rates. Australia is already well on the way toward achieving this goal.

“We can completely eliminate cervical cancer by getting everyone vaccinated who should be,” Monica Bertagnolli, MD, director of the National Cancer Institute, said after Boakye’s presentation.

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