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Janet M. Torpy; Alison E. Burke; Richard M. Glass

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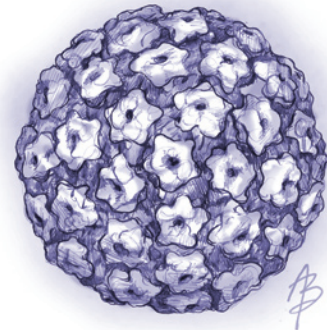
Human Papillomavirus Infection

Human papillomavirus (HPV) is a virus that causes genital warts (*condylomata accuminata*). It also causes some types of oral or throat warts, cervical cancer, penile cancer, and vulvar and vaginal cancers and has been linked to other cancers. Infection with HPV is common, with as many as 20 million persons infected in the United States alone. Worldwide, there are more than 440 million individuals with HPV infection. More than 500 000 cases of cervical cancer are diagnosed each year, mostly in developing countries.

Human papillomavirus passes from person to person through sexual contact (oral, vaginal, and anal). Infection with HPV is usually without symptoms, and an individual may never know he or she has been exposed to or infected with HPV. Genital warts are benign and usually cause no problems. However, because HPV is linked to cervical cancer in women, the **Papanicolaou (Pap) test** is an important part of preventive care to help prevent cervical cancer and cervical cancer precursors. Pap tests can detect precancerous states (called **dysplasia**) in the cells of the cervix. Specialized testing may be used for girls and women in some settings to determine whether high-risk types of HPV (the types that are related to cancer formation) are present at the time of a Pap test.

The February 28, 2007, issue of JAMA includes an article about the prevalence of HPV infection.

Human Papillomavirus



TREATMENT

- Genital warts can be left alone, treated with prescription medicines, or surgically removed (including cryotherapy or laser treatment).
- If cervical dysplasia is found on a Pap test, options may include close observation, other specialized testing, cervical cryotherapy, loop electrosurgical excision procedure (LEEP), or surgical excision.
- Treating cervical cancer may include surgical options (including hysterectomy), radiation therapy, and chemotherapy. Therapy depends on the stage and spread of cervical cancer at the time of diagnosis.

PREVENTION

- A vaccine against HPV has been recently approved. The Centers for Disease Control and Prevention (CDC) recommends routine vaccination with 3 doses of the quadrivalent HPV vaccine for girls 11 to 12 years of age. Catch-up vaccination is recommended for girls and women 13 to 26 years of age who have not been vaccinated previously or who have not completed the full vaccine series. Adverse effects from the HPV vaccine are usually mild and include pain where the injection is given and low-grade fever.
- Condoms help decrease HPV exposure but do not protect completely against all HPV transmission.
- Abstinence (not having any sexual contact at all) is the only sure way to prevent transmission of HPV.
- Smoking increases the risk of cervical cancer and other cancers, as well as heart disease and stroke.

FOR MORE INFORMATION

- Centers for Disease Control and Prevention
www.cdc.gov/std/hpv
- National Women's Health Information Center
800/994-9662
www.4woman.gov
- National Cancer Institute
www.cancer.gov

INFORM YOURSELF

To find this and previous JAMA Patient Pages, go to the Patient Page Index on JAMA's Web site at www.jama.com. Many are available in English and Spanish. A Patient Page on cervical cancer was published in the February 23, 2000, issue.

Sources: National Women's Health Information Center, National Institute of Allergy and Infectious Diseases, National Cancer Institute, World Health Organization, American Academy of Family Physicians

Janet M. Torpy, MD, Writer

Alison E. Burke, MA, Illustrator

Richard M. Glass, MD, Editor

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