UNIVERSITY STUDENT HEALTH SERVICES • Fact Sheet

Human Papillomavirus (HPV) & Cervical Cancer

WHAT IS HPV?

Human Papillomavirus (HPV) is the name of a family of viruses that has over 200 different strains. Certain strains have a tendency to infect specific parts of the body, like the genital area. These genital HPV strains have been classified as high or low risk for causing cervical cancer. The cervix is the bottom part of the uterus that opens into the vagina.

- Low-risk HPV types are known to cause genital warts and very rarely lead to cervical cancer.
- High-risk HPV types can cause cervical cancer in some people. High-risk HPV can also lead to less common cancers, such as cancers of the vulva, vagina, anus, penis, and oropharynx (the back of the throat).

This handout focuses on genital HPV strains that cause cervical cancer. For information about HPV and genital warts, please refer to our handout "Genital Warts (HPV)."

HOW COMMON IS HPV?

Globally, genital HPV is the most common sexually transmitted infection. It has been estimated that 75-80% of sexually active adults will become infected with genital HPV before the age of 50. However, only a small proportion of patients infected with genital HPV will develop cervical cancer. Most of the time, the body's immune system is able to clear the HPV infection on its own within 2 years.

In the US, cervical cancer is the third most common cancer diagnosis and cause of death among gynecologic cancers.

HOW IS HPV TRANSMITTED?

Genital HPV is passed by direct skin-to-skin contact with an infected person, most often during vaginal or anal sex. It can also be passed through oral sex and any other contact involving the infected genital area (genital-to-genital, hand-to-genital, etc.). It is not possible to get HPV by touching an object, such as a toilet seat.

Most people with HPV do not realize that they are infected and that they can pass the virus on to others.

HOW DOES HPV CAUSE CANCER?

While there are more than 40 genital types of HPV, only a few types can progress to cervical cancer.

- High-risk HPV strains can lead to abnormal changes in the cells of the cervix. Most of the time, the body fights off the infection naturally, and the cells return to normal.
- In about 10-20% of cases, high-risk HPV is not cleared by the immune system. Left untreated, the infection can linger for many years and eventually transform abnormal cells into cancer.
- Co-factors that increase the risk of developing cervical cancer include tobacco use and having a suppressed immune system (eg. from HIV, taking immunosuppressant medications, etc.).

The high-risk HPV types that cause cervical cancer can also lead to much less common cancers, such as those of the vulva, vagina, penis, and anus.

- Heterosexual men rarely develop cancer from HPV.
- Men who have sex with men (MSM) are at increased risk for developing anal cancer from high-risk HPV strains.

WHAT ARE THE SYMPTOMS OF HPV?

Most people do not have symptoms, so they don't even realize that they are infected. When symptoms are present, they depend on the type of HPV causing the infection:

- Low-risk HPV types that are not cleared by the body can lead to the development of genital warts.
- High-risk HPV types can lead to the development of invasive cervical cancer over an average of 15 years, although more rapid courses have been reported.
    - Cervical cancer usually does cause symptoms until late in the disease process. The most common symptoms include irregular or heavy vaginal bleeding or bleeding after sex. Other symptoms may include abnormal vaginal discharge, pelvic pain, and/or pain during sex.

HOW IS HPV DIAGNOSED ON A PAP SMEAR?

Because high-risk HPV types can cause cervical changes without noticeable symptoms, routine Pap smears are recommended to screen for cervical cancer. During a Pap smear, a brush is used to sample cells from the cervix. The sample is sent to a lab to be examined for any abnormal changes caused by HPV. When indicated, the lab can also determine if HPV DNA is present within the cervical cells.

HOW OFTEN DO I NEED A PAP SMEAR?

The first Pap smear should be performed in anyone with a cervix at the age of 21, regardless of gender identity or sexual orientation. If results are normal, testing is repeated every 3 or 5 years, depending on the person's age. Abnormal results require more frequent Pap smears and follow-up. Please refer to our handout "Your Pap Smear: What You Need to Know" for more information.

HOW IS AN ABNORMAL PAP SMEAR TREATED?

Depending on the severity of abnormal findings on a Pap smear and the patient's age, treatment may consist of continued observation or referral to a gynecologist for colposcopy. A colposcopy helps to further identify abnormal cervical tissue that can be biopsied and removed. Close follow-up after treatment is important. If a precancerous lesion is identified and removed, cervical cancer can usually be prevented.

WHAT IS AN ANAL PAP SMEAR?

HPV can also lead to anal cancer, particularly in high-risk populations such as those with HIV, men who have sex with men, and patients with a history of cervical, vaginal, or vulvar cancer. Studies are under way to determine if early detection and treatment prevents anal cancer. In the meantime, many experts recommend screening high-risks patients with anal Pap smears. Although guidelines for the timing and frequency of screening have not yet been established, some experts recommend starting at age 25 in those with HIV (or other immunosuppressant condition) and at age 40 in immunocompetent individuals.

CAN HPV BE PREVENTED?

Yes, there are several ways to decrease your chances of getting HPV if you are sexually active:

- Choose to be monogamous and to use latex barriers (eg. condoms, dental dams, finger cots) every time. Even though condoms cannot cover all areas of skin that may harbor HPV (eg. the scrotum, outer labia), consistent condom use is known to lower the risk of HPV and HPV-related diseases. Condom use also helps protect the cervix and promote the clearance of HPV.
- Get vaccinated against HPV. Gardasil 9 is a safe and effective vaccine that protects against 9 HPV strains that cause the majority of cervical cancers and genital warts. It also protects against anal cancer in men who have sex with men (MSM).
  - The vaccine is given in 3 doses over 6 months. Student Health can help eligible students receive free or discounted vaccines. Ask your provider for more information.
  - Gardasil 9 is routinely recommended for people ages 9-26. However, vaccination may be considered in people ages 27-45 depending on their risk factors.
  - The vaccine is most effective among individuals who have not yet been infected with HPV (ie. prior to becoming sexually active). However, it can still protect those already infected with HPV from other HPV types that they have not been exposed to yet.
  - The vaccine does not treat or cure existing HPV infections.

CAN CERVICAL CANCER BE PREVENTED?

Absolutely! Routine pap smears can detect precancerous changes, which are 100% curable if found early. Yet approximately 4,300 women die every year in the US from cervical cancer. If you have an abnormal Pap smear, it is very important to follow up as directed by your healthcare provider.

HOW CAN I DEAL WITH MY FEELINGS ABOUT HPV?

Educate yourself about HPV, and talk to your medical provider if you have any questions or concerns.

- Realize that HPV can be managed and that cervical cancer is preventable with regular Pap smears.
- Remember that you are not alone. Millions of Americans have HPV, and most do not develop long-term problems if they adhere to close medical follow-up.

RECOMMENDED RESOURCES: www.ashastd.org, www.cdc.gov/hpv, www.niaid.nih.gov

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