



What is HPV?

Human papilloma virus (HPV) is a type of virus that can cause abnormal genital tissue growths (for example, warts) as well as other cellular changes. Infection for a long time with certain types of human papillomavirus can cause cervical cancer. HPV can also play a role in some other types of cancer, such as anal, vaginal, vulva, penile, and rarely oropharyngeal cancers.

There are more than 120 different types of HPV but only 40 types can infect the genital tract. About twelve types (but primarily types 6 and 11) are associated with the development of genital warts and low grade lesions of the cervix, but are not associated with cancer. Approximately thirteen to sixteen types are high risk, and may be factors in the development of cervical and anal/genital cancers. Types 16 and 18 are responsible for 70% of cervical cancer. The GARDASIL HPV vaccine covers the most problematic HPV types: 6, 11, 16, and 18.

How common is HPV?

HPV is the most prevalent sexually transmitted infection (STI) with 6.2 million new HPV infections diagnosed in the United States each year. It is estimated that at any given time 26 % of women ages 14-49 have HPV. The lifetime risk of acquiring this infection is 75% for sexually active adults.

How is HPV transmitted?

HPV is transmitted through direct skin-to-skin contact, not via body fluids. Vaginal intercourse or receptive anal intercourse are the highest risk activities, but skin-to-skin genital contact, or less commonly oral-genital contact may also transmit the virus. The virus does not survive long on inanimate objects but it can be spread in the short-term via use of sex toys. Because the virus is transmitted by skin-to-skin contact, condoms do not completely prevent infection, as they might not cover all areas infected with HPV. However, according to one study, women whose partners used condoms consistently were 70% less likely to acquire an HPV infection than women whose partners did not.

What is the natural history of HPV infection?

HPV is an infection which many people will contract, but only a small minority of those people will have a lasting infection leading to cancer. This is because, in most cases, HPV- whether low or high-risk types- is cleared by the immune system. In a study of female college students, more than 90% of women infected with high risk HPV had cleared the infection 24 months later. The average time of infection is 4 to 20 months. Progression to pre-cancer occurs when infection with high-risk types persists over time. Infection with high-risk HPV types is a necessary, but generally not a single or sufficient, cause of cancer. Other factors which may contribute to developing cancer include smoking, nutritional status, health of the immune system (e.g., HIV infection), and oral contraceptive use. Oral contraceptives (OCs) users have a slightly increased risk of cervical cancer. This may be associated with lack of condom use when on the pill and lifetime number of partners, rather than any direct effect. There is insufficient evidence to recommend discontinuation of OCs use in women with high-risk HPV infection.

Key Points to Remember about HPV:

- ◆ The primary risk factor for HPV infection is sexual activity. Virtually any person who has engaged in sexual activity is likely to have been exposed to HPV.
- ◆ HPV is very common. Most people who have been sexually active have had HPV.
- ◆ HPV is spread through close contact of genital skin, usually during vaginal or anal intercourse. HPV can be transmitted with non-penetrative sexual activity.
- ◆ HPV infection usually causes no symptoms, and most people never know they are infected.
- ◆ It may not be possible to know who gave you HPV or when you got it.
- ◆ Condom use reduces but does not completely prevent the spread of HPV.
- ◆ People who have same-sex partners can be infected by HPV.
- ◆ In most cases, the body clears HPV infection on its own.

Understanding HPV and your Pap results

The Pap test (also known as the Pap smear) is a

simple and effective way of checking for cells in your cervix that are abnormal and potentially cancer-causing. Cervical cancer, most often caused by human papillomavirus (HPV), is preventable by early detection and treatment of worrisome or abnormal cells. The pap test is a screening test, not a diagnostic test. It gives us information we can use to determine which women need further evaluation.

What Do My Pap Test Results Mean?

Pap tests are generally performed on women 21 and older. Your Pap test is reported as either normal, or abnormal. Abnormal test results fall into categories along a spectrum, ranging from mild to serious abnormality. Based on the results, your age, and the likelihood of cancer, your health care provider will advise you about the possible next steps (shown in the table below). If the results are abnormal, the three most likely next steps are a repeat Pap test, and HPV DNA test, or colposcopy.

Colposcopy is a procedure used after certain types

of abnormal Pap test results to get a closer look at the cervix. It is usually performed in a health care provider’s office. The woman is positioned on the examination table as if she were having a Pap test. The health care provider uses a large microscope with a bright light to look closely at the cervix. The provider may take a tissue sample (known as a biopsy), which feels like a cramp and may cause mild discomfort. The entire procedure takes about ten to fifteen minutes.

False Positives and False Negatives

As with all screening tests, the Pap test is not perfect. Sometimes, the Pap test gives a positive result when everything is actually normal—this is called a “false positive.” The Pap test can also give a “false negative” result—a negative result when abnormal cells are present. Age guidelines for how frequently pap tests should be done on women 21 and over reduce chances of false negatives. Repeating the Pap test on a regular basis can help find abnormal cells that were missed before.

Result of Pap Test	What Result Means	Likely Next Step
Normal (no abnormal cells seen)	No abnormal cells	Pap test in 1 to 3 years, depending on age and other factors; your provider will determine timing.
ASC-US (atypical squamous cells of undetermined significance)	Cells look unusual but aren’t clearly abnormal (75% of women with an ASC-US result have no abnormal cervical cells, but to be safe all women need additional reflex testing or evaluation)	HPV DNA test is often done reflexively when the pap is abnormal. If positive, then colposcopy; if negative, then Pap test in 1 year
LSIL (Low-grade squamous intra-epithelial lesions)	Mildly abnormal cells (most women with a LSIL result have HPV infection, which will usually go away on its own, but to be safe all women need additional evaluation)	Colposcopy
HSIL (High-grade squamous intra-epithelial lesions)	Moderately to severely abnormal cells (all women need further evaluation)	Colposcopy

Table adapted from: “Understanding Pap Test Results”, Association of Reproductive Health Professionals web page

If I Have HPV or an Abnormal Pap Test, What Can I Do?

- ◆ Follow-up as recommended by your health care provider.
- ◆ Stop smoking. Women who smoke are more likely to have abnormal Pap tests and more likely to develop cervical cancer than women who do not smoke.

- ◆ Continue (or start) healthy habits, such as eating a nutritious diet.
- ◆ Try to remain calm. HPV is very common; you are not alone. The majority of sexually active Americans get HPV at some time in their lives. Remember most young women clear the virus spontaneously over time.

The following Web sites offer additional information:

- ◆ American Social Health Association - HPV Resource Center
http://www.ashstd.org/hpv/hpv_overview.cfm
- ◆ The American Society for Colposcopy and Cervical Pathology
<http://www.asccp.org/>
- ◆ National HPV & Cervical Cancer Public Education Campaign
<http://www.cervicalcancercampaign.org/>
- ◆ Association of Reproductive Health Professionals
<http://www.arhp.org/Topics>