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Sources

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1. **What is HPV?**

The human papilloma (pronounced "pap-ah-LO-mah") virus, also called HPV, is a common virus that most people get at one point during their lives. HPVs are a group of over 100 related viruses. Each HPV virus in the group is given a number, which is called an HPV type. HPVs are called papilloma viruses because some of the HPV types cause warts, or papillomas, which are non-cancerous tumors. The papilloma viruses are attracted to and are able to live only in squamous epithelial cells in the body. Squamous epithelial cells are thin, flat cells that are found on the surface of the skin, cervix, vagina, anus, vulva, head of the penis, mouth, and throat. HPVs will not grow in other parts of the body.

HPV lives in the top (layer) of skin - not in the blood stream, not in the spinal cord, nor in any other internal organs. HPV virus infects every single human being, usually in the form of hand or feet warts in childhood, so there is nothing extraordinary about having an HPV infection. The virus can only move from one human to another through skin-to-skin contact (not through pets or towels or linen), where the receiving skin already has a (usually microscopic) abrasion.

Of the more than 100 types (strains) of HPV about 60 HPV types cause warts on non-genital skin, such as on the hands and feet. These are the common warts. The other 40 HPV types are mucosal types of HPV. "Mucosal" refers to the body’s mucous membranes, or the moist skin-like layers that line organs and cavities of the body that open to the outside. For example, the vagina and anus have a moist skin-like layer. The mucosal HPV types are also called the genital type HPVs because they typically affect the anal and genital area. The mucosal HPVs prefer the moist squamous cells found in this area. They do not prefer the skin of the hands and feet.

The 40 types of HPV that affect the genital area are divided into two groups:

"**Low-risk**" types of HPV

There are about 12 types of HPV that are called "low-risk" because they rarely develop into cervical cancer. They can, however, cause genital warts or minor cell changes on the cervix that go away on their own.

"**High-risk**" types of HPV

There are more than a dozen types of "high-risk" HPV. High risk HPV infection is the primary risk factor for cervical cancer. Infections with high-risk types of HPV, if they persist, may result in development of abnormal cell changes in the cervix (Dysplasia). These abnormal cell changes, if not treated, may gradually develop into cervical cancer.

In most cases, the body's immune system fights off or suppresses the HPV virus without causing any kind of abnormality. The Centers for Disease Control and Prevention (CDC) estimates that 70 percent of new HPV infections (including those that are "high risk") go away within one year, and 91 percent are gone within two years. It's only when high-risk types of HPV stay "active" that the risk of developing dysplasia (a pre-cancerous change in cells and tissues) and cervical cancer increases significantly.
2. How do you get HPV?

HPV is spread from person to person through sex or intimate skin-to-skin (genital) contact. Condoms provide some protection; however, they cannot prevent infection completely, because they do not cover all areas of the genital region. Transmission by genital contact without intercourse is not common, but infection has been reported in women who did not have a history of intercourse. Oral-genital and hand-genital transmission of some genital HPV types is possible and has been reported.

It also is important to remember that even women who have had only one sexual partner for many years need to be screened for abnormal cells that can turn into cervical cancer. This is because HPV may remain dormant in the cervical cells for a long period and not be detected. If this occurs, the virus is inactive and thus won't cause any problems – unless it re-activates, perhaps due to changes in the body's immune system. It is impossible to determine exactly when you acquired an HPV infection or how long you have been infected.

3. How common is HPV?

The Centers for Disease Control and Prevention (CDC) has reported that as many as 80 percent of women will get a genital type of HPV by the age of 50. However, most of those infections go away or are suppressed by the body within one to two years, without causing any problems that require treatment.

4. What are the symptoms of HPV?

HPV usually has no symptoms, unless it is a type that causes genital warts. Genital warts may occur within weeks or months after contact with a partner who has HPV. More rarely, genital warts may occur years after exposure. Most people will never know if they have HPV because no significant disease develops and the immune system suppresses the virus. A small percent of people with HPV will have the virus for a longer time and will develop cell changes that may lead over many years to cervical or other anogenital cancer.

5. Can HPV be treated?

Antibiotics or other currently available medicines cannot treat HPV infection. The virus usually goes away or is suppressed by the body without causing any problems. Seventy percent (70%) of HPV infections are typically gone within one year and 90% are gone within 2 years. That's why regular screening with a Pap smear and the HPV test is so critical. With early treatment of pre-cancerous cells, cervical cancer can be prevented before it has a chance to develop.

Although there is currently no medical cure for papillomavirus infection, the lesions and warts these viruses cause can be treated. Methods commonly used to treat lesions include cryosurgery (freezing that destroys tissue), LEEP (loop electrosurgical excision procedure, the removal of tissue using a hot wire loop), and conventional surgery. Similar treatments may be used for external genital warts. In addition, some drugs may be used to treat external genital warts.
6. **What is the HPV test and how is it different from the PAP test?**

The HPV test uses advanced, molecular technology to determine the presence of one or more of the virus types that cause abnormal cells to form in the first place. It works by detecting the genetic (DNA) "footprint" of the virus. The laboratory can perform the HPV test on the same sample of cervical cells collected for the Pap.

The HPV test was first approved by the Food and Drug Administration in 1999 for women whose Pap results are borderline or inconclusive (ASCUS) – pap test results could broadly be categorized as normal, abnormal, or inconclusive.

In 2003, the HPV test was approved for routine use along with a Pap in women age 30 years and older, the group considered most at risk for cervical cancer.

While a Pap test looks for signs of abnormal cell changes in the cervix, the HPV test looks for the virus that may cause the abnormal cell changes. Abnormal cell changes, if not treated, can lead to cancer of the cervix.

7. **Can the HPV test detect the type of HPV?**

There are about 15 types of high-risk HPV that can cause cervical cancer. Of those, 13 are considered the most important, and are known by the numbers assigned to them (in the order of their discovery): 16, 18, 31, 33, 35, 39, 45, 51, 52, 56, 58, 59 and 68. [Remember, there are more than 100 different types of HPV all together.] Of these 13, two of them – 16 and 18 – have been shown to cause 70 percent of all cervical cancers.

The HPV Test detects whether one or more high-risk types of the virus. **It does not determine which specific high-risk type of HPV is present.** Under current medical guidelines, the extra exams and other follow-up care needed once high-risk HPV is detected are the same regardless of the high-risk HPV type.

8. **Why are both the HPV and Pap tests necessary? Why not just test for HPV?**

The HPV and Pap tests look for different "clues":

- In a Pap test, a laboratory technician looks at cervical cells under a microscope and gives an opinion about whether any of the cells are abnormal.
- The HPV test uses advanced, automated technology to test the cells for the virus that actually causes abnormal changes in the cervix.

Present guidelines for the prevention of cervical cancer developed by the American College of Obstetricians and Gynecologists (ACOG), the American Cancer Society (ACS) and the American Society for Colposcopy and Cervical Pathology (ASCCP), recommend HPV and Pap tests based on age groups:
**Women 30 years of age and older**

Routine (getting both) HPV and Pap tests offer the most peace of mind for women 30 and older -- the age group that is most at risk of cervical cancer. As women grow older, HPV infections become less common, but the occurrence of cervical cancer increases. Thus, HPV infections in older women are of the most concern. That's why it's recommended that women 30 and older be routinely tested for infection with high-risk types of HPV.

If a woman does not have HPV and her Pap is normal, she can be confident she does not have abnormal cells that could develop into cervical cancer without being detected. If a woman does have HPV, and/or abnormal Pap, she and her physician now know that additional procedures are needed to determine if she has abnormal cells that need to be treated.

Even if a woman has been in a long-term relationship with one partner, it is important to be regularly screened with both the HPV and Pap tests. This is because it is possible for HPV to "hide" in the genital cells and thus go undetected long after she or her partner were first exposed. While it is dormant, the infection won't cause any problems and can't be spread to others. However, the HPV infection may "re-activate" later. That's why periodic re-testing is needed.

**Women under 30 years old**

Women under 30 are indeed sometimes diagnosed with cervical cancer despite having normal Pap results. However, it is relatively rare. Both the American College of Obstetrics & Gynecology (ACOG) and the American Cancer Society (ACS) agree that routine testing for HPV at this age is not necessary or useful. The reason is that HPV infection is very common in young women, but usually goes away on its own or is suppressed by the body before it causes any problems. That means that if younger women were tested routinely, many would be found to have HPV and thus undergo additional, unnecessary testing. It's a bit like mammography. Although young women sometimes get breast cancer, regular mammograms are not recommended until they reach the age of 40, when the risk is significant enough to justify regular testing.

However if the Pap test result for a woman under the age of 30 is abnormal or inconclusive/borderline (commonly referred to as ASCUS), then an HPV test should be performed. If HPV is detected additional procedures are needed to determine if there are abnormal cells that need to be treated.

9. **What does HPV Positive mean? What happens next?**

The most important thing to remember is that HPV infections are very common. In most women, HPV infections go away or are suppressed by the body without causing any problems that need treatment. It is only when an HPV infection stays active that abnormal (pre cancerous) cells may form.

- **If the HPV test shows a high-risk type of the HPV virus (HPV Positive), and the Pap is normal**, then the expert guidelines recommend that both tests be repeated in six months. If the HPV infection is still active at that time, and/or if the Pap is now abnormal, a procedure called Colposcopy is needed to help determine if any "bad cells" are present. If abnormal cells are found early, before they become cancerous, treatment is highly effective.
• If the HPV test shows a high-risk type of HPV (HPV Positive), and the Pap result is **abnormal or inconclusive** (ASCUS), the expert guidelines recommend a procedure right away.

• If the HPV test does not detect presence of HPV (HPV Negative), and the Pap result is **abnormal**, it is unlikely that there is a cause to worry. The presence of a high-risk type of HPV is necessary for cancer to develop. However, just to be sure, the guidelines recommend that a Colposcopy procedure be performed.

• If the HPV test does not detect presence of HPV (HPV Negative), and the Pap result is **unclear or inconclusive** (ASCUS), both the HPV and Pap tests should be repeated.

10. **Does infection with High Risk HPV virus always lead to abnormal cervical cells (pre-cancerous condition) or cancer?**

No. Most HPV infections appear to go away on their own without causing any kind of abnormality. However, persistent infection with cancer-associated HPV types (high Risk HPV) increases the risk that mild abnormalities will progress to more severe abnormalities or cervical cancer. With regular follow-up care by trained clinicians, women with precancerous cervical abnormalities can be treated before cancer develops.

In one study conducted by the National Cancer Institute (NCI), 4 percent of women who were found through testing to have high-risk HPV developed advanced, pre-cancerous cervical disease (CIN 3) in the following three years. When watched for 10 years, about 7 percent of the women developed advanced cervical disease.

11. **After you get HPV, will it go away? Or will you have it forever?**

Medical science does not yet have all the answers to life's mysteries, and this is one of them. It is not known whether the body is actually able to get rid of the virus altogether, or - as appears to happen in at least some women -- the infection is merely suppressed. The good news is that whichever scenario is true, a negative HPV test means you are risk-free for the time being. However, that also means that periodic re-testing is needed to make sure that an old HPV infection hasn't "re-activated," or that you haven't been exposed to a new, different type of the virus.

12. **How is HPV different from other sexually transmitted diseases (STDs)?**

Unlike STDs such as herpes or gonorrhea: HPV by itself is not a disease. HPV is a very common viral infection, affecting up to 80 percent of women by the age of 50. HPV infections usually go away or are suppressed by the body, without causing any lasting problems. Evidence suggests that after you get a particular type of HPV, you become immune to it and cannot be re-infected with that same type again.

13. **Should you tell your sexual partner(s) if you have HPV?**

If you are tested for HPV and are told by your physician that you have the virus, it is your own, personal decision whether to tell your partner. It is important to remember that most adults will get one or more types of HPV at some point in their lives. Chances are, your partner was already exposed to HPV by the
time your infection was detected. Likewise, it is impossible to know for certain from whom you got the HPV virus in the first place. You could have been exposed in another relationship months or years earlier, and the infection may have been dormant in the meantime.

In addition, if your partner is a male, you should be aware that there is currently no FDA-approved HPV test for men. Thus, there is no way to determine whether he has the virus. Fortunately, serious, HPV-related health problems also are relatively rare in men.

14  Does HPV interfere with a woman's ability to get pregnant?

Having HPV does not interfere with a woman's ability to become pregnant.

15.  Can a mother with HPV pass the virus to her child?

According to the federal Centers for Disease Control and Prevention (CDC) it's possible for the HPV virus to be passed from mother to child during birth, but it is "rare." In fact, the agency estimates this occurs in no more than 1.1 cases per 100,000 children. In these extremely infrequent cases, the HPV infection is found in the infant's respiratory tract, which can lead to wart-like growths – most commonly, on the larynx. Early diagnosis and care are key.

16.  Can HPV cause any other kinds of cancer besides cervical cancer?

Cervical cancer is by far the most significant concern. However, high-risk types of HPV also have been linked to less-common cancers of the vagina, vulva, anus and, in men, penis. Some research also has suggested a link between high-risk types of HPV and other cancers, such as oral (mouth and throat) cancer. However, these other HPV-related cancers are still being investigated and are thought to be relatively rare.

17.  What can you do to protect yourself from HPV and its effects?

The U.S. Food and Drug Administration (FDA) recently approved the first vaccine designed to protect against four types of HPV – the two that most commonly cause cervical cancer, and two others that cause most genital warts. The agency approved the use of the vaccine, called Gardasil®, for girls and young women age 9-26. However, the FDA cautioned that “females are not protected if they have been infected with [the targeted] HPV types prior to vaccination, indicating the importance of immunization before potential exposure to the virus” – in other words, prior to a woman’s first sexual relationship.

However, even immunized women can still be infected with one of the HPV types that are not targeted by the vaccine. There are steps you can take to reduce the chance that an HPV infection will persist, causing abnormal cells to form:

- Don't smoke, because that can prevent the body's immune system from working effectively.
- Take a folic acid supplement - like the ones recommended for pregnant women — along with your multi—vitamin. One recent study found that women with higher levels of folate — a type of B vitamin — were less likely to get a new HPV infection. And if an HPV infection already exists, it was less likely to persist.
18. Can men get HPV too?

Men get HPV just like women do. As with women, men usually have no symptoms, unless the HPV virus begins to cause abnormal changes in skin cells. However, although HPV infection has been linked to cancer of the penis and anus, these cancers are very rare in men. For this reason, as well as because a good, reliable way to collect a sample of male genital skin cells that would allow detection of HPV has yet to be discovered, there is currently no FDA-approved HPV test for men.

19. Can you get HPV through oral sex?

This is a question that is still being researched. Some studies have found that 25-35% of oral (mouth and throat) cancers are linked to high-risk types of HPV. However, in light of the widespread practice of oral sex, the American College of Obstetricians and Gynecologists considers the spread of HPV through this route to be rare.