What is HPV?

HPV stands for Human Papilloma Virus. It is a virus that is spread by direct contact, and infects skin cells. When a skin cell is infected by HPV, the HPV genes (instructions in living organisms used to make proteins) become part of the genes of the skin cell and change the way it behaves. When HPV is transmitted by sexual contact, including intercourse and use of fingers, it may infect the skin of the anal or genitals (penis or vagina). The virus may also infect the skin cells of the mouth when there is direct contact with infected area.

There are many subtypes of HPV, just like there are many types of people. Certain HPV subtypes are more likely to cause infection in certain areas of the body. There are over 70 known subtypes of HPV, and over 35 that affect the anal and genital areas.

What changes does HPV cause?

Once the skin is exposed to HPV, four possible results may occur:

1. The body’s immune system may be able to clear the infection. It is still possible to become re-infected through later contact.
2. The body is not able to clear the HPV infection, and the HPV genes become part of the genes in the infected skin cell. The virus may stay “dormant” in the skin cell. The skin cell is infected with HPV indefinitely, but the skin cell behaves normally and there are no noticeable changes. However, the virus may become active many years later.
3. The body is not able to clear the HPV infection, and the viral genes cause the skin cell to grow in an abnormal way and produce a visible growth – a wart.
4. The body is not able to clear the HPV infection, and the viral genes cause the skin cells undergo changes that could lead to skin cancer. Early cell changes may been seen called dysplasia. Some HPV subtypes such as types 16 and 18 are more likely to produce cancerous changes.

What risk are factors related to HPV disease?

HPV can affect both men and women, although it appears to be more common in women. HPV infection in the anal and genital areas is related to sexual activity and contact. This may be either direct contact (vaginal or anal intercourse) or indirect contact (use of fingers which touch infected areas and then non-infected areas).

The risk of HPV spread and infection increases with a greater number of sexual partners. The use of condoms during sexual activity reduces the chance of HPV spread although they do not cover all of the skin at risk. The likelihood of infection being cleared by the body is markedly decreased in immune suppressed patients, most notably HIV-infected patients and organ transplant patients (kidney, liver, others) who are on anti-rejection medications.

What are the symptoms of HPV, anal warts and anal dysplasia?
Patients with “dormant” HPV infection or a small number of anal warts usually have no symptoms. Other patients may notice small growths in the anal area that may increase in size or number. They may experience anal itching, burning or tenderness, anal bleeding, or anal discharge. In some patients, the warts may become very large and cause pain, significant discharge and odor, or interfere with the ability pass bowel movements.

How is HPV treated?
There are three main treatments for HPV related disease: chemical destruction, immune therapy, and surgical treatment. The choice of treatment for warts depends on how much disease is present and whether it is on the skin outside of the anus or in the lining inside the anal canal. Very small lesions may be treated with topical medications, however most of warts need to be removed surgically. Once anal dysplasia develops, surgical destruction is necessary.

Chemical destruction
There are several chemicals that may be used to treat anal warts. Podophyllin and trichloroacetic acid are applied directly to the skin surface. Trichloroacetic acid should be applied by a physician, and may be used for either internal anal canal or perianal warts. 5-fluorouracil/epinephrine gel is injected into the lesions; it is rarely used.

Immune therapy
Imiquimod (Aldara) is a cream that is FDA-approved for the treatment of warts. It is typically applied for 10 hours at a time, usually 3 times each week overnight, for up to 16 weeks. It often reduces the number and size of the warts but rarely completely resolves the process. Interferon alpha injection into the blood stream or into the warty region has also been used. However, this is not an FDA approved use of interferon, and there are several significant side effects. Since immune therapy alone rarely cure the infection, they are more commonly used in addition to surgical removal to improve the results when there is extensive disease or a history of recurrence after initial treatment.

Surgical destruction
Surgical treatment may involve destroying the lesion or removing them. There are several ways to destroy warts. Warts may be frozen (cryotherapy with liquid nitrogen) or burned (infrared coagulation - IRC, electrocautery, or laser). Surgical excision is the most effective method, has the lowest recurrence rates, and has the additional benefit of obtaining tissue for microscopic examination to look for dysplasia or cancer. These treatments usually require either local or general anesthesia.

It is important to realize that regardless of the treatment, recurrence of HPV is common. Skin cells outside of the visible area of disease may already be infected and not detectable until new warts form. Close follow-up to detect recurrence of warts or dysplasia and to treat early is critically important.

Is there an HPV vaccine?
A vaccine called Gardasil is available for HPV. It is specific for 4 subtypes of HPV including those most likely to cause cancer. It is currently indicated for use in males and females 9 through 26 years of age for the prevention of anal cancer, precancerous or dysplastic lesions, and genital warts caused by human papillomavirus (HPV) Types 6, 11, 16, and 18. It has not been demonstrated to provide protection against
diseases to which a person has previously been exposed through sexual activity. Gardasil is not useful for treatment of active external genital lesions.