

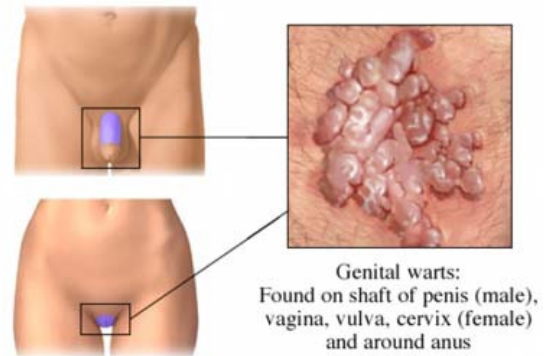
Gardasil: A Vaccine for Cancer?

The Human Papillomavirus (HPV) is a serious infection that can cause complications ranging from harmless warts to cancer. According to the Centers for Disease Control and Prevention (CDC), 6.2 million more people are infected with HPV each year. Studies performed by the CDC also show that there are currently approximately 20 million infected people living in America, and at least 50 percent of sexually active men and women will be infected at some point in their lives. Also, by age 50, 80 percent of women will have acquired the infection. There is no cure for this ravaging infection; however, scientists have recently developed a vaccine to protect women from developing certain types of HPV that can lead to cervical cancer. Due to the constant advances in science and medicine, it is imperative that all women fully inform themselves about the nature, symptoms, and possible treatment or prevention paths associated with HPV.

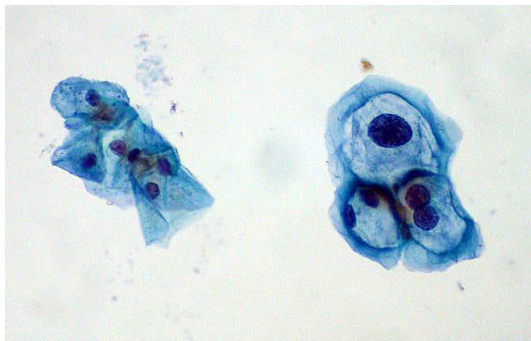
First of all, it is important to understand the ways unsuspecting women are infected with this disease. According to the U.S. Department of Health and Human Services, HPV is the most common Sexually Transmitted Infection (STI) in the world. The strains of HPV that affect the genital area are transmitted through genital contact. A person may be infected and not know it, therefore spreading the infection to sexual partners without being conscious of the danger in their actions.

HPV is commonly known as a “silent infection,” meaning that symptoms rarely arise and are hard to detect if they do appear. The most common skin abnormality associated with HPV is genital warts. Warts are lumps or swellings that can be rough,

soft, pink, flesh-colored, or have a myriad of other descriptions. These can appear on the vulva, vagina, anus, or cervix and may appear weeks or months after infection, if at all.



The most common method of testing for abnormal cervical cells that can lead to cervical cancer is the Pap test, also referred to as the Pap smear. In a Pap test, the gynecologist places a speculum in the vagina, then uses a brush or stick to collect a sample of cells from the cervix for examination. While abnormal Pap test results do not necessarily mean that a woman will develop cervical cancer, it can provide a red flag for gynecologists, alerting them that further inspection



and testing is needed. The graphic at the left shows a Pap smear with a group of HPV-infected cells at the right, and a group of normal cells at the left. (Photomicrograph by Ed Uthman, MD. 20 July 2006)

Possibly one of the most controversial and exciting recent scientific achievements is the development and successful testing of the first and only HPV vaccination treatment, Gardasil. Gardasil is marketed by Merck and consists of three injections performed over a period of six months. A study completed by the National Cancer Institute studied 2,392 women aged 16 to 23 and for 17 months after the third shot in the series. Half of the women were given the experimental vaccination, which the rest were given placebo shots. Neither group knew which injections they were being given. Results showed that a significant number of women in the placebo group developed strains of

HPV, and certain participants also went on to develop precancerous lesions. None of the women in the experimental vaccination group had any complications related to HPV.

Gardasil works by introducing a benign form of the virus into the body. This boosts the immune system and prepares it to respond and fight the disease, should it ever enter the body later in life. The main ingredients in Gardasil are purified, inactive proteins that come from the HPV types 6, 11, 16, and 18, the four strands that the drug protects the patient from. A common concern is that taking the vaccine can actually cause the patient to be infected with HPV, but that is not possible due to the fact that the proteins used to make Gardasil are completely inactive and purified.

Along with the benefits and health protection available with the use of Gardasil, there are a few shortcomings. Gardasil does not treat cervical cancer, it only helps to prevent it. Therefore a patient would not benefit from using Gardasil if they already have cervical cancer. Also, Gardasil does not protect against other sexually transmitted diseases, nor does it protect against all types of cervical cancer. Another important point is that Gardasil does not replace regular gynecological screening. It is still necessary to visit a gynecologist on a regular basis and continue with regular Pap tests and other check-ups to maintain optimum health. There are, as with all drugs, a few side effects associated with the vaccination, such as pelvic or stomach pain, stiffness in the joints, mild fever, nausea, dizziness, and pain or swelling at the site of injection.

The Food and Drug Administration (FDA) approved Gardasil (pictured at left) on June 8th, 2006. The FDA approved the drug for use in females 9-26 years of



age. Gardasil protects women from the HPV types 6, 11, 16, and 18, the strains that most commonly cause cervical cancer and genital warts. The Advisory Committee on Immunization Practices (ACIP) recommends that the vaccine be routinely given to girls 11-12 years old. However, the vaccine is still safe for preteens as young as 9 and is still effective when given to a girl between the ages of 13 and 26. The ACIP also states that it is more beneficial to receive the vaccine before becoming sexually active, but women who are already sexually active should still be vaccinated.

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