

## The Most Common STD

# You've Never Heard Of

**Human papillomavirus causes cervical cancer and genital warts. A new vaccine will stop it.**

By Sara Aase

**A**t age 16, Natalie M. knows more about the most common sexually transmitted disease (STD) in the United States than most teens—or most adults. “I know that 6.2 million cases are diagnosed per year and that if it’s not treated, it can lead to cervical cancer, even though you can’t feel its effects,” she says. The STD Natalie is talking about is human papillomavirus, or HPV—an STD that was little understood by doctors until recently. With the advent of a new vaccine to prevent HPV, doctors are urging renewed attention to the virus that causes genital warts and cervical and anal cancers.

Natalie, for one, isn’t waiting for HPV to appear as part of her school’s abstinence-focused sex-education program. Two years ago, the junior from Manassas,

Va., founded a club at her school to conduct regular educational campaigns about STDs and other issues. This school year, HPV has been at the top of Natalie’s list: “[I hope] the awareness campaign will [jump-start] people into wanting to get the vaccine.”

### What is HPV?

Human papillomavirus is a family of more than 100 virus types, 30 to 40 of which affect the genitals. (Other types cause warts on the fingers or feet.) When the virus detects a microscopic tear in the skin, it inserts itself and starts to grow. The virus then reproduces itself. “But people [usually] have no symptoms when that occurs,” says Dr. Daron Ferris, who directs the Medical College of Georgia’s

Gynecologic Cancer Prevention Center in Augusta.

In the United States, HPV infects one in four teens and young adults between the ages of 15 and 24. By age 50, at least 80 percent of women have acquired it. However, HPV has remained out of the public eye because it is a paradox, says Dr. Jessica Kahn, associate professor of pediatrics in the adolescent medicine division at Cincinnati Children's Hospital Medical Center. In 70 percent of cases, HPV causes neither symptoms nor disease—the body naturally clears out any harmful effects. Yet for about 30 percent of those exposed, HPV can cause itchy, irritating genital warts or lead to cancers of the cervix, vulva, anus, and penis.

In 2006, HPV caused about 3,700 U.S. deaths from cervical cancer, because women who had the virus felt fine until it was too late. "For the cancer-causing types of HPV, there are usually no symptoms unless someone has advanced cancer," says Ferris. "At that stage, we are not as likely to be able to cure [the disease]."

#### How is it spread?

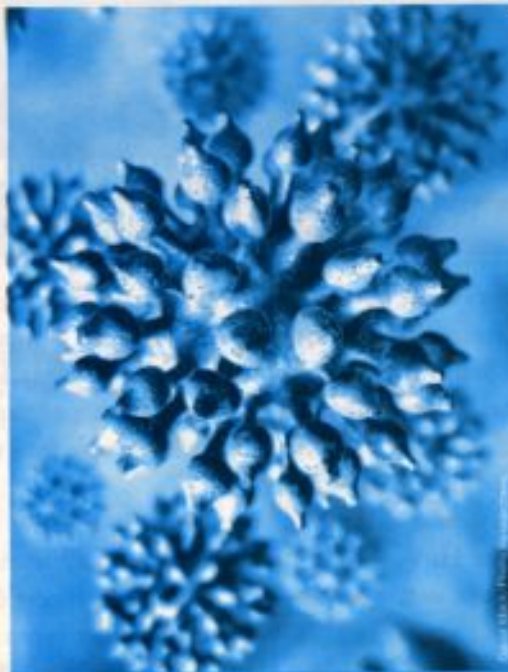
People spread HPV unknowingly by having sex or genital-to-genital contact. You can also spread HPV through anal sex or by touching someone else's genitals and then your own. (Getting HPV from oral sex is possible but rare.) It's all about skin-to-skin contact, Kahn says. "You don't have to have intercourse or exchange bodily fluids to get HPV," she says. "We have a lot of patients who had genital contact for a few minutes, decided not to have sex, and then got genital warts." The virus can spread without recognizable symptoms, although the presence of warts makes HPV highly contagious. Condoms offer very good, but not full, protection because they don't cover all genital areas.

## The scary thing about cervical and anal cancers is that they cause no symptoms until advanced stages.

advances the cancer, which most often strikes people age 35 or older. In 2006, more than 9,700 new cases of cervical cancer were diagnosed in U.S. women, and 4,660 cases of anal cancer were found in U.S. women and men. The scary thing about cervical and anal cancers is that they cause no symptoms, such as bleeding after sex, until advanced stages. This is particularly serious for cervical cancer, which is more common and is harder to treat, if not caught early, than anal cancer.

Avoid all sexual contact, and the risk of HPV goes away. For a sexually active woman, the best insurance against cervical cancer is the HPV vaccine (more on that on page 3), backed up by annual pelvic exams that include Pap smears. During the exam, a doctor swabs cells from the cervix and sends them to a lab. If the test detects precancerous changes, the doctor might remove those cells. If it detects cancer, patients may need laser surgery, cryotherapy (freezing), or more radical surgery such as a hysterectomy (removal of the cervix, uterus, and sometimes the ovaries). A doctor may also recommend radiation and chemotherapy. Most cervical cancer deaths happen in women who don't get regular Pap smears.

Gay men and men who have HIV are at high risk for anal cancer, which can also be detected by a Pap smear. There are no standards for testing men for anal cancer, although some doctors are starting to recommend that gay men get annual Pap smears. Ask your physician about getting the test if you're concerned.



The ugly human papillomavirus (HPV): More than 30 types of HPV can infect the genitals, putting a person at risk for genital warts or cancer of the cervix, vulva, anus, and penis.

### How is HPV related to genital warts?

In about 1 percent of sexually active people, HPV infection causes warts on the genitals. In women, warts can show up on the vulva or cervix or around the vagina or anus. In males, warts can appear on the scrotum, penis, or anus. The warts can emerge within weeks or months of exposure or not until years later. They are generally painless but may itch and should be treated. A doctor may freeze them off with liquid nitrogen, remove them with a laser, or paint them with an acid solution. Treating the warts does not get rid of HPV, and in some people the warts can reappear.

### How does the HPV vaccine work?

The new vaccine, Gardasil, protects against two strains of HPV (HPV-16 and HPV-18) that cause up to 70 percent of cervical cancers. "It will help save the lives of our generation, basically," Natalie says. (Another vaccine is also in the works.) Plus, Gardasil protects against two strains (HPV-6 and HPV-11) that cause about 90 percent of genital warts. Vaccines are essentially decoys that fool the body into producing an immune response, preparing it to fight the real virus. Gardasil is "a nice replica of the protective hollow shell that wraps around the [real] virus," Ferris says. After immunization, if the body later encounters that same strain of the real HPV virus, "it thinks it's already seen it, so you get a very good immune response to it," says Dr. Kevin Ault, associate professor of gynecologic oncology at Atlanta's Emory University School of Medicine.

### Who should get the HPV vaccine?

It is recommended for female preteens and teens, and young women up to age 26 who are not pregnant. Scientists are also studying whether it should be used in older women, men, and boys. The vaccine is most effective in people who haven't yet had sex. If you have had sex or any genital contact, you might have been exposed to HPV already. However, because doctors don't test for HPV unless a Pap smear shows problems, and because there are up to 40 different strains, it can't hurt to get the vaccine. You may still be protected against the four strains that can cause cancer or genital warts. "Only about 5 percent of teens right now have HPV types 16 and 18 [that cause cervical cancer]," Kahn says.



### Condoms Are Effective Against HPV

Add HPV to the list of sexually transmitted diseases that condoms protect against. In a three-year study of 24,000 female college students, women whose partners always wore condoms were 70 percent less likely to become infected with HPV than those whose partners used condoms less than 5 percent of the time.

### Is the HPV vaccine safe and effective?

Studies have shown the vaccine to be safe in tests of more than 11,000 girls and women around the world. It causes no side effects other than brief arm soreness where it is injected. This vaccine is almost 100 percent effective in preventing the four types of dangerous HPV in young women who have not been previously exposed to the virus.

### How do I get the HPV vaccine?

The vaccine should be available from your regular health-care provider or a free clinic, although if you're under 18, you'll probably need parental permission. You'll get the vaccine in a series of three shots over six months. Doctors expect the vaccine to remain effective for at least five years and are researching whether booster shots may be needed in the future.

### How much does the vaccine cost?

The vaccine costs \$120 per dose (\$360 for all three). Many insurance plans cover it. If yours doesn't,

check with the Vaccines for Children program ([www.cdc.gov/nip/vfc/default.htm](http://www.cdc.gov/nip/vfc/default.htm)), which provides free vaccines. Your state may also make free or low-cost vaccines available through public health department clinics.

#### **If I get the vaccine, could I still get cancer?**

Unfortunately, yes. Though the virus is a prerequisite for cervical cancer, 30 percent of cervical cancer is caused by HPV strains that don't yet have a vaccine, Kahn says. "Girls still need to get regular Pap screenings," she adds. Check with your practitioner about when to start; guidelines urge yearly Pap smears about three years after you start having sex or by age 21—whichever comes first.

#### **If I get the vaccine, can I still get HPV?**

Yes. Only abstaining from sex and genital contact can fully protect you against getting the virus. Gardasil protects against only four of 30 to 40 strains, and it's common for people to be infected with more than one strain at a time. But the vaccine will reduce your chance of developing cervical cancer or genital warts.

#### **Is there a cure for HPV?**

No. That's why the vaccine, which protects against infection by some of the most harmful strains, is such an advance. If you've been exposed to HPV, though, you won't necessarily get genital warts or cancer.

#### **Will the vaccine protect me from other STDs?**

No. "The vaccine won't prevent against other STDs or HIV," Kahn says.

## Protective Gel in the Works

Researchers have found that carrageenan, a common thickening agent made from red seaweed that is often used in ice cream, looks like a potent protector against HPV. Used as a gel spread on the skin before sexual activity, it prevents HPV from attaching to skin cells. More testing is needed before scientists can recommend carrageenan as a barrier to HPV, but because this ingredient already appears in sexual lubricants, an extra, inexpensive layer of HPV protection may someday be within reach.

#### **What can guys do?**

They can't get the vaccine yet, but if a vaccine is approved for them later on, they should, says Ferris. Although cancer caused by HPV is rarer in men, "Men who have sex with men have a quite high risk of [developing] anal cancer," he notes. Besides protecting against cancer and genital warts, Ferris says, the vaccine would also help males reduce the risk of transmitting HPV to others. "It will help prevent disease in a future partner," he explains.

#### **How else can I protect myself against HPV?**

"All of the safe-sex behaviors—postponing sex, limiting your partners, using condoms—are still important," Kahn says. "The vaccine has the potential through education to get kids to practice these healthy behaviors because it provides an opportunity to discuss them." **CH2**

### ■ For More Info

#### **American Social Health Association**

[www.iwannaknow.org/basics2/hpv.html](http://www.iwannaknow.org/basics2/hpv.html)

A good source of information about HPV, Pap smears, and cervical cancer

#### **Palo Alto Medical Foundation**

[www.pamf.org/teen/sex/std/std/hpv.html](http://www.pamf.org/teen/sex/std/std/hpv.html)

Straight talk for teens about HPV

#### **Centers for Disease Control and Prevention**

[www.cdc.gov/std/hpv/stdfact-hpv-and-men.htm](http://www.cdc.gov/std/hpv/stdfact-hpv-and-men.htm)

Facts about males and HPV



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