a dose of REALITY

➜ THREE QUICK SHOTS THAT PREVENT CANCER—SOUND TOO GOOD TO BE TRUE? AN IN-DEPTH EXAMINATION OF THE HPV VACCINE DEBATE.

BY SARI HARRAR

I didn't pay much attention when parents in Texas, Wisconsin and 16 other states began arguing about the mandating of a vaccine that protects young women from certain strains of the human papillomavirus (HPV), an infection responsible for more than 11,000 cases of cervical cancer in the U.S. each year. It was far too early to even *think* about giving my daughter—a 9-year-old who loves dolls, piano lessons and stuffed animals—a shot that guards against a sexually transmitted disease.

But when moms in my neighborhood started discussing the topic and TV commercials began appearing at full tilt, I realized this wasn't something I could ignore. Approved for girls ages 11 to 26, the vaccine can be administered to those as young as 9. Of course I want to protect my daughter from cancer, but does she need to get the shot so soon? Is it safe? Expensive? Should I consider getting it too?

I set out to answer my nagging questions so I could make the best decision for me and my daughter. »

illustrations by **Dan Page**

SILENT KILLER

There are more than 100 different strains of HPV. Most are responsible for benign, everyday warts on your hands and feet. Others produce genital warts, which are often uncomfortable but not harmful. The strains to be concerned about are the 15 that can lead to cervical cancer (as well as rare cancers of the vulva, vagina, anus and penis). These high-risk varieties are transmitted sexually, mainly by genital-to-genital contact. Men and women are sometimes unknowing carriers, since high-risk infections cause no symptoms.

This may help explain why HPV is so shockingly common. In fact, in a recent dual-center study, 37% of women (ages 18 to 22) contracted an HPV infection within a year of losing their virginity. Even faithful condom users catch it. "Since the virus is transmitted by skin—not semen—condoms reduce the chance of infection by only 70% [they don't provide complete protection because the scrotum is still exposed]," says Kevin Ault, M.D., an associate professor of gynecology and obstetrics at Emory University School of Medicine in Atlanta, Georgia, who was involved in the HPV vaccine trials. Abstinence until marriage isn't a surefire method of defense either, because it takes only one partner to get infected.

Chances are you've had HPV: Research shows that a woman's lifetime risk falls between 50% and 75%. The good news is that most infections, even the high-risk kinds, clear up on their own. Only about 1% of HPV infections are high-risk *and* linger long enough to cause precancerous changes in cervical cells. This gradual process can happen over the course of months but usually takes several years. When it's caught early, cervical cancer is almost always curable, but treatments can lead to fertility problems. And if left undetected, the disease can be fatal.

➜ BOYS, TOO?

The FDA is currently considering whether or not young men ages 9 to 26 should be eligible for use of the HPV vaccination also.

➜ WHO'S BEEN VACCINATED?

In the U.S.

25%

of girls ages 11 to 17 and 15% of women between 19 and 26 have received the shots.

INFECTION PROTECTION

Approved by the FDA in June of 2006 for girls ages 9 to 26, Gardasil is the only HPV vaccine that's currently available in the U.S. It guards against two strains of the virus that are responsible for 70% of cervical cancers and two that cause 90% of genital warts. Administered as a series of three shots in the upper arm, given over six months, the vaccine stimulates the immune system to produce antibodies.

Gardasil is only the second FDA-approved vaccine in history that can prevent cancer (the first, for hepatitis B, guards against liver cancer). In studies involving 21,000 women who received Gardasil or a placebo, researchers found that the vaccine is nearly 100% effective against the four strains it targets for at least five years in those who are not currently infected. But Gardasil isn't blanket protection. Even vaccinated women can be infected by other cancer-causing HPV strains, and the shots don't guard against pregnancy, HIV, gonorrhea, chlamydia, syphilis, herpes and other STDs.

Cervarix, another HPV vaccine that has been approved for use in places like Europe, Mexico and Australia, is under FDA review in the U.S. Early research suggests that, like Gardasil, Cervarix may be almost 100% effective against two cancer-causing strains, but unlike Gardasil, it won't help prevent genital warts. "The makers of Cervarix propose that their version may guard against more HPV strains that can cause cervical cancer and may provide longer lasting immunity, but it's too soon to tell," says Richard Schlegel, M.D., Ph.D., chair of the pathology department at Georgetown University Medical Center in Washington, D.C. and a co-developer of the formula used in both vaccines.

SAFETY FIRST

After 11,916 adverse reactions to the Gardasil vaccine were reported, the Centers for Disease Control and Prevention (CDC) reevaluated its safety in December 2008. Ninety-four percent of cases were considered "non-serious" (fainting, pain and swelling at the injection site, headache, nausea and fever) and 6% were labeled "serious" (blood clots, allergic reactions, paralysis and even 32 deaths). However, the CDC found no evidence that the vaccine caused the serious events, other than the allergic reactions. The rates of these occurrences in the vaccinated group were no different from rates among the general population, and some of the deaths were linked to other health prob-

WHAT TO DISCUSS WITH YOUR DAUGHTER

If you DO vaccinate her

Use the trip to the doctor as an entry point to talk about STDs and pregnancy. If you think it's too early for that, just tell her it's a "cancer vaccine."

If you DON'T vaccinate her

When she's ready, make sure she knows that condoms provide 70% protection against HPV and they lower her risk for other STDs and pregnancy.

Whether you DO or DON'T

She needs a pap test starting at age 21 or three years after she begins having sex (whichever comes first) to screen for precancerous changes in cervical cells.

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lems. "We concluded that the serious reactions were most likely coincidental," says Neal Halsey, M.D., director of the Institute for Vaccine Safety at the Johns Hopkins Bloomberg School of Public Health in Baltimore. "The CDC and FDA will continue to evaluate any adverse reactions reported in the future."

Though the findings are reassuring, some doctors proceed with caution. "While it's generally safe, there's still a lot we don't know about it," says Diane Harper, M.D., a professor of obstetrics and gynecology at the University of Missouri–Kansas City, who was involved in the vaccine trials. "It could possibly exacerbate unrelated health problems that already exist. At this point, there's no proof one way or the other." For these reasons, Dr. Harper says that some parents may feel more comfortable waiting until the vaccine has been more widely used before allowing their daughters to get it.

COMING OF AGE

The shots are most effective in girls who aren't yet sexually active, which is why the recommended age range for vaccination is 11 to 12. It may seem young, but national surveys show that many girls are experimenting earlier than most of us realize. "Thirty percent of high school freshman participate in sexual activities, and they're 13 to 14 years old," says Dr. Schlegel. "And the vaccine won't eliminate a current infection."

But some doctors argue that holding off until your daughter is a little bit older may be a wiser decision. "HPV is most prevalent among girls ages 16 to 20, so if an 11-year-old gets the vaccine, and it lasts for only five years, then she may lose protection at the time she needs it most," says Dr. Harper. Studies are in the works to determine whether girls who have already been vaccinated will need booster shots later on in life. ●

➜ PRICE OF PROTECTION?

The cost of the shots is about

$400

but some insurance companies cover it for girls ages 9 to 26. For the uninsured, some states have free vaccine programs, so ask your pediatrician for information.

Can moms protect themselves from HPV?

The vaccine is not currently FDA-approved for women ages 27 to 45, but it might be in the future. Although most women in that age range have already been exposed to HPV, the shots may provide extra peace of mind. Preliminary research suggests that the vaccine is safe for older women and almost as effective as it is in young girls. A study of 3,800 women ages 24 through 45 found it reduced the risk of HPV infections by 83% in those who weren't already infected with the strains it protects against. If interested, talk to your doctor about getting it off-label. You'd have to pay for it out of pocket, but if the FDA extends the age range, insurers may pick up the tab.

Whether or not they get vaccinated, all women 30 and older should ask to have an HPV test done when they go for their next Pap smear. It's an important backup because a recent study found that one-third of cervical cancers still develop when Pap results are "normal." (Women under 30 don't need an HPV test unless their Paps reveal a certain abnormality.)

If you do have HPV and your Pap is "abnormal," your gynecologist might do a colposcopy (a 15-minute, in-office procedure) to check the severity of the infection. Women with HPV in early stages may only need monitoring to track whether the infection is clearing up on its own. Those with precancerous or cancerous changes may require further treatments, like surgery.