

HPV Vaccine: Few Risks, Many Benefits

What is it that some parents don't understand about the HPV vaccine, licensed in hopes of preventing most cases of genital warts and cervical cancer?

That infections with human papillomavirus, or HPV, are the most common sexually transmitted diseases?

That there is no treatment for HPV infections?

That cervical cancer is the most serious sexually transmitted disease caused by this virus?

That 70% of cases of cervical cancer arise because of two variants of the virus that the new vaccine protects against?

That 90% of genital warts cases are caused by two other variants of the virus that are countered by the vaccine?

That most people infected with HPV do not know it, yet can transmit the virus to an unsuspecting sexual partner?

That 20% of American girls 14 to 19 are infected, and the vaccine works only if administered before women contract the viral variants it is intended to prevent?

Despite these facts, the vaccine, sold by Merck as Gardasil, has been mired in controversy, and many parents remain wary about using it for the girls and young women it was meant to protect.

Are the Objections Valid?

One commonly voiced thought is that immunizing young girls against HPV will encourage promiscuity and that the message to these youngsters should be abstinence before marriage and monogamy after.

But the abstinence message is rarely effective. Half of all girls become sexually active before graduating from high school. For some girls and women, sexual behavior occurs against their will, through rape, incest, and date rape.

Why would this vaccine give girls license to be sexually indulgent? It protects against only one sexually transmitted problem, and there are so many others, including Chlamydia, trichomoniasis, HIV, and unwanted pregnancy.

Another concern involves long-term safety. How do we know this vaccine will not eventually cause other problems like autoimmune or neurological disorders or lose its protective powers or foster the dominance of other HPV variants?

Actually, we don't. But we do have at least five years of safety data that include no hints of long-term risks or waning effectiveness. But if the vaccine should begin to lose potency over time, that could easily be remedied by a booster shot.

In response to suggestions of mandatory HPV vaccination for all girls entering high school, opponents have objected to "forcing" therapy on healthy girls under the presumption that future behavior might result in a disease.

This is exactly the principle on which every form of immunization is based. Not everyone contracted polio or smallpox before the advent of mandatory vaccines to protect every child. We vaccinate the masses, causing herd immunity to protect the relatively few who would otherwise become ill and suffer devastating consequences.

Finally, objections have been raised about costs. This vaccine is not cheap. Each dose costs \$120 or \$360 for the three doses needed for full protection, far more than any other commonly used vaccine. If a booster shot is needed later, that could mean another \$120. If the vaccine is made mandatory, states might have to pay for immunizing girls not covered by insurance.

Still, HPV infections are far more costly. As noted in the March issue of *The American Journal of Obstetrics and Gynecology*: "The annual burden of cervical HPV-related diseases ranges from \$2.25 billion to \$4.6 billion in the United States. The annual burden of cervical cancer ranges from \$181.5 million to \$363 million."

This is not to mention the physical and emotional costs of cervical cancer to affected women, most of whom can no longer have children and some of whom die of the disease.

A Common Infection

An estimated 20 million Americans are infected with HPV, and 6.2% of girls 15 to 19 become infected each year. All told, more than 6 million new HPV infections occur annually, 74% of them in people 15 to 24.

Human papillomaviruses are ubiquitous, and HPV infections are more the norm than the exception. At least half of sexually active men and women acquire genital HPV infections at some point in their lives. A recent estimate suggests that by age 50, 80% of women will have acquired genital HPV.

Not all HPV infections would be prevented by the new vaccine. There are about 30 variants of the virus that commonly infect men and women. Although the vaccine prevents only four, these four are critically important, because they account for vast majorities of cases of both genital warts and cervical cancer.

Still, because 30% of cervical cancers are because of HPV variants not included in the vaccine, even if a woman is fully immunized, she still needs regular Pap smears.

There are no treatments for HPV infections. Most of the time, they are eliminated by the immune system in a matter of months without causing any signs of disease. It is only those

virus infections that linger that can become troublesome in the long run.

But with 11,000 cases of cervical cancer in the United States each year, there are enough viral infections that are not cleared naturally to result in a devastating, and now mostly preventable, health problem.

Wide use of Pap smears has done wonders to greatly reduce cervical cancer deaths among American women. In developing countries, where most women do not have Pap smears, the cancer is rampant and a major cause of death.

Protection for Men Too

The only sure way to prevent an HPV infection is to remain abstinent and avoid all genital contact. The virus can be transmitted even if a woman stops short of sexual intercourse. Condoms do not provide full protection.

Alternatively, a woman could be protected if she had only one sexual partner and remained monogamous for life, but she would need a guarantee that her partner behaved similarly.

This is why the national Centers for Disease Control and Prevention recommends routine vaccination with three doses of Gardasil for girls 11 to 12 (it is licensed for use in girls from 9 to 26), with luck before they have become sexually active. But even if a woman has already had a HPV infection, the vaccine could help protect her from other disease-causing variants.

In the name of equality, some advocates urge that boys, too, be immunized, because they spread infection to women. In fact, men may benefit directly from the vaccine, because the virus can also cause cancers of the penis and anus. Anal cancer is a particular concern to gay men and a study is under way to determine whether the new vaccine will protect gay men from cancer.

Some cautionary notes: The vaccine should not be given to women who are or may be pregnant. Nor should it be used for anyone who is allergic to its ingredients.

As with all vaccines, Gardasil can cause temporary side effects. They may include pain, swelling, itching and redness at the injection site, as well as fever, nausea and dizziness.