



American College of Pediatricians

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Patient Information Handout Series

HUMAN PAPILLOMA VIRUS VACCINE

What is HPV? Human Papillomavirus (HPV) causes common skin warts (over 100 strains) as well as genital warts (mainly 2 strains) and growths elsewhere in the body that can potentially cause cancer (over 15 strains). HPV is the most common sexually transmitted infection in the United States. More than half of sexually active people will be infected with HPV at some time in their lives. Half of all newly acquired sexually transmitted HPV infections occur in young adults between 15 and 24 years of age. That happens by contact during vaginal, anal or oral sex with an infected person. Because HPV may not cause any visible symptoms, most people do not even realize that they are infected. Both men and women may be infected from opposite and/or same-sex partners.

How harmful is HPV? The most severe consequence of HPV infection is cancer. About 13,000 American women develop cancer of the cervix due to HPV infection every year. Approximately 4,000 of them die due to late or no treatment. Even more (about 10,000) largely HPV-associated deaths occur yearly from cancer of the mouth and throat. The virus also causes rectal and genital (male and female) cancers.

How can one decrease the chances of getting an HPV infection? To avoid sexually acquired HPV infection with complete certainty, a person must remain sexually abstinent their whole life or limit sexual activity to a single uninfected spouse in a mutually faithful marriage. Condoms do not offer total protection. The HPV vaccine, *Gardasil-9*, offers approximately 90% protection if administered properly prior to HPV contact.

How protective and long lasting is the vaccination? There are about 35 types of HPV spread sexually, of which at least 18 can cause cancer. The only currently available HPV vaccine in the U.S., *Gardasil-9*[®], protects against the two types that cause about 70% of cervical cancer and 5 other cancer-causing types. It may prevent 90% of HPV-associated cancers due to cross-type protection. *Gardasil-9*[®] also covers two types of HPV that cause about 90% of genital warts. Protection appears to last at least 10-12 years. Significantly reduced vaccine-strain detection has been measured in vaccinated (80%) as well as unvaccinated (40%) females between 2006 and 2017. Ongoing studies continue.

Who should get the HPV vaccine? *Gardasil-9*[®] is currently approved for females and males between 9 and 45 years of age.

The vaccine is most effective if given before exposure to the virus, and therefore the timing of immunization is very important. A sexually active person may already be infected with HPV, rendering the vaccine not as protective.

Who should NOT get the vaccine? Anyone with a life-threatening allergic reaction to yeast or any other component of HPV vaccine or to a previous dose of HPV vaccine should not get the vaccine. It should not be given during pregnancy, but no evidence of harm has been found so far from HPV vaccination during pregnancy.

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What are the risks from the HPV vaccine? It is not a live vaccine, so a person cannot develop HPV from the vaccine. Common complaints after immunization include pain, itching, redness and/or swelling at the injection site, as well as headache. Less common side effects include muscle aches and fevers up to 102°F. These symptoms generally resolve spontaneously within 24 – 72 hours. After receiving the vaccine the patient should lie down or sit for fifteen minutes due increased risk, compared to other vaccines, of fainting and brief jerking movements, which could cause injury due to falls.

There were not any serious side effects noted in the 5 year study period for these vaccines. Since HPV vaccine licensing in 2006, there have been two peer-reviewed small case series of premature menopause following *Gardasil-4*[®] vaccination, and more recently there is some evidence that HPV-vaccinated women may have lower rates of pregnancy at ages 25 to 29. This needs further investigation. There are no studies regarding fertility in males after the vaccine. See our 2016 “[New Concerns](#)” and our 2019 [updated HPV Vaccine](#) statements for more details.

Is it reasonable to delay or to opt out of receiving the HPV vaccine? It can be. Long term risks and the duration of protection offered by the vaccination are uncertain. For those who wait until age 15, *Gardasil-9*[®] vaccine is given as a 3 dose series over 6 months, with 2 months between the first dose, and 4 months between the second and third dose. If the child is 14 or younger at the time of the first dose, only 2 doses (initial and 6 months later) are needed. Risk of HPV disease from vaccine strains is extremely low for individuals who refrain from sexual intimacy until marriage to an uninfected spouse.

Why should I/my daughter/son get the vaccine if I/she/he will abstain until marriage? As much as we do not like to consider it, there is no perfect way to prevent exposure to HPV through rape and sexual infidelity, both before and after marriage.

Isn't giving the vaccine like telling my children it is okay to have sex? No. Parents of adolescents must always make it clear to their children that there is no vaccine that makes sexual activity physically “safe.” Parents should caution their children about the harmful medical and psychological consequences of pre-marital sex and promote abstinence. While the vaccine is protective against some types of HPV, it does not protect against all HPV-induced cancer, and is not protective against the many other serious sexually transmitted infections. Complete protection is only ensured if one abstains from all sexual activity until one has established a lifelong monogamous relationship with an uninfected spouse.

Do vaccinated sexually active women still need routine screening for cervical cancer? Yes. All women who are, or ever have been, sexually active should continue to have routine Pap smears since vaccination does not protect against all cancer-associated HPV types and certainly not against infection that is acquired prior to vaccination.

What is the cost? HPV vaccines are expensive, but are covered by most insurances. Some young adults will lose their insurance coverage once they finish college; this may be a factor in deciding the best age for vaccination.

In summary, *Gardasil-9*[®] is a useful vaccine that provides substantial protection against HPV which causes many cases of deadly cancer. There are still unanswered questions regarding duration of protection, and more importantly, long-term fertility. Recognizing that the vaccine is ineffective against strains acquired prior to vaccination, decisions on timing of the vaccine may be influenced by the individual patient’s risk factors weighed against possible safety issues including future fertility.

For more details on these vaccines, see the College’s updated statement, “[Human Papillomavirus Vaccination](#),” at www.BestforChildren.org

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