

# Human Papillomavirus Vaccines



Infection with human papillomavirus (HPV) is very common in both women and men. Of the more than 100 types of this virus, about 30 are spread from person to person through sexual contact. Some types of HPV cause genital warts, while others cause cancer of the *cervix*. It is estimated that at least three out of four people who are sexually active will get an HPV infection during their lifetime. There are things you can do to protect yourself against HPV infection. One is to be vaccinated against certain types of HPV.

This pamphlet explains

- how infection with HPV occurs
- HPV and genital warts
- HPV and cancer risk
- who should get the HPV vaccine
- possible side effects

## How Infection With HPV Occurs

HPV is primarily spread through vaginal, anal, or oral sex, but *sexual intercourse* is not required for infection to occur. HPV is spread by skin-to-skin contact. Sexual contact with an infected partner, regardless of the sex of the partner, is the most common way the virus is spread.

Like many other *sexually transmitted diseases*, there often are no signs or symptoms of genital HPV infection. The infected person often is not aware that he or she has been infected.

## HPV and Genital Warts

Approximately 12 types of HPV cause genital warts. Two types, type 6 and type 11, cause most cases of genital warts. Genital warts are growths that can appear on the outside or inside of the *vagina* or on the *penis* and can spread to nearby skin. Genital warts also can grow around the anus, on the *vulva*, or on the cervix. They can be treated with medication that is applied to the area or by surgical removal. The type of treatment depends on where the warts are located.

## HPV and Cancer Risk

Approximately 15 types of HPV are linked to cancer of the anus, cervix, vulva, vagina, and penis. These types also can cause cancer of the head and neck. Most cases of cervical cancer are caused by just two types of HPV—type 16 and type 18.

The cervix is the opening of the uterus at the top of the vagina. It is covered by a thin layer of tissue made up of *cells*. If one of the cancer-causing types of HPV is present, it may enter these cells. Infected cells may become abnormal or damaged and begin to grow differently. In most women, the *immune system* destroys the virus and the cells return to normal. But in some women, HPV is not destroyed by the immune system and does not go away. In these cases, HPV can lead most commonly to precancer but also to cancer. It usually takes several years for cervical cancer to develop.

A Pap test, sometimes called cervical cytology screening, is a test in which cells are taken from the cervix and vagina and examined under a microscope. This test can detect early signs of abnormal cell changes of the cervix. You should have your first Pap test starting at age 21 years. If abnormal cells are detected, they can be treated. An HPV test also is available. It is used along with the Pap test in women 30 years and older and as a follow-up test for women 21 years and older whose Pap tests show abnormal or uncertain results. The HPV test can identify at least 13 of the cancer-causing types of HPV even before there are visible changes to the cervical cells.

## HPV Vaccines

Two vaccines are currently available that protect against some types of HPV. One vaccine protects against type 6 and type 11, which cause the most cases of genital warts, and against type 16 and type 18, which cause the most cases of cervical cancer. The other vaccine protects against type 16 and type 18. The vaccines trigger the immune system to fight off these types of HPV if a person is exposed to them. They do not protect against other types of HPV. The four-type vaccine is almost 100% effective in preventing cervical precancer and genital warts caused by four types of HPV. The two-type vaccine also is almost 100% effective in preventing cervical precancer caused by two types of HPV.

## Who Should Get the HPV Vaccine

Both vaccines are recommended for girls and women aged 9 years through 26 years and are given in three doses over a 6-month period. The vaccines are not recommended for pregnant women but are safe for women who are breastfeeding.

The vaccines are most effective if they are given before a woman is sexually active and exposed to HPV. However, women can get the vaccines even if they have already had sex, have had genital warts, have received abnormal Pap test results, or have been infected with HPV. If a woman is already infected with

one type of HPV, the vaccines will not protect against disease caused by that type. However, the vaccines can protect against the other types of HPV included in the vaccines.

The vaccines are not a treatment for current HPV infection. They do not protect against all types of HPV and do not give complete protection against cervical cancer or genital warts. Therefore, women who are vaccinated should still have regular cervical cancer screening as recommended by their health care providers.

It is currently known that vaccine protection lasts at least 5 years for the four-type HPV vaccine and more than 6 years for the two-type HPV vaccine. Research is still being done. It appears unlikely that a booster vaccination will be needed in the future to strengthen protection.

## Possible Vaccine Side Effects

The most common side effect of the HPV vaccine is soreness in the arm where the shot is given. On very rare occasions, persons who received the shot experienced headache, fatigue, nausea, dizziness, fainting, or pain in the arm. These symptoms are mild and usually go away quickly.

## Staying Healthy

Even if you get the HPV vaccine, it is still important to take other steps to protect yourself against HPV and other sexually transmitted diseases:

- Limit your number of sexual partners. The more partners you have over the course of your life, the greater your risk of infection.
- Use condoms to reduce your risk of infection when you have vaginal, anal, or oral sex.

Condoms cannot fully protect you against HPV infection. They cover only a small percentage of skin and do not completely protect against HPV transmission. HPV can be passed from person to person by touching infected areas not covered by a condom. These areas may include skin in the genital or anal areas. Female condoms cover more skin and may provide a little more protection than male condoms.

## Finally...

If you are 26 years or younger, the HPV vaccine may help protect you from infection with some types of HPV. Other steps that may reduce your risk of infection are to limit your number of sexual partners and use condoms. Also, be sure to get regular Pap tests as recommended by your health care provider to prevent cervical cancer.

## Glossary

**Cell:** The smallest unit of a structure in the body; the building blocks for all parts of the body.

**Cervix:** The opening of the uterus at the top of the vagina.

**Immune System:** The body's natural defense system against foreign substances and invading organisms, such as bacteria that cause disease.

**Penis:** An external male sex organ.

**Sexual Intercourse:** The act of the penis of the male entering the vagina of the female (also called “having sex” or “making love”).

**Sexually Transmitted Disease:** A disease that is spread by sexual contact, including chlamydia, gonorrhea, genital warts, herpes, syphilis, and infection with human immunodeficiency virus (HIV, the cause of acquired immunodeficiency syndrome [AIDS]).

**Vagina:** A tube-like structure surrounded by muscles leading from the uterus to the outside of the body.

**Vulva:** The external female genital area.

This Patient Education Pamphlet was developed by the American College of Obstetricians and Gynecologists. Designed as an aid to patients, it sets forth current information and opinions on subjects related to women's health. The average readability level of the series, based on the Fry formula, is grade 6–8. The Suitability Assessment of Materials (SAM) instrument rates the pamphlets as “superior.” To ensure the information is current and accurate, the pamphlets are reviewed every 18 months. The information in this pamphlet does not dictate an exclusive course of treatment or procedure to be followed and should not be construed as excluding other acceptable methods of practice. Variations, taking into account the needs of the individual patient, resources, and limitations unique to the institution or type of practice, may be appropriate.

Copyright © June 2011 by the American College of Obstetricians and Gynecologists. All rights reserved. No part of this publication may be reproduced, stored in a retrieval system, posted on the Internet, or transmitted, in any form or by any means, electronic, mechanical, photocopying, recording, or otherwise, without prior written permission from the publisher.

ISSN 1074–8601

Requests for authorization to make photocopies should be directed to the Copyright Clearance Center, 222 Rosewood Drive, Danvers, MA 01923.

To reorder Patient Education Pamphlets in packs of 50, please call 800–762–2264 or order online at [sales.acog.org](http://sales.acog.org).

The American College of Obstetricians and Gynecologists  
409 12th Street, SW  
PO Box 96920  
Washington, DC 20090–6920

12345/54321