



Human Papillomavirus (HPV)

Updated

August 2010

IT'S YOUR HEALTH

This article was produced in collaboration with the Public Health Agency of Canada.

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The Issue

HPV is among the most common sexually transmitted infections (STIs) in Canada and worldwide. Many types of HPV have been identified, with some leading to cancer and others to skin lesions (e.g. ano-genital warts). Fortunately, two vaccines are now available to help prevent infection with some types of HPV and offer protection against the HPV types that are responsible for approximately 70% of cervical cancers.

Background

The different types of HPV can lead to different health outcomes. Some types can infect areas such as the hands and feet while other types target the ano-genital area, and are transmitted during vaginal, oral or anal sex or during intimate skin-to-skin contact with someone who is infected. It is possible to be infected by more than one type of HPV at a time.

It is estimated that as many as 75% of sexually active men and women will have at least one HPV infection in their lifetime but many people with healthy immune systems will eventually clear the infection from their

bodies. Of those infected, only a small proportion will potentially go on to develop cancer.

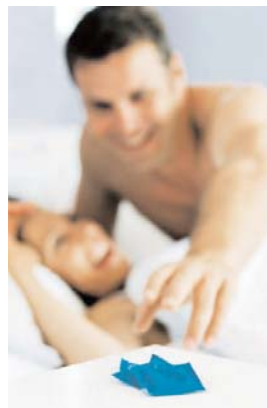
A cure for HPV infections does not exist but many symptoms (e.g. warts) are treatable. Although some infections persist with recurring symptoms, practicing safer sex by using condoms and reducing the number of partners you have can help to reduce your chances of getting an HPV infection or another STI.

There is no precise way to determine in which people HPV infections will persist and lead to cancer but for women, routine Pap (Papanicolaou) testing is an important screening tool for cervical cancer and allows early stage treatment with complete cure. There is no equivalent of Pap testing in males. Penile cancer is rare and occurs in less than 1% of all male cancers. Ano-genital warts are more frequent.

Symptoms of HPV

Ano-genital warts (also called Condylomata) are one symptom of HPV infection. They may look like a small cauliflower or may be flat. Many people with HPV will have no obvious signs of infection because the warts may be inside your body or if on the skin, too small to be seen.

In women, warts may appear on the vulva, thigh, anus, rectum or in the vagina or urethra with the cervix being a common HPV infection site. During pregnancy, the number and size of warts can increase, but



usually decrease after delivery. With an inactive infection, the cells appear normal under a microscope during a Pap test and the woman may never know she was infected. With an active infection, the cervical cells undergo a change. An active infection can follow one of two courses:

- The abnormal cells become normal again and the infection is inactive or cleared from your body by your immune system. However, it is possible that an inactive infection can become active again, for reasons that aren't clearly understood.
- The abnormal cells slowly progress to cervical cancer.

In men, the warts may appear on the penis, scrotum, thigh, anus, rectum or in the urethra.

Testing

HPV testing is available in Canada but access varies across the country and is not part of a woman's regular check-up



or Pap test. If not covered by your provincial and territorial health programs, you may have to pay for HPV testing but where recommended and available, Pap tests are currently used to decide if a woman is at risk of developing pre-cancerous and cancerous changes in the cervix thereby allowing these changes to be treated or closely followed and reduce the chances of developing cancer.

In men, HPV testing is currently under study but once the malignant lesion has developed, complete surgical removal is the only treatment.

The Health Risks of HPV

HPV causes almost all cervical cancers but is also linked to cancer of the throat, oral cavity, penis, anus, vagina or vulva. More research is needed to define the extent of these linkages.

Ano-genital warts, although rarely associated with cancer, are still a significant burden for those affected often leading to physical, emotional and social problems. They can be effectively treated by applying prescribed medication either in a doctor's office or by you at home. Other medical treatments include cryotherapy (cold), an electric current, a laser or surgical removal of the warts but these methods do not always eliminate HPV infection. Even with treatment, warts can recur.

HPV does not appear to affect a woman's ability to become pregnant but its effect on the baby is uncertain. Although considered rare, the baby may be at risk of getting an HPV infection in the throat. A C-section delivery is not routinely recommended, unless there is a significant obstruction or other risks.

Protecting Against HPV through Immunization

Health Canada has authorized two vaccines to prevent infections from the most common types of HPV, Gardasil™ (for females and males) and Cervarix™ (for females only). Both vaccines appear to be very effective in preventing HPV infection and changes in the cells of the cervix related to these types of HPV.

Studies have found both Gardasil™ and Cervarix™ to be safe. Other than a brief soreness at the injection site, participants



reported few side effects. Because vaccines contain only particles from part of the virus, infection from the vaccine is not possible. Also, the vaccines do not contain any preservative or antibiotics, including thimerosal or mercury. It is important to note that Cervarix™ contains a special new adjuvant/additive (ASO4) which studies have also shown to be safe.

If you are infected with one of the HPV types in the vaccine, you will still be protected against the other type(s) in the vaccine. Even with vaccination, you are still at risk for infection with other types of HPV not indicated in the authorization. It is important that vaccinated girls and women continue to have regular Pap tests and practice safe sex.

Neither vaccine has an impact on an existing infection or any consequences of infection (e.g. ano-genital warts and cancerous or pre-cancerous changes) that you may already have. Talk to your doctor for more information.

Gardasil™

A vaccine, called Gardasil™, which prevents certain types of HPV has been approved for use in Canada. The vaccine protects against infection with two high risk types of HPV (16 and 18) which cause approximately 70% of cervical cancers and two low risk types (6 and 11) which cause approximately 90% of ano-genital warts.

The vaccine has been approved for use in both females and males ages nine to 26, and involves one dose given initially followed by one dose a month later and another dose given six months after the first dose was given. Pregnant and lactating women should avoid the vaccine. Talk to your doctor for more information.

In males, studies have demonstrated efficacy in preventing external lesions, mostly due to types 6 and 11. Failure to demonstrate the same efficacy in preventing penile and ano-rectal cancer was likely due to the rarity of these lesions.



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Recent studies indicate good protection against HPV types in the vaccine for five years of follow-up. Studies are ongoing to determine if further immunization is needed for vaccinated women and men to have continued protection.

Cervarix™

A vaccine, called Cervarix™, which prevents certain types of HPV has been approved for use in Canada. The vaccine protects against infection with two high risk types of HPV (16 and 18) which cause approximately 70% of cervical cancers.

The vaccine has been approved for use in females ages 10 to 25, and involves one dose given initially followed by one dose a month later and another dose given six months after the first dose was given. Pregnant and lactating women should avoid the vaccine. Talk to your doctor for more information.

In clinical studies, there was a slightly higher rate of spontaneous abortions in pregnancies which occurred around the time of vaccination in women who were given the Cervarix™ vaccine compared with those who received a control vaccine. It is not known if this imbalance is due to Cervarix™. Talk to your doctor for more information.

Recent studies indicate good protection against HPV types in the vaccine for six years of follow-up. Studies are ongoing to determine if further immunization is needed for vaccinated women to have continued protection. Studies are also currently being done in males.

National Advisory Committee on Immunization (NACI) Recommendations

In February 2007, based on sound scientific consideration, the National Advisory Committee on Immunization (NACI) issued recommendations for the use of Gardasil™ for females aged nine to 26. NACI is currently reviewing its existing HPV recommendations in light of the expanded use of Gardasil™ for males and the recent approval of Cervarix™ for females. Health Canada will provide updates about these recommendations as more information becomes available.

Currently, the use of Gardasil™ is recommended by the NACI for:

- Females between nine and 13 years of age, before the onset of sexual intercourse;
- Females between the ages of 14 and 26 years of age, even if they are already sexually active, have had previous pap abnormalities, or have had a previous HPV infection.

Use of Gardasil™ is not currently recommended by NACI for:

- Females under nine years of age;
- Pregnant women;
- Males

Minimizing Your Risk

These measures can help protect you against HPV and its consequences.



- Anyone who has had sex is at risk for HPV. Since not all infections have symptoms or noticeable symptoms, you often cannot tell if you are infected.
- If you are a woman, see your doctor regularly for a Pap test and/or a HPV DNA test, where recommended and available - even if you have been vaccinated for HPV.
- Learn about STIs including their signs, symptoms, consequences and methods of transmission. Learn about safer sex methods and use them consistently.
- Make informed decisions about your sexual health. Talk to your partner(s) about their STI status and the use of protection. Remember that the previous sexual behaviours of your partner are also a risk for you, especially if they have had multiple partners.
- The use of latex and polyurethane condoms may reduce your risk of getting HPV, as well as preventing other STIs. However, remember that the areas of skin not covered by the condom are not protected.
- If you are a female or have young female children between nine to 26 years of age, consider immunization with the HPV vaccine.

- If you have had multiple sexual partners, talk to your doctor about HPV and other STIs which you may have been exposed to.

Government of Canada's Role

Along with health, education and other partners, the Public Health Agency of Canada promotes the physical and psycho-social well being of Canadians through sexual health promotion activities and cancer control strategies. Activities include:

- the development of national guidelines, including vaccine recommendations;
- publication of national consensus statements and policy recommendations;
- development of surveillance initiatives and targeted research studies; and
- coordination of the dissemination and exchange of information.

The Public Health Agency supports efforts to prevent and control STIs and their complications, including cancer and infertility.

The NACI provides recommendations on the use of vaccines and has published its statement on HPV vaccine.

Need More Info?

For more information on HPV, cervical cancer screening or vaccination talk to your doctor or visit your local public health clinic. To find a clinic, check your telephone book under 'Sexual Health' in the white pages or under 'Health' in the blue pages.

You can also find helpful information on HPV, other STIs and sexual health at these websites:

- For more information on the HPV vaccine, see the **National Advisory Committee on Immunization** site advisory at: <http://www.phac-aspc.gc.ca/publicat/ccdr-rmtc/07pdf/acs33-02.pdf>
- The Public Health Agency of Canada's **Sexual Health and Sexually Transmitted Infections** website at: <http://www.phac-aspc.gc.ca/std-mts/index.html>
- Sexually Transmitted Infection (STI) **Helpline Telephone Numbers** at: http://www.phac-aspc.gc.ca/std-mts/phone_e.html
- Canadian Cancer Society – **human papillomavirus (HPV)** at: http://www.cancer.ca/canada-wide/prevention/infectious%20agents/human%20papilloma%20virus%20hpv.aspx?sc_lang=en and **cervical cancer** at: http://www.cancer.ca/Canada-wide/Prevention/Get%20screened/creening%20for%20cervical%20cancer.aspx?sc_lang=en
- For information on STIs directed at youth, adults, parents, teachers and health professionals go to the Society of Obstetricians and Gynaecologists of Canada's **sexuality and u** at: http://www.sexualityandu.ca/home_e.aspx
- For tips on safer sex practices go to: **The Condoms, Sexually transmitted infections, Safer Sex and You** website at: http://www.phac-aspc.gc.ca/publicat/epiu-aepi/std-mts/condom_e.html
- *It's Your Health* **Condoms** at: <http://www.hc-sc.gc.ca/hl-vs/iyh-vsv/prod/condom-eng.php>
- *It's Your Health* **Screening for Cervical Cancer** at: <http://www.hc-sc.gc.ca/hl-vs/iyh-vsv/diseases-maladies/cervical-uterus-eng.php>



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- For more information on common STIs and tips on prevention go to the College of Family Physicians of Canada's **STIs website** at:
<http://www.cfpc.ca/English/cfpc/programs/patient%20education/sti/default.asp?s=1>

For more information on the vaccines Gardasil and Cervarix please go to:

- **Drug Product Database** (for Gardasil and Cervarix entries, including approved Product Monographs) at:
<http://webprod.hc-sc.gc.ca/dpd-bdpp/index-eng.jsp>
- **Notice of Compliance Search Engine** (for Gardasil and Cervarix Notice of Complicance)
www.hc-sc.gc.ca/dhp-mps/prodpharma/notices-avis/noc-acc/nocsearch_rechercheacc-eng.php
- For additional articles on health and safety issues go to the *It's Your Health* website at:
www.healthcanada.gc.ca/iyh

You can also call toll free at
1-866-225-0709
or TTY at 1-800-267-1245*