



HPV

AUSTRALIA AND NEW ZEALAND
HPV PROJECT

A Patient Guide:
HPV in Perspective



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HPV Infection and Genital Warts

The Professional Advisory Board of the HPV Education Project has produced this booklet to provide accurate and up-to-date information for people with genital human papillomavirus infection (HPV).

If you've had HPV-related cervical changes or warts for many years, you may already be more or less peacefully coexisting with the virus. Or you may now be dealing with the frustration of recurrences of an infection you thought had been cleared. Fortunately, you'll probably find that treatment options are broader – and health care providers better informed – than ever before. With millions of people in Australasia and around the world infected, it's no wonder that researchers are devoting much time and energy into finding new ways to treat and prevent HPV.

Human Papillomavirus Infection (HPV)

HPV (wart virus) is not a new virus. In fact, HPV is an extremely common virus that dates back thousands of years. There has been a rapid improvement in the tests used to detect the wart virus, and what seems like an epidemic may actually be the result of better detection. As tests become increasingly sophisticated, more and more adults are found to have some form of genital HPV. Wart virus can be present as either genital warts or as an infection of the skin which is not visible to the naked eye (subclinical infection).

There are more than 100 different types of HPV. Some infect hands, knees and feet, others the face, and others the genital area. More than 20 HPV types can infect the genital area. Some of these cause warts but are very unlikely to lead to cancer. You can get warts on the skin around the genital area, vagina, cervix, penis, scrotum, urethra (urine opening) or anus. Other HPV types are related to cervical cancer, but rarely cause warts. You may be infected with more than one HPV type at the same time.

How Common is HPV Infection?

At least 75% of adults having sexual intercourse will have at least one genital HPV infection at some time of their life, most commonly between 18 and 28 years of age. Only about a quarter of these will develop warts.

How is Genital HPV Spread?

The virus lives only in the superficial layers of genital skin, and is not transmitted via blood or body fluid, e.g. semen. Genital forms of the virus target the moist, usually pink or red tissue known as mucous membrane and also the areas surrounding the genitals. Therefore, the most common means of transmission of genital HPV is direct contact between infected skin on the penis, urethra, scrotum, vagina, vulva, cervix or anus and uninfected skin in the same areas of the partner's body.

The major risk factor for acquiring genital HPV infection is sexual activity, and the more partners one has, the higher the risk of getting the virus.

Most people have subclinical infection and therefore no symptoms at all, and some may have warts without knowing it. Warts may be hidden, such as inside the vagina. The skin around the genital area is quite bumpy, and it may be difficult to be sure which lumps are warts and which are normal. Warts are seldom painful, so may not be noticed.

It is possible for a person to infect another without even knowing they have the virus. At least 70% of partners of people with HPV also have the infection.

It is also possible that HPV is transmitted by “fomites” – that is, any object that may carry infectious material from one person to another. Some experts believe that in rare cases HPV may be transmitted through shared bath towels, for example, that are rubbed into the genital area. This is still an area of controversy, however. In the end, science simply doesn't have explanations for these rare instances of possible non-sexual transmission.

The long latency period can make dating your exposure impossible. Often, warts will appear three to six months after exposure. Yet latency periods of many months or even decades have been reported before the emergence of warts or cervical abnormalities. Such inconsistencies can be difficult to understand – especially for partners in long-term relationships who feel that some recent infidelity must be to blame. But convincing evidence for such extended latency periods is continually growing. For example, patients who have been sexually inactive for many years can suddenly develop warts or abnormal cervical smears.

Unfortunately, the virus is not easily detected in its subclinical stage. Thus it is impossible to know whether in some cases the immune system completely clears the virus from the body, or whether the virus remains at undetectable levels, capable of re-emerging if the immune system weakens.

Remember that condoms are still the best protection we have against most forms of sexually transmitted infections, including HIV. A number of other common STIs may not cause signs or symptoms but can be easily spread during unprotected sex. So condoms make a lot of sense. But in the case of HPV, the question of protection is more complicated.

Rather than being spread by semen, vaginal secretions, or blood, HPV is most often spread when infected skin rubs against uninfected skin. And HPV can affect a much larger area of tissue than is covered by the condom; thus condoms do leave some possibility of skin-to-skin contact. Of course, condoms also provide a physical barrier that protects the most common sites of infection, and by doing so, they do lower the overall risk as well as the risk of acquiring other STIs.

Another issue still unresolved by the scientific community is when and for how long HPV infection remains contagious. In general, researchers believe that transmission may be more likely when actual warts are present, and that treating warts decreases that possibility. However, most researchers believe that subclinical infections are also contagious. And even those whose warts have been cleared through treatment may have subclinical HPV for some time. If you have been successfully treated for genital warts, and have had no warts or cervical abnormalities for a year or more, some experts would consider the risk of HPV transmission extremely low. No one knows for sure how long the period of infectivity might last, or when it might recur.

Given these uncertainties, what are reasonable steps for a person with HPV to take? First, with any new partner, condoms are important. Even if they don't protect your partner from HPV, they do protect both of you from other STIs. For couples in long-term monogamous relationships, the value of condoms is debatable. Many researchers feel there is no point in trying to protect presumed uninfected partners since, over time, they will probably be infected with the virus, even if they don't develop actual warts. In any case, the decision of whether to use condoms in this situation should be made as a couple – with both parties' full understanding.

It is possible, but rare, to transmit a genital type of HPV infection through oral sex, as the mouth is an environment where HPV is less likely to survive. As with other STIs, condoms, or flat sheets of latex (dams) can be used for oral sex.

There are still many unanswered questions about wart virus and its transmission. It is important that you and your partner have the knowledge you need to make an informed decision about what is best for you both.

Diagnosis

There is no routine diagnostic test for subclinical HPV. However subclinical HPV infections of the cervix are common and may be detected by Pap smear. The Pap smear's primary function is to detect precancerous cell changes of the cervix – not HPV. Subclinical HPV infection of the cervix is of no significance unless it leads to the development of precancerous changes.

Warts are diagnosed by examination, but sometimes biopsy may be needed. There is a variation in appearances of genital warts.

Treatment of HPV Infections

There is no specific treatment for subclinical HPV infection. Subclinical HPV infection is usually temporary and resolves spontaneously. Women who have cervical HPV infection should have follow-up Pap smears as advised by their health care providers.

For people with warts, since we cannot treat the virus itself, the goal of treatment is to remove visible warts. When the warts are gone, the virus may still be present in the tissue, as no treatment is capable of destroying the virus itself. If your warts are causing itch or discomfort, the right treatment will help, and removing visible warts may reduce (though not eliminate) the chance of transmission.

All of the treatment options currently available involve some drawbacks, such as pain, possible scarring, and expense. Additionally, a percentage of those cleared initially will have recurrences necessitating further treatment. The following summary outlines the most commonly prescribed treatments.

Podophyllin, an extract of the May apple plant, has been used to treat genital warts for over 50 years. A doctor or nurse applies this liquid directly to the wart in an effort to keep the wart cells from dividing. Because it can be painful and difficult to apply, it is best used on small warts, and not on the delicate tissue of the cervix. It should not be used during pregnancy. Purified podophyllin, in a more standardised form, is also used to treat warts.

Podophyllotoxin, or Condylina as it is called, is a topical solution that offers patients the advantage of being able to treat themselves, though it's not appropriate for difficult-to-reach places. Like podophyllin, podophyllotoxin should not be used during pregnancy. Its cost is similar to that of podophyllin,

but as it is self-applied, it may prove less expensive because of the reduced number of visits to the doctor. If using condylina the healthy skin surrounding the wart should be protected by applying vaseline before putting the condylina onto the wart.

Imiquimod, known as Aldara, is a newly approved, self-applied cream that appears to enhance the body's immune response to HPV infection. It is used to clear genital and perianal warts. Imiquimod is more effective for moist warts, particularly in women, in the perianal area and in uncircumcised men. It is not recommended for use during pregnancy. The side effects can cause local irritation burning, pain or tenderness, but these only lead to discontinuation of the treatment in less than 2% of patients. The relatively low recurrence rate after treatment compared with other treatments is a significant advantage of Aldara.

Caustic acids, such as TCA (trichloroacetic acid 90%), have frequently been used to treat warts. These can cause scarring and intense, though short-lived, pain, but they are safe to use during pregnancy. TCA should only be applied by a trained (medical) professional.

Cryotherapy is another commonly prescribed treatment for warts, in which tissue is frozen with super-cold liquid or gas (liquid nitrogen) via a cryoprobe. This procedure is used both for external warts and for warts on the cervix or other internal tissue. After treatment, the outer layer of tissue forms a blister and eventually breaks off from the deeper layers, taking most of the affected tissue with it. Cryotherapy may cause some discomfort. It is a relatively effective measure with little risk of scarring. It is usually considered the treatment of choice during pregnancy.

Electrosurgery is another form of HPV treatment. In experienced hands, the electrified blade, wire, or needle can remove the affected tissue precisely, with little or no scarring, under local anaesthetic.

Scissor excision removes warts (also using local anaesthetic) with a knife or scissors in the doctor's office. The results can be comparable to electrosurgery, and the cost is roughly the same.

Laser therapy is sometimes recommended. This is because the high-intensity light, used in conjunction with a microscope, can be adjusted precisely for area and depth, leading to little scarring and good cosmetic results. However, anaesthesia, a long recovery period and, usually, an out-patient hospital visit are required, making this method more appropriate for very extensive warts or areas that cannot be reached by other, simpler

methods. Recurrence rates vary widely, as noted in the table, and may be skewed by the fact that laser therapy is most often used on patients with extensive disease. The relative cost for this treatment is very high and it is not widely available.

Another option that may be prescribed by specialist doctors is 5% fluorouracil cream (also known as Efudix), but because of its side effect, this treatment is rarely used. Vaccine development is an area of active research, and several different approaches are being tested in animal models, including “therapeutic” vaccines that might help those already infected.

In the meantime, the treatment chosen should take into consideration the extent and location of the abnormal tissue along with the experience and preferences of your doctor. Often the simplest method may be the best. Whatever the choice, remember that weekly treatments are usually needed, and it may be some time before the warts clear. No treatment at present can guarantee that your warts are gone forever. Also keep in mind that warts sometimes go away without treatment – that’s the immune system doing its job.

You should ensure that your doctor is experienced in performing the type of treatment which he or she advises.

Useful hints while you are having treatment:

- Saltwater baths are the single most useful thing you can do to help soothe and heal the genital area during treatment. Two handfuls of plain salt per bath or two tablespoons in a large bowl, preferably twice daily.
- Xylocaine (2% lignocaine gel) is a useful local anaesthetic to put on raw areas two minutes prior to micturition or defaecation.
- Thrush infection is common, especially when the genital area is raw, and it is often helpful to be treated for thrush at the same time as the warts are being treated.

Table 1 Summary of Treatment Options

Forms of Treatment	Usage	Application Frequency/Duration	Response Rate
<i>Patient applied</i>			
Podophyllotoxin Condyline	External genital warts	bd for 2 or 3 days, 4 days off, repeat up to 4 cycles; if not responding, change treatment. Protect surrounding skin with Vaseline.	45-82%
Imiquimod <i>Aldara</i>	External anogenital warts	3 times weekly for 4-12 weeks	37-85%
<i>Provider-administered</i>			
Cryotherapy	External anogenital, vaginal, cervical, urethral, anal or oral warts	Weekly. Freeze full thickness of wart, whitening the surrounding skin area to 2mm.	60-97%
Podophyllin	External anogenital, vaginal or urethral warts	1-2 times weekly for 2-3 weeks	19-80%
TCA	External anogenital, vaginal or anal warts	Weekly	50-100%
Electrocautery or Diathermy	External anogenital or oral warts	Single treatment	35-94%
Surgery	Extensive anogenital, oral or anal warts	Single treatment	93%
Laser Therapy	Extensive anogenital warts	Single treatment	60-100%

Recurrence Rate	Advantages and Disadvantages	Use in Pregnancy
0-35%	Results are dependent on patient compliance and correct application of treatment. Not for large (>10cm ²) wart areas.	No
13-19%	Immune enhancer. Most effective on moist warts. May be less effective in circumcised males. Relatively low recurrence rate.	No
20-79%	Effective for moist and dry warts, pain can be reduced by use of an anaesthetic, safety and efficacy highly dependent on skill level, equipment and experience. Risk of over or under application.	Yes
23-70%	Most effective on moist warts, relatively simple to use, unknown shelf life, may contain mutagens, variable concentration of active components, limited value for dry warts. Avoid large wart areas and over application.	No
6-50%	Inexpensive, effective for moist and dry warts. Needs careful application by a health professional. Safe during pregnancy. Not for large areas of friable warts. Low viscosity results in spreading if over applied.	Yes
22%	Prompt wart-free state, results depend on skill level and training, requires equipment, longer clinic visit, local anaesthetic is mandatory.	Yes
8-35%	Prompt wart-free state, results depend on skill level and training, requires equipment, longer clinic visit, local anaesthetic is mandatory.	Yes
3-77%	Prompt wart-free state, may require general anaesthesia, results and safety dependent on skill level. Expensive and only available in a few major centres.	Yes

Special Situations

HPV in Pregnancy

HPV has no link with miscarriage, premature labour, or other types of pregnancy complications. It is no hindrance to a woman's fertility or planning a family, except that it may be more practical to delay conception until after treatment of warts is completed.

If you have warts and are pregnant or think that you might be, tell your doctor so he or she can choose a treatment that won't be harmful to you or to your baby.

Genital warts may grow more rapidly during pregnancy due to the expected decline in normal immunity as well as increased blood supply. If your warts are annoying or cause other symptoms such as swelling, pain, bleeding, discharge, and difficulty in urination, several forms of treatment are available, particularly cryotherapy. The risk of transmitting the virus to the baby is extremely low, and a caesarean delivery is never recommended simply because of the presence of HPV. When transmission does occur on very rare occasions, some babies may develop warts on the vocal chords known as "respiratory papillomatosis." Such complications are extremely rare and can be treated.

Immunosuppressed Patients

Persons who are immunosuppressed because of HIV, or for other reasons, may find that their warts do not respond as well to therapy, and they may have more frequent recurrences after treatment. Annual cervical Pap smears are advised and early referral for colposcopy is recommended if abnormalities are detected. Genital skin cancers resembling genital warts occur more frequently among immunosuppressed persons, and a biopsy may be needed to establish a diagnosis.

Follow-up After Treatment

After visible genital warts have cleared, a follow-up evaluation is not necessary. However, you should watch for recurrences, which occur most frequently during the first 3 months. A follow-up evaluation 3 months after treatment may be useful for reassurance that there are no persistent or new

warts. Women should remember the need for regular cervical smears as recommended for all women regardless of whether they have genital warts or not.

Anyone with genital warts should discuss with their doctor the possibility of other STIs being present, and take the opportunity to be checked for other STIs depending on their risk.

Assessment of Partners

Sex partners of people who have genital warts may benefit from examination to assess the presence of genital warts and other sexually transmissible infections. Sex partners may also benefit from counselling about the implications of having a partner who has genital warts. Because treatment of genital warts does not eliminate HPV infection, it is important to remember that the virus may still be present even though the warts are gone. The use of condoms may reduce, but does not eliminate, the risk for transmission to uninfected partners.

Talking with Partners

Telling partners about subclinical HPV infection, or a past history of genital warts, is an individual decision. The vast majority of sexually active adults will acquire the virus at some time.

Speaking with current or potential partners gives them the opportunity to understand HPV as you do, and put it in perspective as a common skin infection that generally poses no major health threat.

The fact that you have been diagnosed as having HPV (subclinical or warts) does not necessarily mean that you or your partner has been unfaithful. With the long incubation period and the large number of subclinical infections, it is important not to rush to conclusions. One or even both of you may have been exposed years previously, carried the virus in a latent form, and never showed symptoms. If one member of a stable partnership has genital HPV infection, the other will be infected or immune to that infection.

If you are considering a new relationship and have warts, you should discuss this with your partner and use condoms until the warts have cleared.

Who Else To Talk To

Talking with Your Doctor

If you are uncomfortable speaking about sex with a doctor of the opposite (or same) sex, you should ask to speak to someone else in the practice. Perhaps he or she is using words you don't understand. Perhaps you need to make notes in advance of your appointment because you find it hard to remember your questions in the office – and the answers once you're home.

Talking to someone you trust, or a health professional who can give you information and support, whether in person or by telephone, will help you to put HPV in perspective, and minimise its effect on your life and relationships.

HPV and Cervical Cancer

While HPV is extremely common, and there is a link between HPV and cervical, anal, penile and some vulvar cancers, it is important to realise that very few women and men with HPV develop cancer. Most of the HPV types that produce warts on the genitals are not associated with development of abnormalities that progress to cancer.

It is also unlikely that HPV infection alone is sufficient to cause cancer. HPV infection is only one event in a multistep pathway to cancer. While many possible co-factors have been suggested, the relative risks of each have yet to be determined. However, some of the most commonly implicated co-factors include smoking, and a weakened immune system.

The cervical smear (Pap smear) is a screening tool for detecting early changes occurring in the cervix which if untreated or ignored, could progress over years to cancer. Because HPV is so common, any woman who has ever been sexually active should have regular Pap smears as advised by her doctor. This will ensure early detection (and treatment if necessary) of any abnormality, thereby preventing the development of cervical cancer.

Australia and New Zealand HPV Project

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