



# HPV

AUSTRALIA AND NEW ZEALAND  
HPV PROJECT

A Patient Guide:  
**HPV (wart virus)**  
in Perspective





## **About this booklet**

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 or “wart virus”).

You may have had wart virus-related changes to your cervix or warts for many years. 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, researchers are devoting much time and energy into finding new ways to treat and prevent wart virus.

## **Human Papillomavirus Infection (HPV or wart virus)**

Wart virus is an extremely common virus that dates back thousands of years. There has been a rapid improvement in the tests used to detect the 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 wart virus. It 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 wart virus. Some infect hands, knees and feet, others the face, and others the genital area. More than 30 wart virus 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 wart virus types are related to cervical cancer, but rarely cause warts. You may be infected with more than one wart virus type at the same time.

## **How common is wart virus infection?**

At least 75% of adults having sexual intercourse will have a genital wart virus 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 wart virus spread?

The virus lives only in the surface 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 way of spreading the wart virus is through 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 wart virus infection is sexual activity, and the more partners one has, the higher the risk of getting the virus.

Most people have an infection and are not aware of it (subclinical), and some may have warts without knowing it. Warts may be hidden, for example inside the vagina. 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 wart virus also have the infection.

It is also possible that wart virus can be transmitted by an object that may carry infectious material from one person to another. Some experts believe that in rare cases wart virus 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 period between getting the virus and developing warts varies and can make it impossible to know when you were infected. Often, warts will appear three to six months after exposure. Sometimes 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 early, pre-symptomatic 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. New tests may in the future be able to clarify this.

Condoms and dams for women are still the best protection against most forms of sexually transmitted infections, including HIV/Aids. A number of other common sexually transmitted infections (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 wart virus, the question of protection is more complicated.

Rather than being spread by semen, vaginal secretions, or blood, wart virus is most often spread when infected skin rubs against uninfected skin. And wart virus can affect a much larger area of tissue than is covered by the condom; thus condoms do not provide complete protection. Condoms 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 sexually transmitted infections.

Another issue still unresolved by the scientific community is when and for how long wart virus 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 wart virus 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 wart virus 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 wart virus to take? First, with any new partner, condoms are important. Even if they don't protect your partner from wart virus, they do protect both of you from other sexually transmitted infections. For couples in long-term monogamous relationships, condoms are probably of little value in preventing wart virus infections. 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 wart virus infection through oral sex, as the mouth is an environment where wart virus is less likely to survive. As with other sexually transmitted infections, 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 (invisible to the naked eye) wart virus. However subclinical wart virus 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 wart virus. Subclinical wart virus infection of the cervix is of no significance unless it leads to the development of precancerous changes.

Warts are diagnosed by examination, but sometimes removal of a small piece of tissue (biopsy) may be needed. There is a variation in appearances of genital warts.

## Treatment of wart virus infections

There is no treatment for subclinical wart virus infection. Subclinical wart virus infection usually only lasts a short time and goes away by itself. Women who have wart virus on their cervix 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.

**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. This can be performed in your GP's practice or a sexual health clinic by an experienced doctor or nurse. The service is often free in sexual health clinics but there may be a small charge in GP practices.

**Electrosurgery** is another form of wart virus treatment. In experienced hands, the electrified blade, wire, or needle can remove the affected tissue precisely, with little or no scarring, under local anaesthetic. Electrosurgery is usually used to treat more extensive areas of genital warts. It is often provided as an outpatient or day stay procedure in sexual health clinics or gynaecology services. The treatment is usually provided at no cost in the public health system. A specialist referral is required.

**Imiquimod**, known as Aldara, is an approved, self-applied cream that helps the body's immune system fight the infection. Imiquimod is more effective for moist warts, particularly in women, in the area around the anus 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 lead to a need to stop the treatment in less than 2% of patients. There appears to be a lower rate of return of the warts compared with other treatments. Imiquimod is not currently subsidised so it is more expensive than other first line treatments. You can discuss the cost with your doctor or nurse. As it is self-applied, the treatment may be less expensive because you do not require as many visits to the doctor.

**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. However a very small number of sexual health and gynaecology services in the public health system do provide this service free of charge. A specialist referral is required.

**Podophyllotoxin**, or Condyline 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. Podophyllotoxin should not be used during pregnancy. It is available on prescription and as it is self-applied it may be less expensive because you do not require as many visits to the doctor. The healthy skin surrounding the wart should be protected by applying vaseline before putting the condyline onto the wart.

**Podophyllotoxin cream**, known as Wartec<sup>®</sup> Cream, can be applied using a finger, which, unlike podophyllotoxin solution, offers patients the advantage of treating warts in difficult-to-reach places. Podophyllotoxin cream should not be used during pregnancy. Wartec<sup>®</sup> Cream is not currently subsidised and is more expensive than other first line treatments. You can discuss the cost with your doctor or nurse. As it is self-applied the treatment may be less expensive because you do not require as many visits to the doctor.

**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.

**Preventive vaccines** are now available which provide protection from some of the most common genital HPV types. For more detailed information ask for our HPV Vaccine pamphlet.

In the meantime, the treatment chosen depends on the extent and location of the abnormal tissue and 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 would usually go away over time without treatment.

### **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 passing urine or having a bowel motion.
- Thrush (yeast) infection is common, especially when the genital area is raw, and it is often helpful to treat the thrush at the same time as the warts are being treated.

**Table 1. Summary of Treatment Options**

<b>Forms of Treatment</b>	<b>Usage</b>	<b>Application Frequency/Duration</b>	<b>Response Rate</b>
<b><i>Patient applied</i></b>			
Imiquimod <i>Aldara</i>	External anogenital warts	3 times weekly for 4-12 weeks	37-85%
Podophyllotoxin Condyline	External genital warts	Twice daily 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%
Podophyllotoxin Cream	External anogenital warts	Twice daily for 2 to 3 consecutive days each week with 4 days off, for a maximum of 4 consecutive weeks.	45-82%
<b><i>Provider-administered</i></b>			
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%
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%
TCA	External anogenital, vaginal or anal warts	Weekly	50-100%

<b>Recurrence Rate</b>	<b>Advantages and Disadvantages</b>	<b>Use in Pregnancy</b>
13-19%	Immune enhancer. Most effective on moist warts. May be less effective in circumcised males. Relatively low recurrence rate.	No
0-35%	Results are dependent on the patient using it correctly and continuing until warts are gone. Not for large (>10cm <sup>2</sup> ) wart areas.	No
0-35%	Easier self-application for hard-to-reach places than condyline. Results dependent on correct patient usage.	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
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
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

## **Special situations**

### **Wart virus in pregnancy**

Wart virus 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 getting pregnant 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 wart virus. When transmission does occur on very rare occasions, some babies may develop warts on the vocal chords. Such complications are extremely rare and can be treated.

### **Immunosuppressed patients**

People who are immunosuppressed (people whose immune system is not working well because they have HIV, or for other reasons), may find that their warts do not respond as well to treatment, 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 people, 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. Recurrences (a return of the warts) 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. Regular cervical smears are 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 sexually transmitted infections being present, and take the opportunity to have a full sexual health check.

## **Assessment of partners**

Sex partners of people who have genital warts may benefit from examination to assess the presence of genital warts. They may also benefit from counselling about the implications of having a partner who has genital warts. Because treatment of genital warts does not eliminate wart virus 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 wart virus 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 about wart virus 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 wart virus 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 wart virus 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 or dams until the warts have cleared.

## **Who else to talk to**

### **Talking with your doctor**

If you are uncomfortable speaking about sexual matters with a doctor of the opposite (or same) sex, you should ask to speak to someone else in the practice. It may be helpful to make notes in advance of your appointment because you may find it hard to remember your questions in the office – and the answers once you're home. If there is something you don't understand, ask for clarification.

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 wart virus in perspective, and minimise its effect on your life and relationships.

### **Wart virus and cervical cancer**

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

It is also unlikely that wart virus infection alone is sufficient to cause cancer. Wart virus 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 wart virus 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.

For more information on wart virus and Pap smears, the HPV Project has a leaflet available.

## **Australia and New Zealand HPV Project**

Viral Sexually Transmitted Infection Education Foundation Ltd

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