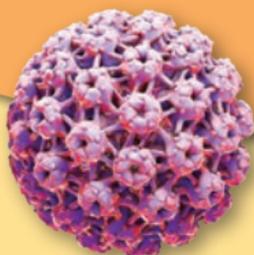


What
do you need
to know about
HPV?



Zora

National Cervical Cancer
Screening Programme

What is HPV and how is it transmitted?

Human papillomaviruses, known as HPV, are viruses that live in the human skin and mucous membranes. HPV infections are **very common** and most people are infected at least once in their lifetime. Infection is transmitted through **close contact** with the skin or mucous membranes of an infected person (fondling, genital skin contact, vaginal, anal and oral sex). It can also be transmitted to other parts of the body by hands. The infection can also be passed from mother to newborn at birth.

What diseases are caused by HPV?

There are more than 200 different genotypes of HPV, about 45 of which cause infections of the genitals, reproductive organs and the area surrounding the anus. Most infections are not dangerous and do not cause any problems for the infected. In cases where the infection results in a disease, the disease may vary depending on the type of HPV genotype that caused the infection.

- a) **High-risk HPV types** cause **precancerous lesions** and **cancer**. There are about 12 high-risk HPV genotypes, of which HPV-16 is by far the most common, followed by HPV-18. Persistent infection with these genotypes can cause six different types of cancer: cervical cancer and, less commonly vaginal and cancers of the external genitalia in women and penile cancer in men, as well as anal and oropharyngeal cancers in both sexes. It may take several years from infection to the development of cancer – from 10 to 30 years.
- b) **Low-risk HPV types** cause **genital warts** and genital mucosal changes, which generally do not progress to cancer. The most common among them are the genotypes HPV-6 and HPV-11.
- c) **Cutaneous HPV genotypes** cause different types of **skin warts**. The most common are HPV-2, HPV-27 and HPV-57.

How do HPV infections progress?

Most HPV infections **do not show any clinical signs** and the infected person is usually not aware they are infected. These infections are **transient** and pass without consequences within one to two years. Even infections with high-risk HPV genotypes are usually transient and never cause a disease.

In a small proportion of infected people, the infection does not clear up within this period, and such infections may be persistent or latent. Only a **persistent** infection with high-risk HPV types lasting several years can cause precancerous lesions and cancer. Sometimes the infection becomes **latent** (inactive, dormant) for many years or decades, and it may reactivate at any time. Often we cannot determine when the infection first occurred. Therefore, the infection can also occur in women who have been in a long-term, stable partnership or who have not had intimate contact for a long time. **Therefore, being diagnosed with HPV infection does not constitute infidelity in a partnership.**

Which lesions caused by HPVs are dangerous?

Persistent infections with high-risk HPV types can cause **high-grade precancerous lesions of the cervix**. These lesions are called HSIL (high-grade squamous intraepithelial lesions) or CIN (cervical intraepithelial neoplasia), which are subsequently divided into CIN 2 and CIN 3 according to the risk of cancer. Precancerous lesions are detected and treated in time with the help of regular screenings as part of the national ZORA programme. If they are not detected and treated, they can **progress to cervical cancer** after several years. Persistent infections with the high-risk HPV types can also, although less frequently, lead to precancerous lesions and vaginal cancer in women, cancer of the external genitalia, anus and oropharynx in both sexes, as well as penile cancer in men.

How can we detect lesions caused by HPV?

Most HPV infections do not present with any symptoms and the person will not know they are infected (asymptomatic infection). Cervical infections go unnoticed by women

because they are hidden inside the body and do not cause problems. HPV-infected cervical cells may transform to form lesions, but this is not always the case. These lesions are most often low-grade and will resolve on their own, without treatment, once the HPV infection that causes them has cleared up.

Persistent infections with high-risk HPV types may (but do not necessarily) cause high-grade precancerous lesions. These lesions generally do not cause problems for the woman and are invisible to the naked eye. They can only be detected through a microscopic examination of a cervical smear taken by a gynaecologist during a preventive gynaecological examination **in the national screening programme for the early detection of cervical precancerous lesions ZORA**. Regular screening every three years allows us to detect precancerous lesions in apparently healthy women that do not show any signs of disease, and subsequently treat them to prevent cervical cancer. The microscopic examination of cervical smear cells is also known as a **PAP test** (named after its inventor, the Greek doctor George Papanicolaou).

Infections with low-risk HPV types may cause genital warts, which can be noticed by the infected person or detected during a gynaecological examination or examination by other doctors (e.g. a dermatologist).

When is the HPV test used?

The HPV test is performed in a laboratory to determine the presence of high-risk HPV types in a cervical swab. It is used in women with **low-grade cervical lesions** and **women who have been treated for precancerous lesions**. If the HPV triage test is negative (if the laboratory has not confirmed infection with high-risk HPV types), the woman is considered to have an extremely low risk of

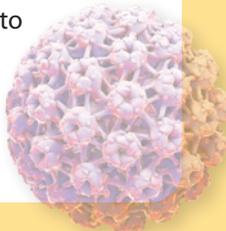
developing cervical cancer in the next few years, despite the initial pathology or treatment, and therefore generally does not need further examinations. If the HPV triage test is positive (if the laboratory has confirmed infection with high-risk HPV types), it does not mean that the woman already has precancerous or cancerous lesions in her cervix, but she does require further gynaecological examinations to check whether or not the infection has caused any pathological changes. These changes are usually still in an early stage and limited.

A positive HPV test cannot determine how long a woman has been infected. It may be a transient, persistent or reactivated latent infection. Partners of HPV-positive women are not tested for HPVs. The indications for HPV triage testing are well-defined in the current international and Slovenian medical guidelines. Reckless and excessive use of the HPV test may do more harm than good.

How can we reduce the chance of HPV infection?

You can protect yourself against HPV infection in part by following the principles of **healthy and safe sex** as much as possible. It is very important for young people to have sex as late as possible, with a partner they know and trust. **Condom use** is important but, unfortunately, does not completely prevent HPV transmission, though it does protect against the transmission of other diseases.

One of the most effective measures to prevent HPV infection and HPV-related precancerous lesions and cancers is **the HPV vaccine**.



HPV vaccination

Vaccination is **extremely safe and effective**. In countries where vaccination has been successfully used for several years, the incidence of both genital warts and precancerous lesions has decreased. When girls reach an age where they may potentially start developing cervical cancer, those that have been **vaccinated will have significantly less disease** than those who are unvaccinated. A nine-valent HPV vaccine is available.

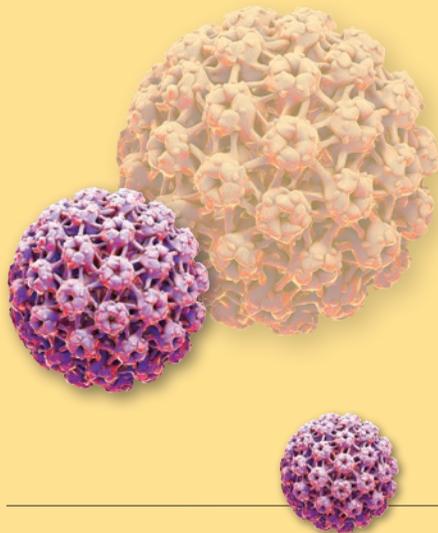
Vaccination can prevent 70–90 % of cervical cancers, 50–85 % of high-grade precancerous lesions, 20–90 % of other HPV-related cancers (cancers of the external genitalia, the anus and oropharynx in both sexes, and vaginal cancers), more than 90 % of genital warts, and almost all cases of respiratory papillomatosis of the larynx.

Vaccination is most effective before the person becomes sexually active. The vaccine is also effective after that, but it only protects against infection by HPVs that the vaccinated person has not yet been infected with and that are covered by the vaccine. In Slovenia, HPV vaccination is carried out as part of the national vaccination programme for 6th-grade primary school students, as it is most effective at that age. Free vaccination is also available for older girls and boys up to the age of 26. After that age, people can get the vaccine out-of-pocket. Although vaccinated girls are significantly less likely to get precancerous or cancerous cervical lesions, they are still at risk from HPV genotypes not covered by the vaccine. Therefore, we recommend that vaccinated girls also undergo preventive gynaecological examinations as part of the ZORA programme.

How is HPV infection treated?

There is no cure for HPV infection. Women who are infected with HPV and have no signs of infection do not need any treatment. Their partners also do not need any treatment.

Only lesions caused by an HPV infection can be treated. If we find that a woman has low-grade squamous cell lesions or genital warts, we treat her by destroying the lesions with a laser or cryotherapy. Low-grade lesions are not usually treated immediately but only if they persist, as they often resolve on their own without treatment. High-grade precancerous lesions are usually treated by excising part of the cervix. The technique most commonly used is the large loop excision of the transformation zone (abbreviated LLETZ), which is performed as an outpatient procedure under local anaesthesia, or less commonly, conization is performed with a scalpel under general anaesthesia. Lesions in the vagina, external genitalia and anus are also treated in a similar way.



What are the consequences of HPV infection and how are they treated?

Thanks to the effective detection and treatment of precancerous lesions under the national ZORA programme, cervical cancer has become a rare cancer in Slovenia in recent years, with between 100 and 120 women contracting the disease each year. In recent years, cancer cases have been largely concentrated in women who do not regularly attend ZORA screenings, and the cancer is usually detected at an advanced stage when treatment is more invasive and survival prospects are poorer. Treatment of initial cancerous and precancerous lesions is very effective and most women live a full life after surgery, with rare recurrences of the disease. After the treatment of precancerous lesions, a woman may still become pregnant, but the treatment can shorten the cervix, which can increase the risk of premature birth.

HPV infection does not affect fertility. Cervical infection with high-risk HPV types in pregnancy is not harmful to the fetus. If a pregnant woman has genital warts at the time of delivery, the newborn may become infected with low-risk HPV types that can cause a life-threatening but very rare condition – respiratory papillomatosis (growths on the throat and vocal cords that can obstruct breathing).

Steps of my
life

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Summary:

HPV infection is very common and **almost everyone** who has been sexually active will be infected at least once in their lifetime.

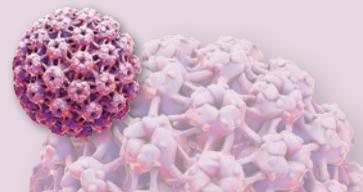
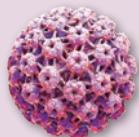
As the infection **does not cause clinical signs or symptoms** it is possible that a woman may have been infected for many years without knowing it.

In the vast majority of women, the **infection clears up** within one to two years, without any problems or consequences.

In a small proportion of women, the **infection persists** for several years. The longer the infection persists, the more likely it is to lead to precancerous or even cancerous lesions in the cervix.

Sometimes the infection does not clear up, but becomes **latent (inactive, dormant)** for years or decades, and it can reactivate at any time later in life. Therefore, the infection can occur even in women who are in a long-term and stable partnership or who have not had sex for a long time. A reactivated infection is similar to a new infection and is only dangerous if it persists for several years.

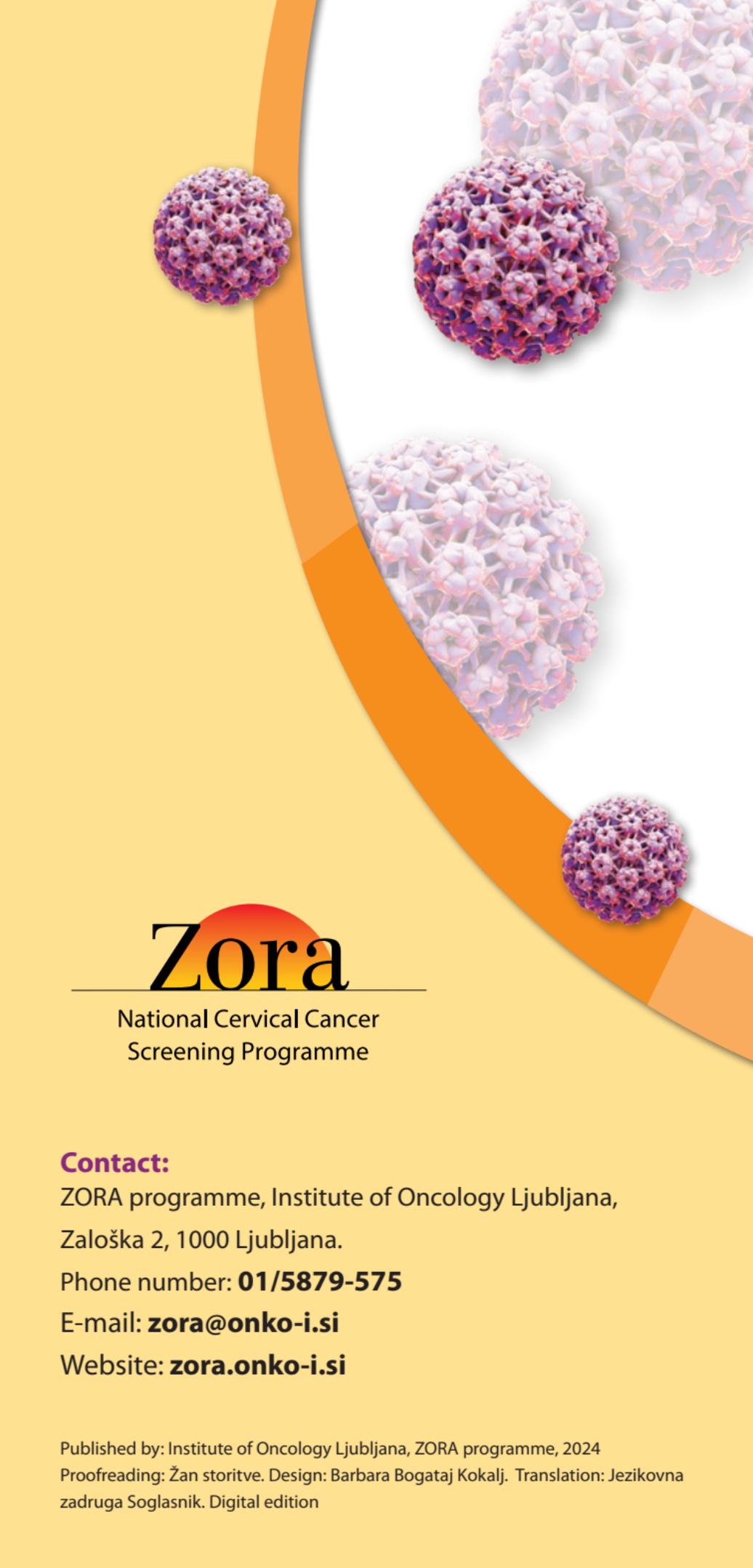
There are more than 200 known genotypes of HPV, but only about 12 can cause cervical cancer – these are called the **high-risk HPV types**.



HPV infection is effectively detected by the HPV test. We can't cure it, but an additional test can check if it is causing cervical changes, which can be **successfully treated**.

The most important HPV infections are **very effectively prevented by HPV vaccination**. Vaccination is most effective if it is administered before the first infection. Vaccinated girls will have significantly fewer precancerous and cancerous cervical lesions, as well as certain other HPV-related diseases. Vaccination with the quadrivalent and nine-valent vaccines also protects against genital warts and respiratory papillomatosis of the throat.

Although vaccinated girls are significantly less likely to develop precancerous or cancerous cervical lesions, they are still at risk from HPV genotypes not covered by the vaccine. Therefore, **we recommend that vaccinated girls also undergo preventive gynaecological examinations as part of the ZORA programme**.



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