

Talking with patients and parents about HPV vaccination for girls

How to respond to frequently asked questions

Human papillomavirus vaccine

Human papillomavirus (HPV) is a highly contagious infection that is transmitted through sexual or skin-to-skin contact. HPV is a common infection, with over three quarters of sexually active women acquiring it at some time in their lives. More than 100 types of HPV have been identified including at least 13 oncogenic types. Persistent infection with oncogenic HPV types can cause cervical cancer in women and anogenital cancers in both sexes. Ninety-nine percent of cervical cancers are caused by HPV and approximately 70% of these are caused by HPV types 16 and 18.

Two HPV vaccines have been developed and are approved for use in many countries in the WHO European Region. A quadrivalent vaccine, Gardasil®, and a bivalent vaccine, Cervarix®, both prevent infection with and disease from HPV types 16 and 18. The quadrivalent vaccine also protects against HPV types 6 and 11, which cause 90% of genital warts. Both vaccines are administered as a 3-dose series. The vaccines are not designed to treat people who are already infected with these HPV types.

The vaccines are close to 100% effective in preventing persistent infection by the targeted HPV types and over 90% effective in preventing moderate and severe cervical intraepithelial neoplasia (CIN 2 and CIN 3) caused by the HPV types in the vaccines (among women who have not previously been infected with these types.) Modelling has demonstrated that high levels of HPV vaccination have the potential to considerably reduce the rates of cervical cancer in the population. Since the vaccine was introduced 5 years ago, at this point in time, protection has been shown to last at least 5 years and likely last much longer. Research and observation will continue on the duration of protection and the ultimate impact of vaccination on cervical cancer incidence and mortality.

Cervical cancer remains the second leading cause of death from cancer in women worldwide.

Each year, an estimated 500 000 women contract the disease and 275 000 die of it. Around 10% of these deaths occur in the WHO European Region.

HPV vaccination, in addition to cervical screening and other health promotion activities, is an effective way to prevent cervical cancer morbidity and mortality.



© iStockphoto

Questions you may get from patients and parents

HPV vaccines offer a promising new approach to the prevention of HPV and associated conditions, including cervical cancer. It is therefore vital that patients receive accurate information about the vaccines and any concerns are addressed in order to ensure high rates of vaccination.

Below are suggested responses to some common questions that may be raised by patients and parents regarding HPV vaccination in girls.

For further information about addressing general safety concerns regarding vaccines as well as communication strategies for having successful conversations about vaccination with parents, see the related document:

Talking with parents about vaccines for children – Strategies for health care professionals

www.euro.who.int/immunization-resource-centre

Are the HPV vaccines safe?

Both HPV vaccines have good safety profiles. The vaccines were initially tested in tens of thousands of people before they were approved for widespread use. Since then, over 100 million doses of the vaccines have been distributed worldwide and adverse reactions are monitored and investigated. This helps detect adverse events that may only occur very rarely.

The World Health Organization's Global Advisory Committee on Vaccine Safety regularly reviews the safety of vaccines and has found no concerns with the safety profile of the HPV vaccines.

A decision not to be vaccinated against HPV needs to be balanced against the risk of developing cervical cancer, which is the second most common cancer among women of childbearing age in Europe. One in 100 women in Europe will be diagnosed with cervical cancer in her lifetime.

What are the side effects of the HPV vaccines?

The most common side effects are mild and resolve after a short time. These include pain and redness at the injection site, fever, dizziness, headache and nausea. Fainting may occur after vaccination, as with other medical procedures. Sitting or lying down during and after vaccination can help prevent fainting and fall-related injuries.

Do the vaccines cause any serious side effects?

Serious reactions to the HPV vaccines are uncommon. Anaphylaxis is a very rare but recognized side effect of all vaccines but immunization providers are trained to recognize this reaction and treat it promptly and successfully.

There is no evidence that other adverse events reported following HPV vaccination, such as Guillain–Barré Syndrome, blood clots, stroke or pancreatitis, occur more frequently than would be expected in the general population. Furthermore a recent meta-analysis of HPV vaccine safety studies found no significant difference in serious adverse events between vaccinated and unvaccinated groups.

What are the main components of the HPV vaccines?

The HPV vaccines contain purified structural proteins from the shell of the HPV virus.

The vaccines contain a very small amount of aluminium salts as adjuvants. Aluminium-based adjuvants have been used to help boost the immune response to vaccines for over 70 years and are considered safe. The HPV vaccines contain 0.225–0.500 mg of adjuvant. By comparison, an adult or child ingests an average of 5mg of aluminium from dietary sources every day. The World Health Organization’s Global Advisory Committee on Vaccine Safety has concluded that there is no evidence to suggest that the administration of aluminium-containing vaccines poses a health risk.

While there are no concerns with their use in vaccines, the HPV vaccines contain no antibiotics, thiomersal or other preservatives. Vaccines are manufactured under strict quality control conditions and each batch is tested before release to ensure safety and screen for contamination.

Do the vaccines affect fertility?

No, there are no biologically plausible mechanisms through which the HPV vaccines could cause infertility. Studies of high doses of the vaccines in female rats showed no effect on fertility. HPV infection, unlike some sexually transmitted infections, does not cause infertility.

Can the vaccines transmit the virus and cause cancer?

The HPV vaccines do not cause infection with the virus and cannot cause cancer. The vaccines are made using recombinant technology that recreates some of the proteins on the outside of the virus. When the vaccines are given, the body detects these proteins and makes antibodies which help the body fight the real virus if it is ever exposed. The vaccines do not contain any live biological material or viral DNA, so they are non-infectious.

If HPV is sexually transmitted why are the vaccines recommended at such a young age?

The HPV vaccines are most effective when given prior to exposure to HPV, that is, before the initiation of sexual activity. Younger people also develop a stronger immune response after vaccination compared with older teenagers. This means they have better protection against HPV if they are exposed to the virus in the future. For these reasons the vaccines are recommended for pre-teenage girls.

Females who are sexually active may also receive some benefit from being vaccinated. Although they may have already been exposed to one or more of the HPV types targeted by the vaccines, they could still gain protection against other types by getting vaccinated. However the benefit may be less than optimal for these females.

Does getting vaccinated encourage promiscuity?

No, there is no evidence that receiving an HPV vaccine leads to promiscuity. Studies have shown that those who receive the vaccines do not go on to have sex earlier than those who do not receive the vaccines, nor do they engage in more sexual activity once they became sexually active.

The assumption underlying this question is that fear of contracting HPV or developing cervical cancer is a deterrent for engaging in sexual activity, but this is not supported by any evidence. There is evidence that education about sexually transmitted infection, providing condoms or discussing sex does not result in earlier or more sexually activity. Parents should think of the vaccine like they would a seatbelt, which acts as protection, not an invitation to engage in risky behaviour.

Can HPV infection be avoided simply by using a condom?

Using a condom during sexual intercourse offers only partial protection against HPV transmission because the virus can exist on skin sites not covered by the condom and can be transmitted by genital skin-to-skin contact. The HPV vaccines offer nearly 100% protection against persistent infection by the HPV types targeted by the vaccines.

Nonetheless condoms can offer protection against many sexually transmitted infections and help prevent unwanted pregnancies.

Is cervical screening (Pap test) still needed after vaccination?

Yes, in countries where screening takes place, continued screening for precancerous cervical lesions will continue to be necessary for vaccinated females. Screening will help to prevent the 30% of cervical cancers due to HPV types not targeted by the vaccines and to prevent cancers from vaccine-related HPV types to which females may have been exposed before vaccination.

Clinicians should stress to patients that HPV vaccines do not protect against all types of oncogenic HPV infection and that future cervical cancer screening remains essential to detect precancerous lesions caused by non-vaccine-related types of HPV.