

HPV Immunisation

Human papillomavirus (HPV) is a common cause of infection but usually causes no symptoms. Infection with some types of HPV can cause cancer of the cervix (cervical cancer). Cervical cancer takes many years to develop after the infection with HPV. Genital warts are also caused by HPV. Immunisation against HPV should dramatically reduce cervical cancer cases in the future and lead to fewer cases of genital warts. Immunisation against HPV was introduced in the UK for girls in 2008. Women are still advised to attend for cervical screening tests, even if they have been immunised against HPV.

What is HPV?

Human papillomavirus (HPV) is the name given to a group of viruses that can affect the skin and mucosae. The mucosae are the moist membranes that line different parts of the body, including the mouth, throat and genital area.

There are over one hundred types of HPV and about 40 of these can affect the genital area. Some types of HPV can cause skin warts and verrucas but many types do not cause any problems or harm at all.

Both men and women can have HPV. There are certain risk factors for HPV infection that include:

- Smoking.
- Multiple sexual partners.
- Early age of first sexual intercourse.

Most women will have an HPV infection at some time during their life, usually without even knowing it. Some types of HPV are known to increase the risk of developing particular cancers. These are known as oncogenic (causing cancer) or high-risk subtypes. About 9 in 10 infections with HPV will clear completely from the body within two years by the immune system - it is a self-limiting infection for most people. There is no treatment for HPV itself.

What is the link between HPV infection and cervical cancer?

Cervical cancer is the second most common type of cancer in women in the UK. It kills just over 1,000 women every year in the UK. Most types of HPV do not cause any symptoms or diseases. However, two types, HPV16 and HPV18, are involved in the development of most (three quarters of) cases of cancer of the cervix.

HPV infection with types 16 and 18 can cause cells in the cervix to change gradually over time. This may lead to precancerous cells or even cancer forming. The precancerous cells are known as cervical intraepithelial neoplasia (CIN) and are discussed in a separate leaflet called '*Cancer of the Cervix*'. Having these types of HPV infection does not mean that you will definitely go on to develop cancer of the cervix in the future. However, your risk of developing cancer of the cervix is much increased with these infections.

HPV infection with types 16 and 18 are passed to other people by sexual contact, usually through sexual intercourse. It is more common, therefore, in those people who have had several different sexual partners.

Unfortunately, the use of condoms does not seem to protect very well against HPV transmission. Safe sex with a condom is still advised, as condoms prevent against many other sexually transmitted infections (STIs) such as chlamydia and HIV.

HPV and genital warts

Genital warts are the most commonly diagnosed STI. Two types of HPV (types 6 and 11) are the cause of about 9 in 10 cases of genital warts. These types of HPV do not cause cervical cancer. See separate leaflet called '*Anogenital Warts*' for more information.

HPV vaccines

Two HPV vaccines are available in the UK: Cervarix® and Gardasil®.

Cervarix® is known as a *bi* valent vaccine, meaning it protects against *two* strains of HPV. Cervarix® protects against HPV16 and HPV18 and so is aimed to reduce (in time) the number of cases of cervical cancer. When the UK first started immunising young women against HPV, this was the vaccine chosen.

Gardasil® is a *quadri* valent vaccine, meaning it protects against *four* strains of HPV. Gardasil® protects against HPV16, HPV18 *and* HPV6 and HPV11. This means that it also protects against genital warts as well as cervical cancer.

In November 2011, the Department of Health (DH) announced that the UK HPV immunisation programme would switch to using Gardasil® from September 2012.

Is the HPV vaccine effective?

Studies have shown that the HPV vaccines are very effective at stopping cancer of the cervix developing. In clinical trials, the vaccine was over 99% effective at preventing CIN or cancer of the cervix associated with HPV types 16 or 18 in young women. Gardasil® is also 99% effective at preventing HPV6 and HPV11- associated genital warts.

The vaccine has been shown to work better for people who are given the vaccine when they are younger, before they are sexually active, compared to when it is given to adults. However, the HPV vaccine still does not completely protect against all HPV infections and it is not a treatment for HPV. Trials have shown that the HPV vaccine is effective against HPV for up to six years. More trials are being done to find out if it is effective for longer than this.

The HPV vaccines do not prevent all cases of cervical cancer (as not all cervical cancers are caused by HPV16 and HPV18). So, it is still important that women attend for their cervical screening tests when invited. See separate leaflet called '*Cervical Screening Test*' for more information.

What are the current recommendations regarding the HPV vaccine?

The DH recommends that the HPV vaccine be given to girls aged 12-13 years. Immunisation takes place in schools, as part of the standard immunisation schedule. The immunisation programme started in September 2008. A catch-up programme (now finished), was started to vaccinate girls up to the age of 18 years.

The vaccine is given by injection in the upper arm or thigh. Three doses are needed to provide maximum protection. The second and third doses should, ideally, be given two months and six months after the first.

Girls who have already received Cervarix® will NOT need to have further immunisation with Gardasil® when the national immunisation programme changes. This is because the aim of the immunisation programme is to reduce the number of cases of cervical cancer, and both types of vaccine are equally effective at this. The decision to change to Gardasil® has been made because it protects against genital warts *and* cervical cancer. This is felt to be the safer option as condoms only stop about half of cases of genital warts being passed on. There are 100,000 new cases of genital warts per year in the UK, costing the NHS nearly £17 million to treat.

Are there any side-effects from the vaccine?

The HPV vaccine is generally very safe. Serious problems caused by the vaccine are rare.

At least one in 10 people who have the vaccine have mild side-effects for a day or so. These include some pain, swelling and redness around the site of the injection, headache, aching muscles and tiredness. Occasionally, there is some bleeding or itchiness around the area of the injection. Less common side-effects include slightly raised temperature, sickness, dizziness, diarrhoea and muscle aches. More rarely, people can develop hives (urticaria).

You should not have the vaccine if you have had an allergic reaction to a previous HPV vaccine. It is safe in people who have egg, yeast or nut allergies. You should not have it if you have a high temperature or are generally ill. However, it is still possible to be immunised with the HPV vaccine if you have a common cold. Taking the contraceptive pill does not interfere with the vaccine.

Do I still need to have cervical screening tests?

Yes. You should still attend for your regular cervical screening tests, even if you have received the HPV vaccine. This is because the vaccine does not guarantee complete protection against cervical cancer. Cervical screening tests are still important as:

- Immunisation with the HPV vaccine will take several years to reduce the chances of developing cervical cancer.
- The vaccine does not protect against all HPV types.
- Not all cases of cervical cancer are caused by the high risk HPV16 and HPV18 strains.
- Women who do not have the vaccine will not be protected at all against cancer of the cervix or CIN.

It can take between 10 and 20 years for cancer of the cervix to develop after having an infection with HPV. This means that the benefits of the HPV immunisation programme will take many years to be shown.

Do I need a special test to see if I have HPV?

It is not possible to routinely test any woman for HPV.

HPV testing done at the moment is called HPV triage as it triages (sorts) women according to whether they have HPV. If you have a mildly abnormal cervical screening test (so-called borderline changes or mild dyskaryosis), an HPV test is automatically done on the sample. This helps doctors decide whether you need to have a more specialised examination of the cervix, called a colposcopy. See separate leaflet called *Colposcopy* for more information.

An HPV Test of Cure is also being introduced for women who have treatment for abnormal cells (called CIN) at colposcopy. It can allow a decision to be made regarding how often future cervical screening tests need to be performed on that woman.

Further help and information

Information on the NHS cervical screening programme

Web: www.cancerscreening.nhs.uk/cervical/index.html (Search for HPV on their site for documents about HPV testing.)

Information from the Health Protection Agency (HPA) on HPV - cervical cancer and genital warts

Web: www.hpa.org.uk/Topics/InfectiousDiseases/InfectionsAZ/GenitalWarts

Information on HPV immunisation from the NHS

Web: www.nhs.uk/conditions/hpv-vaccination/pages/introduction.aspx?WT.mc_id=090805

Department of Health (DH)

Web: www.dh.gov.uk

Search for HPV on their site for documents about national policy.

Web: <http://mediacentre.dh.gov.uk/2011/11/24/hpv-vaccine-to-change-in-september-2012>

Press release regarding change in vaccine used for immunisation programme.

Further reading & references

- [Immunisation against infectious disease - 'The Green Book'](#); Dept of Health (various dates)
- [Zimmerman RK](#); HPV vaccine and its recommendations, 2007. J Fam Pract. 2007 Feb;56(2 Suppl Vaccines):S1-5, C1.

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