



## **HUMAN PAPILOMA VIRUS (HPV) VACCINATION**

By Alison Fiander

### **What is HPV?**

The Human Papilloma Virus (HPV) is a small virus infecting the skin and mucous membranes (soft, moist lining inside body passages e.g. mouth, vagina or anal canal) of humans. There are over 100 different types of HPV which can cause a variety of diseases ranging from skin warts to cervical cancer. Around 20-30 types infect the genital tract and these are divided into low risk (LR) and high risk (HR) groups according to whether or not they can cause cancer.

HPV is a very common virus which everyone will come into contact with at some point in their lives, e.g. hand warts or verrucas are caused by HPV. Most people will also have a genital HPV infection at some stage and it is estimated that there is up to an 80% lifetime chance of having a genital HPV infection. The virus is transmitted by skin-to-skin contact and although in the case of genital infection is usually sexually transmitted penetrative sex is not necessary for infection to occur.

### **What does HPV cause?**

HPV infection causes no symptoms in three quarters of infected people and in most individuals (80%) the immune defence system will get rid of an HPV infection within two years without them ever knowing they've caught HPV.

The commonest low risk HPV types infecting the genital area are HPV 6 and 11. These two types together cause 90% of genital warts.

There are several high-risk HPV types, which may cause pre cancerous changes on the cervix (neck of the womb), vulva (outside genital area), anal area and rarely in the vagina. It appears that persistent high risk HPV infection is required to develop pre-cancerous changes. Persistent HPV infection is more likely in people who smoke as this depresses the immune response to HPV, or in those with immunosuppression, e.g. those with kidney transplants or HIV infection. Scientists don't know all the reasons why HPV infection persists in some individuals and not others.

After a period of time (usually several years) these precancerous changes may progress into cancer. The commonest high risk types are HPV 16 and 18 which are together responsible for around 70% of cervical cancer. A proportion of cancers (around 20%) occurring in the head and neck are thought to be due to HPV.

#### **What does HPV cause?**

- Benign skin warts and verrucas
- Genital warts
- Cervical cancer
- A proportion of other anogenital cancers
  - Vulval
  - Vaginal
  - Anal
  - Penile
- A proportion of head and neck cancer
- Recurrent respiratory papillomatosis

#### **Cervical Cancer in the UK**

There are almost 3,000 new cases of cervical cancer in the UK every year with around 1,000 deaths; the equivalent of 3 women dying every day. Currently the lifetime chance of getting cervical cancer in the UK is 1 in 116. Although women of all ages may suffer cervical cancer it is commonest in 30-

40 year olds. Around two thirds of women with cervical cancer are cured by treatment. This may be by surgery or by a combination of radiotherapy and chemotherapy. For younger women treatment usually results in infertility.

There are over 24,000 cases of pre cancerous lesions (cervical intraepithelial neoplasia grade III or CIN3) in the UK each year, picked up by cervical screening. Pre cancerous lesions can be easily treated to remove or destroy the abnormal cells, preventing them from becoming cancer in years to come.

Unfortunately the number of women attending cervical screening seems to be going down, especially amongst younger women. The cervical screening programme in the UK is very effective and prevents 70-80% of cervical cancer.

### **HPV Vaccines**

There are two HPV vaccines licensed in the UK, Cervarix and Gardasil. Cervarix has been chosen by the government for the UK HPV vaccination programme. Both vaccines cover the high risk HPV types 16 and 18 responsible for around 70% of cervical cancers. Gardasil also covers HPV types 6 and 11 and so also protects against genital warts. The vaccines are composed of protein and contain no infectious material and are therefore safe.

In the UK the government has decided to start vaccinating 12-13 year old girls from autumn 2008. There will then be a phased 'catch-up' programme to vaccinate girls up to the age of 18 years by 2010.

The vaccines work by preventing initial infection with HPV and so need to be given before a girl comes into contact with the virus. This means before a girl becomes sexually active. It has also been shown that the antibodies produced by vaccination in preadolescent girls are higher than when girls are vaccinated later on.

## Unanswered questions for HPV vaccines

1. *How long does the vaccine last?*

It is not yet known how long the vaccines are effective for and whether boosters will be required. This is the main reason the HPV vaccination is not being given as a childhood vaccine at present.

2. *Should men be vaccinated?*

Pre cancerous changes in genital cancer are rarer in men and so at the moment it is not felt that it is cost effective to vaccinate boys.

3. *What effect will HPV vaccination have on cervical screening?*

It is not known if women will be less likely to attend cervical screening if they have been vaccinated, thinking that they are completely protected from cervical cancer. Cervical screening will still be very important as HPV types not covered by the vaccines cause 30% of cervical cancer cases.

4. *Is vaccination beneficial for older women?*

Ideally the vaccine should be given before coming into contact with HPV. However vaccination may still be of benefit for older women who are unlikely to be infected by *both* HPV 16 and 18 contained in the vaccine. So they may still gain some protection from vaccination.

5. *What about acceptance & uptake of HPV vaccination in the UK?* This is not known for sure before the introduction of the HPV programme but studies suggest uptake will be good. Vaccination for HPV requires three doses to be given over a six month period and this probably easiest to organise through schools.

## **How to prevent cervical cancer?**

The best way to prevent cervical cancer is for girls to be vaccinated and then be screened once they become older (at age 25 years in England and 20 years in Wales and Scotland). For older girls and women cervical screening remains a very effective way to minimise the chances of developing cervical cancer.

### **KEY MESSAGES FOR GIRLS RECEIVING THE HPV VACCINE**

- **HPV Infection is very common**
  - It occasionally causes abnormal smears and cervical cancer
- **Vaccines protect against 70-75% of cervical cancer**
  - But not against all cancer causing types
- **Cervical Screening is still required**
- **Vaccines don't protect against other sexually transmitted infections or pregnancy**
  - Safe sex is still important



Registered Charity No: 239281

[www.wellbeingofwomen.org.uk](http://www.wellbeingofwomen.org.uk)