

FAQ _ HPV

1. What is human papillomavirus (HPV)?

Human Papillomavirus (or HPV) causes cancer of the neck of the womb (or uterine cervical carcinoma), the first tumour recognised by the World Health Organisation as being wholly attributable to an infection. There are roughly 120 different genetic types (genotypes) of HPV virus capable of infecting humans, a third of which are associated with diseases (pathologies) of the anogenital tract, both benign and malignant. Of these genotypes, type 16 is responsible for almost half (50%) of cases of cancer of the cervix, type 18 is responsible for 20% of cases and the others for the remaining 30%. Genotypes 6 and 11 are responsible for 90% of genital condylomas.

2. How is this infection caught?

HPV is the most common of all sexually-transmitted diseases. Sometimes contact with the genital area alone (incomplete sexual exposure) is sufficient to cause it. Communities are full of healthy carriers. Generally speaking, neither men nor women show obvious signs of infection, despite being able to transmit it. Prophylactics (or condoms) should always be used to protect against sexually-transmitted diseases, but do not guarantee total protection against the HPV virus.

3. What disorders (symptoms) does HPV infection cause?

HPV infection does not give rise to any particular disorders (symptoms). Most infections actually heal spontaneously without further consequences. A small minority of infections become chronic and it is in precisely this situation that the virus is capable of triggering pre-cancerous lesions (cancer precursors) over a few years. In fact, if these are not picked up (through Pap Tests) and adequately treated, they can develop into cervical cancer.

4. What can be done about HPV infection?

There is no specific treatment for HPV infection. Pap Tests (Papanicolaou Tests, named after their inventor) should be carried out on a regular basis in order to prevent - or make an early diagnosis of - alterations in the cervical cells potentially generated by the HPV virus. This test is geared to investigating alterations in the cells of the neck of the womb, making it possible to identify any suspicious early changes in the cervical tissues. It is clear that vaccination does not treat but does prevent infection.

5. Can HPV infection be cured?

In most cases, the body's own defences eventually combat infection with one or more types of papillomavirus. HPV-16 and HPV-18 are the types that give rise to most of the chronic conditions, with infections and instances of cancer even 10 years later.

6. Is it possible to become infected twice?

Yes, it is theoretically possible to catch the same type of HPV infection twice because the body's defences, triggered by the natural infection, work powerfully and short-term: the lesion is localised and the virus fails to enter the bloodstream.

Vaccination alone can confer levels of protection at least 10 times higher than natural levels: they last for over 8 years.

7. How important is HPV in terms of generating cervical tumours?

Persistent infection with oncogenic HPV viruses (i.e. viruses capable of generating tumours) has a crucial part to play in the development of cervical tumours. In these cases, the virus manages to penetrate the cells of the mucosa (mucous membrane lining the womb) and steadily alter it until pre-cancerous lesions (known as CIN-2 and CIN-3) are formed: these are signs of medium and high grade alterations). The process takes a long time, many years even, but the lesions can be treated if diagnosed in good time. The likelihood of an HPV infection failing to heal spontaneously and becoming chronic seems to depend on the type of HPV, occurring more often in HPV-16. The HPV virus is found in 99.7% of cases of cervical cancer, which points to the fact that there can be no tumour unless there has been chronic HPV infection. Smoking, protracted use of oral contraceptives, number of partners, concurrent HIV infection and having had a lot of children are all factors that increase the likelihood of developing cancer.

8. Can vaccination against HPV-16 and HPV-18 stop infection?

Vaccination has proved to be capable of preventing acute HPV infection because of the strains of virus used in the vaccine, stopping it becoming chronic or developing into pre-cancerous lesions (a pre-requisite for the development of actual tumours).

9. How does the vaccine work to prevent cervical cancer?

Today's vaccines are made up of virus-like particles (like empty virus husks), that have no powers of reproduction or of human infection, although their external make-up is exactly like that of live viruses. The immune system (our defence system) is thus stimulated to produce antibodies against the proteins present in the surfaces of the viruses and therefore, in cases of natural exposure to infection, the virus is prevented from penetrating the genital mucosa (protective mucous membrane). Two different formulations of anti-HPV vaccine exist: one contains HVP-16 and HPV-18 virus-like particles, and the other contains HPV-6 and HPV-7 virus-like particles in addition to the HVP-16 and HPV-18 ones. The vaccine has a preventative action and does not work once viruses have already penetrated the mucous cells. Vaccination is primarily geared to non-infected people. As the immune response has proved to be higher in younger people who have not yet come into contact with HPV, vaccination is primarily aimed at girls in Italy over the age of 11.

10. Who is eligible for free vaccination?

In Tuscany, vaccination is available free of charge. Local USL health units operate a call system for all adolescent girls in their twelfth year (after their eleventh birthday). The right to free vaccination continues, in the event of any delay, until their 18th birthday, although the vaccination programme must commence before but not as of their 18th birthday.

11. Will all eligible girls be contacted by their local USL health units?

Girls in their twelfth year (after their eleventh birthday) receive a letter of invitation sent to their homes by the local USL health unit. Any girls of sixteen who have not previously responded to a call will also receive an invitation at home. Girls in their thirteen, fourteenth, fifteenth, seventeenth and eighteenth years, who are - in any case - eligible for free vaccination, should contact their local USL health unit to arrange an appointment.

12. Why should girls be vaccinated during their twelfth year? Is that not too early?

The World Health Organisation recommends the vaccination of pre-adolescent girls as a primary objective, on the basis of available data.

All girls in their twelfth year (after their eleventh birthday) will receive a call for vaccination because it is in this age group that the greatest benefit is to be had.

Administering the vaccine before girls become sexually active is, in fact, particularly advantageous because it confers effective protection prior to any potential infection with the HPV virus, which tends to set in immediately after the start of sexual activity, and because the defence system response (immune system) is most acute at this stage than in girls and women of different age groups.

Putting it off '*for a few years*' because '*my daughter is still young*' can turn out to be a serious mistake, because it means that the opportunity of an excellent response to the vaccine and a sure defence against future infection are passed up.

13. Is the vaccine safe?

Both types of vaccine are safe. Hundreds of millions of doses have been administered all over the world with no reports of serious ill effects. Some girls may suffer mild side-effects after vaccination: these mainly consist of pain, swelling and redness in the arm used for the vaccination, or headaches and general malaise or, sometimes, low-grade fever. All these effects resolve spontaneously without further consequences within a matter of days.

14 Is the vaccine effective?

Clinical research into the safety of the vaccine has shown that it affords extremely high protection (90-100%) against pre-cancerous lesions triggered by HPV-16 and HPV-18, when administered prior to any contact with the virus.

15. What are the contraindications for its use?

Vaccination should not be repeated where there has been an allergic reaction to a previous dose of the same vaccine or to one of its components. It should also not be carried out during acute bouts of feverish illness. In this case, vaccination should be delayed until recovery is complete.

16. Can pregnant women be vaccinated?

The vaccine must not be given to pregnant women. Studies have not shown up any particular problems for either mother or foetus where vaccination has been carried out before pregnancy was noted, but only limited safety testing has been carried out, and therefore further research is needed

17. How long does the vaccine remain effective?

This is not yet quite clear, partly because large-scale vaccination has only been ongoing for the last 5 years. However, none of the studies carried out on girls vaccinated prior to that have revealed any lessening of protection. Should any evidence of diminished protection long-term arise, a top-up dose could be made available to reconsolidate protection.

18. Is vaccination possible over the age of 18?

Yes, vaccination can provoke antibody response in older women and protect against HPV, even though the likelihood of having already contracted infections from viruses normally prevented by the vaccine increases with age, which means that the vaccine is less effective. Vaccination can now be carried out up to the age of 45-49 as an individual preventative measure.

19. Will males be offered the vaccine?

There are no plans for free vaccinations for males because, unlike women, men are not at risk of dangerous and common tumours such as cervical cancer. However, vaccination is effective in males for the prevention of genital condyloma and pre-cancerous lesions (lesions that precede the development of tumours: precursors of cancer) that typically occur in men (anus, penis etc.). Vaccination is now available to males as an individual preventative measure.

20. How long can the intervals between doses of anti-HPV vaccine be without compromising efficacy?

It is always advisable to follow the instructions for optimum use of the anti-HPV vaccine (3 doses at 0, 1-2 months, 6 months). Should this not prove possible, however, the entire vaccination cycle need never be repeated right from the beginning.

21. What are the expected benefits of extending the vaccination programme?

Given that these diseases take a long time to develop, all the benefits of an extended vaccination programme will be seen once there is a lower incidence of pre-cancerous lesions (lesions that precede tumoural development: precursors of cancer) caused by HPV-16 and HPV-18 viruses. In practice there is likely to be a very real slowdown in the rate of cervical cancer.

22. How are the vaccinations performed?

The vaccine is administered intramuscularly into the deltoid muscle (upper arm) and consists of one initial dose followed by two further doses, 1-2 months and 6 months after the first.

23. Where are vaccinations performed?

Vaccinations are performed free of charge at Tuscan Health Authority (AUSL) vaccination centres.

24. Does vaccination replace periodic screening (or Pap Tests)?

It is important to remember that vaccination operates alongside periodic screening (Pap Tests) for cervical cancer, currently recommended at three-yearly intervals for women aged between 25 and 64, but does not replace it. This is because the vaccine protects only against lesions caused by two strains of HPV virus (16 and 18), responsible for 70% of invasive cancers, while 3-yearly Pap Tests are designed to identify pre-cancerous lesions (lesions preceding tumoural transformation: precursors or cancer) linked with all types of HPV and not just those included in the vaccine.

25. What is an HPV test? Does it have to be carried out at the same time as a Pap Test?

HPV testing is done in order to identify types of HPV that may have infected a woman's genital tract: it is an indispensable means of working out how and when to start treatment. HPV testing will replace Pap Tests in adult women in the future.

26. What do the preliminary research data tell us in relation to the prevention of pre-cancerous lesions?

We now have data going back 8 years from initial vaccination. The results have been excellent and have exceeded expectations: after 8 years, over 99 per cent of those vaccinated showed no sign of any pre-cancerous lesions (i.e. lesions preceding tumoural transformation: precursors of cancer) due to the two strains of HPV contained in the vaccine. From a funding point of view, studies have shown that vaccination is both good value and beneficial (they all agree with regard to the positive cost/benefit ratio).

27. Where can I find further information?

You should definitely talk to your general practitioner or family paediatrician and make contact with staff at the vaccination, advisory and healthcare centres run by your local USL health unit.