

Patient information from BMJ

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HPV (human papillomavirus) vaccine

The HPV vaccine is designed to protect against the human papillomavirus (HPV).

HPV is the main cause of cervical cancer, which kills many thousands of women each year.

What is human papillomavirus?

HPV is probably most commonly known as the virus that causes **warts**, including **genital warts**.

But HPV is usually harmless and causes no symptoms at all.

Most people who are not vaccinated will be infected with HPV at some point during their lives, usually with no ill effects, as the body's immune system fights off the infection.

HPV and cervical cancer

In some people, the immune system doesn't manage to fight off the infection. If this happens, it can cause serious health problems. For example, HPV is the main cause of **cervical cancer**.

In 2020 more than 4,000 women in the US died from cervical cancer.

Cervical cancer affects the **cervix**, which is the lower part of the uterus (womb). It sits between the lower part of the uterus and the vagina.

Women who are diagnosed with early-stage cervical cancer can usually be cured with surgery. But most women diagnosed with late-stage cervical cancer will not survive.

HPV can also cause other types of cancer, including cancers that affect the vulva, vagina, penis, anus, and the mouth and throat (called oropharyngeal cancer).

Who needs the HPV vaccination?

Young people

HPV spreads easily through unprotected sex. It is the most common sexually transmitted infection (STI).

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But it can also spread through other kinds of intimate touching, without actually having sex. For example, the virus is commonly present on the hands, in the mouth, and around the genitals.

To protect people who are most likely to be exposed to HPV, the vaccine is offered to teenagers a few years before the age when most people first become sexually active.

In the US, boys and girls are offered the vaccine when they are around **11 and 12 years old**.

The vaccine is given in **two or three doses**, depending on your age, and your health. For example, three doses are recommended if you:

- Have your first dose after the age of 15 years, or
- Have a weakened immune system: for example, if you have HIV.

If you have two doses, the second dose is given between six and twelve months after the first dose.

If you have three doses, the second is usually given sooner, about one or two months after the first, with the third dose given six months after the first.

It's important to have all the recommended doses for the best protection.

Catch-up vaccines

Young people who missed out on the vaccine program at 11 and 12 years might still be able to have the vaccine, depending on where you live.

So if you (or your child) missed out on the vaccine for any reason, or just missed one of the doses, talk to your doctor about getting the vaccine. But the vaccine is not recommended for people aged over 25 years.

Men who have sex with men

Men who have sex with men (or MSM for short) might be able to get the vaccine over the age of 25, depending on where you live. Talk to your doctor for more information.

Transgender people

Some transgender people might have an increased chance of HPV infection. So, depending on where you live, you might be able to get the HPV vaccine.

Again, for more information, check your local guidance online or talk to your doctor.

Is there anyone who shouldn't have the vaccine?

It's very rare, but some people have a severe allergic reaction to the vaccine. You shouldn't have this vaccine if you are allergic to any of its ingredients. Tell your doctor or the medical staff giving the vaccine about any allergies you have.

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For example, you shouldn't have the second dose of the vaccine if you had an allergic reaction to the first dose.

The staff giving the vaccine will have been trained in how to treat a severe allergic reaction.

Is it safe?

The HPV vaccine is fairly new compared to some vaccines that have been used for many years, such as the tetanus vaccine. But many millions of people have now been vaccinated, and no major safety issues have been found.

Like all vaccines, the HPV vaccine can cause side effects in some people. These are usually mild and short term. They include:

- redness, swelling, and pain where the injection was given (called the injection site)
- a headache
- fever
- nausea
- pain in the arms or legs, and
- a rash.

Some people also have breathing problems after this vaccine, but this is extremely rare.

How is the vaccination given?

The HPV vaccine is given as a shot into the upper arm. It's important to get all the recommended (two or three) doses for the best protection.

How well does the vaccine work?

The HPV vaccine is fairly new compared with some vaccines, so we don't have as much information about how well it works as we do for other vaccines.

For example, the cancers caused by HPV can take many years to develop, so it will be some years before we have a clear picture of how many cancers have been prevented.

But studies suggest that there has already been a large fall in the number of dangerous infections, and in cervical problems in women who have been vaccinated.

The vaccine only seems to offer protection against HPV for about ten years. This means that it's important for women to keep up with their cervical cancer screening (PAP smear) appointments.

To find out more about screening, see our leaflet on *Cervical cancer*.

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