

HPV Vaccine Key Facts

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There is evidence that the recommendation of a known health professional leads to increased vaccine uptake. Please help to inform parents about the safety and effectiveness of HPV vaccine.

Human papillomavirus (HPV)

- Human Papillomavirus (HPV) infection is the most common sexually transmitted disease worldwide.
- Spread by direct (usually sexual) contact with an infected person.
- About 80% of all women will have a HPV infection in their lifetime usually in their late teens and early 20s.
- HPV infection rates are rising rapidly among women and men in high income countries.
- Most HPV infections clear naturally but some caused by high risk HPV types can progress to cervical cancer.
- Two high risk HPV types (16 and 18) cause over 70% of cervical cancers.

Cervical cancer

- Ireland has one of the highest rates of cervical cancer in Western Europe and 58% of women are diagnosed at less than 50 years of age.
- Each year in Ireland
 - 90 women die from cervical cancer
 - over 280 (many young) women need treatment (surgery, chemotherapy and/or radiotherapy) for invasive cervical cancer
 - over 6,500 women are diagnosed with high grade cervical intraepithelial neoplasia (CIN) and require hospital treatment.

Other cancers

- HPV is responsible for
 - more than 90% anal cancers
 - almost 70% vaginal and vulvar cancers
 - more than 60% of penile cancers
 - over 70% oropharyngeal cancers.
- Male incidence of oropharyngeal cancer will overtake cervical cancer incidence by 2020.

HPV vaccine is recommended by the World Health Organization (WHO), the International Federation of Obstetricians and Gynaecologists (FIGO), the American Society of Clinical Oncology and the Royal College of Physicians in Ireland (Royal College of Physicians of Ireland) to reduce the burden of cervical cancer in women.

HPV Vaccine

- Should be administered before exposure to HPV at sexual contact.
- Recommended for all girls aged 12-13 years.
- Known to be most effective when given at this age.

Two HPV vaccines (HPV2 and HPV4) were licensed in 2006.

• HPV2 vaccine (Cervarix)

- is licensed to prevent premalignant genital lesions and cervical cancer causally related to HPV types 16 and 18
- is licensed for use in females from 9 years of age
- two dose schedule at 0 and 6 months for girls less than 15 years at first dose
- three dose schedule at 0,1, 6 months for females aged 15 to 26 years.

• HPV4 vaccine (Gardasil)

- is used in the HSE HPV school vaccination programme
- is licensed to prevent premalignant genital and anal lesions, cervical and anal cancers causally related to HPV types 16 and 18
- provides protection against HPV types 6 and 11 that cause over 90% anogenital warts in men and women
- is licensed for use in females and males from 9 years of age
- two dose schedule at 0 and 6 months for those less than 15 years at first dose
- three dose schedule at 0,2, 6 months aged 15 to 26 years.

HPV types 16 and 18 cause 70% cervical cancers.

• HPV9 vaccine (Gardasil 9)

- was licensed in 2015
- provides protection against 9 HPV types 6, 11, 16, 18, 31, 33, 45, 52 and 58 (7 of which cause almost 90% of cervical cancers).

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Impact of HPV vaccine

- Countries that have commenced a vaccine programme since 2006 and have high vaccination rates have shown a major fall in high grade cervical intraepithelial neoplasia (CIN).
- The number of cases of high grade CIN have reduced by 75% in Australia and by more than 50% in Denmark and Scotland.
- The incidence of anogenital warts in vaccinated Australian girls aged under 21 has decreased from 18% to 1.1% and the incidence of warts in young men also has fallen showing the impact of herd immunity – protection from vaccinated to unvaccinated persons.
- In the UK where 90% of girls have been vaccinated since 2008, HPV infection rates have fallen by over 90%.
- In Australia, the HPV infection rate among women aged 18 to 24 dropped from 22.7% to 1.1% between 2005 and 2015. A substantial fall also occurred in women aged 15-25, despite lower vaccine coverage.
- Immunity has lasted for ten years without significantly waning.

Evidence published by the Cochrane Review (2018) shows that HPV vaccines are safe and protect against cervical cancer.

HPV Vaccine Safety

- HPV4 (Gardasil) is currently used in 84 government funded HPV immunisation programmes worldwide including the UK, US, Canada, Australia and New Zealand.
- By May 2017, over 244 million doses of HPV 4 (Gardasil) have been distributed worldwide, either as part of national immunisation programmes or by private doctors.

- As part of the HSE HPV school vaccination programme in Ireland more than 750,000 doses of HPV4 (Gardasil) have been distributed.
- More than 240,000 girls have received the full vaccine course.
- HPV vaccine safety has been monitored for more than ten years and is frequently reviewed by many international bodies including
 - the European Medicines Agency (EMA)
 - the WHO Global Advisory Committee on Vaccine Safety (GACVS). Since licensure of HPV vaccines, GACVS has found no new adverse events of concern based on many very large high quality studies (July 2017).
 - the Centers for Disease Control and Prevention (CDC) in the US.

The known side-effects are:

- About 1 girl in 10 will get pain, erythema and swelling at the injection site and/or headache.
- About 1 girl in 100 will get nausea, pain in the vaccinated arm and pyrexia.
- About 1 girl in 1000 to 1 girl in 10,000 will get urticaria.
- Severe allergic reactions with bronchospasm occur in about 1 in 1 million patients.
- Syncope which can occur after any vaccination especially in adolescence. Girls are advised to sit down for 15 minutes after the vaccination to prevent this.

There is no scientific evidence of an increase in the incidence of Chronic Fatigue Syndrome or any other long term medical condition in vaccinated compared to non-vaccinated girls.

- Chronic fatigue syndrome (CFS)
 - has been known for over 200 years
 - is 3-4 times more common in females and commoner in younger adolescents
 - estimated prevalence rate in Ireland 0.2-0.4% so at least 440-880 cases of CFS would have been expected by chance among 240,000 vaccinated girls. The numbers reported are much lower than expected.
- A Norwegian nationwide study, shows no association between HPV vaccination & chronic fatigue syndrome (June 2017).

All international bodies have continually reported that HPV vaccine is safe with no known long-term side effects.

Cervical Screening

- Screening is still necessary after HPV vaccination as the vaccines currently available in Ireland only protect against 70% of cervical cancers.

High HPV vaccine uptake rates combined with a cervical screening programme will lead to a very significant reduction in the number of women who develop cervical cancer.

More information

www.hpv.ie

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<http://www.cdc.gov/vaccinesafety/vaccines/hpv-vaccine.html>

<https://www.cdc.gov/vaccinesafety/pdf/data-summary-hpv-gardasil-vaccine-is-safe.pdf>

http://www.who.int/vaccine_safety/committee/topics/hpv/en/

<http://cochranelibrary-wiley.com/wo1/doi/10.1002/14651858.CD009069.pub3/abstract>

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