

## Human Papillomavirus (HPV)

Human papillomavirus (HPV) causes cervical cancer, which is the fourth most common cancer in women, with an estimated 266,000 deaths and 528,000 new cases in 2012. A large majority (around 85%) of the global burden occurs in the less developed regions, where it accounts for almost 12% of all female cancers.

Although most infections with HPV cause no symptoms, persistent genital HPV infection can cause cervical cancer in women. Virtually all cervical cancer cases (99%) are linked to genital infection with HPV and it is the most common viral infection of the reproductive tract. HPV can also cause other types of anogenital cancer, head and neck cancers, and genital warts in both men and women. HPV infections are transmitted through sexual contact.

Three HPV vaccines are now being marketed in many countries throughout the world - a bivalent, a quadrivalent, and a nonavalent vaccine. All three vaccines are highly efficacious in preventing infection with virus types 16 and 18, which are together responsible for approximately 70% of cervical cancer cases globally. The vaccines are also highly efficacious in preventing precancerous cervical lesions caused by these virus types. The quadrivalent vaccine is also highly efficacious in preventing anogenital warts, a common genital disease which is virtually always caused by infection with HPV types 6 and 11. The nonavalent provides additional protection against HPV types 31, 33, 45, 52 and 58. Data from clinical trials and initial post-marketing surveillance conducted in several continents show all three vaccines to be safe.

The primary target group in most of the countries recommending HPV vaccination is young adolescent girls, aged 9-14. For all three vaccines, the vaccination schedule depends on the age of the vaccine recipient.

- *Females <15 years at the time of first dose*: a **2-dose schedule** (0, 6 months) is recommended.
- If the interval between doses is shorter than 5 months, then a third dose should be given at least 6 months after the first dose.
- *Females ≥15 years at the time of first dose*: a **3-dose schedule** (0, 2, 6 months) is recommended.
- *NB: A 3-dose schedule remains necessary for those known to be immunocompromised and/or HIV-infected.*