

Vaccination against HPV

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Executive summary

Health Council of the Netherlands



Since 2010, girls have been offered vaccination against the human papillomavirus (HPV), the virus that causes cervical cancer, under the National Immunisation Programme. HPV is now known to be involved in other diseases as well, both in men and women. In addition, this vaccination has now been in use for almost ten years, and a third vaccine has recently become available. For these reasons, at the request of the Ministry of Health, Welfare and Sport, the Health Council of the Netherlands has again prepared an advisory report on vaccination against HPV.

There is a substantial burden of disease

HPV infections are common – about 80% of the population has been infected at some point in

their lives. Such infections are usually symptom-free and clear up naturally. Infections may occasionally lead to cancer, which does cause a considerable burden of disease. Almost all cases of cervical cancer are the result of an HPV infection. Many cases of anal cancer and vaginal cancer are also associated with HPV infections. There is also a link between HPV and vulvar cancer, penile cancer and cancer of the mouth and throat. However, factors other than HPV are also involved in these diseases. For instance, smoking and alcohol consumption are major causes of mouth and throat cancer.

Finally, HPV can lead to genital warts. These are common, but not serious.

Vaccines are effective

Three vaccines are currently available for use against HPV, all of which are adequately efficacious and effective. These provide protection against various types of HPV (two, four, and nine different types respectively). Many studies have shown that all these vaccines remain effective for long periods of time. They elicit a strong immune response (the body produces antibodies against the virus), and reduce the incidence of HPV infections and cervical cancer precursors by 80% to 100%. As yet, it is not possible to say with certainty whether, and to what extent, this translates into a reduction in the number of cancer cases. However, vaccinated women do appear to be less prone to cervical cancer. There is strong evidence to suggest that vaccination leads to herd protection, which reduces the incidence of HPV infections among unvaccinated individuals.

HPV vaccination is safe

HPV vaccination is safe for both boys and girls. HPV vaccination can result in pain and redness

Annual number of new cases and deaths involving cancers associated with HPV

Disease	Number of new patients per year (approximately)	Number of deaths per year (approximately)
Cervical cancer	800	200
Anal cancer	200-300	60
Vaginal cancer	60	20
Vulvar cancer	300-400	100
Penile cancer	160	30
Cancer of the mouth and throat	1,600-1,800	600



at the vaccination site, but these fade away naturally. Studies have found no evidence to link vaccination against HPV with disorders such as chronic fatigue, migraine and autoimmune diseases.

Benefit outweighs the risk

The Committee considers HPV vaccination to be acceptable, because the health gains it delivers outweigh any temporary discomfort suffered by vaccinated individuals. The vaccination is effective and has few adverse effects.

Cost effectiveness is favourable

Vaccination of girls only or of both girls and boys (gender-neutral vaccination) has a cost-effectiveness ratio of less than €20,000 per quality-adjusted life year (QALY). This is a measure that is often used to assess whether preventive measures are cost-effective. The vaccination of girls and women up to the age of 25 also has a cost-effectiveness ratio of less than €20,000 per QALY. Due to a lack of data, it is not possible to say whether the same applies

to the gender-neutral vaccination of this age group.

Recommendation: vaccinate boys and girls, and implement a supplementary programme

The Committee recommends that HPV vaccination be retained within the National Immunisation Programme. Both boys and girls should be vaccinated. For boys, too, vaccination provides protection against various forms of cancer. Vaccination also provides herd protection, which protects vaccinated individuals while also benefiting unvaccinated individuals. The Committee recommends that children be vaccinated as close to their ninth birthday as possible. This would give them protection as early in life as possible, which would enhance the effectiveness of vaccination. When the current vaccination age (13) was selected, there was still some uncertainty about the period of protection provided. We now know that this period is long enough.

In addition, the Committee recommends setting up a supplementary vaccination programme for individuals up to the age of 26. This applies to boys and men (who were never included in the programme) and to any girls and women who had previously declined to be vaccinated.

Vaccination of this group would result in substantial health gains. For this group, too, vaccination is completely safe. The Committee recommends that this supplementary programme be evaluated after a period of five years.

With regard to the three vaccines that are currently available, the Committee cannot indicate a preference. That would require modelling studies. In the meantime, it recommends that vaccination be continued. The Committee recommends that steps be taken to improve the low turnout for HPV vaccination in the Netherlands. Such measures have proved highly effective in other countries. Studies will be needed to determine which of these measures works best in the Netherlands.



The Health Council of the Netherlands, established in 1902, is an independent scientific advisory body. Its remit is “to advise the government and Parliament on the current level of knowledge with respect to public health issues and health (services) research...” (Section 22, Health Act).

The Health Council receives most requests for advice from the Ministers of Health, Welfare and Sport, Infrastructure and Water Management, Social Affairs and Employment, and Agriculture, Nature and Food Quality. The Council can publish advisory reports on its own initiative. It usually does this in order to ask attention for developments or trends that are thought to be relevant to government policy.

Most Health Council reports are prepared by multidisciplinary committees of Dutch or, sometimes, foreign experts, appointed in a personal capacity. The reports are available to the public.

This publication can be downloaded from www.healthcouncil.nl.

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