

# The new cervical cancer vaccine

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There has been much in the media recently about the new cervical cancer vaccine, "Gardasil". The first vaccine was initially produced in the 1990s by a team of researchers in Queensland, headed by [Professor Ian Frazer](#); who received [Australian of the Year in 2006](#) for his work. The vaccine was then marketed by CSL pharmaceuticals and released in 2006. It is a vaccine aimed at preventing infection with the human papilloma virus (HPV), also known as the wart virus.

There is a clear relationship to human papilloma virus (HPV) and the development of cervical cancer (1). There are more than 100 different forms of human papilloma virus (HPV), but not all of them are linked to causation of cervical cancer (2). HPV 16 and 18 are indicated in causing over 70% of cervical cancers detected. The other genotypes linked to developing cervical cancer are types 45 and 31. Types 6 and 11 are linked to the clinical manifestation of genital warts and are low risk for developing cervical cancer.

Infection with high risk HPV is almost always sexually transmitted. There is a high rate of transmission and infection is usually asymptomatic. The usual duration of infection ranges from 8 to 14 months. There is a higher risk of cervical cancer developing with prolonged infection.

The screening program in Australia of 2 yearly Pap smears from the age of sexual activity has been extremely effective in reducing the number of women who develop squamous cell cervical cancer by detecting early abnormal cell changes (3). However there are some forms of cervical cancer such as glandular cervical cancer which are difficult to pick up on screening Pap smear. Hopefully the advent of the new vaccine will help to reduce the number of these cancers occurring.

The vaccine is a recombinant vaccine against the four human papilloma viruses (HPV types 6, 11, 16, 18). There is still the possibility of infection with other oncogenic HPV, therefore pap smears are still required for a vaccinated women. However, the risk of cancer is greatly reduced.

Currently the vaccine is aimed at girls prior to sexual activity. The reason for this is that most studies have been regarding prophylaxis of infection with HPV. There is currently uncertain evidence regarding its use in women who have already been infected with HPV 6, 11, 16 or 18. The other current area of interest is in the use of the vaccine for men who have sex with men (MSM) in preventing anal cancer caused by HPV 16 or 18.

The Australian government has approved of a PBS listing for Gardasil for women aged 9 to 26 years of age, after March 2007. If vaccination is required privately prior to that, the cost is currently \$466 (Australian). It is also available to males aged 9 to 15 years of age, although not on the PBS.

**Dosage:** (5)

**Administered intramuscularly as 3 separate 0.5 mL doses at the elected date, 2 and 6 months later.**

In clinical studies there has been good efficacy with a dosage regimen of 0, 1 month and 3 months.

Gardasil can be administered concurrently with other vaccinations. Main side effects appear to be pain, swelling or erythema at the injection side, and occasionally fever.

## References

- (1) Daley, EM. Clinical update on the role of HPV and cervical cancer. *Cancer Nurs.* 1998 Feb;21(1):31-5.
- (2) Screening to Prevent Cervical Cancer: Guidelines for the Management of Asymptomatic Women with Screen Detected Abnormalities. *National Health and Medical Research Council (NHMRC)*. (c) Commonwealth of Australia 2006. [[Link](#)]
- (3) Cervical Cancer Screening [electronic document]. *The Cancer Council New South Wales*. Last updated: November 2006 [[Link](#)]
- (4) Gardasil Product information, CSL Pharmaceuticals

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