

Awareness and Prevention of Cervical Cancer

Key Messages

- ※ Cervical cancer is one of the common cancers threatening women's health. In Hong Kong, it was the eighth most common female cancer with 520 new cases in 2019.
- ※ Nearly all cervical cancers are caused by persistent infection with cancer-causing (or high-risk types of) human papillomavirus (HPV). Therefore, cervical cancer is preventable through highly effective HPV vaccination and regular cervical screening.
- ※ Starting from the 2019/20 school year, the Department of Health provides the first dose of 9-valent HPV vaccine to Primary Five school girls, and the second dose when they reach Primary Six in the following school year.
- ※ The Cancer Expert Working Group on Cancer Prevention and Screening recommends women aged 25 to 64 who ever had sexual experience (including those being HPV vaccinated) to have regular cervical screening.
- ※ Members of the public are also urged not to smoke and take appropriate precautions (such as practicing safer sex) to reduce the risk of contracting HPV and other sexually transmitted diseases.
- ※ The Hong Kong SAR Government is committed to reducing the burden of cervical cancer among local females. Let's work together and make the vision of eliminating cervical cancer as a public health problem a reality.

Awareness and Prevention of Cervical Cancer

Cervical cancer is one of the common cancers threatening women's health. As the fourth most frequently diagnosed cancer and the fourth leading cause of cancer death in women globally, there was an estimate of 604 000 new cases and 342 000 deaths attributed to cervical cancer in 2020¹. In Hong Kong, cervical cancer was the eighth most common female cancer with 520 new cases in 2019. While the median age at diagnosis was 55 years, nearly one-quarter (23.3%) of cervical cancers occurred in women aged 20–44 years², and over two-fifths (43.9%) of the new cases were diagnosed at an advanced stage (28.5% for Stage III and 15.4% for Stage IV)². Being the eighth leading cause of cancer deaths among women in Hong Kong, cervical cancer caused 159 deaths and the median age at death was 63 in 2020³.

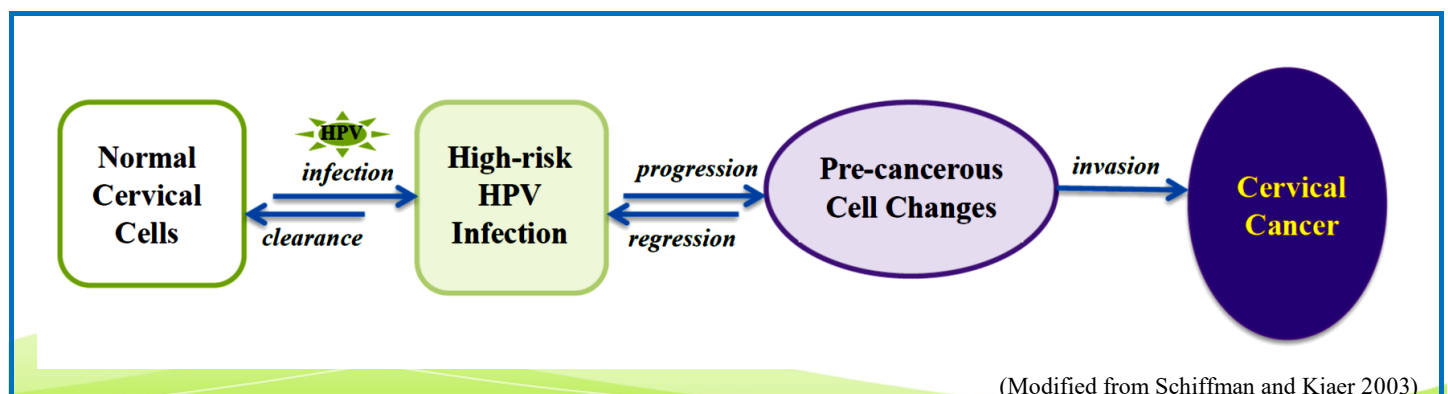
Carcinogenesis of Cervical Cancer

Nearly all cervical cancers are caused by persistent infection with high-risk types of human papillomavirus (HPV). Among the many types of HPV that can cause cancer, HPV-16 and 18 are the most common genotypes identified in cervical cancer cases. Together, they account for

about 70% of cervical cancers worldwide^{4, 5}. In Hong Kong, about 90% of cervical cancer cases are attributed to HPV types 16, 18, 31, 33, 45, 52 and 58⁶.

HPV infection is usually found in people who have ever been sexually active. Most people with HPV infection do not have any symptom and can clear it on their own in 1 to 2 years^{5, 7}. However, certain women with persistent high-risk HPV infection in the cervix will develop abnormal (pre-cancerous) cell changes. While the majority of these changes will regress to normal, some may progress to cancer over time if left untreated (Figure 1)^{7, 8}. Apart from the HPV type and its cancer-causing strength, risk factors for HPV persistence and thus cervical cancer include weakened immunity, coinfection with sexually-transmitted diseases, increasing parity and younger age at first pregnancy⁴. Smoking is suspected to compromise the innate immune system and suppress immune response in the cervix, thus promoting persistent HPV infection⁹. In persistent high-risk HPV-infected women, study showed that long-term or heavy smoking habits increased the risk of cervical cancer progression¹⁰.

Figure 1: Epidemiological Model of Cervical Carcinogenesis



(Modified from Schiffman and Kjaer 2003)

Prevention of Cervical Cancer

Cervical cancer is deemed nearly completely preventable because of the highly effective HPV vaccination and cervical screening¹.

HPV Vaccination

Vaccination of adolescent girls against HPV infection before onset of sexual activity is the most effective long-term intervention for reducing the risk of developing cervical cancer¹¹. Since 2006, safe and effective HPV vaccines have been available and approved for use⁵. Like other vaccinations that guard against viral infections, HPV vaccines stimulate the body to produce antibodies that, in future encounters with HPV, bind to the virus and prevent it from infecting cells¹². Currently, four types of prophylactic HPV vaccines are available and all of them protect against both HPV types 16 and 18⁴. However, HPV vaccines cannot offer 100% protection from cervical cancer since it does not protect against all types of HPV nor can it cure any existing HPV infection. Vaccinated females still need to have regular cervical screening. Other preventive measures for reducing the risk of HPV infection and cervical cancer include practicing safer sex (such as use of condoms and avoid having multiple sexual partners) and no smoking¹³.

As of 2020, more than 85% of high-income countries have introduced the HPV vaccine to their national immunisation programmes¹¹. A 2-dose schedule starting at age 9 to 11 years is the most common regimen⁶. In Hong Kong, the Scientific Committee on Vaccine Preventable Diseases and Scientific Committee on AIDS and STI under the Centre for Health Protection (CHP) have jointly recommended incorporating HPV vaccination in the Hong Kong

Childhood Immunisation Programme (HKCIP). As a public health programme for cervical cancer prevention, 9-valent HPV vaccine is provided to girls of suitable ages before sexual debut⁶. It is estimated that this vaccine, which covers major genotypes accounting for cervical cancer cases in Hong Kong, could potentially offer protection against around 90% of cervical cancer in Hong Kong. Starting from the 2019/20 school year, the School Immunisation Teams of the Department of Health (DH) have visited schools to provide the first dose of 9-valent HPV vaccine to Primary Five school girls, and the second dose when they reach Primary Six in the following school year¹⁴. For details about HPV vaccination, please visit the website of CHP at <https://www.chp.gov.hk/en/features/102146.html>.

Cervical Screening

Cervical screening aims to timely detect and treat pre-cancerous changes of the cervix or early cancer before symptoms appear. Regular cervical screening is proven to be an effective way of preventing cervical cancer. For many years, cytology test (also known as cervical smear or Pap smear), which looks for abnormal changes in the cervical cells, has been the main method of cervical screening¹⁵. Advances in molecular technology have made HPV test, which detects the genetic material of the high-risk types of HPV, widely available⁵. In recent years, an increasing number of overseas countries (such as Australia, the Netherlands, United Kingdom and United States) have adopted or recommended HPV testing as the main or one of the primary screening tests for cervical cancer^{13, 15}.

In 2021, the Cancer Coordinating Committee of the Hong Kong SAR Government endorsed the revised recommendations on cervical cancer screening for the local female population (Table 1) formulated by the Cancer Expert Working Group on Cancer Prevention and Screening after taking into consideration the local epidemiology, available scientific evidence, local and overseas screening practices. In gist, women aged 25 to 64 who ever had sexual experience should have regular cervical screening¹³. Family doctors,

gynaecologists, non-governmental organisations, Maternal and Child Health Centres (MCHCs) and Women Health Centres of the DH provide cervical screening services. To book an appointment at the MCHCs, please call the Cervical Screening Service 24-hour Phone Booking and Information Hotline 3166 6631 (For details, please visit the website of Family Health Service of the DH at www.fhs.gov.hk/english/main_ser/woman_health/phone_booking.html).

Table 1: Latest recommendations on cervical cancer screening by the Cancer Expert Working Group on Cancer Prevention and Screening¹³

For Asymptomatic Women at Average Risk

- Women aged 25 to 29 who ever had sexual experience should have screening by cytology every 3 years after two consecutive normal annual screenings.
- Women aged 30 to 64 who ever had sexual experience should have screening by:
 - i) **Cytology** every 3 years after two consecutive normal annual screenings; **or**
 - ii) **HPV testing** every 5 years; **or**
 - iii) **Co-testing (cytology and HPV testing)** every 5 years.
- Women aged 65 or above who ever had sexual experience:
 - i) May discontinue screening if routine screenings within 10 years are normal.
 - ii) Should be screened if they have never had cervical screening.

For Women at Increased Risk

- Women aged 21 to 24 who ever had sexual experience and with risk factors for HPV infection or cervical cancer are considered at increased risk. They should receive screening based on the doctor's assessment and recommendations.
- Other women at high risk of developing cervical cancer may require more frequent screenings based on the doctor's assessment.

Since 2004, the Hong Kong SAR Government has launched the Cervical Screening Programme (CSP) in collaboration with the healthcare sector to facilitate and encourage women to have regular cervical screening to prevent cervical cancer. To enable sharing of information among healthcare providers, the Cervical Screening Information System (CSIS) has been established. All women can register with the CSIS free of charge. Benefits of joining CSIS include reviewing submitted screening records on the CSIS, receiving screening reminders by email, SMS or post, and enabling the continuity of care by authorising selected service providers to review screening records. As at 31 December 2021, after excluding registered deaths, over 548 000 women aged 25 to 64 have registered with the CSIS¹⁶. For more information about the CSP including the CSIS, please visit the designated website at www.cervicalscreening.gov.hk.

Elimination of Cervical Cancer

The World Health Organization launched a global strategy to accelerate the elimination of cervical cancer as a public health problem in 2020, calling on all countries to effectively scale up HPV vaccination, cervical screening and treatment of detected precancerous lesions. It is envisaged that achieving the ‘90-70-90 targets’ (Box 1) by 2030 could reduce new cases of cervical cancer by 42% by 2045 and prevent about 5 million related deaths by 2050 globally¹¹.

The Hong Kong SAR Government is committed to reducing the burden of cervical cancer among local females. In 2019, the Hong Kong SAR Government launched the “Hong Kong Cancer Strategy” with a holistic plan for cancer prevention and control for Hong Kong¹⁷. DH will continue to increase public awareness and encourage the uptakes of both HPV vaccination and cervical screening.

Box 1: Key pillars and corresponding targets for the elimination of cervical cancer

Vaccination

90%

of girls fully vaccinated with HPV vaccine by age 15 years.

Cervical Screening

70%

of women are screened with a high-performance test by 35 years of age and again by 45 years of age.

Treatment

90%

of women identified with cervical disease receive treatment.

(Source: WHO 2020)

While members of the public are urged not to smoke and take appropriate precautions (such as practicing safer sex) to reduce the risk of contracting HPV and other sexually transmitted diseases, parents should allow their eligible primary school daughters to join the HPV vaccination programme and women aged 25 to 64 who ever have had sex (including those being HPV vaccinated) should also have regular cervical screening to reduce the risk of cervical cancer. Let's work together and make the vision of eliminating cervical cancer as a public health problem a reality.

References

1. Sung H, Ferlay J, Siegel RL, et al. Global Cancer Statistics 2020: GLOBOCAN Estimates of Incidence and Mortality Worldwide for 36 Cancers in 185 Countries. *Cancer* 2021; 71(3):209-249.
2. Cervical Cancer Statistics. Hong Kong SAR: Hong Kong Cancer Registry, Hospital Authority. Available at www3.ha.org.hk/cancereg/.
3. Mortality Statistics 2020. Hong Kong SAR: Department of Health and Census and Statistics Department.
4. Cervical Cancer. Geneva: World Health Organization, February 2022. Available at [www.who.int/news-room/fact-sheets/detail/human-papillomavirus-\(hpv\)-and-cervical-cancer](http://www.who.int/news-room/fact-sheets/detail/human-papillomavirus-(hpv)-and-cervical-cancer).
5. Wild CP, Weiderpass E, Stewart BW, (Eds). World Cancer Report. Cancer Research for Cancer Prevention. Lyon: International Agency for Research on Cancer, 2020.
6. Scientific Committee on AIDS and STI and Scientific Committee on Vaccine Preventable Diseases. Joint Consensus Recommendation on the Use of 9-valent Human Papillomavirus Vaccine in Prevention of Cervical Cancer in Hong Kong. Hong Kong SAR: Department of Health, September 2018.
7. Schiffman M, Kjaer SK. Chapter 2: Natural history of anogenital human papillomavirus infection and neoplasia. *Journal of the National Cancer Institute Monographs* 2003 (31):14-19.
8. Kombe Kombe AJ, Li B, Zahid A, et al. Epidemiology and Burden of Human Papillomavirus and Related Diseases, Molecular Pathogenesis, and Vaccine Evaluation. *Frontiers in Public Health* 2020;8:552028.
9. Vaccarella S, Herrero R, Snijders PJ, et al. Smoking and human papillomavirus infection: pooled analysis of the International Agency for Research on Cancer HPV Prevalence Surveys. *International Journal of Epidemiology* 2008;37(3):536-546.
10. Fang JH, Yu XM, Zhang SH, et al. Effect of smoking on high-grade cervical cancer in women on the basis of human papillomavirus infection studies. *Journal of Cancer Research and Therapeutics* 2018;14(Supplement): S184-s189.
11. Global Strategy to Accelerate the Elimination of Cervical Cancer as a Public Health Problem. Geneva: World Health Organization, 2020.
12. Human Papillomavirus (HPV) Vaccines. Bethesda, MD: National Cancer Institute at the National Institutes of Health, U.S. Department of Health and Human Services, 25 May 2021. Available at www.cancer.gov/about-cancer/causes-prevention/risk/infectious-agents/hpv-vaccine-fact-sheet.
13. Cancer Expert Working Group on Cancer Prevention and Screening (CEWG). Recommendations on Prevention and Screening for Cervical Cancer for Health Professionals. Hong Kong SAR: Centre for Health Protection, Department of Health, June 2021.
14. Press Release – HPV vaccine to be provided under Childhood Immunisation Programme. Hong Kong SAR: The Government of the Hong Kong Special Administrative Region. Available at www.info.gov.hk/gia/general/201810/11/P2018101100552.htm.
15. IARC Handbooks of Cancer Prevention Volume 18: Cervical Cancer Screening. Lyon France: International Agency for Research on Cancer, 2022.
16. Cervical Screening Information System. Hong Kong SAR: Department of Health.
17. Hong Kong Cancer Strategy 2019. Hong Kong SAR: Food and Health Bureau, Department of Health and Hospital Authority.

Love yourself! Have you had your screening yet?

To raise public awareness on cervical cancer and encourage regular screening, DH has produced a series of two Announcement in the Public Interests (API) with the slogan “Love yourself! Have you had your screening yet?” that tackle common barriers to cervical screening.

To view the videos, please visit the below designated websites.

定期做子宮頸篩查
Regular Cervical Screening



Website: youtu.be/wTO1wgaG00E

定期做子宮頸篩查
Regular Cervical Screening



Website: youtu.be/oDX11s_RVxg

Non-Communicable Diseases (NCD) WATCH is dedicated to promote public's awareness of and disseminate health information about non-communicable diseases and related issues, and the importance of their prevention and control. It is also an indication of our commitments in responsive risk communication and to address the growing non-communicable disease threats to the health of our community. The Editorial Board welcomes your views and comments. Please send all comments and/or questions to so_dp3@dh.gov.hk.

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