

Comparison of cervical cancer
screening strategies involving the
human papillomavirus screening
test (HPV test) or gynecological
cytology (Pap test)
English summary

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This is the English summary of the guidance entitled Comparaison des stratégies de dépistage du cancer du col de l'utérus avec le test de détection des virus du papillome humain (test VPH) ou la cytologie gynécologique (test Pap) published in June 2017.

The complete version of this guidance (in French) is available on the website of INESSS in the *Publications* section.

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SUMMARY

The Canadian Cancer Society (CCS) estimates that 280 new cases of cervical cancer will be diagnosed and 80 cervical cancer deaths recorded in Québec in 2016.

The leading cause of cervical cancer is persistent infection with a high-risk human papillomavirus (HPV). The virus's persistence can lead to cell abnormalities, which, in the natural development of the disease, can lead to cervical cancer. The HPV-16 and HPV-18 genotypes are responsible for more than 70 % of cases of cervical cancer. HPV infection is usually transmitted sexually through direct contact with infected skin or mucous membranes. Most infections are temporary and disappear within 18 months, especially in women aged 30 years and younger. However, the persistence (> 2 years) of an HPV infection increases the risk of progression to precancerous lesions or cancer of the cervix.

Gynecological cytology (hereinafter referred to as Pap test or cytology) consists of a morphological analysis of cells taken from the cervix and spread on a slide for the early detection of any abnormalities that could progress to cancerous lesions. However, the Pap test has certain limitations, the main one being its limited sensitivity. In a Canadian study, its sensitivity was determined to be 55,4 % (range : 33,6 % to 77,2 %) and its specificity was 96,8 % (range : 96,3 % to 97,3 %). A meta-analysis reported sensitivity and specificity for the Pap test ranging, respectively, from 30 % to 87 % and 86 % to 100 %.

The human papillomavirus screening test (HPV test) uses molecular technology to detect HPV nucleic acid in cells or cervical-vaginal secretions taken from the cervix. The aim of the test is to identify high-risk (or oncogenic) viral genotypes in order to identify women who are more likely to have precancerous lesions and, therefore, at greater risk for developing cervical cancer.

Given that an HPV vaccination program has been put in place in Québec, and because of changes in cervical cancer screening practice worldwide, which has shifted more to the use of the HPV test, the Direction générale de cancérologie (DGC) asked the Institut national d'excellence en santé et en services sociaux (INESSS), in collaboration with experts in the area, to compare the validity, efficacy and safety of the HPV test with those of the Pap test. To this end, the screening strategies recently recommended by experts from different authorities, organizations and associations were reviewed.

Meta-analyses have shown that the HPV test is significantly more sensitive than cytology. The specificity of the HPV test is lower than that of the Pap test. The data on these tests' performance in vaccinated populations are incomplete and are insufficient for accurately ruling on the impact of vaccination on these screening tests' sensitivity and specificity.

In a population-based screening context, the use of a triage strategy should reduce the rate of unnecessary referrals for a colposcopy and permit an adequate follow-up of women. In addition, adherence to the recommendations in terms of age and the

prescribed screening interval, as well as the arrival of vaccinated populations at the age of screening, could reduce the risks associated with an increased number of colposcopies and optimize the use of the HPV test.

The HPV test is recommended as the only test for primary screening in a number of countries and by authorities around the world. A single screening strategy should target both unvaccinated and vaccinated women. The strategies should be reviewed on a regular basis as the population effect of vaccination is achieved. Combining vaccination and screening is the best strategy for preventing cervical cancer.

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