Human papillomavirus vaccines

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1 Human papillomavirus (HPV) can lead to cancer

Human papillomavirus is the most common sexually transmitted infection. Persistent infection with a high-risk HPV type causes virtually all cases of cervical cancer and has been associated with 90% of anal, 70% of vaginal, 40% of vulvar and 65% of penile cancers,¹ as well as up to 70% of oropharyngeal cancers, which is on the rise.²

2 HPV vaccines can prevent cancer

Large randomized controlled trials of bivalent (Cervarix), quadrivalent (Gardasil) and nonavalent (Gardasil9) vaccines show that these vaccines prevent about 70% of anogenital cancers. Nonavalent vaccine prevents up to an additional 14% of anogenital cancers caused by the additional five HPV types. Quadrivalent and nonavalent vaccines also prevent 90% of anogenital warts.¹

3 HPV vaccines are safe

Data from clinical trials and safety surveillance show no evidence of increased frequency of systemic or serious adverse events.^{1,3} After systematic investigations, the World Health Organization's Global Advisory Committee on Vaccine Safety⁴ and the Institute of Medicine issued reports concluding that there is no evidence to support an association between HPV vaccine and serious adverse events.⁵

4 Canada's National Advisory Committee on Immunization recommends use of HPV vaccine for females and males

The National Advisory Committee on Immunization has recommended HPV immunization for females aged 9 years and older since 2007 and for males between 9 and 26 years of age since 2012 (see Appendix 1, available at www.cmaj.ca/lookup/suppl/doi:10.1503/cmaj.150465/-/DC1).⁶ Two doses of HPV vaccine among immunocompetent 9- to 14-year-olds provide similar protective efficacy as three doses in immunocompetent 9- to 26-year-olds.⁷

5 HPV vaccination rates are suboptimal

By 2010, all Canadian jurisdictions had implemented school-based immunization programs for girls, and some also have programs for boys. However, only 74.6% of 13- to 14-year-old girls across Canada have received at least one dose of HPV vaccine.⁸ Physicians can increase vaccine coverage by recommending this vaccine to their patients.

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