



Cervical cancer prevention and beyond: Optimizing HPV vaccine uptake in all eligible individuals

Practice aid for HPV vaccination

For more information, visit: www.touchONCOLOGY.com

Disease related to HPV infection

HPV-related cancer incidence^{1,2}

4.5% of all cancers*

620,000[†]

70,000[†]

HPV association with cancers³⁻⁵

~100% Cervical cancers globally	~80% Vaginal cancers globally	≤50% Vulval cancers globally
~50% Penile cancers globally	~100% Anal cancers globally	~70% Oropharyngeal SqCC in US

Non-cancer³

Anogenital warts

RRP

HPV types causing most HPV-related disease and targeted by HPV vaccines

Low-risk HPV types: Anogenital warts and RRP³

High-risk HPV types: Cancers of cervix, vulva, vagina, penis, anus and oropharynx^{3,6}

6

11

16

18

Bivalent vaccine

Quadrivalent vaccine

Nonavalent vaccine

31

33

45

52

58

35

39

51

56

59

Vaccine HPV types⁷

HPV vaccination could prevent >90% of HPV-related cancers developing⁸

*Data from 2012; †Data from 2018.

HPV vaccine dosing schedules

TWO-DOSE SCHEDULE^{9,10}

✓ Individuals 9–14 years



Nonavalent vaccine USA/Europe approved indication

Recommended WHO schedule for individuals ≥ 9 years³

THREE-DOSE SCHEDULE^{9,10}

✓ Individuals ≥ 15 years*



Nonavalent vaccine USA/Europe approved indication

THREE-DOSE SCHEDULE^{3,11}

✓ Immunocompromised individuals



CDC- and WHO-recommended

SINGLE-DOSE SCHEDULE³

✓ Individuals 9–20 years



Off-label schedule recommended by WHO as an alternative

Missed a dose? Resume the schedule, don't restart!

Maintain minimum intervals per label; complete all recommended doses for full protection¹²

Country recommendations and approved indications vary by geography and vaccine type. Always consult local guidance and vaccine labels.

HPV vaccine eligibility

Eligibility is broad



Most HPV vaccines approved for **girls and boys**³



Recommended for **immunocompromised individuals** including those living with HIV^{3,11}



HPV vaccination may benefit **adults in certain circumstances**¹³

HPV vaccine efficacy

Vaccine preventative not therapeutic¹⁴



Prevents **new infections** with HPV types in vaccine, even if **previously exposed** to other HPV types



Not effective in clearing active HPV infection caused by vaccine-covered types



Does not treat **existing** HPV lesions/disease but still **protects against other vaccine HPV types**

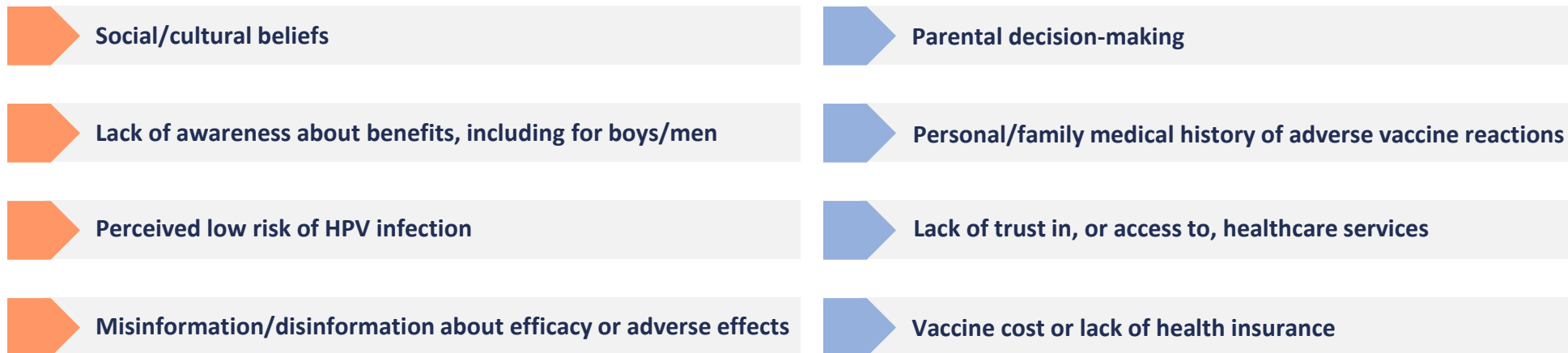
HPV screening**

- **Cervical cancer** screening well-established and critical^{3,6}
- **Anal cancer** screening recommended for certain individuals, e.g. MSM^{6,16}
- **Oropharyngeal, penile, vaginal and vulvar cancers** lack routine screening, early symptom recognition and referral ideal⁶

*In Europe there is no maximum age limit in the nonavalent vaccine label, in the USA the maximum indicated age is 45 years.^{9,10}

**Individuals who have been treated for HPV-related pre-cancers or cancer may still be at risk and have ongoing screening needs.¹⁵

Factors limiting HPV vaccine uptake¹⁷



Strategies to increase HPV vaccine uptake^{18–20}



Abbreviations and references

Abbreviations

CDC, Centers for Disease Control and Prevention; HPV, human papillomavirus; MSM, men who have sex with men; RRP, recurrent respiratory papillomatosis; SqCC, squamous cell carcinoma; WHO, World Health Organization.

References

1. de Martel, C et al. *Lancet Glob Health*. 2020;8:e180–90.
2. de Martel, C et al. *Int J Cancer*. 2017;141:664–70.
3. WHO. Weekly epidemiological record. 2022;97:645–72.
4. WHO. Cervical cancer. Available at: www.who.int/health-topics/cervical-cancer (accessed 5 February 2025).
5. Lechner M, et al. *Nat Rev Clin Oncol*. 2022;19:306–27.
6. National Cancer Institute. HPV and Cancer. Available at: www.cancer.gov/about-cancer/causes-prevention/risk/infectious-agents/hpv-and-cancer (accessed 5 February 2025).
7. European Commission. Proposal for a council recommendation on vaccine-preventable cancers. Available at: health.ec.europa.eu/system/files/2024-01/com_2024_45_1_act_en.pdf (accessed 5 February 2025).
8. CDC. Clinical overview of HPV. Available at: www.cdc.gov/hpv/hcp/clinical-overview (accessed 5 February 2025).
9. FDA. HPV 9-valent vaccine PI. Available at: www.fda.gov/media/90064/download?attachment (accessed 5 February 2025).
10. EMA. HPV 9-valent vaccine SmPC. Available at: www.ema.europa.eu/en/documents/product-information/gardasil-9-epar-product-information_en.pdf (accessed 5 February 2025).
11. CDC. Administering HPV vaccine. Available at: www.cdc.gov/vaccines/vpd/hpv/hcp/administration.html (accessed 5 February 2025).
12. CDC. Clinical Overview of HPV. Patient counselling. Available at: www.cdc.gov/hpv/hcp/clinical-overview/ (accessed 5 February 2025).
13. CDC. HPV vaccination recommendations. Available at: www.cdc.gov/vaccines/vpd/hpv/hcp/recommendations.html (accessed 5 February 2025).
14. Kamolratanakul S, Pitisuttithum P. *Vaccines (Basel)*. 2021;9:1413.
15. CDC. Sexually Transmitted Infections Treatment Guidelines, 2021. Available at: www.cdc.gov/std/treatment-guidelines/hpv-cancer.htm (accessed 5 February 2025).
16. Barroso LF, et al. *Clin Infect Dis*. 2022;74(Suppl. 2):S179–92.
17. Kyei GK, et al. *J Adv Nurs*. 2024. doi: 10.1111/jan.16653. Online ahead of print.
18. CDC. Five ways to boost vaccination rates. Available at: www.cdc.gov/hpv/hcp/vaccination-considerations/boost-rates.html (accessed 5 February 2025).
19. Gilkey MB, et al. *Vaccine*. 2016;34:1187–92.
20. Brewer NT, et al. *Hum Vaccin Immunother*. 2023;19:2216117.

The guidance provided by this practice aid is not intended to directly influence patient care. Clinicians should always evaluate their patients' conditions and potential contraindications and review any relevant manufacturer product information or recommendations of other authorities prior to consideration of procedures, medications, or other courses of diagnosis or therapy included here.

Our practice aid coverage does not constitute implied endorsement of any product(s) or use(s). touchONCOLOGY cannot guarantee the accuracy, adequacy or completeness of any information, and cannot be held responsible for any errors or omissions.