HPV vaccination program shows increasing impact on preventing HPV among vaccinated and unvaccinated females

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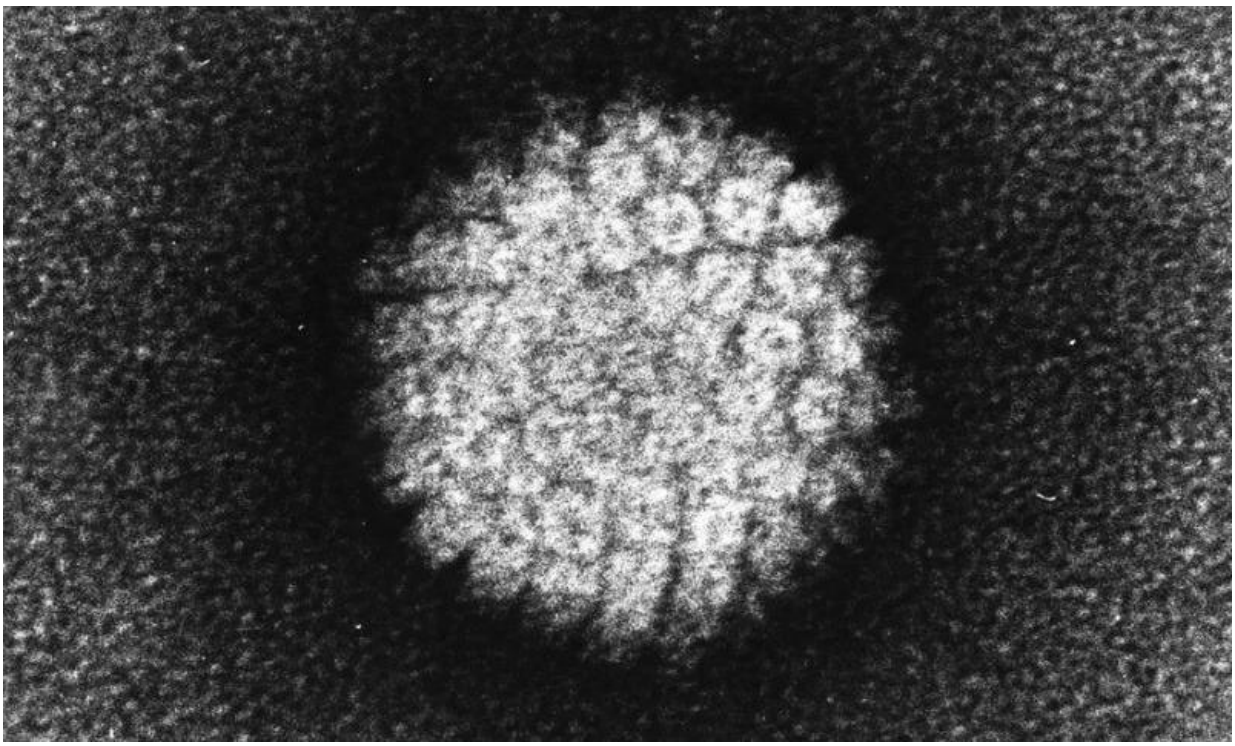

Electron micrograph of a negatively stained human papilloma virus (HPV) which occurs in human warts. Credit: public domain

A new analysis of nationally representative data shows the increasing impact of human papillomavirus (HPV) vaccination efforts that started

more than a decade ago. The findings suggest direct protection as well as herd effects from the vaccine. The findings are published in *Annals of Internal Medicine.*

HPV is the most common sexually transmitted infection in the United States. Persistent infection of some HPV types can cause cancer, which may develop years or decades after infection. HPV vaccination aims to prevent these complications. Prevalence monitoring for HPV infection is used to assess the early impact of HPV vaccination programs and can provide measurements of vaccine impact. Prevalence monitoring in the United States is possible through NHANES (National Health and Nutrition Examination Survey); the Centers for Disease Control and Prevention (CDC) incorporated HPV testing for female genital HPV before the HPV vaccination program began and data from the survey have provided strong evidence of impact of the HPV vaccination program.

Epidemiologists from the CDC analyzed NHANES data to track pre- and post-vaccination era HPV prevalence for both vaccinated and unvaccinated females. The authors also analyzed data for male HPV prevalence, but only one four-year data cycle (2013-2016) was available. The authors found that compared to pre-vaccine years, the overall prevalence of cancer-causing HPV decreased by 85% among females. They report that among vaccinated females, prevalence decreased by 90%, and among unvaccinated females, prevalence decreased by 75%. HPV types not targeted by HPV vaccination did not change during this time period. The authors caution that vaccination program disruption during the COVID-19 pandemic could threaten strides made in the previous decade.

The authors of an accompanying editorial from Boston University Medical Center suggest that these findings show that vaccine-type HPV infections are not being replaced with other oncogenic HPV infections,

contrary to concerns expressed early in the HPV vaccination era. The findings also indicate that the decreases seen in vaccine-type infections are related to vaccination. The authors offer four suggestions for improving vaccine uptake post-pandemic: providers unambiguously stating that a child is due for vaccination at a visit; nurses and licensed medical assistants having standing orders to give due vaccinations; healthcare systems and professionals implementing remind and recall programs; and healthcare systems and clinicians implementing multilevel interventions to improve outcomes for patients.

More information: Hannah G. Rosenblum et al, Human Papillomavirus Vaccine Impact and Effectiveness Through 12 Years After Vaccine Introduction in the United States, 2003 to 2018, *Annals of Internal Medicine* (2022). DOI: 10.7326/M21-3798. www.acpjournals.org/doi/10.7326/M21-3798

Rebecca B. Perkins et al, Long-Term Effectiveness of Human Papillomavirus Vaccination: Implications for Future Reduction in Cancer, *Annals of Internal Medicine* (2022). DOI: 10.7326/M22-1309. www.acpjournals.org/doi/10.7326/M22-1309

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