

Benefits of HPV Immunization Spilling Over to the Unvaxxed

— But vaccination rates plunged during the pandemic

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Human papillomavirus (HPV) vaccination was associated with a 90% reduction in four types of cervical HPV infections in sexually active girls and young women, a cross-sectional study found.

For unvaccinated females in the study of 14- to 24-year-olds, the vaccine had a 74% impact against quadrivalent HPV vaccine-type prevalent infection, possibly because they benefited from "strong herd effects or indirect protection," reported researchers led by Hannah Rosenblum, MD, an epidemiology fellow with the CDC in Atlanta.

The analysis in *Annals of Internal Medicine* showed no significant differences in the prevalence of non-vaccine-type HPV infections. This suggests that other types of infections did not replace vaccine-type HPV infections, and that the decrease in vaccine-type infections was due to vaccination and not other variables.

"These data are consistent with other sources, which also suggest [substantial reductions](#) in vaccine-type HPV infections and precancer among vaccinated populations," according to an [accompanying editorial](#) by Rebecca Perkins, MD, MSc, an ob/gyn at Boston University School of Medicine and Boston Medical Center, and colleagues.

"Recent data also indicate near elimination of cervical cancer diagnosed before age 30 years among women who received on-time vaccination," they added.

The quadrivalent HPV vaccination effort for females had begun in 2006, and for males in 2011, to combat the most common sexually transmitted infection in the U.S.

Since then, female and male vaccination rates increased to 59% and 29.5%, respectively, in 2015-2018, Rosenblum's group reported.

Notably, vaccine effectiveness in females appeared to drop from 84% in the 2011-2014 era to 60% in 2015-2018. Vaccine effectiveness last stood at about 51% in the 2013-2016 period for males.

The investigators cautioned that though vaccine effectiveness is an important metric, it could be misleading.

"As herd protection increases and prevalence among unvaccinated persons decreases, vaccine effectiveness might be difficult to estimate," explained the authors. "We

do not believe that these findings raise concerns about waning immunity; multiple studies show long-lasting protection after HPV vaccination."

Previous studies in other countries found that risk reduction for HPV infection was age-dependent. Young people who received a vaccine before turning 15 years old were less likely to be infected.

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The authors highlighted improved vaccination efforts in the U.S., where nearly 50% of children received their first vaccination before age 15 years in the 2015-2018 era, compared with about 18.6% for boys and 27.2% for girls in 2011-2014.

What's more, the "nine-valent" Gardasil 9 vaccine, targeting an [additional five strains of HPV](#), became available in 2015.

However, Perkins and colleagues noted that the COVID-19 pandemic has hampered HPV vaccination efforts and other immunization programs, reversing "much of the progress made in recent years."

"During the pandemic, providers and health systems have deprioritized adolescent vaccination, and particularly HPV vaccination, which in turn has led to more severe drops for HPV vaccination than for other adolescent

vaccinations, and for adolescent vaccination compared with early childhood and adult vaccinations," the editorialists wrote. "Even as adolescents return for well visits and routine vaccinations, the need to compensate for the cumulative deficit of missed vaccinations over the past 2 years has created a serious and urgent threat to cancer prevention efforts, with a shortfall from which it may take a decade to recover."


For their analysis, Rosenblum and colleagues used data from the National Health and Nutrition Examination Survey.

A limitation of the study was self or parent-reported vaccination history and low numbers of participants from certain races or ethnicities.

Nevertheless, Perkins' group argued that healthcare providers should vouch for the HPV vaccine when [speaking with their patients](#), and nurses should be allowed to provide the vaccine without interaction with a physician. They also wrote that reminder programs for patients and other interventions could reinvigorate the vaccination effort.

"As we aim to rebuild health care services in the post-pandemic era, we have over a decade of research on how to effectively provide HPV vaccinations to children and adolescents in the United States," the editorialists emphasized.



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Disclosures

Rosenblum and co-authors reported no conflicts of interest. The study was supported by the Centers for Disease Control and Prevention.

Primary Source

Annals of Internal Medicine

[Source Reference](#): Rosenblum HG, et al "Human papillomavirus vaccine impact and effectiveness through 12 years after vaccine introduction in the United States, 2003 to 2018" *Ann Intern Med* 2022; DOI: 10.7326/M21-3798.

Secondary Source

Annals of Internal Medicine

[Source Reference](#): Perkins RB, et al "Long-term effectiveness of human papillomavirus vaccination: implications for future reduction in cancer" *Ann Intern Med* 2022; DOI: 10.7326/M22-1309.

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