The HPV vaccine reduces risk of cancer for all, not just women, new data show—so why isn't everyone rushing to get it?

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One of the big headlines from a major scientific meeting recently: The HPV vaccine not only prevents cervical cancer but reduces the risk of

multiple other cancers and even pre-malignant lesions.

Researchers reported that they followed 1.7 million females and males who received the HPV vaccine between 2010 and 2023 as either children or young adults.

It was already known that the HPV vaccine can potentially prevent more than 90% of HPV-related cancers in women—most often cervical cancer—and now scientists have discovered a 50% risk reduction in all HPV-associated cancers in men, including head and neck cancers.

Data from the latest groundbreaking study at the American Society of Clinical Oncology annual meeting was the first to show a significant benefit for men to prevent oropharyngeal cancer (throat, tonsils, back of the tongue) for which there is no screening.

A nationwide goal is to have 80% of teens vaccinated against HPV by 2030. Currently, however, in the U.S., just below 63% of adolescents ages 13 to 17 are up to date on this vaccine. New York state is slightly higher at 69%.

What is the HPV vaccine? Who should get it? And what is being done to address immunization challenges?

Cynthia Rand, MD, MPH, division chief of General Pediatrics at UR Medicine's Golisano Children's Hospital and a member of the Wilmot Cancer Institute, is studying how to boost immunizations.

"There is a need to get the word out about this vaccine," Rand said. "It's very effective and very safe, and it prevents cancer."

What Is the HPV vaccine?

The vaccine prevents infection of several HPV subtypes, including HPV-16 and HPV-18, which causes 70% of cervical cancer as well as other cancers in the genital area, and more rarely, in the throat or tongue.

Known as Gardasil 9, the vaccine is a series of either two or three shots available to all children. It works best before exposure to an HPV infection. Doctors recommend starting the immunizations before the teenage years.

Australia, which has among the highest vaccination rates in the world, gives children the vaccine through public health services and in schools, Rand said, adding, "Australia is well on their way to eliminating cervical cancer."

Scientists at the University of Rochester made pivotal research contributions to the pioneering vaccine, which was first recommended in 2006 for females and in 2010 for males.

Why do young children need to get the HPV vaccine?

The simple answer is that the immune response is better at a younger age. When a child's body makes antibodies against HPV infection, it provides the strongest long-lasting protection.

The American Academy of Pediatrics suggests starting the vaccine between ages nine and 12.

Some physicians and parents, however, are concerned about talking to younger children about sex in connection with the vaccine. Skin-to-skin intimate contact spreads HPV infections. Because of that and for other reasons, many children are vaccinated between ages 13 and 17.

But the vaccine is not as effective if someone has already acquired an

HPV infection.

"We find that by focusing on a message about cancer prevention, it removes the discussion about age," Rand said. "I really want people to be vaccinated before they are even thinking about having sex."

Can older teens and young adults benefit from the HPV vaccine?

Sexually active people in their teens and 20s transmit HPV infections. Evidence shows that most individuals will get HPV during that period, but many will have no symptoms and may not know they have an infection. Only a relatively small percentage of people will go on to develop cancer.

Researchers have studied vaccine effectiveness for people up to age 45, and so far, it appears to be beneficial for some.

The U.S. Advisory Committee on Immunization Practices recommends that people up to age 26 who did not receive the vaccine earlier should still get it. Adults ages 27 to 45 should discuss the vaccine with their doctors, as certain populations are more likely to benefit than others. Learn more.

Why are HPV vaccination rates lower than desired?

Vaccine hesitancy in the U.S. is a problem, despite compelling evidence that the HPV vaccine is safe and effective, Rand said.

Factors in recent years that caused a decline in vaccination rates, according to Rand:

- The COVID pandemic resulted in fewer visits to doctor's offices for routine services, including pediatric immunizations.
- Misinformation about the COVID vaccine flowed to other vaccines.
- Some people lack trust in medical providers and the Centers for Disease Control and Prevention.

Despite the lag time required to study HPV-related cancer incidence and outcomes, researchers can compare data from the pre-vaccine era to more recent years. When they do, Rand said, rates of HPV infections have declined dramatically in vaccinated young women, and scientists are seeing reductions in HPV-related pre-cancers as well.

How to increase HPV vaccinations

To better understand obstacles from the perspective of medical providers, Rand and her research team interviewed 20 people at pediatric and family medicine practices and studied 150 surveys that had been distributed throughout a 16-county region in Rochester and central and western New York.

They learned, for example:

- It is important to have a clearly defined vaccine champion in the primary care office.
- A vaccination reminder via electronic medical record would help.
- It may be most effective to have a lead doctor issue standing orders for the HPV vaccine, like they do with flu vaccines, so that nurses can give the shot when a child comes in for another required vaccine for school.
- Staffing shortages and being too busy can be a barrier to implementing something new.

In December 2024, Rand said, her group will begin to test interventions designed to improve vaccine uptake. These include using standing orders and training modules to help providers communicate with patients about the HPV vaccine and answer questions from patients and families.

"There is work to do, but in general, primary care physicians, nurses, and staff are motivated to improve upon vaccine rates," Rand said.

More information: Jefferson DeKloe et al, Effects of HPV vaccination on the development of HPV-related cancers: A retrospective analysis of a United States-based cohort., *Journal of Clinical Oncology* (2024). DOI: 10.1200/JCO.2024.42.16_suppl.10507

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