Vaccines Can Prevent Cancer

Getting vaccinated against HPV and hepatitis B is an easy way to reduce cancer risk.

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Researchers are working to develop therapeutic vaccines to treat cancer, but preventive vaccines can already lower the risk of some malignancies.

Human Papillomavirus

Human papillomavirus (HPV) causes abnormal cell changes that can progress to cervical, anal, genital and oral cancers. HPV is the most common sexually transmitted infection, and most people acquire one or more of the 200-plus types soon after they become sexually active.

The Gardasil 9 vaccine protects against nine types of HPV that cause cancer or anal-genital warts. HPV vaccines are safe and effective, reducing infection and preventing precancerous cell changes. Widespread vaccination is already on track to eliminate cervical cancer in some countries.

The Centers for Disease Control and Prevention (CDC) recommends HPV vaccination for boys and girls at ages 11 or 12, with catch-up vaccines for those up to age 26. The CDC previously recommended two doses for those younger than 15 and three doses for older people. This year, however, the agency changed its recommendation to a single dose for adolescents, after studies showed that one dose works as well as two.

Although Gardasil 9 is approved for people up to age 45, it does not work as well for older individuals who have already been exposed to HPV. People ages 27 to 45 can talk with their health care provider about whether vaccination still makes sense for them.

Hepatitis B

Chronic hepatitis B can lead to complications, including cirrhosis and liver cancer. Hepatitis B virus (HBV) spreads via objects that come in contact with blood—such as needles for injecting drugs or shared household items—and it can be transmitted during sex and from a pregnant woman to her baby.

Hepatitis B vaccines are safe and effective. Since 2022, the CDC has recommended routine vaccination for all children, adolescents and adults up to age 59. Vaccinating infants immediately after birth prevents chronic HBV infection, and giving a birth dose to all babies has decreased hepatitis B among children and adolescents in the United States by around 95%. However, the CDC recently stopped recommending the birth dose for all infants, leaving it optional for those born to women who test negative for HBV. This change is controversial, and many doctors still advise it for all babies.

Other Pathogens

Like HBV, hepatitis C virus (HCV) causes cirrhosis and liver cancer. There is no vaccine for HCV, but a two- to three-month course of direct-acting antiviral therapy can cure more than 90% of chronic hepatitis C cases.

Epstein-Barr virus (EBV), a member of the herpesvirus family, increases the risk for stomach cancer, nasopharyngeal cancer and some types of lymphoma. Kaposi sarcoma–associated herpesvirus (also known as HHV-8) causes a malignancy that mainly affects people with compromised immunity, such as those with untreated HIV. Helicobacter pylori is a type of bacteria that causes stomach cancer. There are no approved vaccines for these pathogens, but research is underway.

Along with smoking cessation, eating a balanced diet, getting enough exercise and maintaining an overall healthy lifestyle, vaccination is one of the best ways to protect yourself and your children against cancer.
