

Is there a vaccine for cancer?

While scientists are working on personalized vaccines to treat cancer, more traditional vaccines protect against cancer-causing viruses.

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In March 2026, [an article in The Australian](#) reported on a tech entrepreneur who used artificial intelligence to [create a customized vaccine](#) to treat his dog's cancer. The idea is news to many people, but researchers have been working on personalized [cancer vaccines](#) that help the immune system recognize and attack tumors [for at least a decade](#).

To create customized cancer vaccines, scientists genetically sequence DNA from a patient's tumor, looking for mutated proteins known as neoantigens. Machine learning algorithms are used to select antigens most likely to provoke an immune response. One method involves creating [messenger RNA \(mRNA\)](#) blueprints that encode instructions for making the neoantigens, which are packaged into lipid nanoparticles for injection—the same technology used for the Pfizer/BioNTech and Moderna COVID-19 vaccines.

Cancer vaccines, often used in combination with [checkpoint inhibitor immunotherapy](#), appear to work best for preventing recurrence by training the immune system to attack residual malignant cells after a tumor is surgically removed. Scientists have reported promising results from studies of personalized mRNA vaccines for [melanoma](#), [pancreatic cancer](#), [kidney cancer](#) and [glioblastoma brain cancer](#), and some are now in late-stage clinical trials.

Researchers are also working on “off-the-shelf” cancer vaccines that use common tumor antigens rather than those selected from a specific patient's tumor, which have the potential to be more scalable and affordable. In the meantime, [existing vaccines](#) that prevent human papillomavirus (HPV) and hepatitis B infection can dramatically lower the risk of cancer developing in the first place. The HPV vaccine protects against cervical, anal, oral and other malignancies, while the hepatitis B vaccine prevents liver cancer.