# First Personalized mRNA Cancer Vaccine for Melanoma Shows Impressive Results in Clinical Trials



The world's first personalized mRNA cancer vaccine for melanoma has shown promising results in clinical trials, significantly reducing the risk of death or recurrence of the disease. Presented at the American Society of Clinical Oncology (ASCO) annual meeting in Chicago, the phase 2b trial results were described by doctors as "extremely impressive."

Melanoma affects more than 150,000 people annually worldwide. In the study, patients with stage three or four melanoma who received the vaccine, developed by Moderna and Merck, alongside the immunotherapy Keytruda, exhibited a 49% lower risk of dying or the disease recurring after three years compared to those who received only Keytruda. The recurrence-free survival rate was 74.8% for the combination treatment versus 55.6% for Keytruda alone.

Moderna’s head of development, therapeutics, and oncology, Kyle Holen, expressed encouragement over the trial results, which he believes reinforce the commitment to advancing innovative treatments. Iain Foulkes from Cancer Research UK also emphasized the promising potential of therapeutic cancer vaccines.

The vaccine, known as mRNA-4157 (V940), is custom-built for each patient using a sample of their tumor for DNA sequencing. Artificial intelligence helps design a vaccine to instruct the patient’s body to target and kill remaining cancer cells while preventing the disease from returning.

A second trial presented at ASCO by the University of Vienna found that a cancer vaccine could significantly improve survival for breast cancer patients. The study reported that 81% of patients who received the breast cancer vaccine were alive and free of cancer after seven years, compared to 65% who received standard care.

Prof. Charles Swanton, Cancer Research UK's chief clinician, praised the melanoma trial results as a significant step toward improving survival rates and reducing disease relapse in the coming years. The NHS is also conducting trials, potentially leading to the availability of these personalized vaccines by 2025.