

Cancer cure using mRNA technology? Progress in treating melanoma inching forward but challenges are large

The long-awaited cancer vaccine revolution is getting a little closer to reality. New data from Moderna Inc. and Merck & Co. suggest that after decades of failures, researchers are finally figuring out the right way to design a vaccine that can teach immune cells how to recognize and combat tumors.

Earlier this month, the companies said that when used in concert with Merck's cancer immunotherapy Keytruda, Moderna's mRNA cancer vaccine reduced the risk of certain skin cancers from returning or patient deaths by 44% compared with Keytruda alone.

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That number justly generated a lot of excitement. It's the first time an mRNA-based cancer vaccine has proven itself in a randomized study, and with an unambiguously positive outcome. If that result holds up in larger trials, it would be a huge advance both for the mRNA technology behind Covid vaccines and for the field of cancer vaccines in general.

But there are a lot of steps between achieving early, positive data for a subset of melanoma patients and developing a widely accessible, cost-effective treatment. Among the more daunting challenges: The vaccine needs to be tailored to the genetic makeup of an individual patient's tumors.

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