Prevention: mRNA Vaccine

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The first participants in a new study of an experimental HIV vaccine regimen that uses the same messenger RNA (mRNA) technology as COVID-19 vaccines have received their first doses, the International AIDS Vaccine Initiative and Moderna announced in late January. HIV mutates rapidly, enabling the virus to evade the common, narrowly targeted antibodies produced by most people with HIV. But rare broadly neutralizing antibodies (bnAbs) can target hidden parts of the virus that don't change much. The Phase I IAVI G002 trial is testing an approach known as germline targeting, which aims to train immature B cells in a stepwise fashion to produce bnAbs that target multiple strains of HIV. In a proof-of-concept study, 97% of people who received an earlier version of the vaccine regimen developed specialized B cells capable of producing bnAbs. The latest study will use mRNA technology to speed up production of successive versions of primer and booster vaccines that deliver a cluster of engineered HIV proteins.

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