



Prevention: bnAb HIV Vaccine

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A new type of HIV vaccine that teaches the immune system to produce broadly neutralizing antibodies (bnAbs) looks promising in an early study. Scientists have spent nearly four decades studying vaccines to prevent and treat HIV, with little success. The virus mutates rapidly, making it difficult to develop a broadly effective vaccine. A novel approach known as germline targeting uses a series of vaccines in a stepwise manner to spur the development of specialized B cells and train them to produce bnAbs, antibodies that target hidden parts of the virus that don't change much. All but one of the 36 participants in the Phase I IAVI G001 trial who received a vaccine containing eOD-GT8 60mer—an immunogen consisting of 60 engineered copies of HIV's gp120 envelope protein—developed specialized precursor B cells. After a booster, these cells produced antibodies with greater affinity for the HIV proteins. The results offer proof of concept that this approach could work, but it will likely take years of research before it can be tested in large clinical trials.

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