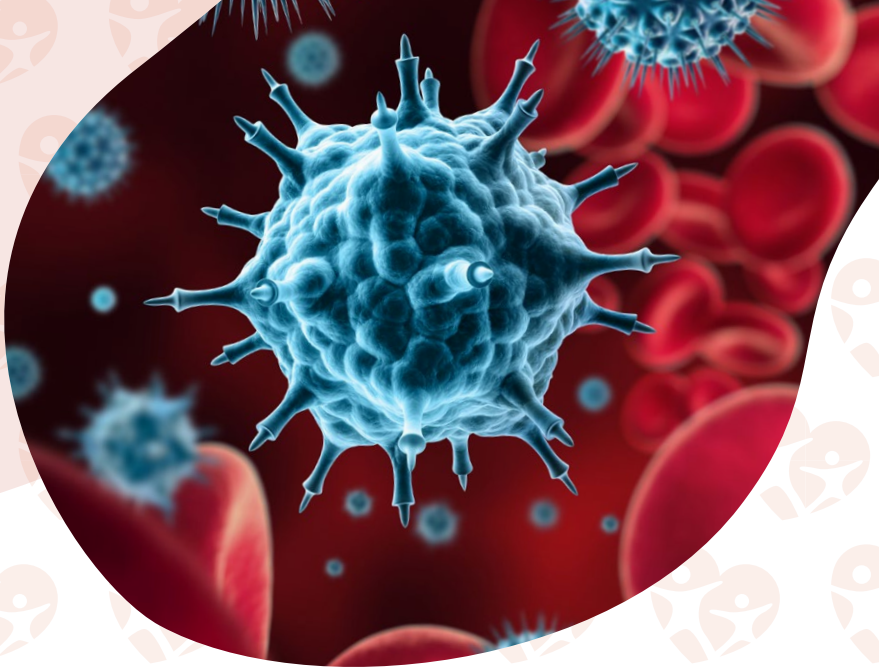
WHAT IF WE COULD DEFINITIVELY CURE AIDS?



This might be possible in the future by going into the DNA and deleting the AIDS-causing virus

Promise: A combination of antiviral therapy and genome editing has succeeded in removing the HIV virus from infected mice.

Did you know?
Globally, more than 5000 people are infected by HIV every day. Curing people of HIV would impede its spread and bring us closer to achieving the third UN Sustainable Development Goal of Good Health and Well-Being.

UNAIDS estimates that in 2018 more than 36.7 million people worldwide were infected with the human immunodeficiency virus type one (HIV-1). This virus causes acquired immune deficiency syndrome (AIDS), which breaks down the immune system and makes patients susceptible to infections and cancers. Depending on the type of HIV, patients have on average 9 to 11 years to live after infection. Antiviral treatment can extend life expectancy, but does not cure the disease itself.

That could change in the future, though. In July 2019, scientists at Temple University and the University of Nebraska succeeded in eliminating HIV-1 from living animals using CRISPR genome editing. CRISPR/Cas9 is a protein used for precision genetic engineering that allows scientists to change or delete individual letters of the genetic code with high efficiency and relative ease. Because viruses integrate themselves into the genome of their host, curing the HIV infection requires cutting them out of the DNA in all the infected cells. The approach followed by the researchers consists in combining a long-acting, slow release antiviral therapy with CRISPR/Cas9 delivery to the body's cells. The antiviral therapy subdues the infection and CRISPR removes the DNA. In this combination, it successfully cuts out the DNA from infected immune cells in living mice. The virus can no longer be found in the blood, lymphoid tissue, bone marrow, or brain.

This new approach will hopefully soon be replicated in clinical trials. This is potentially lifesaving news for millions of people.

Genome editing is **#InspiredByLife**

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