

## 30 years after first AIDS cases, hope for a cure

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This May 16, 2011 photo shows Timothy Ray Brown, the only man ever known to have been apparently cured from AIDS, with his dog, Jack, on Treasure Island in San Francisco. Brown was in a Berlin hospital in 2007, worrying whether leukemia or the AIDS virus would do him in, when his German doctor said he had an "off the wall" idea for tackling both. The unusual blood transplant they tried has made Brown the first person in the world apparently cured of AIDS. (AP Photo/Eric Risberg)

(AP) -- Sunday marks 30 years since the first AIDS cases were reported in the United States. And this anniversary brings fresh hope for something many had come to think was impossible: finding a cure.

The example is Timothy Ray Brown of San Francisco, the first person in the world apparently cured of AIDS. His treatment isn't practical for wide use, but there are encouraging signs that other approaches might

someday lead to a cure, or at least allow some people to control HIV without needing medication every day.

"I want to pull out all the stops to go for it," though cure is still a very difficult goal, said Dr. Anthony Fauci, director of the National Institute of Allergy and [Infectious Diseases](#).

For now, the focus remains on preventing new infections. With recent progress on novel ways to do that and a partially effective vaccine, "we're starting to get the feel that we can really get our arms around this pandemic," Fauci said.

More than 25 million people have died of AIDS since the first five cases were recognized in Los Angeles in 1981.

More than 33 million people have HIV now, including more than 1 million in the United States.

About 2 million people die of the disease each year, mostly in poor countries that lack treatment. In the U.S. though, newly diagnosed patients have a life expectancy only a few months shorter than people without HIV. Modern drugs are much easier to take, and many patients get by on a single pill a day.

But it wasn't that way in 1995, when Brown, an American working as a translator in Berlin, learned he had HIV. He went on and off medicines because of side effects but was holding his own until 2006, when he was diagnosed with leukemia, a problem unrelated to HIV. [Chemotherapy](#) left him so sick he had to be put into a coma to allow his body to recover.

"They didn't know if I'd survive that," Brown said.

Dr. Gero Huetter, a [blood cancer](#) expert at the University of Berlin, knew that a transplant of blood [stem cells](#) (doctors used to use bone marrow) was the best hope for curing Brown's cancer. But he aimed even higher.

"I remembered something I had read in a 1996 report from a study of people who were exposed to HIV but didn't get infected," Huetter said.

These people had gene mutations that provide natural resistance to the virus. About 1 percent of whites have them, and Huetter proposed searching for a person who also was a tissue match for Brown.

But transplants are grueling. Huetter would have to destroy Brown's diseased immune system with chemo and radiation, then transplant the donor's cells and hope they would take hold and grow. Many cancer patients die from such attempts and Brown wasn't willing to risk it.

His mother, Sharon Brown of Seattle, agreed.

"Before I knew he had HIV I used to have nightmares about it," and gambling on a transplant to try to cure it didn't seem smart when the cancer seemed to be in remission, she said.

Several months later, the return of leukemia changed their minds.

Brown discussed the transplant with his boss "and she said, 'wow, this is amazing. Because you have leukemia, you could be cured of HIV.'"

A registry turned up more than 200 possible donors and Huetter started testing them for the HIV resistance gene. He hit pay dirt at No. 61 - a German man living in the United States, around 25 years old.

Brown had the transplant in February 2007. A year later, his [leukemia](#)

returned but HIV did not. He had a second transplant in March 2008 from the same donor.

Now 45, Brown needs no medicines, and his only health problems are from the mugging he suffered two years ago as he returned home one night in Berlin. Brown was knocked unconscious, required brain surgery and therapy to walk and talk again, and doesn't have full use of one arm. He moved back to the United States in December.

"He's now four years off his antiretroviral therapy and we have no evidence of HIV in any tissue or blood that we have tested," even places where the virus can lie dormant for many years, Huetter said.

Brown's success inspired scientists to try a similar but less harsh tactic: modifying some of a patient's infection-fighting blood cells to contain the mutation and resist HIV. In theory, this would strengthen the immune system enough that people would no longer need to take HIV drugs to keep the virus suppressed.

Scientists recently tried this gene therapy in a couple dozen patients, including Matthew Sharp of suburban San Francisco. More than six months later, the number of his infection-fighting blood cells is "still significantly higher than baseline," he said.

It will take more time to know if gene therapy works and is safe. Experiments on dozens of patients are under way, including some where patients go off their HIV medicines and doctors watch to see if the modified cells control the virus.

The results so far on the cell counts "are all wonderful findings but they could all amount to nothing" unless HIV stays suppressed, said Dr. Jacob Lalezari, director of Quest Clinical Research in San Francisco who is leading one of the studies.

The approach also is not practical for poor countries.

"I wouldn't want people to think that gene therapy is going to be something you can do on 33 million people," said Fauci.

Other promising approaches to a cure try new ways to attack the dormant virus problem, he said. They hinge on getting people tested and into care as soon as they become infected.

Fauci's institute has boosted money for cure research, and the International AIDS Society, a professional organization for those who work in the field, has added finding a cure to its strategic plan.

"There are paths forward now" to a day when people with AIDS might be cured, said Dr. Michael Horberg, president of President Obama's HIV/AIDS council and of the [HIV](#) Medicine Association, doctors who treat the disease. "But it's not tomorrow, and it's not today."

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