



Why the London Patient matters: What does a second HIV 'cure' mean?

By now, many people have heard the news that **there was a second man 'cured' of HIV**. It was a top headline last week, based on a presentation of research at the 2019 [Conference on Retroviruses and Opportunistic Infections](#) (CROI) – one of the premier scientific conferences for HIV-related research.

Some are saying, "I didn't know someone had already been cured." Others ask, "Was he really cured?" Importantly, many people living with HIV are asking, "How does this apply to me?"

First Man Cured

Scientists in the field agree that the **first man deemed cured of his HIV infection is Timothy Ray Brown**, who underwent a stem-cell transplant in Berlin in 2007. For years, he was known only as, the 'Berlin Patient,' until he went public with his identity in 2010, as he wanted to be part of the search for a cure for HIV.



From left to right, Julie Patterson, London Patient doctor Dr. Ravi Gupta, Timothy Ray Brown, and U=U founder Bruce Richman at CROI 2019 (Photo credit: Bruce Richman)

Brown was not trying to cure his HIV infection when he agreed to a stem-cell transplant more than a decade ago. His main concern was life-threatening acute [myeloid leukemia](#) that hadn't responded to chemotherapy. **The transplant was a desperate attempt to cure his deadly cancer.**

He endured two stem-cell transplants, intense conditioning, full body irradiation, a bout with graft-versus-host disease and neurological damage, but eventually **Brown defeated his cancer.**

Simultaneously, he had stopped taking his anti-retroviral therapy (ART) and a few months later, he discovered that his HIV was in remission.

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But for people living with HIV who don't have cancer, is this even relevant?

The key to this remission was an innovation by his oncologist, Dr. Gero Hütter, who had never treated a cancer patient living with HIV, and had never done HIV research. However, **he had read about a rare gene mutation – found in about 1 percent of people of northern European descent. This mutation confers natural resistance to the virus by deleting what is known as the delta-32 section of the CCR5 gene.** HIV typically latches onto this gene and uses it to enter white blood cells. Hütter mentioned to Brown the idea of finding a stem-cell donor with that mutation, Brown agreed, and it appears to have stopped his HIV in its tracks.

Scientists tested samples of his blood, tissues, spinal fluid and brain, and did not find virus that was replicating. By 2011, scientists began to say that he'd been [cured](#).

Many people living with HIV are asking, “How does this apply to me?”

Brown remains visible and active in cure advocacy, he just publicly celebrated his 12th cancer ‘birthday’ alongside advocates and researchers at an HIV cure research-related CROI pre-conference.

Doctors and researchers agree that **Brown’s treatment pathway would not be suitable for the vast majority of people with HIV**, unless they face a similar life-threatening cancer. Not only is finding an appropriate stem-cell donor difficult, but the costs, both physically and financially, are high.

But the path to becoming the embodiment of hope for the nearly [37 million people worldwide](#) who are living with HIV has been more demanding than many people recognize. His recovery was slow and complicated, and he suffers from ongoing neurological issues. He’s been mugged and gay-bashed, even as recently as this month in Seattle. And **despite being a private person, he lives a very public life.**

Is the Second Man Cured?

Since 2008, there have been several attempts to repeat the cure for other people living with HIV who have cancer. Many of them have died from either the cancer or transplant complications. A few lived long enough to experience HIV remission, but [the virus always came back](#) after treatment was interrupted.

The ‘London Patient’ is the second longest adult case of long-term HIV remission, following a stem cell transplant for Hodgkin’s lymphoma, similar to the transplant received by Brown. The London Patient has lived without detectable HIV (called an ‘undetectable’ viral load) for 18 months. Like Brown, his donor had a double CCR5-delta-32 mutation, the gene that makes it difficult for HIV to attach to white blood cells. Previous transplant recipients did not have a donor with the double mutation - meaning that they inherited a copy of the mutation from both of their parents.

Since he did not undergo intensive conditioning therapy or irradiation, his case also shows that HIV remission may be possible with a less aggressive approach than the one received by Brown.

Some call this a possible cure; others – including his doctor, [Professor Ravindra Gupta](#) – **are more cautious and prefer the term ‘sustained HIV remission’** until more time has passed, and/or until deeper investigation of tissues, fluids and organs are completed. This is, of course, assuming the gentleman wants to participate in that level of research.

HIV remission may be possible with a less aggressive approach than the one received by Brown

Another recent case is referred to as the ‘Dusseldorf Patient’ and was presented in [a poster at CROI](#) describing another patient’s long-term HIV remission after a 2013 stem cell transplant to treat acute myeloid leukemia. That donor also had a double CCR5-delta-32 mutation. The man remained on anti-retroviral therapy with undetectable viral load until November 2018, and so far, is undetectable.

How Does This Apply to People Living with HIV?

Brown, who attended the CROI conference, has been very gracious with media appearances since the London Patient was announced. He has said he finds meaning and community in being involved in cure research, both as a participant and as an advocate. He has helped start a registry of stem cell donors with the CCR5 mutation at [IciStem](#), and he continues to work alongside cure researchers.

Today, 39 people living with both HIV and cancer who are registered with the IciStem program have received a transplant. **The expectation is that there will be more transplants, leading to more long-term remissions, and that scientists will learn from each one.**

IciStem has the largest program to investigate HIV cure following stem cell transplantation, and has identified more than 22,000 donors with the rare double CCR5-delta-32 mutation. People living with HIV can participate in an [observational cohort](#) if they have cancer and need to receive a stem-cell transplant.

But for people living with HIV who don’t have cancer, is this even relevant?

Hope

Hope is elusive, yet it drives so much.

Notably, until Brown’s case, research into an HIV/AIDS cure had stalled. By 2008, when it began to receive attention, several researchers convened and agreed that his case showed “proof of concept” that a cure was possible. Since then, HIV cure-related research has enjoyed a renaissance, with researchers, laboratories, and clinical environments [collaborating](#) in the US and [across the globe](#).

Timothy Ray Brown is the embodiment of hope. His fellow sustained HIV remission patients are his siblings in that journey. Each one represents new discovery and a new understanding of the mechanisms of cure.

Despite the fact that this kind of HIV cure has been treacherous and elusive, each one shines a light. Researchers, advocates and people living with HIV need that light to keep searching.

Undetectable Equals Untransmittable (U=U)

U=U is more than a slogan. In fact, what it stands for — the overwhelming evidence that a person with HIV who has a undetectable virus cannot transmit the virus to a sexual partner — has finally been accepted and even promoted by the world’s top scientific bodies, including the World Health Organization, the National Institutes of Health and the U.S. Centers for Disease Control and Prevention.

U=U represents a revolution not only in the world of HIV prevention, but also in the lives of people living with HIV who continue to experience stigma, discrimination and criminalization in even the most open-minded and tolerant communities.

Less stigma, discrimination and criminalization mean people can access the life-saving treatment that will help them and their communities thrive. For people living with HIV, treatment with the goal of becoming undetectable is the best plan right now – while we wait for the cure.

A message from an iconic 1990’s [HIV-related public health campaign](#) is both timely and relevant: **“Be here for the cure.”**

[To learn more about HIV and the community please attend the upcoming AFC Community Briefing on April 10!](#)

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