

Research priorities for an HIV cure: the science in context: a community perspective



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Disclosure

No personal financial conflict of interest

Impossible dream...

Activist focus on a cure.

38m adults & children.

6m not yet diagnosed.

28m on ART, 1.5m new cases.

0.7m people died.

Limited ART and monitoring.



Source: UNAIDS, 2021 data. <https://www.unaids.org/en/resources/fact-sheet>

Global need...



>85% in global south.

~50% are women.

65% from key populations: *sex workers; people who are trans; gay and bisexual men; people using drugs etc.*

Issues of poverty, housing, healthcare.

Link to aid: \$30b a year. *“I don’t want to worry about who is the next US President”* – Moses Supercharger.

Source: UNAIDS, 2021 data. <https://www.unaids.org/en/resources/fact-sheet>

Profiles for a cure...

Safe = low risk.

Affordable in all settings.

Effective for all populations.

Permanent – no reinfection.

Easy to deliver and use.

Refs: Lewin S et al. Multi-stakeholder consensus. Lancet HIV, Jan 2021, McCune M, Jonathan Lax lecture 2022.

Review

Multi-stakeholder consensus on a target product profile for an HIV cure

Sharon E Lewin*, Timothy Altmann, Cathy Barnhart, Brian Doerflinger, Karim Douk, Mark Dyball, Dev Sengupta, Adam Jahn, Reemeh Johnson, Isaacson Lamphugh, Joseph McCune, Gary Haddad, Frank Mwangi, John Pettigrew, David Roper, James Rooney, Isang Shikaze, Moses Mubanga, Michael Warren, Steven G Deeks*, on behalf of the Sunwaylands 2019 Working Group

IAS

BILL & MELINDA GATES foundation

Product profile for an HIV cure

BEAT-HIV
DELANEY COLLABORATORY

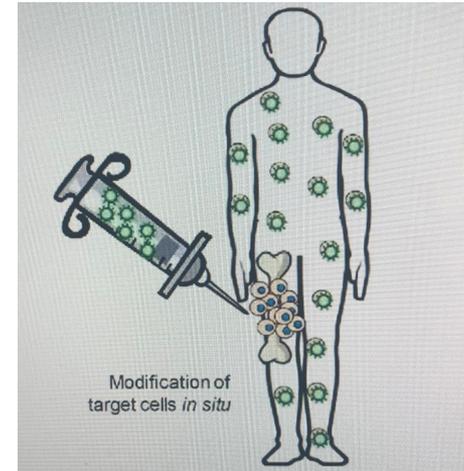
Profiles for a cure...

Minimal dosing... long duration:

maybe every three years?

No risk to partners + **easy monitoring for rebound.**

Timeline: 10 years – in stages LA-ART > bNAbs > 1st/2nd/3rd cures > single shot.



Refs: Lewin S et al. Multi-stakeholder consensus. Lancet HIV, Jan 2021,
McCune M, Jonathan Lax lecture 2022. <https://beat-hiv.org/jonathan-lax-award-lectures/>

IAS 2021 roadmap

- 3rd IAS 5-year review: Nature Medicine: covers 170 new studies. [1]
- Summary for medical journalists (English, French, Portuguese, Spanish).
- Non technical Q&A: everyday language. [2]
Reading age 11-12. Easy for translations.

The collage features several key documents and news items:

- Research priorities for an HIV cure: International AIDS Society Global Scientific Strategy 2021** (Nature Medicine, Review Article). This is the primary document mentioned in the text, listing authors like Steven G. Deeks and detailing research priorities for the next 5 years.
- Towards an HIV Cure RIAS**: A summary document for medical journalists.
- Research Priorities for an HIV Cure: IAS Global Scientific Strategy 2021** (The science in context): A news article featuring a photo of two scientists in a lab.
- i-base**: A news snippet from i-base.info dated 1 December 2021, titled "IAS strategy for an HIV cure (2021): an easy-to-read Q&A".
- Towards an HIV Cure RIAS**: Another news snippet dated 1 December 2021, titled "Towards an HIV Cure RIAS".

1. IAS, Nature Medicine (1 Dec 2021), 2. i-Base.info

Community highlights

- Real people who have been cured. *Each one brings hope.*
- Advances in understanding the **reservoir** – in context of ART.
- That researchers are working **collaboratively and internationally.**

Current cures and/or remission

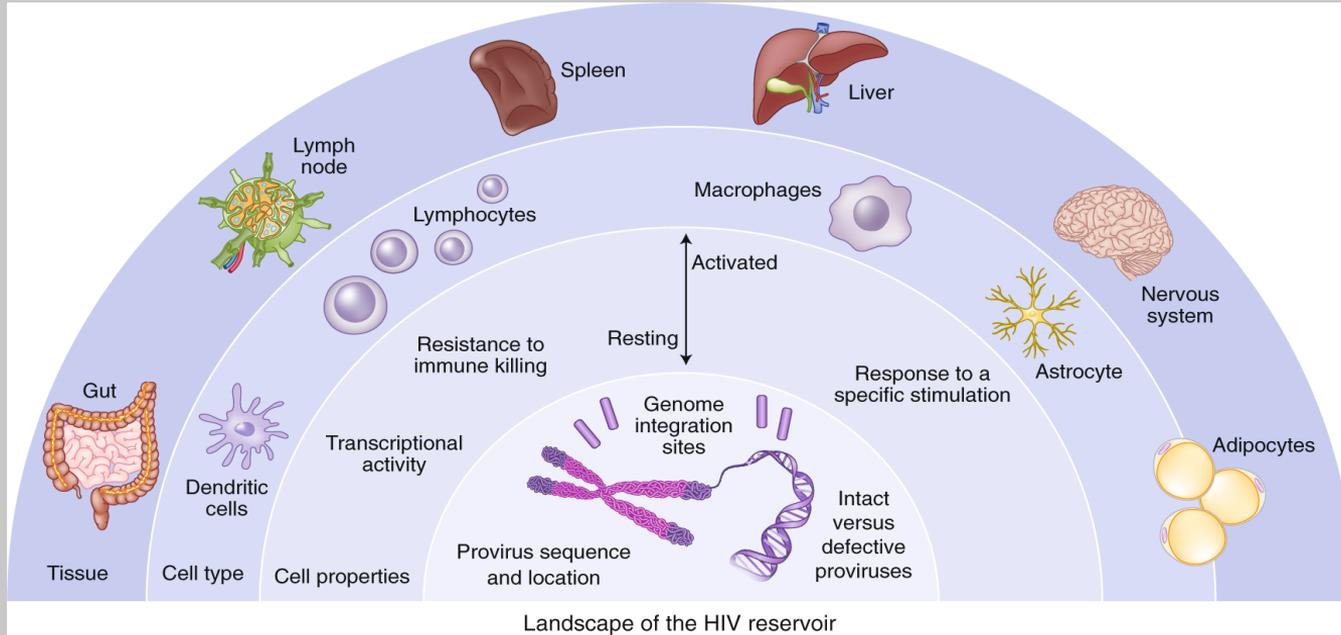


- **Four** stem cell cures in patients from Berlin (Timothy Ray Brown) in 2008, London (Adam Castillejo) in 2019, Düsseldorf in 2019, and the US in 2022.
- Loreen Willenberg, Esperanza patient.
- Visconti cohort (control without ART).
- **IAS 2022:** City of Hope, Barcelona pt.



Photos: Timothy Ray Brown, Adam Castillejo, Loreen Willenberg.

Diverse reservoir



Smaller reservoir - but not small.

10^{10} viral DNA after years of ART – even if 99% might be defective.

Refs: IAS Roadmap to an HIV Cure, Nature Med, 2021. Estes et al. Nat Med, 2017. Bruner et al. Nature, 2019).

Community asks.1

- Broaden **awareness**: to 40 million people living with HIV and **engagement** beyond advocates and CABs.
- **Inclusive research**: balance for race / sex / gender / age / country – and in entry criteria.
- Include **social research** – in clinical studies.

Refs: Barr L, Jefferys R: A landscape analysis of HIV cure-related clinical research in 2019. J Virus Erad, 2018 and 2019.

Include women and all ages

- Including women in cure research is essential and achievable. ...*on principle* AND supported by *biological differences in viral load and reservoir dynamics (including hormone exposure and immune differences).*
- **Expand age criteria** to include children and much older adults.

Ref: Eileen Scully, "Ready for a Cure: Where are the Women and Children?", July 2022.

Community asks.2

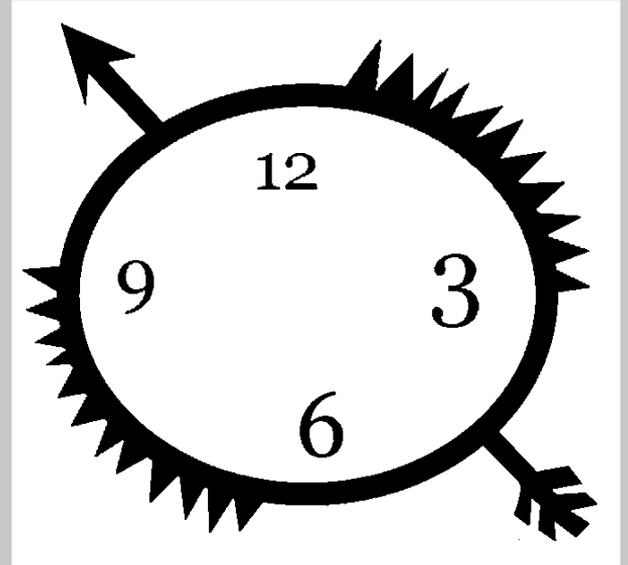
- **Ethics** - disconnect between participants and researchers: “I might be cured”.
- **Global research** – involve and **fund** research site in different countries and all regions.
- Use community-preferred **language**.
- Extend follow-up on reported cases.

Ref: AVAC: Community preferred language for an HIV cure.

Timeline...

An HIV cure, like a vaccine, is always 10 years away...

But, even being cautious, the 10 years now feels closer than it has ever been ...



Summary

- Broader **community inclusion and participation** in research and consent.
- Expand sites to **fund** countries globally.
- Care over language and reporting.
- Including cure as part of **treatment literacy**.
- **Optimism and hope** – for treatment, a vaccine and a cure.

Thanks

Investigators and funders for cure-related research.

Participants in cure-related studies.

And for comments on slides: Lynda Dee, Richard Jefferys, Cissy Kityo, Udom Likhitwonnawut, Michael Louella, Moses Supercharger, Jeff Taylor and community members of the IAS writing group.

Back-up slides

Future cure...?

Increasing focus on cure research.

International networks.

Either

- (i) Eradication (cure) or
- (ii) Remission (where viral load stays undetectable without need for ART).

