AIDS 2026

Sustained undetectable intact reservoir in early treated infants in Africa

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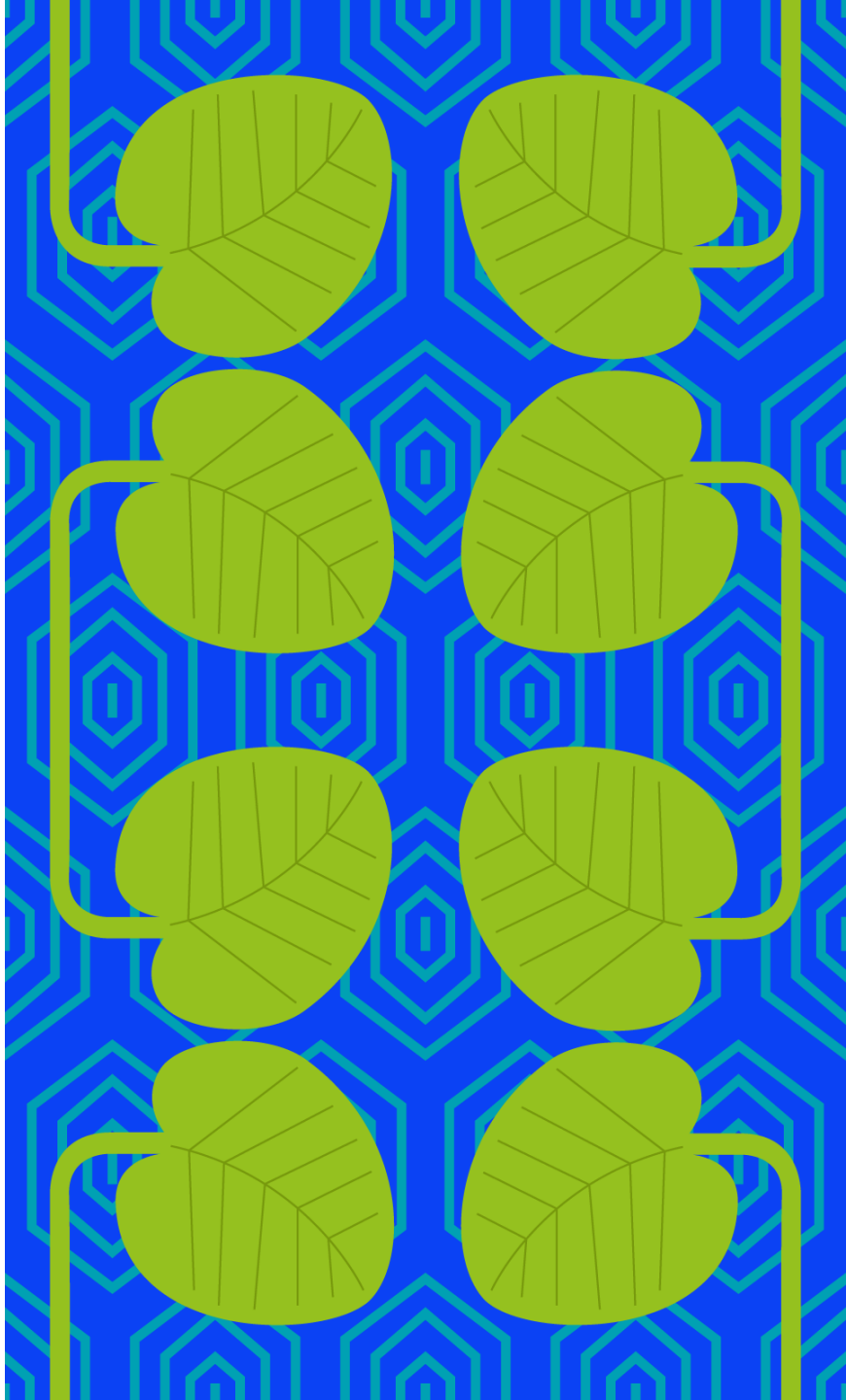
Africa Health Research Institute (AHRI)

31 July 2026



HIV global estimates for children and adolescents

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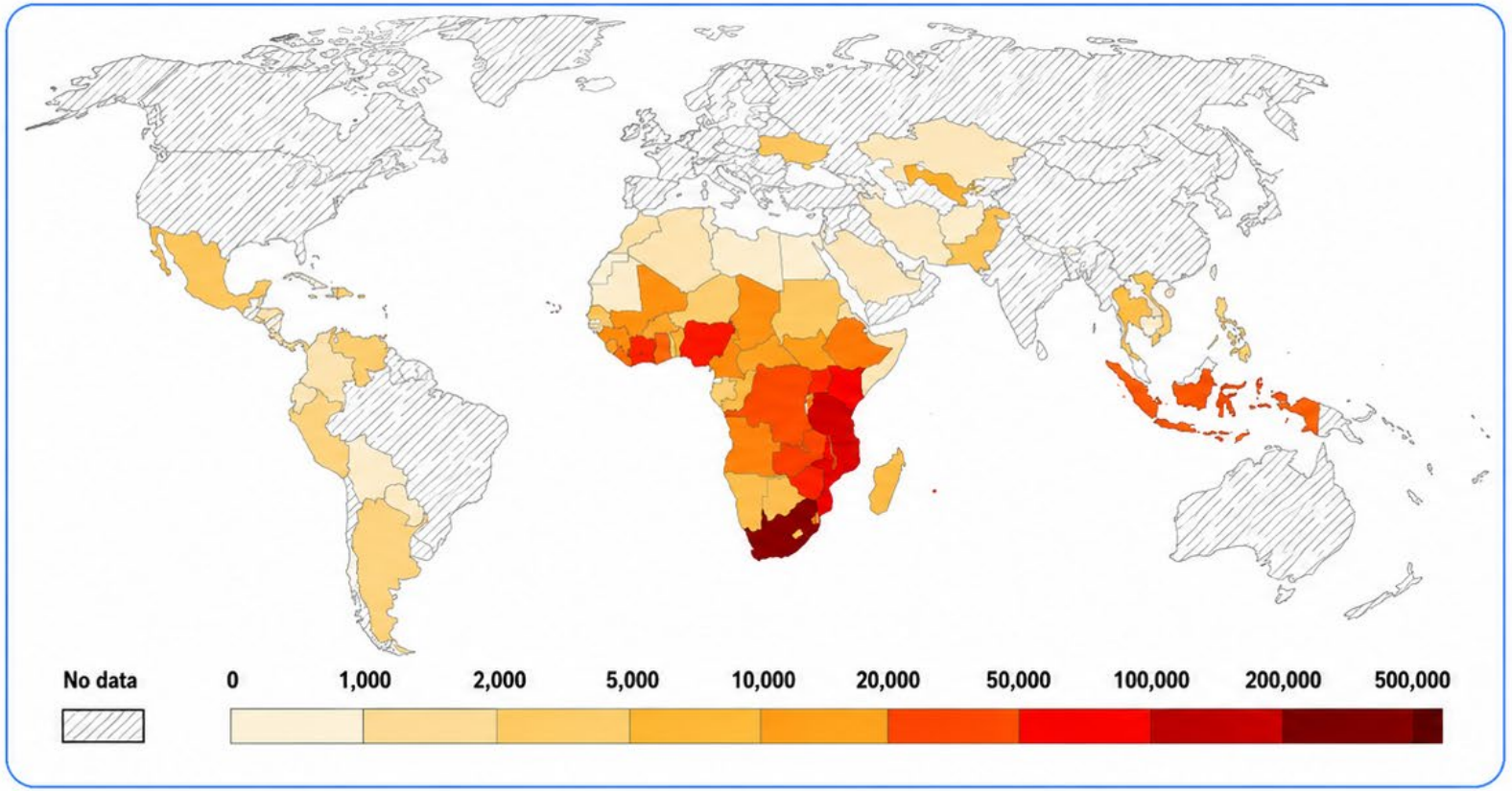

Children living with HIV

1.3 million [1.0 million–1.6 million]

New HIV infections in 2025

94,000 [66,000–140,000]

AIDS-related deaths in 2025

~63,000

Majority (~84%) of new infections occurred in Sub-Saharan Africa

- Adolescents account for 4% of PLWH

Significant challenges unique to paediatric HIV remain

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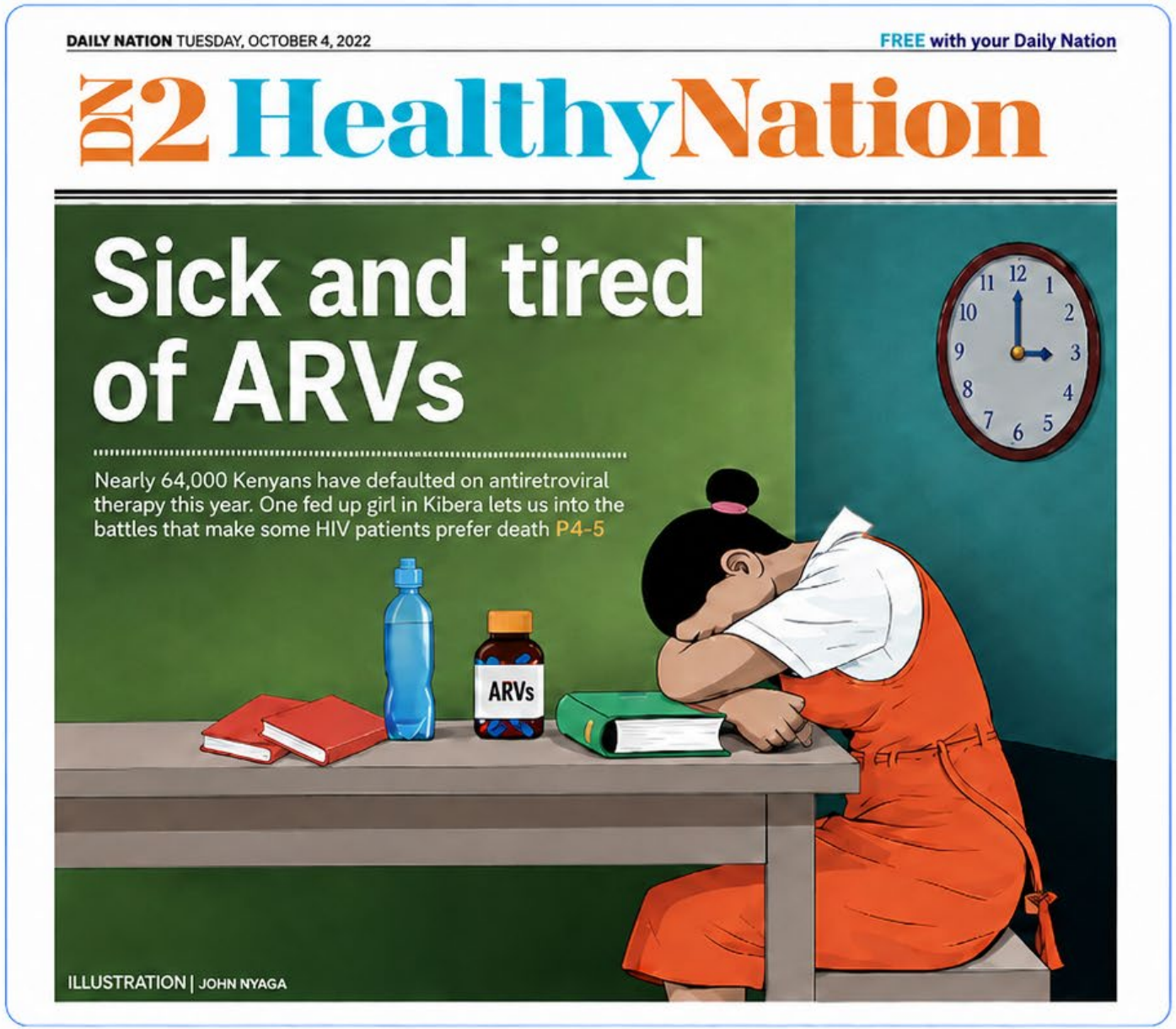

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DN2 HealthyNation

Sick and tired of ARVs

Nearly 64,000 Kenyans have defaulted on antiretroviral therapy this year. One fed up girl in Kibera lets us into the battles that make some HIV patients prefer death P4-5

ILLUSTRATION | JOHN NYAGA

Quotes from teenagers living with HIV

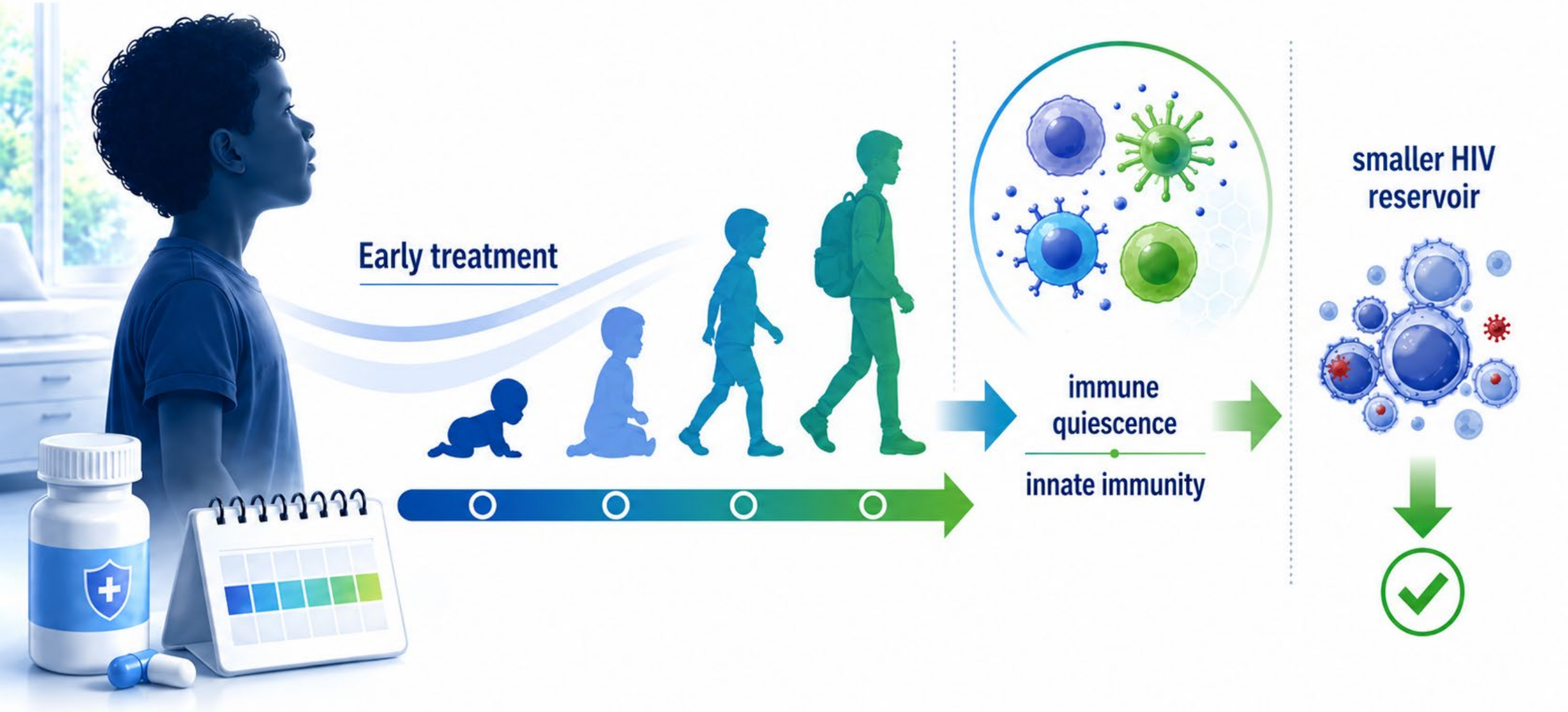
> "To be honest, I am tired of taking antiretroviral drugs (ARVs) for something that was not my fault."

> "Why did God let this happen to me? What did I ever do to deserve this? It sucks, to be honest."

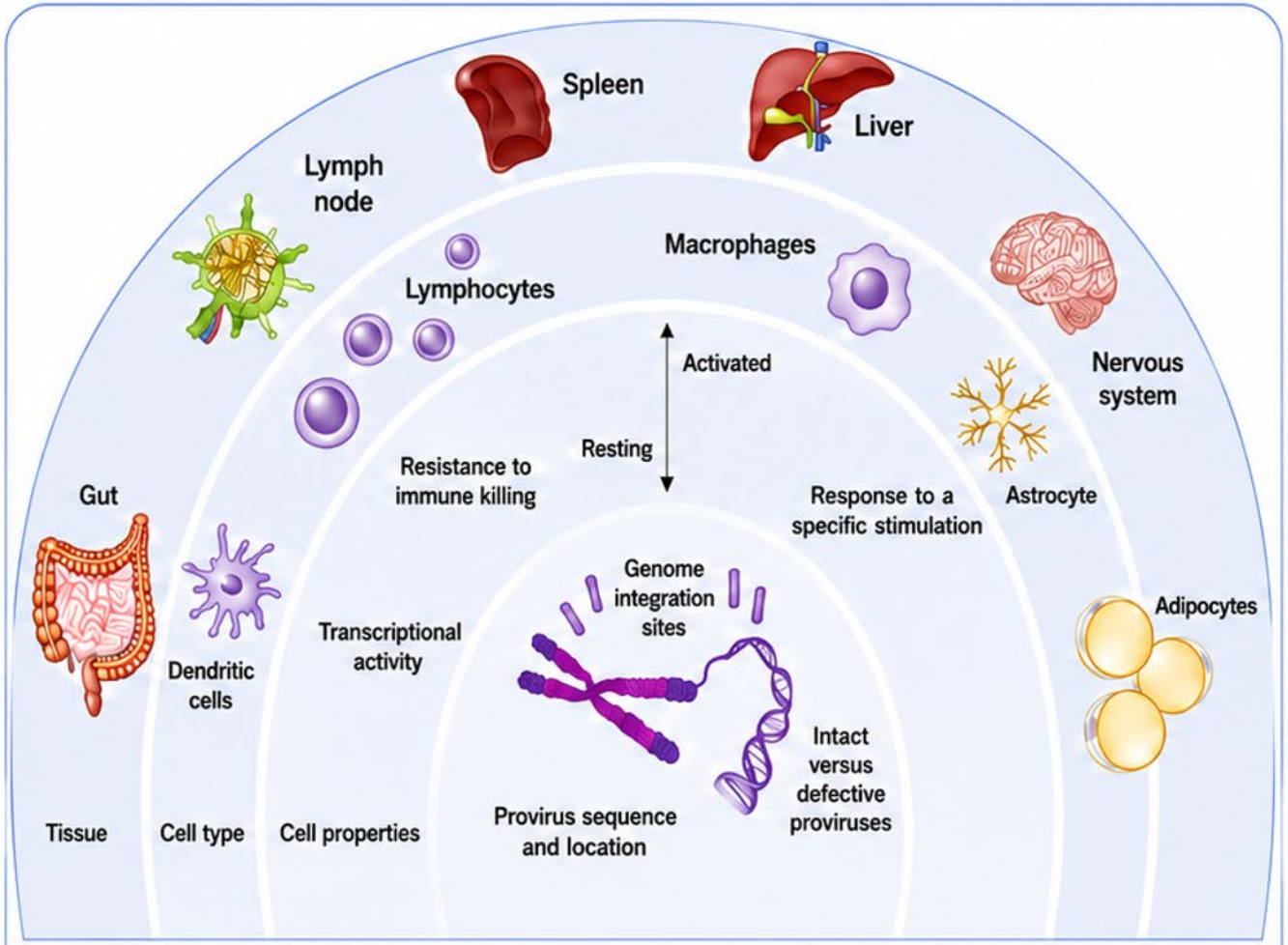
> "You ask yourself: what is the point of school when life seems to be on a clock that is determined by the pills you must take? Is the hassle worth it?"

> "It is how society perceives persons living with this virus. It makes you want to give up and die. It is not my fault that I was born with this predicament. I am in constant fear of being ridiculed."

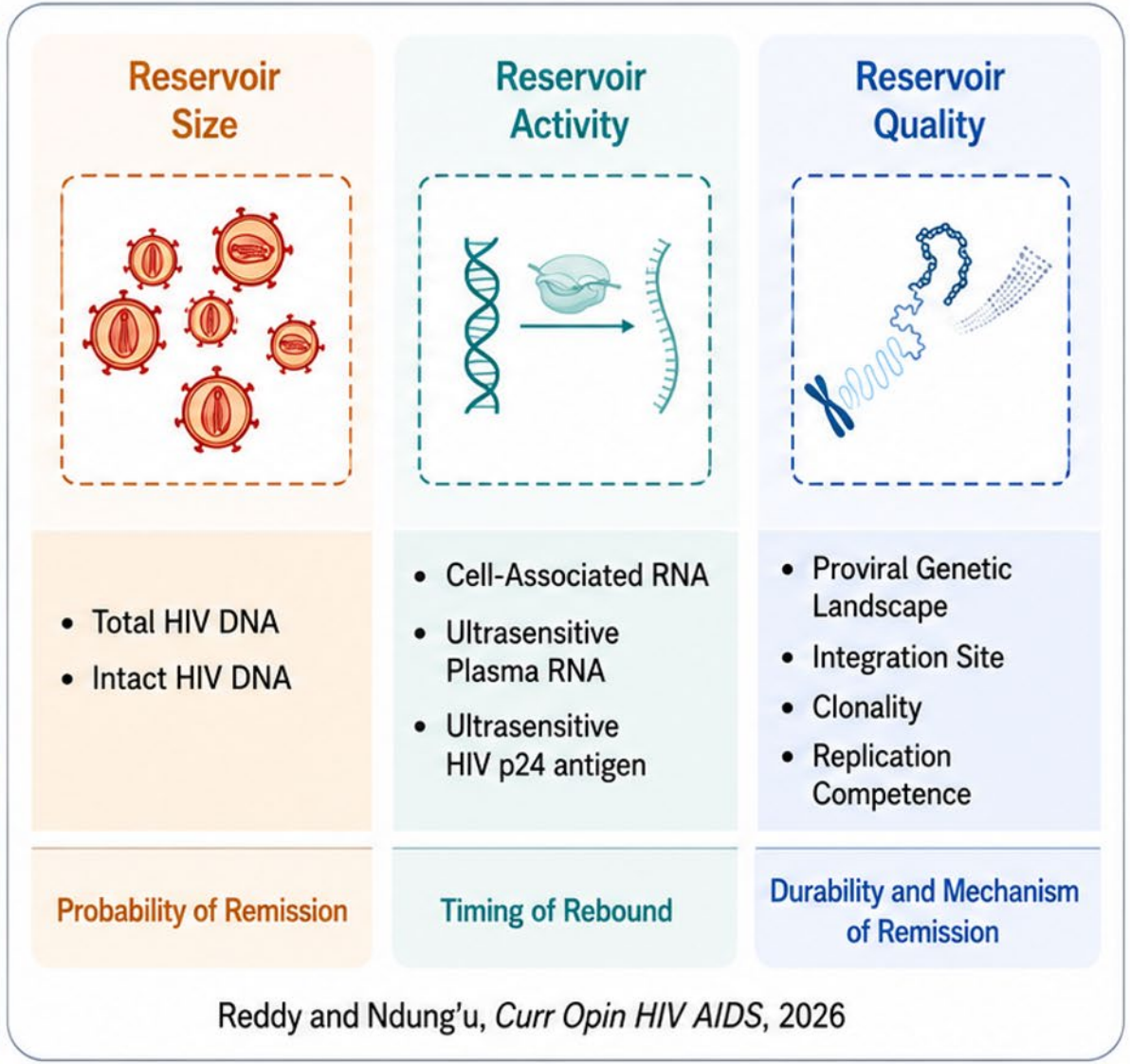
Early-treated children – a key population for remission



HIV Reservoirs are Complex



Deeks et al., *Nature Med*, 2021



Reddy and Ndung'u, *Curr Opin HIV AIDS*, 2026

The EARTH Cohort

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Early Anti-Retroviral Treatment in HIV perinatally infected children

Multicountry prospective cohort

- South Africa
- Mozambique
- Mali

n=215

- Enrolled within 6 months of age
- Follow-up at 2, 6, 12, 24 weeks, then every 6 months up to 4 years

Early ART

HIV

ART

4 years

- All infants started ART within 6 months of age
- Monitored up to 4 years

Study Objectives

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PRIMARY OBJECTIVE

Measure **total HIV DNA** by **ddPCR**

Baseline and annually for up to **4 years**

Evaluate **HIV-1 DNA** dynamics **up to 4 years** and factors associated with **reservoir size**

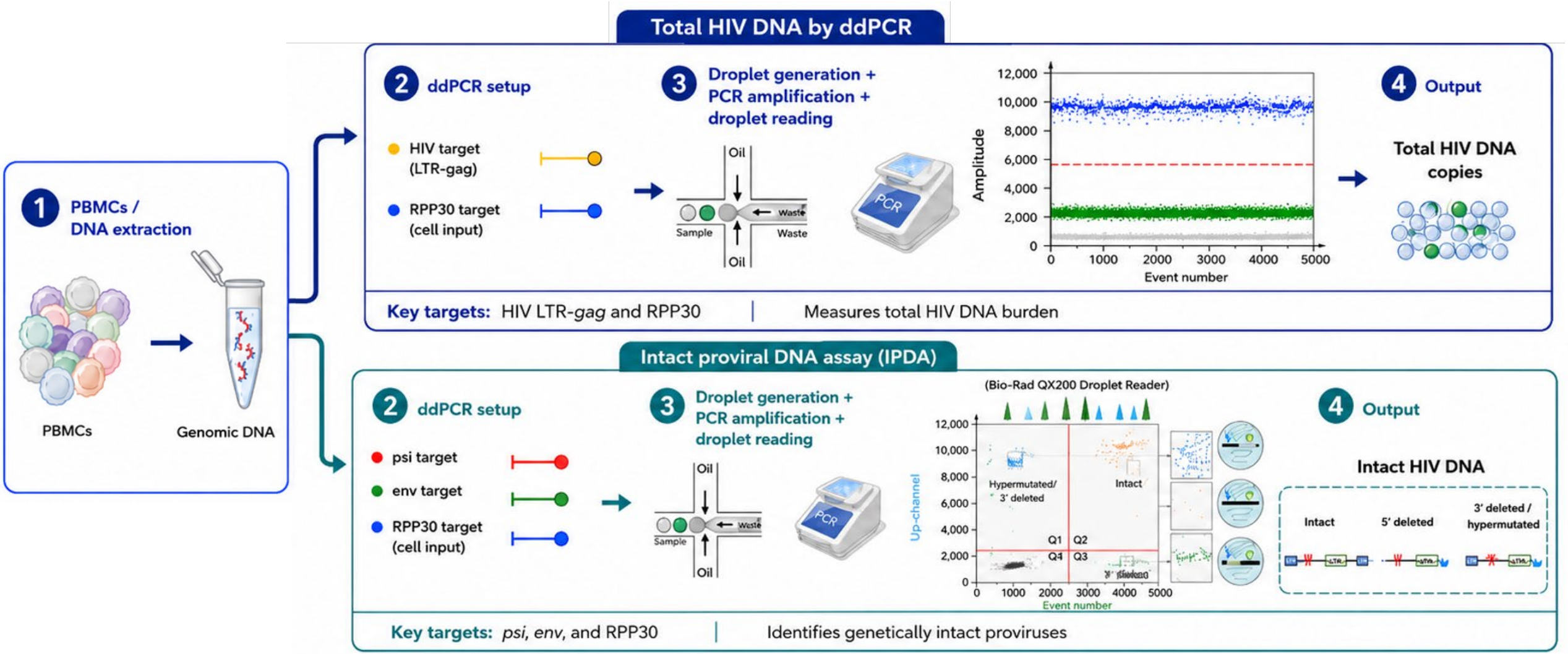
Feasibility: High, scalable, low blood volume, high throughput using total HIV DNA ddPCR.

Limitation: Dominated by defective proviruses; does not reflect true active reservoir; limited sensitivity in early-treated children with very small reservoirs.

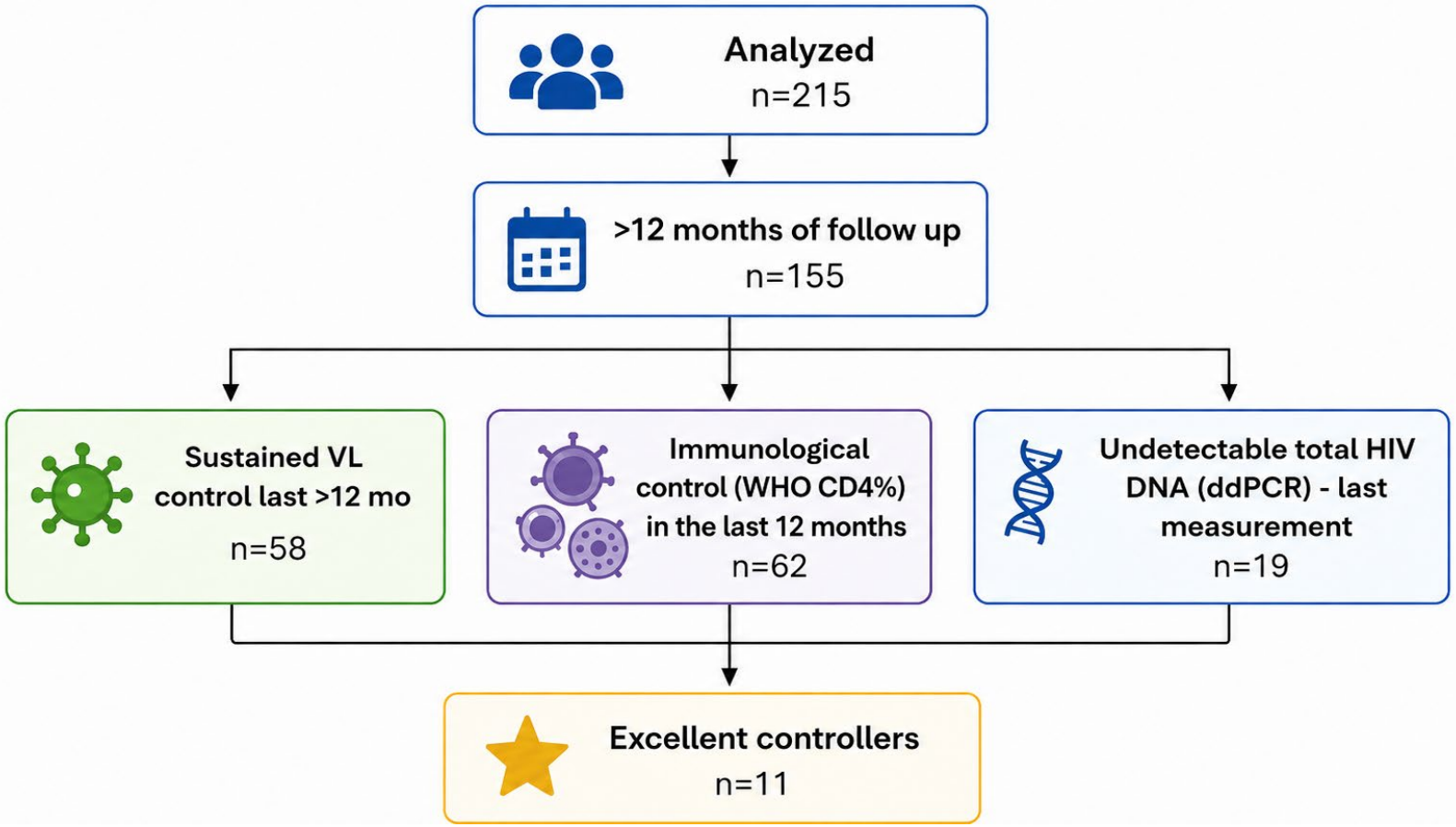
SECONDARY OBJECTIVES

1. Characterize the **intact HIV reservoir** by **IPDA** in children with **undetectable** total HIV DNA.
2. Determine whether total HIV DNA ddPCR identifies infants with absent or minimal intact provirus.
3. Explore host and treatment factors: HLA type, adherence, and ARV drug levels.
4. Identify candidates with favorable characteristics for HIV remission strategies.

Quantification of HIV DNA



EARTH Excellent Controllers



Sustained viral suppression: having at least 12 months of follow-up and VLs below the lower limit of detection during the last 12 months

Immunological control: no significant immunosuppression (CD4%) during the last 12 months according to WHO definition.

Factors associated with Excellent Control

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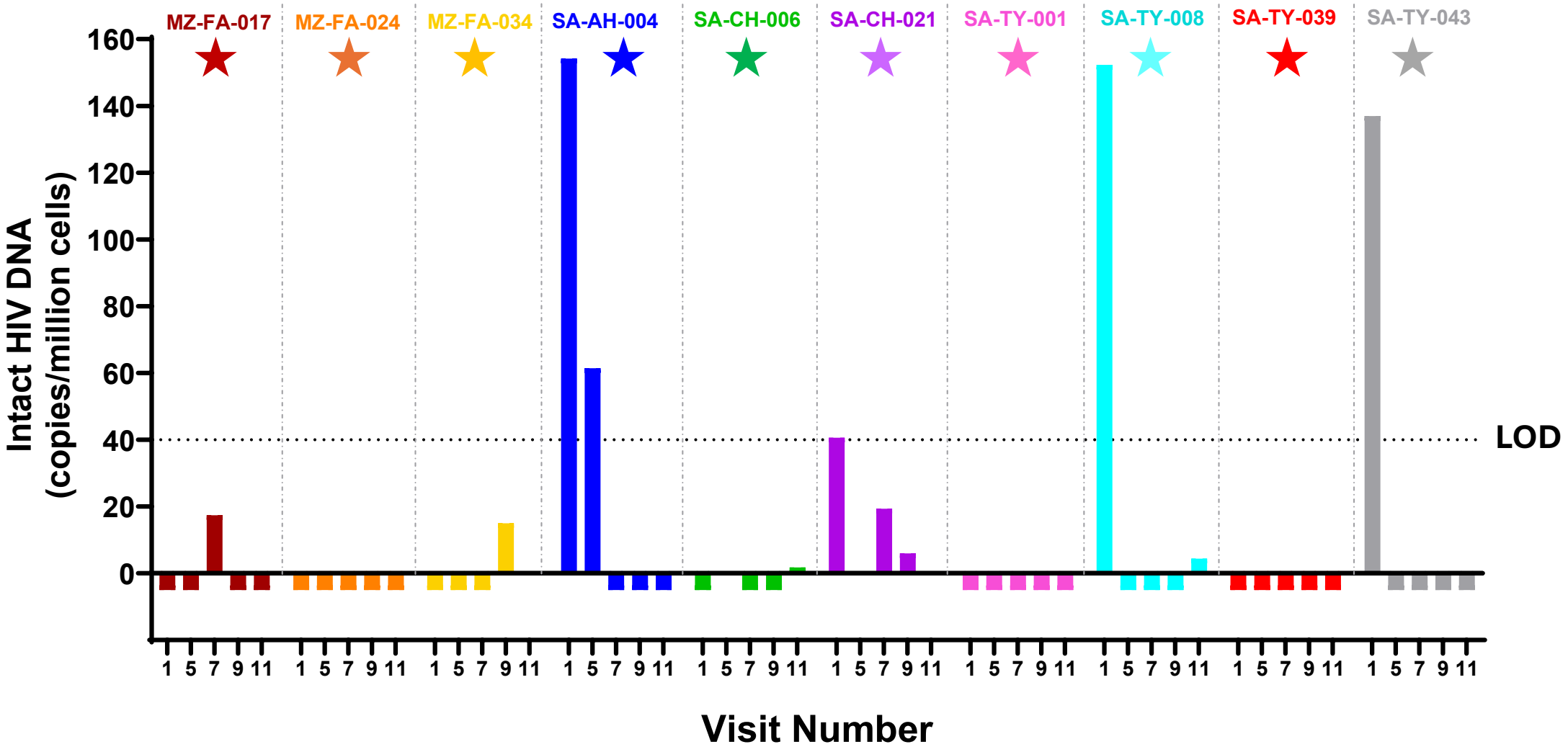
	Excellent controllers	Others	
	N=11	*N=144*	*P value*
Baseline viral load RNA:			
Log10 copies/mL	2·81 [2·37;3·04]	4·88 [3·58;5·59]	**0·001**
>5 logs	1 (10%)	66 (46·5%)	**0·043**
Peak viral load RNA			**0·002**
Log10 copies/mL	3·08 [2·81;4·52]	5·61 [4·55;6·30]	
Baseline percentage CD4			**0·010**
%	45·4 [40·7;50·8]	38·0 [29·6;44·2]	
Percentage of CD4 nadir			**<0·001**
%	33·8 [31·0;36·9]	23·8 [18·6;28·5]	
Baseline total HIV-1 DNA			**0·001**
Log10 copies/10^6 PBMC	2·36 [1·78;2·94]	3·67 [2·91;4·22]	
Total HIV-1 DNA decay			
1 year slope	-0·08 [-0·14;-0·03]	-0·08 [-0·16;-0·00]	0·864
Total slope	-0·05 [-0·07;-0·03]	-0·02 [-0·04;0·00]	**0·001**
Viral Control			
Time to viral suppression (m):	1·54 [1·20;4·09]	5·26 [2·17;16·3]	**0·041**
Time suppressed (y)	2·91 [1·94;3·29]	2·23 [1·18;3·04]	0·177
RNA Blips	0 (0·00%)	3 (2·08%)	0·238

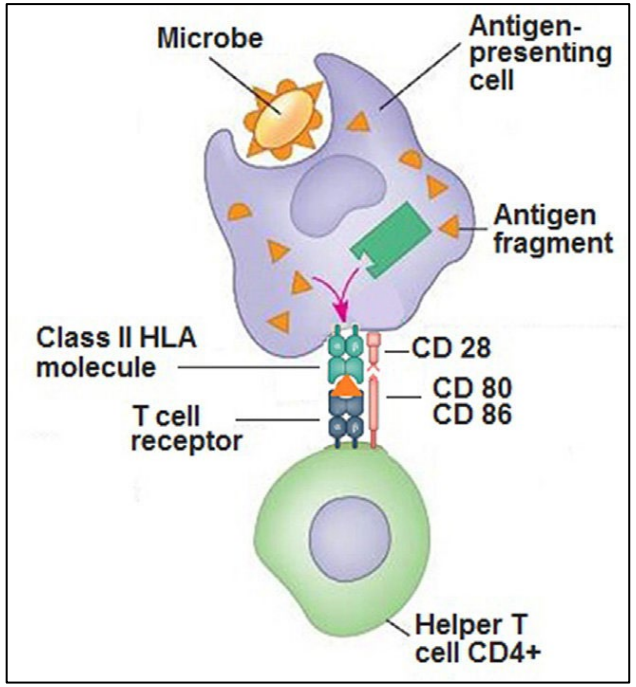
Intact HIV-DNA Profiles of Excellent Controllers



HLA types of Excellent Controllers

	HLA Class I alleles			HLA Class II alleles	
PID	HLA-A1/A2	HLA-B1/B2	HLA-C1/C2	DQB1/DQB2	DRB1/DRB2
ML-GT-002					
MZ -FA-017					
MZ-FA-024					
MZ-FA-034					
SA-AH-004					
SA-CH-006					
SA-CH-021					
SA-TY-001					
SA-TY-008					
SA-TY-039					

protective HLA
deleterious HLA



Cavello, J. Trans Autoimmunity, 2020,

8/10 participants had protective HLA

ART Adherence and LPV/r levels

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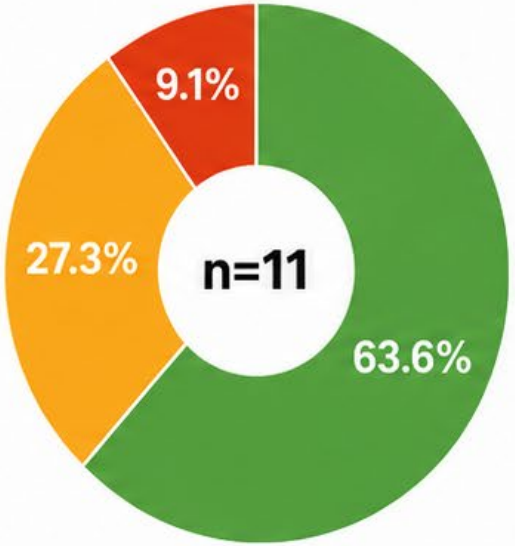
Caregiver reported ART adherence



- **>85%**
  7/11 participants
- **50–85%**
  3/11 participants
- **<50%**
  1/11 participant
  (with 5 successive undetectable IPDA)

LPV/r levels

All infants had LPV/r levels detectable, except **one timepoint** in **one infant,** a year post-enrolment.

Overall, the majority of excellent controllers had high reported ART adherence, and LPV/r levels were consistently detectable across timepoints.

Conclusions

Early-treated infants, particularly those with **protective HLA**, can achieve durable **undetectable intact proviral DNA**, suggesting an **extremely small or absent intact reservoir**.

1

These infants may represent candidates with **favorable characteristics** for HIV remission strategies.

2

Undetectable total HIV-DNA by ddPCR reliably identified infants with **absent or minimal intact provirus by IPDA.**

3

These findings support **ddPCR** as an **effective initial screening tool** for cure-related studies.

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EPICAL
Novel strategies to obtain long-term viral remission in Early Treated HIV infected Children

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