

# WHAT'S NEW IN TREATMENT MONITORING: VIRAL LOAD AND CD4 TESTING

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Monitoring of individuals on ART is important to ensure treatment efficacy and improved health outcomes.

The *2016 WHO Consolidated Guidelines on the use of antiretroviral drugs for treating and preventing HIV infection* include recommendations on routine monitoring and the diagnosis of treatment failure.

## Treatment initiation

- ART should be initiated in all children, adolescents, pregnant and breastfeeding women and adults living with HIV, regardless of WHO clinical stage and at any CD4 cell count.
- As a priority, ART should be initiated in all children, adolescents and adults with severe or advanced HIV clinical disease and adults with a CD4 count  $\leq 350$  cells/mm<sup>3</sup> as well as children < 5 years of age with WHO clinical stage 3 or 4 or CD4 count  $\leq 750$  cells/mm<sup>3</sup>.

## Treatment failure monitoring

- Viral load is recommended as the preferred monitoring approach to diagnose and confirm treatment failure.
- If viral load testing is not routinely available, CD4 count and clinical monitoring should be used to diagnose treatment failure, with targeted viral load testing to confirm viral failure where possible.

## Stable patients

- In settings where routine viral load monitoring is available, CD4 cell count monitoring can be stopped in individuals who are stable on ART and virally suppressed.

### ADVANCED HIV DISEASE DEFINITIONS

- For children above five years of age, adolescents and adults, advanced HIV disease is defined as the presence of a CD4 cell count < 200 cells/mm<sup>3</sup> or a WHO clinical stage 3 or 4 event.
- All children < 5 years old with HIV infection are considered as having advanced HIV disease.
- A patient is considered **stable** on ART based on the following criteria: on ART for at least 1 year, no current illnesses, good understanding of lifelong adherence and evidence of treatment success (two consecutive viral load measurements below 1,000 copies/ml).

## Assessing advanced HIV disease

CD4 count is the best predictor for disease status and immediate risk of death and thus should be used to identify those who have advanced HIV disease.

All patients entering or re-entering care should receive a CD4 test at treatment baseline and as clinically indicated for patients who are unstable or with advanced HIV disease.

It is strongly recommended that patients with advanced HIV disease (CD4 count below 200 cells/mm<sup>3</sup>) receive a package of care as defined in the *2017 WHO Guidelines for managing advanced HIV disease and rapid initiation of antiretroviral therapy*.

Additional tests recommended by the WHO to support the management of patients with advanced HIV disease include cryptococcal antigen screening and tuberculosis testing.

## Viral load for monitoring treatment

- Viral load is recommended as the preferred monitoring approach to diagnose and confirm **treatment failure**.
- Routine viral load testing should be conducted at 6 and 12 months after ART initiation and every 12 months thereafter.
- Viral load testing gives clients a measure of understanding, control and motivation to adhere to treatment and understand their HIV infection. Adherence counseling needs to address the implications of a detectable or undetectable viral load.
- Dried blood spot specimens using venous or capillary whole blood can be used to determine the HIV viral load using a treatment failure threshold of 1,000 copies/ml. While plasma specimens are preferred, dried blood spot specimens can be used in settings where logistical, infrastructural or operational barriers prevent routine viral load monitoring using plasma specimens.



Photo: WHO/Gary Hampton

### FAILURE

#### VIROLOGICAL FAILURE

viral load above 1,000 copies/ml based on two consecutive viral load measurements in a 3-month interval, with adherence support following the first viral load test, after at least six months of starting a new ART regimen

#### IMMUNOLOGICAL FAILURE

##### Adults and adolescents

CD4 count at or below 250 cells/mm<sup>3</sup> following clinical failure or persistent CD4 levels below 100 cells/mm<sup>3</sup>

##### Children

###### Younger than 5 years

Persistent CD4 levels below 200 cells/mm<sup>3</sup>

###### Older than 5 years

Persistent CD4 levels below 100 cells/mm<sup>3</sup>

#### CLINICAL FAILURE

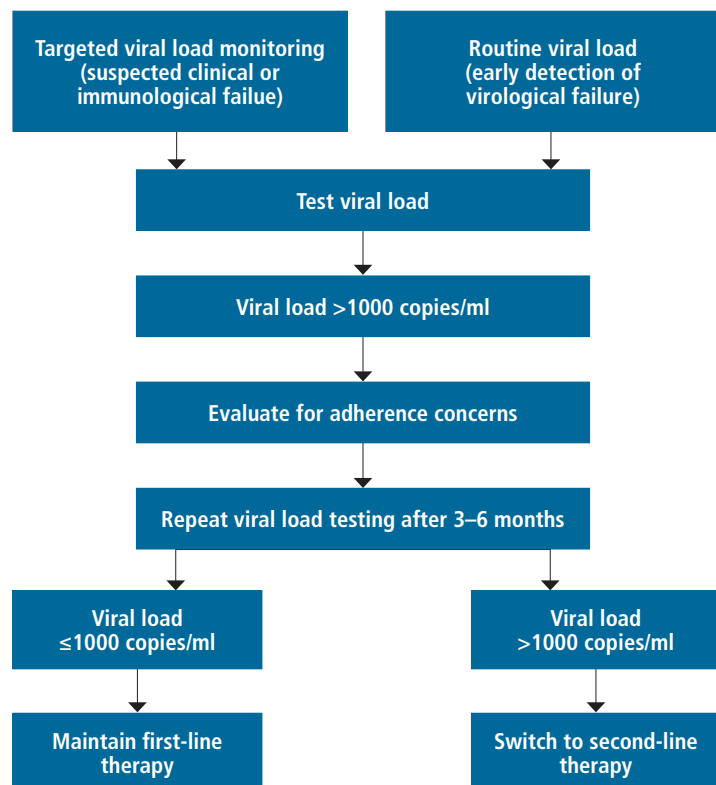
##### Adults and adolescents

New or recurrent clinical event indicating severe immunodeficiency after 6 months of effective treatment

##### Children

New or recurrent clinical event indicating advanced or severe immunodeficiency after 6 months of effective treatment

Fig. Viral load testing strategy



### For more information, contact:

World Health Organization  
Department of HIV/AIDS  
20, Avenue Appia  
1211 Geneva 27  
Switzerland

E-mail: [hiv-aids@who.int](mailto:hiv-aids@who.int)  
[www.who.int/hiv](http://www.who.int/hiv)  
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### INFORMATION NOTE

### HIV TREATMENT AND CARE