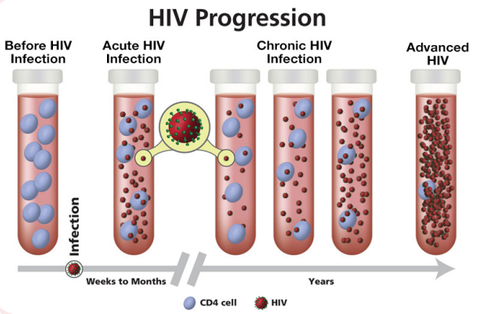
Living with HIV

Why knowing your CD4 count is still important

Human immunodeficiency virus (HIV) is a virus that attacks the body's immune system. In people living with HIV (PLHIV), the virus attacks and destroys a special type of white blood cell, known as CD4 cells, that coordinates the immune response to fight infection.

Although the average life expectancy of PLHIV has been raised to 70 years of age, we know there are some patients who are dying unnecessarily from opportunistic infections (OIs) as they do not have access to routine tests that can monitor their disease progression[1]. Common examples of OIs are tuberculosis (TB), cryptococcal meningitis, toxoplasmosis, Pneumocystis pneumonia and histoplasmosis.

Routine measurements of HIV Viral Load (VL) and CD4 respectively inform on how much virus is circulating in blood and how damaged the immune system has become[2].



HIV Progression leading to Advanced HIV Disease (AHD)
Generally, following HIV infection, as VL increases, CD4 levels decrease and sometimes so much so that these patients are termed as having AHD or as previously classified as having AIDS.

Despite advances in technology, testing and therapies, AHD exists in many populations, especially the further outside of centralised care you go. The World Health Organisation (WHO) define a patient having AHD if their CD4 count is equal to or below 200 cells/μL or the patient has a WHO clinical stage 3 or 4 event[3]. Normal CD4 levels are between 500 to 1500 CD4 cells/μL.[4]

Why is detecting AHD in the community important?

It is very important to understand which PLHIV have AHD to prevent health decline and death in these patients. AHD patients are likely to be co-infected with OIs such as TB, which can affect the effectiveness of their antiretroviral therapy (ART) treatment[5]. In such cases, the co-infection must be treated and then ART can recommence to reduce the VL and increase the CD4 count. Patients who do not know their co-infection status can affect the community as they run a higher risk of transmitting the virus to others if their ART is not working.

A package of interventions must be offered to those presenting with AHD that includes screening for major OIs.

How is AHD detected now?

In some countries, AHD is detected by visual presence of symptoms like a cough, weight loss or other clinical observations, as routine diagnostic tests for common OIs such as TB and CrAg are not widespread or are only available in centralised hospitals. Therein lies a major problem: what about patients who do not present with symptoms? This is very common. In a recent trial they found nearly 50% of patients with WHO defined AHD (having a CD4 count below 200 cells/μL) had no physical symptoms[6]. They appeared healthy and would have been missed by a healthcare professional. Solid proof that CD4 testing is essential to detect patients with AHD.

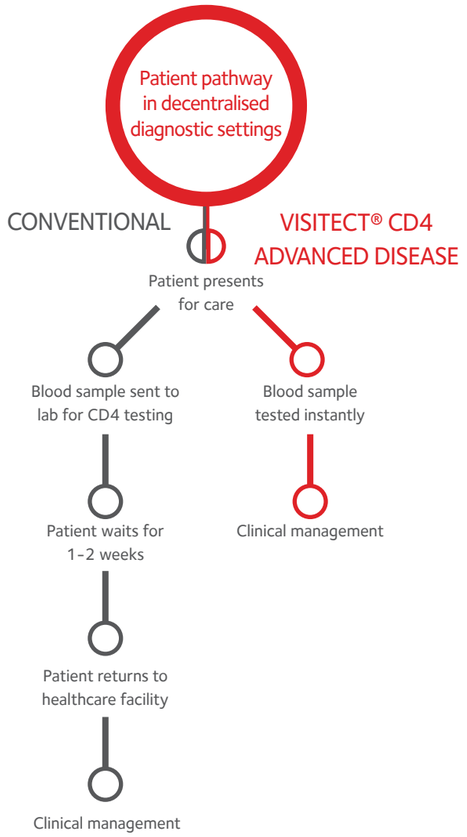
How do we test for CD4 right now?

Typically, newly diagnosed HIV positive patients have a CD4 count done at their first visit using a laboratory-based instrument. Following that, in low- and middle-income countries, CD4 is not repeated unless they show signs of a weakened immune system. Those patients who should have a CD4 test done sometimes cannot for various reasons, such as test coverage in the country, lack of government funding and existing laboratory-based instruments for CD4 testing not being maintained or having technical issues.

How can VISITECT® CD4 Advanced Disease help?

Omega Diagnostics' **VISITECT® CD4 Advanced Disease** test can support the identification of AHD in PLHIV. It is the worlds' only instrument-free, rapid, and disposable CD4 test with utility in centralised and decentralised settings for use wherever the patient is. The technology of the test lies within its design; it is a lateral flow device that can be used anywhere, anytime. It is semi-quantitative with the results read by eye by healthcare professionals. VISITECT® CD4 Advanced Disease is CE marked and WHO Prequalified.

VISITECT® CD4 Advanced Disease allows healthcare workers to assess patients rapidly (within 40 minutes) from a finger-prick sample of blood and immediately identifies when a patients CD4 count falls below 200 cells/μL. Being able to identify which patients have AHD allows healthcare workers to prioritise testing for the presence of OIs before the symptoms may have presented.



1. https://aidsinfo.nih.gov/understanding-hiv-aids/fact-sheets/19/46/the-stages-of-hiv-infection accessed July 2019.
2. WHO GUIDELINE ON WHEN TO START ANTIRETROVIRAL THERAPY AND ON PRE-EXPOSURE PROPHYLAXIS FOR HIV, September 2015.
3. http://www.aidsmap.com/about-hiv/cd4-cell-counts.
4. WHO Guidelines for managing advanced HIV disease and rapid initiation of antiretroviral therapy, July 2017 (https://apps.who.int/iris/bitstream/handle/10665/255884/9789241550062-eng.pdf?sequence=1).
5. https://www.hiv.gov/hiv-basics/starting-hiv-care/getting-ready-for-your-first-visit/what-to-expect-at-your-first-hiv-care-visit.
6.Hakim J et al. for the REALITY Trial Team. N Engl J Med 2017; 377:233-245

VISITECT® CD4 Advanced Disease **benefits** people living with HIV and healthcare providers

Accelerate clinical disease management
Faster decisions reducing burden on healthcare workers

Reduce patient loss to follow-up
Improve patient retention

Test anywhere, anytime
Convenient, disposable and read by eye

Reduce costs
Zero investment in equipment, lower costs for patient and sample transport

Improve patient outcomes
Patients with advanced HIV disease targeted for OI investigations earlier

With VISITECT® CD4 Advanced Disease you can identify patients progressing toward AHD. If you would like further information, to ask for a call back or to arrange for a demonstration, please contact:

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