



HIV/AIDS

Viral suppression for HIV treatment success and prevention of sexual transmission of HIV

July 2018 – The World Health Organization (WHO) leads the health sector response to HIV as part of the Joint United Nations Programme on HIV/AIDS. WHO works to increase access to HIV testing, antiretroviral therapy (ART) and viral load monitoring, to improve the clinical management of HIV as an urgent public health priority to prevent HIV-related morbidity and mortality.

The science related to the use of ART as an additional prevention tool is clear: there is no evidence that individuals who have successfully achieved and maintained viral suppression through ART transmit the virus sexually to their HIV-negative partner(s). The preventive benefits of ART should be appropriately emphasized in HIV treatment and prevention programmes.

WHO recognizes that awareness of the treatment and prevention benefits of ART should be promoted, in order to encourage HIV testing uptake, and to support people to access and adhere to ART as early as possible.

WHO HIV-related guidance promotes health equity, gender equality and human rights. It continues to push for greater efforts in providing primary prevention and addressing the structural barriers that increase the vulnerability of people and communities to HIV.

ART, viral suppression and HIV transmission: the evidence

Evidence has been available for several years that ART prevents morbidity and mortality for people with HIV, and also has clear HIV prevention benefits. Several cohort studies have confirmed the HIV prevention benefits of ART^{1,2,3,4,5}. Randomized clinical trials (RCTs) serve as the gold standard of scientific evidence and in 2011, a multi-country RCT, HPTN 052⁶, showed reduction in HIV transmission in serodiscordant (often referred to as serodifferent) couples, where the partner with HIV and a CD4 count between 350 and 550 cells/μL had started ART. This led WHO to recommend in early 2012⁷ that:

- people with HIV in serodiscordant couples should be advised that ART is also recommended to reduce HIV transmission to the uninfected partner; and
- HIV-positive partners with a CD4 count above 350 cells/μL in serodiscordant couples should be offered ART to reduce HIV transmission to uninfected partners.

These recommendations, recognizing the preventative benefits of ART, were made when global recommendations were for ART initiation at counts below 350 CD4 cells/μL – before evidence was available to support the clinical benefits of immediate ART, which WHO recommended in September 2015.⁸

Further evidence that successful ART with viral suppression prevented HIV transmission to sexual partners has confirmed the findings from HPTN 052. PARTNERS⁹ and Opposites Attract¹⁰ both reported no transmission when viral load was undetectable below 200 copies/mL.

These data have led to an increasing consensus that people who have achieved and maintained undetectable viral load cannot transmit HIV sexually to their partners.

Focus needed to increase access to testing, ART, viral load monitoring and support to retain in care

The primary objective of ART is to provide clinical benefits to people living with HIV. The large scale-up of ART, particularly in low- and middle-income countries, has resulted in significant gains in health, as well as reductions in HIV-related morbidity and mortality.¹¹ People with HIV are recommended to start ART as soon as they are diagnosed for their own health; it is also emphasized that starting ART and attaining viral suppression prevents sexual HIV transmission.

Significant progress has been made on the United Nations 90-90-90 targets. However, there are significant gaps and remaining challenges. WHO recommends viral load monitoring to ensure viral load suppression is achieved and maintained, but large gaps in global access remain, particularly in low- and middle-income countries and in rural areas.

Most HIV infections occur following transmission from someone who is unaware that they have HIV. There is a higher risk of HIV transmission when someone is newly infected,¹² which is often well before people seek testing. HIV transmission also occurs when someone with HIV is not on treatment or is on treatment and not virally suppressed (because they have not been on ART long enough, take ART suboptimally, or are failing treatment due to factors such as drug resistance). HIV care cascade data from various countries indicate that 19% (uncertainty range 5–40%) of people on treatment who have had viral load testing are not virally suppressed. This calls for continued emphasis on: increasing

access to testing and linkage to ART; monitoring and responding to drug resistance; supporting ART adherence; better awareness of sero-status of partners of people with HIV; and access to viral load monitoring to support effective treatment and guide decisions about HIV prevention and safer conception choices.

A comprehensive HIV response is still required

Although HIV incidence continues to decline, particularly in high-burden countries, 1.8 million people were newly infected in 2016, and outside sub-Saharan Africa some countries continue to experience increasing numbers of new HIV infections. Continued HIV transmission is also being reported in areas with high ART coverage. Therefore, HIV testing, ART and viral load monitoring are needed, together with primary combination HIV prevention (male and female condoms, harm reduction for people who inject drugs, voluntary male circumcision and pre-exposure prophylaxis).

Condoms remain an essential component of the HIV response.

Supporting condom access and use provides effective HIV prevention for millions of people in the situations described above. It also allows people to protect themselves from other sexually transmitted infections, including hepatitis B and C, and prevents unintended pregnancies. Harmful gender dynamics, interpersonal violence and substance use can undermine condom negotiation,¹³ and ongoing research into sexual behaviour should be encouraged. As well as ensuring the range of prevention options are available, supporting wider knowledge of the preventive benefits of ART could reduce stigma and allow people who are virally suppressed on ART to make informed choices in their sexual lives.

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