

TREATMENT GOALS

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Antiretroviral therapy (ART) reduces HIV-related morbidity and mortality at all clinical stages of HIV¹⁻⁵ and reduces sexual and perinatal HIV transmission to others.⁶⁻¹¹ In addition, maximal and durable viral suppression preserves or improves CD4 T lymphocyte (CD4) cell count, prevents the selection and archival of drug-resistance mutations, and prevents sexual and perinatal transmission of HIV, all of which are important treatment goals. Early HIV diagnosis and ART initiation provide the best opportunity to maximize the benefits of ART.^{3,12-14} Data show that with contemporary ART, viral suppression has improved, and adverse effects leading to treatment discontinuation have declined over time.¹² ART-mediated viral suppression may also decrease inflammation and immune activation, thought to contribute to higher rates of cardiovascular and other end-organ disease reported in cohorts with HIV (see [Initiation of Antiretroviral Therapy](#) and [Immune Activation and Inflammation Among People With HIV Receiving Antiretroviral Therapy](#)). Despite these benefits, eradication of HIV infection cannot be achieved with currently available antiretroviral (ARV) drugs. Treatment interruption has been associated with rebound viremia, worsening of immune function, and increased morbidity and mortality.¹⁵ Thus, once initiated, ART should be continued for life, with the following key treatment goals:

- Maximally and durably suppress plasma HIV RNA (viral load)
- Restore, preserve, and improve immunologic function
- Reduce HIV-associated morbidity and prolong the duration and quality of survival
- Prevent HIV transmission

Achieving viral suppression requires the use of combination ARV regimens that generally include two or three active drugs from two or more drug classes. Certain baseline characteristics and results from drug-resistance testing should guide design of the specific regimen (see [What to Start](#)). With the currently available ARV drugs, including long-acting injectable drugs, durable viral suppression can be achieved by >90% of people with HIV who adhere to their prescribed regimens.¹⁶⁻¹⁸ If viral suppression is not achieved or maintained despite an assessment of adherence and other structural barriers to care, changing to a new regimen should be guided by ART history, prior treatment responses, and current and historic drug-resistance testing (see [Virologic Failure](#)).

After initiation of effective ART, viral load typically declines to below the limits of assay detection within the first 8 to 12 weeks of therapy. Predictors of virologic success include the following:

- Earlier stage of HIV disease (higher CD4 count) at ART initiation
- Low baseline viremia
- High potency of the ARV regimen
- Tolerability of the regimen
- Convenience of the regimen
- Excellent ART adherence and engagement in care

Strategies to Achieve Treatment Goals

Selection of Initial Combination Regimen

Several ARV regimens are recommended for use as initial therapy (see [What to Start](#)). The recommended regimens have comparable efficacy but [with slight variation](#) in pill burden ([one or two pills daily](#)), potential for drug interactions and/or side effects, propensity to select for resistance mutations if ART adherence is suboptimal, [and appropriateness for use in people with hepatitis B virus coinfection](#). Regimens should be individualized to enhance adherence and support long-term treatment success. Considerations when selecting an ARV regimen for an individual include comorbidities, [such as viral hepatitis; prior use of HIV pre-exposure prophylaxis](#); possible interactions with concomitant medications; results of pre-treatment genotypic drug-resistance testing; potential adverse effects; and regimen convenience (see [Table 7](#)).

Improving Adherence

Suboptimal adherence may result in reduced treatment response. Incomplete adherence can result from complex ARV regimens, individual circumstances (e.g., substance use, mental health conditions, adverse effects), and structural barriers to treatment access, education, or support. Conditions that promote adherence should be maximized before and continue after initiation of ART (see [Adherence to the Continuum of Care](#)). [For some people with HIV, switching to a simpler or better-tolerated ARV regimen can improve treatment outcomes \(see \[Optimizing Antiretroviral Therapy in the Setting of Viral Suppression\]\(#\)\).](#)

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