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Pregnancy and Postpartum HIV Testing and Identification of Perinatal and Postnatal HIV Exposure

Updated: June 12, 2025

Reviewed: June 12, 2025

Panel's Recommendations

- HIV testing is recommended for all sexually active people and should be a routine component of pre-pregnancy care **(AII)**.
- For all pregnancies, opt-out HIV testing should be done as early as possible during each pregnancy (see [Laboratory Testing for the Diagnosis of HIV Infection: Updated Recommendations](#) and [2018 Quick Reference Guide: Recommended Laboratory HIV Testing Algorithm for Serum or Plasma Specimens](#) from the Centers for Disease Control and Prevention [CDC]) **(AII)**.
- For all pregnancies, partners should be referred for HIV testing when their status is unknown **(AIII)**.
- Repeat HIV testing in the third trimester is recommended during pregnancies in which there are negative initial HIV tests and increased risk of acquiring HIV, including pregnancies in which the care is received in facilities that have an HIV incidence of ≥ 1 case per 1,000 patients experiencing pregnancy per year, those who reside in jurisdictions (states or counties) with elevated HIV incidence among females aged 15 to 45 years (>17 per 100,000 females aged 15–45 years), or those who reside in states or territories that require third-trimester testing **(AII)**. Annual state and county-level HIV diagnosis rates are available at CDC's National Center for HIV, Viral Hepatitis, Sexually Transmitted Diseases, and Tuberculosis Prevention [AtlasPlus webpage](#).
- Repeat HIV testing is recommended when there is a sexually transmitted infection during pregnancy, when there are signs and symptoms of acute HIV infection, or when there is ongoing exposure to HIV **(AIII)**. Initiation of pre-exposure prophylaxis (PrEP) is recommended if HIV testing is negative **(AIII)**. See [Pre-exposure Prophylaxis \(PrEP\) to Prevent HIV During Periconception, Antepartum, and Postpartum Periods](#) for more information.
- Expedited^a HIV testing should be performed during labor or after delivery when HIV status is undocumented as well as when HIV tests were negative early in pregnancy but there is increased risk of HIV infection and there was no retest in the third trimester **(AII)**. HIV antigen/antibody testing should be available 24 hours a day, and results should be available within 1 hour. If results of expedited^a HIV testing are positive, intrapartum intravenous zidovudine prophylaxis should be initiated immediately **(AI)**; see [Intrapartum HIV Care](#).
- When acute HIV infection is suspected during pregnancy or the intrapartum period or while breastfeeding, a plasma HIV RNA assay should be performed in conjunction with an antigen/antibody immunoassay **(AIII)**.
- When there is a positive HIV test result during labor and delivery or postpartum, a maternal HIV-1/HIV-2 antibody differentiation assay and an HIV RNA assay should be performed **(AI)**. In these situations, an HIV nucleic acid test (NAT) should be performed on the infant, with immediate initiation of presumptive HIV therapy appropriate for an infant at high risk of perinatal HIV transmission **(AI)**; see [Diagnosis of HIV Infection in Infants and Children](#) for additional information.
- If maternal HIV test results are unavailable at birth, the newborn should be tested using an expedited^a antibody test to identify perinatal HIV exposure **(AI)**. If positive, an HIV NAT should be performed on the infant, and standard maternal HIV diagnostic testing should be offered as soon as possible **(AI)**.
 - In this situation, presumptive HIV therapy appropriate for infants who are at high risk of perinatal HIV transmission should be initiated immediately **(AI)**. See [Antiretroviral Management of Infants With In Utero, Intrapartum, or Breastfeeding Exposure to HIV](#) for guidance.
 - When there is an initial positive HIV test during labor or delivery or immediately postpartum and there are plans to breastfeed, the Panel [on Treatment of HIV During Pregnancy and Prevention of Perinatal Transmission](#) recommends

against breastfeeding. Breast milk should be expressed and stored appropriately until all supplemental HIV tests are reviewed and are negative **(AI)**.

- When there is increased risk of HIV acquisition postpartum, HIV testing and PrEP should be offered. If breastfeeding is occurring, consult an HIV specialist regarding frequency of HIV testing for the breastfeeding dyad **(AIII)**.
- Maternal HIV test results should be documented in the newborn's medical record and communicated to the newborn's primary care provider **(AIII)**.
- To identify perinatal HIV exposure and possible HIV infection, HIV testing is recommended for infants and children in foster care and adoptees for whom maternal HIV status is unknown **(AIII)** (see [Diagnosis of HIV Infection in Infants and Children](#)).

^a The term "expedited" is used to designate HIV testing performed in situations when a very short turnaround time is optimal. Expedited testing is dependent on the available HIV tests in each facility and may include antigen/antibody immunoassays or antibody-only assays; see Approved HIV Tests in the text below.

Rating of Recommendations: A = Strong; B = Moderate; C = Optional

Rating of Evidence: I = One or more randomized trials in children[†] with clinical outcomes and/or validated endpoints; I* = One or more randomized trials in adults with clinical outcomes and/or validated laboratory endpoints with accompanying data in children[†] from one or more well-designed, nonrandomized trials or observational cohort studies with long-term clinical outcomes; II = One or more well-designed, nonrandomized trials or observational cohort studies in children[†] with long-term outcomes; II* = One or more well-designed, nonrandomized trials or observational studies in adults with long-term clinical outcomes with accompanying data in children[†] from one or more similar nonrandomized trials or cohort studies with clinical outcome data; III = Expert opinion

[†]Studies that include children or children and adolescents, but not studies limited to postpubertal adolescents

Pre-Exposure Prophylaxis (PrEP) to Prevent HIV During Periconception, Antepartum, and Postpartum Periods

Updated: June 12, 2025

Reviewed: June 12, 2025

Panel's Recommendations

Health care professionals should discuss pre-exposure prophylaxis (PrEP) with all sexually active people without HIV, including those who are trying to conceive, pregnant, postpartum, or breastfeeding, to prevent HIV acquisition (AII); counseling should include the benefits of PrEP to prevent HIV acquisition and perinatal transmission (AI) and potential adverse effects of PrEP during periconception, pregnancy, and postpartum/breastfeeding periods (AII). Health care professionals should offer PrEP to those who desire PrEP or have specific indications for PrEP (AII).

- The preferred PrEP option for preventing HIV transmission from receptive vaginal sex during pregnancy and breastfeeding is tenofovir disoproxil fumarate/emtricitabine (TDF/FTC) (AII). TDF/FTC is currently the only U.S. Food and Drug Administration (FDA)-approved PrEP option with known safety and efficacy data during pregnancy and postpartum/breastfeeding. If pregnancy occurs while using TDF/FTC as PrEP, PrEP use can continue throughout pregnancy and breastfeeding. Risk for HIV acquisition should be reassessed, and counseling regarding the benefits and risks of PrEP use in pregnancy and during breastfeeding should be provided (AII).
- Health care professionals should counsel patients about the importance of daily adherence to oral TDF/FTC PrEP to prevent HIV acquisition (AI). Patients should be counseled to use additional HIV prevention strategies (e.g., condoms) for the first 20 days after initiating TDF/FTC PrEP (BII). Patients with a planned PrEP discontinuation should continue use for 7 to 28 days after their last potential vaginal exposure (BII). Given the lack of data, episodic or non-daily PrEP is not recommended for protection against vaginal exposure to HIV (AII).
- Health care professionals should offer routine PrEP follow-up, including HIV testing every 3 months and counseling on signs and symptoms of acute retroviral syndrome (AI) (see [Pregnancy and Postpartum HIV Testing and Identification of Perinatal and Postnatal HIV Exposure](#) and Centers for Disease Control and Prevention's [PrEP for the Prevention of HIV in the United States—2021 Update](#)). Consider more frequent testing when clinically indicated (e.g., adherence challenges, nonstandard visit schedule).

Long-acting injectable cabotegravir (CAB-LA) is FDA-approved for vaginal exposure to HIV; however, only preliminary data have been presented for CAB-LA dosing, efficacy, and safety in pregnancy. If pregnancy occurs while receiving CAB-LA PrEP, the limited available safety data and long half-life of CAB should be discussed with the patient with shared decision-making around ongoing PrEP use and options (CIII). Consider expert consultation.

If pregnancy occurs while receiving PrEP, clinicians are strongly encouraged to register the pregnancy with the Antiretroviral Pregnancy Registry (AIII) (see [Teratogenicity](#)).

Rating of Recommendations: A = Strong; B = Moderate; C = Optional

*Rating of Evidence: I = One or more randomized trials with clinical outcomes and/or validated laboratory endpoints;
II = One or more well-designed, nonrandomized trials or observational cohort studies with long-term clinical outcomes;
III = Expert opinion*

Prepregnancy Counseling and Care

Updated: June 12, 2025

Reviewed: June 12, 2025

Panel's Recommendations
<ul style="list-style-type: none">• When there is childbearing potential, HIV care should include discussions about reproductive desires and plans on an ongoing basis throughout the course of care (AIII).• Provide information about effective and appropriate contraceptive methods when pregnancy is not currently desired (AI). Offer all contraceptive methods or refer for contraceptive services. All available contraceptive methods (e.g., pill, patch, ring, injection, implant) can be used with HIV; however, the presence of other medical co-morbidities and drug–drug interactions between hormonal contraceptives, antiretroviral (ARV) drugs, and other medications should be considered (see Table 3) (AII). This information may help support shared decision-making about acceptable contraception options when pregnancy is not currently desired.• Assess knowledge about partner HIV status and the need to screen partner(s) for HIV and sexually transmitted infections; provide testing or refer for services as needed (AII). Discuss whether HIV status has been disclosed to sexual partner(s); discuss options for pre-exposure prophylaxis when indicated (AII) (see Reproductive Options When One or Both Partners Have HIV and Pre-exposure Prophylaxis to Prevent HIV During Periconception, Antepartum, and Postpartum Periods).• Provide education and counseling about interventions to prevent perinatal HIV transmission, including antiretroviral therapy (ART). Explain that maximum viral suppression of HIV should be attained before attempting conception for personal health, to prevent sexual HIV transmission to partners without HIV (AI), and to minimize the risk of <i>in utero</i> HIV transmission to the infant (AI). When fully suppressive ART is started before pregnancy and undetectable viral load is maintained throughout pregnancy and at delivery, the risk of HIV transmission to the infant is extremely low (<1%).• When pregnancy with HIV is being considered or planned, begin to provide patient-centered, evidence-based counseling to support shared decision-making about infant feeding (AIII) (see Preventing HIV Transmission During Infant Feeding). Information and plans for infant feeding should be reviewed throughout pregnancy and again after delivery.• When selecting or evaluating an ARV regimen and there is the potential for pregnancy, consider a regimen's effectiveness, changes in ARV pharmacokinetics in the second and third trimesters of pregnancy, hepatitis B status, possible drug–drug interactions with other needed medications, and the possible adverse outcomes for maternal and fetal health (AII). See Teratogenicity and Recommendations for Use of Antiretroviral Drugs During Pregnancy: Overview for more information. The Panel on Treatment of HIV During Pregnancy and Prevention of Perinatal Transmission emphasizes the importance of counseling and shared decision-making regarding all ARV regimens for treating HIV (AIII).
<p><i>Rating of Recommendations: A = Strong; B = Moderate; C = Optional</i></p> <p><i>Rating of Evidence: I = One or more randomized trials with clinical outcomes and/or validated laboratory endpoints; II = One or more well-designed, nonrandomized trials or observational cohort studies with long-term clinical outcomes; III = Expert opinion</i></p>

Reproductive Options When One or Both Partners Have HIV

Updated: January 31, 2024

Reviewed: January 31, 2024

Panel's Recommendations
<p>When Pregnancy is Desired and One or Both Partners Have HIV</p> <ul style="list-style-type: none">• When trying to conceive with HIV, viral suppression should be sustained (e.g., two recorded measurements of plasma viral loads that are below the limits of detection and that have been taken at least 3 months apart) before attempting conception to maximize personal health, prevent HIV sexual transmission (AI), and minimize the risk of HIV transmission to infants once conception occurs (AI).• Both partners should be screened and treated for genital tract infections before attempting to conceive (AII). Rescreening for genital tract infections while attempting to conceive may be considered based on individual risk and duration of the preconception period (AII). <p>For partners with different HIV status when the person with HIV is on antiretroviral therapy and has achieved sustained viral suppression, sexual intercourse without a condom allows conception without sexual HIV transmission to the person without HIV (BII).</p> <ul style="list-style-type: none">• Expert consultation is recommended to tailor guidance to the specific needs of the person or people planning for pregnancy when indicated (e.g., infertility) (AIII).• Health care providers should discuss pre-exposure prophylaxis (PrEP) with all sexually active people without HIV, including when trying to conceive, to prevent HIV acquisition (AII); counseling should include the benefits of PrEP to prevent HIV acquisition and perinatal transmission (AI) and potential adverse effects of PrEP during periconception, pregnancy, postpartum, and breastfeeding periods (AII). Health care providers should offer PrEP to those who desire PrEP or have specific indications for PrEP (AII) (see PrEP to Prevent HIV During Periconception, Antepartum, and Postpartum Periods).<ul style="list-style-type: none">○ When partners with different HIV status attempt conception, the partner without HIV can choose to take PrEP as an additional method of HIV prevention even if the partner with HIV has achieved viral suppression (CIII).
<p>Rating of Recommendations: A = Strong; B = Moderate; C = Optional</p> <p>Rating of Evidence: I = One or more randomized trials with clinical outcomes and/or validated laboratory endpoints; II = One or more well-designed, nonrandomized trials or observational cohort studies with long-term clinical outcomes; III = Expert opinion</p>

Antepartum HIV Care

Updated: January 31, 2024

Reviewed: January 31, 2024

Panel's Recommendations
<p>In addition to the standard antepartum assessments during pregnancy, the initial evaluation should include an assessment of HIV disease status and recommendations for HIV-related medical care (AI). See Initial Evaluation and Continued Monitoring of HIV-Related Assessments During Pregnancy and Table 4. HIV-Related Antepartum Screenings and Assessments During Pregnancy for the recommended schedule of HIV-related laboratory tests during pregnancy.</p> <p>If clinically indicated, amniocentesis may be performed during pregnancy with HIV after thorough patient-centered counseling on potential risks, benefits, and alternatives.</p> <ul style="list-style-type: none">○ An effective ARV regimen should be used during pregnancy, ideally ensuring undetectable HIV RNA levels (BIII).○ For pregnancies where HIV RNA levels are detectable and amniocentesis is required, consultation with an expert in HIV care during pregnancy should be considered (BIII).○ Data are inadequate to guide decision-making about other invasive diagnostic or therapeutic procedures; an individualized process of shared decision-making is recommended. <p>Counseling for HIV care during pregnancy and postpartum should address the known benefits and potential risks of all medications, including ARV drugs. Counseling about the importance of adherence should be addressed at each visit (AIII).</p> <ul style="list-style-type: none">● Coordination of services among prenatal care providers, primary care, HIV specialty care providers, and, when appropriate, mental health and substance use disorder treatment services; intimate partner violence support services; and public assistance programs is essential to care and enables adherence to antiretroviral therapy (AII).● During pregnancy, providers should initiate counseling about key intrapartum and postpartum considerations, including mode of delivery, lifelong HIV therapy, family planning and contraceptive options, infant feeding, infant ARV prophylaxis, and timing of infant diagnostic testing (AIII).
<p>Rating of Recommendations: A = Strong; B = Moderate; C = Optional</p> <p>Rating of Evidence: I = One or more randomized trials with clinical outcomes and/or validated laboratory endpoints; II = One or more well-designed, nonrandomized trials or observational cohort studies with long-term clinical outcomes; III = Expert opinion</p>

Initial Evaluation and Continued Monitoring of HIV During Pregnancy

Updated: June 12, 2025

Reviewed: June 12, 2025

Panel's Recommendations
<ul style="list-style-type: none">• The plasma HIV RNA levels during pregnancies impacted by HIV should be monitored at the initial antenatal visit with a review of prior HIV RNA levels (AI), 2 to 4 weeks after initiating (or changing) antiretroviral therapy (ART) (BI), monthly until RNA levels are undetectable (BIII), and then at least every 3 months during pregnancy (BIII). HIV RNA levels also should be assessed at approximately 36 weeks gestation, or within 4 weeks of planned delivery, to inform decisions about mode of delivery, the need for intrapartum intravenous zidovudine administration (see Intrapartum HIV Care), and to inform decisions about optimal management for the newborn (see Antiretroviral Management of Infants With In Utero, Intrapartum, or Breastfeeding Exposure to HIV) (AIII).• CD4 T lymphocyte (CD4) cell count should be measured at the initial antenatal visit with review of prior CD4 counts (AI). Patients who have been on ART for ≥ 2 years and who have had consistent viral suppression and CD4 counts that are consistently ≥ 300 cells/mm³ do not need to have their CD4 counts monitored after the initial antenatal visit during this pregnancy, per the Adult and Adolescent Antiretroviral Guidelines (CIII). Patients who have been on ART for < 2 years and have CD4 counts of < 300 cells/mm³, those with inconsistent adherence, or those with detectable viral loads should have CD4 counts monitored every 3 months during pregnancy; patients on ART < 2 years and with CD4 counts ≥ 300 cells/mm³ should have CD4 monitored every 6 months (CIII).• HIV drug-resistance testing (genotypic testing and, if indicated, phenotypic testing) should be reviewed in conjunction with antiretroviral (ARV) history (if prior results are available) and performed during pregnancy in those whose HIV RNA levels are above the threshold for resistance testing (usually > 500 copies/mL to 1,000 copies/mL but may be possible for HIV RNA > 200 to ≤ 500 copies in some laboratories). Testing should be conducted before—<ul style="list-style-type: none">○ Initiating ART in pregnancy when ARV drugs have never been taken previously and testing for ARV drug resistance was not previously conducted (AII);○ Initiating ART in pregnancy when ARV drugs have previously been taken (including those who have received pre-exposure prophylaxis) (AIII); or○ Modifying ARV regimens for pregnancy that occurs while receiving ARV drugs or for suboptimal virologic response to ARV drugs that were started during pregnancy (AII). See Antiretroviral Drug Resistance and Resistance Testing in Pregnancy.• ART should be initiated in pregnancy prior to receiving the results of ARV-resistance tests. ART should be modified, if necessary, based on the results of resistance testing (AII).• Laboratory testing to monitor complications of ARV drugs during pregnancy should be based on what is known about the adverse effects of the drugs being taken (AIII).• When ART is taken during pregnancies impacted by HIV, standard gestational diabetes screening should be conducted (AIII).
<p>Rating of Recommendations: A = Strong; B = Moderate; C = Optional</p> <p>Rating of Evidence: I = One or more randomized trials with clinical outcomes and/or validated laboratory endpoints; II = One or more well-designed, nonrandomized trials or observational cohort studies with long-term clinical outcomes; III = Expert opinion</p>

Antiretroviral Drug Resistance and Resistance Testing in Pregnancy

Updated: January 31, 2024

Reviewed: January 31, 2024

Panel's Recommendations
<ul style="list-style-type: none">• Drug-resistance testing should be performed in the presence of virologic failure and with HIV RNA levels >200 copies/mL (AI for >1,000 copies/mL, AIII for 501–1,000 copies/mL, CIII for confirmed HIV RNA 201–500 copies/mL). When HIV RNA levels are >200 copies/mL but <500 copies/mL, drug-resistance testing may be unsuccessful but should still be considered. Perform resistance testing before—<ul style="list-style-type: none">○ Initiating antiretroviral therapy (ART) during pregnancy when there is no history of prior antiretroviral (ARV) use or prior ARV resistance testing results (AII),○ Initiating ART during pregnancy with prior exposure to ARVs, including pre-exposure prophylaxis (AIII), or○ Modifying ARV regimens during a new pregnancy or when virologic response to ARV drugs during pregnancy is suboptimal (AII).• ART should be initiated during pregnancy before receiving results of ARV-resistance testing; ART should be modified, if necessary, based on the results of resistance assays (AII).• Phenotypic resistance testing is indicated when multidrug resistance is suspected due to previous ARV exposure (BIII).• If the use of an integrase strand transfer inhibitor (INSTI) is being considered and INSTI resistance is a concern, providers should supplement standard resistance testing with a specific INSTI genotypic resistance assay (AIII). INSTI resistance may be a concern if—<ul style="list-style-type: none">○ A patient received prior treatment or pre-exposure prophylaxis that included an INSTI, or○ A patient has had a sexual partner on INSTI therapy who was not virologically suppressed or with unknown viral load.• Documented zidovudine (ZDV) resistance does not affect the indications for use of intrapartum intravenous ZDV (see Intrapartum HIV Care) (BIII).• Choice of ARV regimen for an infant born to a person with known or suspected drug resistance should be determined in consultation with a pediatric HIV specialist, preferably before delivery (Antiretroviral Management of Infants With In Utero, Intrapartum, or Breastfeeding Exposure to HIV) (BIII).• ART should be given during pregnancy to maximally suppress viral replication, which is the most effective strategy for preventing development of resistance and minimizing risk of perinatal transmission (AII).• Prenatal and postpartum counseling should address the importance of ART adherence to reduce the risk of acquired drug resistance (AII).
<p>Rating of Recommendations: A = Strong; B = Moderate; C = Optional</p> <p>Rating of Evidence: I = One or more randomized trials with clinical outcomes and/or validated laboratory endpoints; II = One or more well-designed, nonrandomized trials or observational cohort studies with long-term clinical outcomes; III = Expert opinion</p>

Recommendations for the Use of Antiretroviral Drugs During Pregnancy: Overview

Updated: June 12, 2025

Reviewed: June 12, 2025

Panel's Recommendations

Pregnancy often results in exclusion from clinical trials of antiretroviral (ARV) drugs, resulting in limited data on pharmacokinetics (PK), drug safety, and the efficacy of new ARV drugs in pregnancy and lactation. However, **pregnancy, lactation, or the potential for pregnancy should not preclude the use of drug regimens that would be chosen for people who are not pregnant**, unless adequate drug levels are not likely to be attained in pregnancy or known adverse effects outweigh potential benefits **(AIII)**.

- In most cases of HIV, when antiretroviral therapy (ART) is being used at the time of presentation for pregnancy care, the current ART should be continued if the regimen is tolerated, safe, and effective in suppressing viral replication (defined as a regimen that maintains an HIV RNA level [viral load] less than the lower limits of detection of the assay) **(AII)** (see [Antiretroviral Therapy Use During Prepregnancy and Early Pregnancy](#)).
- If **ART is not already being used during pregnancies impacted by HIV, ART should** be initiated as early in pregnancy as possible, regardless of HIV RNA level or CD4 T lymphocyte cell count, to maximize health and prevent perinatal HIV transmission and sexual transmission **(AI)**. In addition to benefiting personal health and preventing HIV transmission to sexual partners, the goal of ART during pregnancy is to achieve and maintain HIV viral suppression to undetectable levels to reduce the risk of perinatal transmission and maximize health during pregnancy **(AI)**.
- The selection of which ARV drugs to use during pregnancy is best made through shared decision-making between the health care provider and patient after discussion of the known and potential risks and benefits to the patient and fetus, acknowledging limited data **(AIII)**. See [Appendix C: Antiretroviral Counseling Guide for Health Care Providers, Table 6. What to Start: Initial Antiretroviral Regimens During Pregnancy When Antiretroviral Therapy Has Never Been Received](#), and [Table 7. Situation-Specific Recommendations for Use of Antiretroviral Drugs During Pregnancy and When Trying to Conceive](#).
- The Panel on Treatment of HIV During Pregnancy and Prevention of Perinatal Transmission (the Panel) uses a variety of data sources to assign ARV drugs to one of five categories for use in pregnancy: *Preferred*, *Alternative*, *Insufficient Data to Recommend*, *Not Recommended Except in Special Circumstances*, and *Not Recommended*, as outlined in [Table 6. What to Start: Initial Antiretroviral Regimens During Pregnancy When Antiretroviral Therapy Has Never Been Received](#) and [Table 7. Situation-Specific Recommendations for Use of Antiretroviral Drugs During Pregnancy and When Trying to Conceive](#) for a variety of clinical scenarios.
 - When selecting ARV drugs for use in pregnancy or when trying to conceive, the Panel recommends **the** use of ARV drugs in the *Preferred* or *Alternative* categories whenever possible **(AIII)** but also tailors its recommendations to a variety of clinical scenarios; see [Table 7. Situation-Specific Recommendations for Use of Antiretroviral Drugs During Pregnancy and When Trying to Conceive](#).

When choosing an ARV drug regimen and weighing the benefits and risks of specific ARVs for use during pregnancy or in when trying to conceive, providers and patients should consider multiple factors, including adverse effects, drug interactions, PK, convenience of the individual drugs and drug combinations in the regimen, available pregnancy safety and outcome data, virologic efficacy in nonpregnant adults (and during pregnancy if data are available), and the patient's resistance test results and comorbidities **(AIII)**.

Important changes in physiology and volume of distribution during pregnancy may impact drug concentrations and effectiveness in suppressing HIV viral replication, especially later in pregnancy when viral rebound may increase transmission risk and impact **intrapartum and delivery management** (see [Table 9](#) in [Intrapartum HIV Care](#)). Patients and clinicians should review these potential impacts as early in pregnancy as possible when choosing to start, modify, or continue an ARV regimen (**AIII**) (see [Antiretroviral Therapy Use During Prepregnancy and Early Pregnancy](#)).

- The Panel strongly recommends against discontinuing ART during pregnancy (**AII**).
- If an ARV drug regimen must be stopped during pregnancy, all ARV drugs should be stopped simultaneously, and a complete, effective ARV regimen should be reinitiated as soon as possible (**AII**).
- Throughout the prepregnancy, pregnancy, and postpartum periods, clinicians should discuss current and future reproductive desires and contraceptive options, as well as the risks and benefits of conceiving or conceiving again on the current ARV regimen (**AIII**). See [Pregpregnancy Counseling and Care](#) and [Postpartum HIV Management and Follow-Up](#) for more information.
- **Clinicians are encouraged to submit to the Antiretroviral Pregnancy Registry data any time ARV drugs are being used during pregnancy or when conception occurs (AIII).**

Rating of Recommendations: A = Strong; B = Moderate; C = Optional

Rating of Evidence: I = One or more randomized trials with clinical outcomes and/or validated laboratory endpoints; II = One or more well-designed, nonrandomized trials or observational cohort studies with long-term clinical outcomes; III = Expert opinion

Use of Antiretroviral Drugs to Prevent Perinatal HIV Transmission and Improve Health During Pregnancy

Updated: January 31, 2024

Reviewed: January 31, 2024

Panel's Recommendations
<ul style="list-style-type: none">• Antiretroviral therapy (ART) should be initiated as early in pregnancy as possible, regardless of HIV RNA level or CD4 T lymphocyte count, to maximize health outcomes and to prevent perinatal HIV transmission and secondary sexual transmission (AI).• When initiating ART, any necessary support should be provided to achieve viral suppression to undetectable levels as rapidly as possible, and to maintain an undetectable viral load prior to conception, during pregnancy, postpartum, and thereafter (AII). (See Recommendations for Use of Antiretroviral Drugs During Pregnancy: Overview.)• Neonates should receive antiretroviral prophylaxis or presumptive HIV therapy appropriate to their risk of perinatal HIV acquisition (AI). (See Antiretroviral Management of Infants With <i>In Utero</i>, Intrapartum, or Breastfeeding Exposure to HIV.)
<p><i>Rating of Recommendations: A = Strong; B = Moderate; C = Optional</i></p> <p><i>Rating of Evidence: I = One or more randomized trials with clinical outcomes and/or validated laboratory endpoints; II = One or more well-designed, nonrandomized trials or observational cohort studies with long-term clinical outcomes; III = Expert opinion</i></p>

Antiretroviral Therapy When Trying to Conceive

Updated: June 12, 2025

Reviewed: June 12, 2025

Panel's Recommendations
<ul style="list-style-type: none">• Reproductive intentions should be reviewed at each health care encounter. The time before a planned attempt to conceive is an important opportunity to review current and alternative antiretroviral (ARV) regimens and underscore the goal of reaching viral suppression (i.e., undetectable HIV RNA) before and throughout pregnancy, along with many other aspects of preconception planning (see Prepregnancy Counseling and Care) (AIII).• Use of contraception, regardless of type, should never be a requirement to initiate or continue ARV regimens, even if data are limited on use of these ARV regimens in pregnancy (e.g., long-acting injectable cabotegravir and rilpivirine) (AIII). Clinicians should engage in shared decision-making, counsel patients on the potential benefits and risks, and be aware of the potential for reproductive coercion (AIII).• Whenever possible, regimen initiation or changes should be made with sufficient time to achieve viral suppression before attempting to conceive or becoming pregnant (AII).
<p><i>Rating of Recommendations: A = Strong; B = Moderate; C = Optional</i></p> <p><i>Rating of Evidence: I = One or more randomized trials with clinical outcomes and/or validated laboratory endpoints; II = One or more well-designed, nonrandomized trials or observational cohort studies with long-term clinical outcomes; III = Expert opinion</i></p>

Lack of Experience With Antiretroviral Drugs During Pregnancy and Prior to Pregnancy (Antiretroviral-Naive)

Updated: June 12, 2025

Reviewed: June 12, 2025

Panel's Recommendations
<ul style="list-style-type: none">• During pregnancy, when there is a lack of experience with antiretroviral therapy (ART), ART should be initiated as soon as possible, even before results of drug-resistance testing are available, as viral suppression earlier in pregnancy has been associated with lower risk of transmission (AI). When ART is initiated before the results of the drug-resistance assays are available, the antiretroviral (ARV) regimen should be modified, if necessary, based on the resistance assay results (AII).• During pregnancy, when there is a lack of experience with ART and no previous use of long-acting cabotegravir (CAB-LA) as pre-exposure prophylaxis (PrEP), Preferred regimens consist of the integrase strand transfer inhibitors (INSTIs) dolutegravir (DTG) or bictegravir (BIC) plus a tenofovir-containing dual-nucleoside reverse transcriptase inhibitor combination (see Table 6. What to Start: Initial Antiretroviral Regimens During Pregnancy When Antiretroviral Therapy Has Never Been Received and Early (Acute and Recent) HIV Infection) (AIII). Preferred regimens include:<ul style="list-style-type: none">○ DTG plus (tenofovir disoproxil fumarate [TDF] or tenofovir alafenamide [TAF]) plus (emtricitabine [FTC] or lamivudine [3TC]) or○ BIC plus TAF plus FTC (available as the fixed-dose combination BIC/TAF/FTC)• In the context of HIV during pregnancy, when CAB-LA has previously been used as PrEP, genotype testing should be performed before the start of ART and should include screening for INSTI-resistance mutations (AIII). ART should be started as soon as possible, before the results of genotype testing are available.<ul style="list-style-type: none">○ Preferred regimens for those who have received CAB-LA as PrEP should consist of the ritonavir-boosted protease inhibitor darunavir/ritonavir, rather than an INSTI, with (TAF or TDF) plus (FTC or 3TC) (see Previous Experience With Antiretroviral Medications but Not on Antiretroviral Therapy During Current Pregnancy) (AIII).• Alternative ARVs for the treatment of HIV during pregnancy when ARV drugs have never been used are shown in Table 6. What to Start: Initial Antiretroviral Regimens During Pregnancy When Antiretroviral Therapy Has Never Been Received.• Choice of ART regimen should be based on results of resistance testing, concurrent medical conditions, and current recommendations for ART in pregnancy (AII). For additional information, see Recommendations for Use of Antiretroviral Drugs During Pregnancy: Overview.
<p>Rating of Recommendations: A = Strong; B = Moderate; C = Optional</p> <p>Rating of Evidence: I = One or more randomized trials with clinical outcomes and/or validated laboratory endpoints; II = One or more well-designed, nonrandomized trials or observational cohort studies with long-term clinical outcomes; III = Expert opinion</p>

Antiretroviral Therapy Use During Prepregnancy and Early Pregnancy

Updated: June 12, 2025

Reviewed: June 12, 2025

Panel's Recommendations
<ul style="list-style-type: none">• In most cases, when antiretroviral therapy (ART) is used at the time of presentation for pregnancy care, ART regimens should be continued during pregnancy, provided that the regimen is tolerated, safe, and effective in suppressing viral replication (defined as a regimen that maintains an HIV viral load less than lower limits of detection of the assay) (AII).• When considering changes in ART during pregnancy, the Panel on Treatment of HIV During Pregnancy and Prevention of Perinatal Transmission recommends patient counseling to support informed decision-making (AIII). See Appendix C: Antiretroviral Counseling Guide for Health Care Providers.• Clinicians need to consider whether pharmacokinetic changes in pregnancy, especially in the second and third trimester, may lead to a lower plasma level of some antiretroviral (ARV) drugs and necessitate increased doses, more frequent dosing, boosting, more frequent viral load monitoring, or a change in the ARV regimen (AII). See Appendix B: Supplement: Safety and Toxicity of Individual Antiretroviral Agents in Pregnancy.• Although there are no data on the use of two-drug oral regimens during pregnancy (e.g., dolutegravir [DTG] plus lamivudine [3TC], DTG plus rilpivirine [RPV]), the component drugs are recommended as <i>Preferred</i> or <i>Alternative</i> for use in pregnancy. If DTG/3TC or DTG/RPV is used during pregnancy at the time of presentation and viral suppression has been successfully maintained, the two-drug regimen can be continued (BIII) with more frequent viral load monitoring every 1 to 2 months throughout pregnancy (CIII).• Data about the use of long-acting injectable cabotegravir and RPV during pregnancy are limited and insufficient to make a recommendation for or against use in pregnancy. When this regimen is used during pregnancy at the time of presentation, counseling about limited data should be provided. In conjunction with an HIV expert, a shared decision should be reached about continuing this regimen with frequent viral load monitoring (every 1–2 months) or switching to one of the Preferred or Alternative three-drug ARV regimens (CIII).• The use of cobicistat (COBI)-containing regimens during pregnancy is associated with lower plasma drug exposures due to physiologic changes associated with pregnancy. These lower drug exposures pose an increased risk of virologic failure during the second and third trimesters of pregnancy. When one of these regimens is used during pregnancy at the time of presentation, a shared decision should be reached about whether to continue the regimen with frequent viral load monitoring or to switch to a different regimen that is recommended for use during pregnancy (BIII) (see Table 6. What to Start: Initial Antiretroviral Regimens During Pregnancy When Antiretroviral Therapy Has Never Been Received and Table 7. Situation-Specific Recommendations for Use of Antiretroviral Drugs). If a COBI-containing regimen is continued, absorption should be optimized by taking the drugs with food and following instructions for administration (e.g., spacing administration of vitamins containing iron and calcium) (AII). In these instances, viral load should be monitored more frequently (i.e., every 1–2 months) (CIII).• When a regimen that is not fully suppressive is used during pregnancy at presentation, adherence barriers, drug–drug and drug–food interactions, and HIV drug resistance should be carefully evaluated to determine whether a change in ART regimen is indicated. See Lack of Viral Suppression While on Antiretroviral Therapy in Pregnancy for additional guidance.• If an ARV regimen is altered during pregnancy, the new regimen should include ARV drugs that are recommended for use in pregnancy (BIII) (see Table 6. What to Start: Initial Antiretroviral Regimens During Pregnancy When Antiretroviral Therapy Has Never Been Received and Table 7. Situation-Specific Recommendations for Use of Antiretroviral Drugs), and more frequent virologic monitoring is warranted until stable viral suppression is observed (CIII).• If ART is used during pregnancy, ARV drug-resistance testing should be performed prior to changing an ARV regimen when HIV RNA levels >200 copies/mL (AI for >1,000 copies/mL, AIII for 501–1,000 copies/mL, CIII for 201–500 copies/mL). For confirmed HIV RNA levels >200 copies/mL but <500 copies/mL, drug-resistance testing may be unsuccessful but should still be considered. See Antiretroviral Drug Resistance and Resistance Testing in Pregnancy. <p>Please see Intrapartum HIV Care for guidance about use of intrapartum intravenous zidovudine prophylaxis and scheduled cesarean birth for instances when viral suppression on ART has not been achieved at birth.</p>
Rating of Recommendations: A = Strong; B = Moderate; C = Optional

Rating of Evidence: I = One or more randomized trials with clinical outcomes and/or validated laboratory endpoints; II = One or more well-designed, nonrandomized trials or observational cohort studies with long-term clinical outcomes; III = Expert opinion

Previous Experience With Antiretroviral Medications but Not Currently on Antiretroviral Therapy During Current Pregnancy

Updated: June 12, 2025

Reviewed: June 12, 2025

Panel's Recommendations
<ul style="list-style-type: none">• In choosing an antiretroviral therapy (ART) regimen for pregnancy when antiretroviral (ARV) medications have been used previously, clinicians should obtain an accurate history of all prior ARV medications used for HIV treatment or prevention of HIV transmission, including virologic efficacy, tolerance of the medications, results of prior resistance testing, and barriers to adherence (AIII).• ART should be restarted before receiving the results of ARV drug-resistance testing because longer durations of ART during pregnancy have been associated with reduced perinatal transmission rates. ART should be modified, if necessary, based on the results of resistance assays (AIII).
<p><i>Rating of Recommendations: A = Strong; B = Moderate; C = Optional</i></p> <p><i>Rating of Evidence: I = One or more randomized trials with clinical outcomes and/or validated laboratory endpoints; II = One or more well-designed, nonrandomized trials or observational cohort studies with long-term clinical outcomes; III = Expert opinion</i></p>

Lack of Viral Suppression While on Antiretroviral Therapy in Pregnancy

Updated: June 12, 2025

Reviewed: June 12, 2025

Panel's Recommendations
<ul style="list-style-type: none">• Regular viral load monitoring is needed in pregnancy to quickly detect lack of viral suppression (AII). See Initial Evaluation and Continued Monitoring of HIV During Pregnancy.• To detect problems with viral suppression early, more frequent viral load monitoring (every 1–2 months) is recommended when regimens associated with lower drug levels in the third trimester or drugs with limited or no pharmacokinetic (PK) data about use in pregnancy are used (AII). See Table 7. Situation-Specific Recommendations for Use of Antiretroviral Drugs During Pregnancy and When Trying to Conceive.• When lack of suppression is identified, a thoughtful evaluation of potential contributing factors is needed, including barriers to adherence, drug resistance, drug–drug and drug–food interactions, PK changes in pregnancy that affect drug levels, and combinations of these factors. Viral suppression management should address each of these factors, if relevant (AII) (see Antiretroviral Drug Resistance and Resistance Testing in Pregnancy and Virologic Failure in the Adult and Adolescent Antiretroviral Guidelines). After these factors are addressed, repeat viral load monitoring within 2 to 4 weeks (AII).• In general, adding a single antiretroviral (ARV) drug to a virologically failing regimen is not recommended because this would rarely result in full virologic suppression and, therefore, may cause the development of resistance to one or more drugs in the regimen (BII).• Consider consulting with an HIV treatment specialist when modifying antiretroviral therapy (ART) due to inadequate viral suppression (BIII). Consultation is also available through the National Perinatal HIV/AIDS Hotline (1-888-448-8765).• Discontinuing or briefly interrupting ART may lead to a rapid increase in HIV RNA, a decrease in CD4 T lymphocyte cell count, the development of resistance mutations, and an increase in the risk of perinatal HIV transmission and clinical progression. Therefore, this strategy is not recommended (AI). <p>Please see Intrapartum HIV Care for guidance about use of intrapartum intravenous zidovudine prophylaxis and scheduled cesarean birth for pregnancy when viral suppression has not been achieved on ART.</p>
<p>Rating of Recommendations: A = Strong; B = Moderate; C = Optional</p> <p>Rating of Evidence: I = One or more randomized trials with clinical outcomes and/or validated laboratory endpoints; II = One or more well-designed, nonrandomized trials or observational cohort studies with long-term clinical outcomes; III = Expert opinion</p>

Teratogenicity

Updated: January 31, 2024

Reviewed: January 31, 2024

Panel's Recommendations
<ul style="list-style-type: none">• All cases of antiretroviral (ARV) drug exposure during pregnancy should be reported to the Antiretroviral Pregnancy Registry (AIII).• Based on multiple studies indicating no difference in rates of total birth defects for first-trimester exposure compared with later ARV drug exposures, prenatal counseling should include that ARV drugs generally do not increase the risk of birth defects during pregnancy (BIII). Providers should be aware that data on the risks of birth defects for many ARV drugs are limited and evolving (see Appendix B: Supplement: Safety and Toxicity of Individual Antiretroviral Agents in Pregnancy).• Antiretroviral therapy (ART) should be initiated as early as possible in all pregnancies with HIV (AI). Pregnant people with HIV should not delay initiating ART due to concerns about teratogenicity with first-trimester exposure (AIII).• The Panel on Treatment of HIV During Pregnancy and Prevention of Perinatal Transmission emphasizes the importance of counseling and informed decision-making regarding all ARV regimens before, during, and after pregnancy (AIII). For additional information, see Appendix C: Antiretroviral Counseling Guide for Health Care Providers.• Clinicians should discuss future reproductive plans and timing, as well as the risks and benefits of conceiving on specific ARV medications, and the use of appropriate contraceptive options to prevent unplanned pregnancies (AIII). See Prepregnancy Counseling and Care, Introduction to the Selection of Antiretroviral Drugs In Pregnancy, Antiretroviral Therapy When Trying to Conceive, and Table 7. Situation-Specific Recommendations for Use of Antiretroviral Drugs During Pregnancy and When Trying to Conceive.
<p><i>Rating of Recommendations: A = Strong; B = Moderate; C = Optional</i></p> <p><i>Rating of Evidence: I = One or more randomized trials with clinical outcomes and/or validated laboratory endpoints; II = One or more well-designed, nonrandomized trials or observational cohort studies with long-term clinical outcomes; III = Expert opinion</i></p>

Antiretroviral Drug Regimens and Pregnancy Outcomes

Updated: June 12, 2025

Reviewed: June 12, 2025

Panel's Recommendations
<ul style="list-style-type: none">• Given the clear and proven benefits of HIV treatment in pregnancy, antiretroviral therapy (ART) should not be withheld due to concern for possible associations with adverse neonatal and pregnancy outcomes (AII).• ART use should not be avoided or withheld before conception or in early pregnancy for the purpose of preventing preterm birth (AII).• ART should not be avoided or withheld to prevent hypertensive disorders of pregnancy (HDP) or stopped if HDP develop (AIII).• Enhanced antenatal surveillance of fetal growth in the third trimester may be considered for pregnancy in the setting of HIV, especially those who are prescribed ART with boosted protease inhibitors, due to the increased risk for low birth weight or small-for-gestational-age infants (CIII).
<p><i>Rating of Recommendations: A = Strong; B = Moderate; C = Optional</i></p> <p><i>Rating of Evidence: I = One or more randomized trials with clinical outcomes and/or validated laboratory endpoints; II = One or more well-designed, nonrandomized trials or observational cohort studies with long-term clinical outcomes; III = Expert opinion</i></p>

Special Populations: Hepatitis B Virus/HIV Coinfection

Updated: January 31, 2024

Reviewed: January 31, 2024

Panel's Recommendations
<p>Screening for HBV infection should be performed during each pregnancy impacted with HIV unless HBV/HIV coinfection has been confirmed or HBV immunity has been documented via serologic testing (AIII).</p> <p>A negative screening for HBV infection and lack of HBV immunity (i.e., HBV surface antigen negative, HBV core antibody negative, and HBV surface antibody negative) warrants administration of the HBV vaccine series (AII).</p> <ul style="list-style-type: none">• In the context of chronic HBV infection during pregnancy, if the hepatitis A virus (HAV) vaccine series has not been previously administered, screening for immunity to HAV infection should occur. If they screen negative for HAV antibodies (either immunoglobulin G [IgG] or total antibody [IgG and immunoglobulin M]), they should receive the HAV vaccine series (AIII).• After delivery, treatment of HBV/HIV coinfection with antiretroviral regimens that include drugs with anti-HBV activity (tenofovir disoproxil fumarate or tenofovir alafenamide plus lamivudine or emtricitabine) should be continued (AII).• Counseling about signs and symptoms of liver toxicity should be given when ART is administered during pregnancy with HBV/HIV coinfection, and liver transaminases should be assessed 1 month after initiating ART and at least every 3 months thereafter during pregnancy (BIII).• If medications with anti-HBV activity are discontinued during pregnancy with HBV/HIV coinfection, frequent monitoring of liver function tests for potential exacerbation of HBV infection is recommended, with prompt reinstitution of treatment for HBV when a flare is suspected (BIII).• HBV/HIV coinfection is not an independent indication for cesarean delivery (see Intrapartum Care for People with HIV) (AIII).• Infants with perinatal HBV exposure should receive hepatitis B immune globulin and the first dose of the HBV vaccine series as soon as possible and within 12 hours of birth (AI).
<p><i>Rating of Recommendations: A = Strong; B = Moderate; C = Optional</i></p> <p><i>Rating of Evidence: I = One or more randomized trials with clinical outcomes and/or validated laboratory endpoints; II = One or more well-designed, nonrandomized trials or observational cohort studies with long-term clinical outcomes; III = Expert opinion</i></p>

Special Populations: Hepatitis C Virus/HIV Coinfection

Updated: January 31, 2024

Reviewed: January 31, 2024

Panel's Recommendations
<ul style="list-style-type: none">• Hepatitis C virus (HCV) screening should be performed during each pregnancy, ideally at the initial prenatal visit (AIII).<ul style="list-style-type: none">○ HCV antibody testing, with confirmatory HCV RNA polymerase chain reaction testing if the antibody test is positive, is recommended for screening (AI).• HCV screening may be repeated later in pregnancy if the initial test is negative but persistent or new risk factors for HCV are identified (e.g., new or ongoing injection or intranasal substance use) (AIII).• For those known to be HCV antibody-positive, HCV RNA and liver function tests should be checked at the beginning of prenatal care to determine the risk of perinatal transmission and the severity of liver disease (AIII).• Hepatitis B surface antigen testing is advised during each pregnancy, ideally in the first trimester, including for HIV/HCV coinfection cases. If results are negative and there is no immunity, the hepatitis B virus vaccine series should be initiated (see Hepatitis B Virus/HIV Coinfection) (AIII).• For pregnancies with HCV infection where the hepatitis A virus (HAV) vaccine series has not been received, HAV immunity should be assessed (AIII). If testing is negative for HAV antibodies (either immunoglobulin G [IgG] or total antibody [IgG and immunoglobulin M]), the HAV vaccine series should be provided (AIII).• Currently, treatment of HCV during pregnancy is not recommended (unless part of an approved experimental protocol) because of the lack of safety data on the use of HCV direct-acting antiviral agents during pregnancy. If considering initiating HCV treatment during a pregnancy with HCV/HIV coinfection, consultation with an expert in HIV and HCV is strongly recommended (AIII).• Recommendations for antiretroviral therapy (ART) are the same for all pregnancies with HIV, including in the context of HCV coinfection (AIII).• For pregnancies with HCV/HIV coinfection and ART use, counseling on the signs and symptoms of liver toxicity should be provided, and hepatic transaminases should be assessed 1 month after initiating ART and at least every 3 months during pregnancy (BIII).• Postpartum HCV treatment with direct-acting antiviral agents should be recommended and offered (AI).• Post-delivery evaluation of HCV RNA is advised for HCV infection to check for spontaneous clearance, particularly if initiation of postpartum HCV therapy is under consideration (BII).• HCV/HIV coinfection is not an independent indication for cesarean delivery (see Intrapartum HIV Care) (AIII).• Infants exposed to HCV/HIV coinfection during pregnancy or delivery should be evaluated for HCV infection (AIII). Decisions regarding the specific type of assays to use for HCV screening in children and the timing of those assays should be made after consultation with an expert in pediatric HCV infection (AIII).
<p><i>Rating of Recommendations: A = Strong; B = Moderate; C = Optional</i></p> <p><i>Rating of Evidence: I = One or more randomized trials with clinical outcomes and/or validated laboratory endpoints; II = One or more well-designed, nonrandomized trials or observational cohort studies with long-term clinical outcomes; III = Expert opinion</i></p>

HIV-2 and Pregnancy

Updated: June 12, 2025

Reviewed: June 12, 2025

Panel's Recommendations

- HIV-2 infection should be considered in pregnancy when the virus is endemic in the country of origin or the partner's country of origin (AII).
- When pregnant or trying to conceive with HIV-2 infection, treatment should be based on the guidelines for HIV-1 infection but using antiretroviral (ARV) drugs that are active against HIV-2 (AIII).
- ARV regimens for use during pregnancy (and when trying to conceive) with HIV-2 mono-infection or HIV-1/HIV-2 coinfection should include an integrase strand transfer inhibitor (INSTI) recommended for use in pregnancy (bictegravir or dolutegravir) plus two nucleoside reverse transcriptase inhibitors (NRTIs) (AII). A recommended alternative regimen is ritonavir-boosted darunavir plus two NRTIs (BII). See Recommended Antiretroviral Therapy for Treating HIV-2 Infection During Pregnancy below and [Recommendations for the Use of Antiretroviral Drugs During Pregnancy: Overview](#).
- During pregnancy (and when trying to conceive) with HIV-2 mono-infection or HIV-1/HIV-2 coinfection, immediate antiretroviral therapy (ART) is recommended (AII).
- If ART is already being used during pregnancy with drugs that are active against HIV-2, treatment should be continued (AIII).
- As with HIV-1, the possibility of hepatitis B virus coinfection should be considered when choosing an ARV regimen to treat HIV-2 (AI) (see [Hepatitis B Virus/HIV Coinfection](#)).
- HIV-2 RNA, CD4 T lymphocyte (CD4) cell counts, and clinical status should be monitored for response to treatment (AII). In the context of HIV-2, regular CD4 testing should be continued even with below detectable HIV RNA levels (viral load) because disease progression can occur even with undetectable viral load (AIII). However, monitoring HIV-2 plasma viral loads in pregnancy and receiving the results in a timely manner can be difficult because plasma samples must be sent to the [University of Washington](#) or the [New York State Department of Health](#).
- HIV-2 resistance may occur with INSTIs, NRTIs, or protease inhibitors. However, no validated HIV-2 genotypic or phenotypic resistance assays are approved for clinical use.
- During pregnancy and when trying to conceive with virologic or immunologic failure, a new ART regimen should be considered in consultation with an HIV expert. For multidrug-resistant virus, ibalizumab and lenacapavir demonstrate *in vitro* activity against HIV-2 but are not recommended except in special circumstances due to insufficient efficacy, pharmacokinetic, and safety data in pregnancy. Shared decision-making should be used when selecting a new ART regimen.
- ARV management of infants perinatally exposed to HIV-2 mono-infection or HIV-1/HIV-2 coinfection should follow recommendations for infants perinatally exposed to HIV-1 infection (see [Antiretroviral Management of Infants With In Utero, Intrapartum, or Breastfeeding Exposure to HIV, Table 11](#), and [Table 12](#)) using drugs that are active against HIV-2 (AIII) (see Care of Infants With *In Utero*, Intrapartum, or Breastfeeding Exposure to HIV-2 below). Nevirapine (NVP) should not be used because it lacks activity against HIV-2.

In the context of HIV-2, the same patient-centered, evidence-based counseling should be provided according to the guidance for HIV-1 to support shared decision-making about infant feeding options prior to and during pregnancy; counseling and plans for infant feeding should be reviewed again after delivery (AIII) (see [Preventing HIV Transmission During Infant Feeding](#)).
- For infants perinatally exposed to HIV-2 infection, ARV prophylaxis during breastfeeding should follow recommendations for infants perinatally exposed to HIV-1 infection (see Antiretroviral Prophylaxis for Breastfeeding Infants in [Antiretroviral Management of Infants With In Utero, Intrapartum, or Breastfeeding Exposure to HIV, Table 12](#), and [Table 12.1](#)). If extended ARV prophylaxis is used, infants should receive lamivudine since NVP lacks activity against HIV-2 (CIII).
- If maternal HIV-2 infection is suspected or confirmed, infant diagnostic testing for HIV-2 can follow the same schedule as for infants perinatally exposed to HIV-1 using virologic assays to diagnose HIV-2 infection. See [Diagnosis of HIV Infection in Infants and Children](#) and [Table 13. Recommended Virologic Testing Schedules for Infants With Perinatal and Breastfeeding Exposure to HIV](#) for guidance about infant testing.

Rating of Recommendations: A = Strong; B = Moderate; C = Optional

Rating of Evidence: I = One or more randomized trials with clinical outcomes and/or validated laboratory endpoints; II = One or more well-designed, nonrandomized trials or observational cohort studies with long-term clinical outcomes; III = Expert opinion

Prenatal Care, Antiretroviral Therapy, and HIV Management When HIV Was Perinatally Acquired

Updated: January 31, 2024

Reviewed: January 31, 2024

Panel's Recommendations
<ul style="list-style-type: none">• The management of prenatal care and general principles of antiretroviral therapy (ART) and HIV management do not differ between perinatally acquired HIV (PHIV) or non-perinatally acquired HIV during pregnancy (AII).• PHIV is often associated with extensive ART experience, and multidrug antiretroviral (ARV) resistance may be a factor at the onset of pregnancy due to long-term HIV exposure and prior adherence difficulties. Consultation with experts in HIV and pregnancy is recommended when the presence of extensive drug resistance warrants the use of ARV drugs for which there is limited experience in pregnancy (AIII).• Managing PHIV during pregnancy necessitates enhanced focus on adherence interventions during pregnancy and after delivery (AII).
<p><i>Rating of Recommendations: A = Strong; B = Moderate; C = Optional</i></p> <p><i>Rating of Evidence: I = One or more randomized trials with clinical outcomes and/or validated laboratory endpoints; II = One or more well-designed, nonrandomized trials or observational cohort studies with long-term clinical outcomes; III = Expert opinion</i></p>

Early (Acute and Recent) HIV Infection

Updated: June 12, 2025

Reviewed: June 12, 2025

Panel's Recommendations

- When early^a (acute and recent) HIV infection is suspected during pregnancy, the postpartum period, or breastfeeding, a plasma HIV RNA test should be obtained in conjunction with an antigen/antibody immunoassay test (AII). See [Early \(Acute and Recent\) HIV Infection](#) in the [Adult and Adolescent Antiretroviral Guidelines](#) and the Centers for Disease Control and Prevention (CDC) [HIV testing algorithm](#) for more information.

Repeat HIV testing in the third trimester is recommended during pregnancy when initial HIV test results are negative and there is increased risk of acquiring HIV, including instances when care is received in facilities that have an HIV incidence of ≥ 1 case per 1,000 women experiencing pregnancy screened per year, the jurisdiction of residence (state or county) has an elevated HIV incidence among females aged 15 to 45 years (>17 per 100,000 females aged 15–45 years), or the state or territory of residence requires third-trimester testing (see [Pregnancy and Postpartum HIV Testing and Identification of Perinatal and Postnatal HIV Exposure](#)) (AII). Annual state- and county-level HIV incidence among females is available at CDC's National Center for HIV, Viral Hepatitis, STD, and Tuberculosis Prevention [AtlasPlus webpage](#).

- Antiretroviral therapy (ART) should be initiated as soon as possible after HIV diagnosis (AII). The goals of ART are to suppress HIV RNA to undetectable levels (AI), prevent perinatal and horizontal HIV transmission (AI), and preserve immune function (AIII).
- A blood sample for genotypic resistance testing should be sent to the laboratory before initiating ART (AIII).
 - Standard genotypic drug-resistance testing should be performed for mutations in the reverse transcriptase and protease genes in the setting of early HIV (AIII).
 - Genotype testing for integrase strand transfer inhibitor (INSTI) resistance should be performed in the following situations:
 - For those who acquire HIV during or after the use of long-acting cabotegravir (CAB-LA) as pre-exposure prophylaxis (PrEP), or
 - If transmitted INSTI resistance is suspected, or
 - If HIV diagnosis occurs after receiving an INSTI-based regimen for post-exposure prophylaxis (AIII).
- ART should be initiated before drug-resistance test results are available. The regimen can be adjusted when results are available to optimize virologic response.

In early (acute and recent) HIV infection when there is no history of using CAB-LA as PrEP, one of the following Preferred antiretroviral (ARV) regimens are recommended for initial ART^b (AIII):

- Dolutegravir (DTG) with (tenofovir alafenamide fumarate [TAF] or tenofovir disoproxil fumarate [TDF])^c plus (emtricitabine [FTC] or lamivudine [3TC]), or
- Bictegravir (BIC)/TAF/FTC

In early (acute and recent) HIV infection and a history of CAB-LA use as PrEP, a regimen of ritonavir-boosted darunavir (DRV/r) with (TAF or TDF) plus (FTC or 3TC) is recommended for initial ART (AIII).

- Use of an empiric INSTI-containing regimen is not recommended unless genotype testing shows no evidence of INSTI resistance (AIII). This is because INSTI resistance may be present in those who acquire HIV during and possibly after the use of CAB-LA as PrEP.
- If baseline drug-resistance tests show no evidence of INSTI resistance, a switch to one of the Preferred INSTI-based regimens with DTG or BIC (listed above) should be considered.

- See [Table 6. What to Start: Initial Antiretroviral Regimens During Pregnancy When Antiretroviral Therapy Has Never Been Received](#), [Table 7. Situation-Specific Recommendations for Use of Antiretroviral Drugs During Pregnancy and When Trying to Conceive](#), [Recommendations for Use of Antiretroviral Drugs During Pregnancy](#), [Appendix C: Antiretroviral Counseling Guide for Health Care Providers](#), and [Early \(Acute and Recent\) HIV Infection in the Adult and Adolescent Antiretroviral Guidelines](#) for more information.
- When early HIV infection is diagnosed during the postpartum period, [decisions on HIV drug-resistance testing and ARV regimens should be guided by recommendations outlined in the Early \(Acute and Recent\) HIV Infection](#) section of the [Adult and Adolescent Antiretroviral Guidelines](#).
- The Panel on Treatment of HIV During Pregnancy and Prevention of Perinatal Transmission emphasizes the importance of counseling and informed decision-making regarding all ARV regimens for HIV (AIII).
- When ART is initiated, providers should counsel on the importance of strict adherence to rapidly achieve and maintain viral suppression (AIII).
- When HIV is diagnosed during breastfeeding, [counseling should be provided about the Panel's recommendation to discontinue breastfeeding immediately to reduce the risk of postnatal HIV transmission to the infant](#) (see [Preventing HIV Transmission During Infant Feeding](#)) (AII).
- Infants perinatally exposed to early HIV that was diagnosed during pregnancy or breastfeeding should receive [immediate diagnostic testing and an ARV regimen](#). The ARV regimen will vary based on when parental infection occurred, treatment response, and viral load at delivery (see [Table 11. Antiretroviral Management of Infants With In Utero or Intrapartum Exposure to HIV](#) and [Table 12.1. Antiretroviral Prophylaxis Dosing for Infants Who Are Breastfed in Antiretroviral Management of Infants With In Utero, Intrapartum, or Breastfeeding Exposure to HIV and Diagnosis of HIV Infection in Infants and Children](#)) (AII). Consulting a pediatric HIV specialist regarding appropriate infant management is strongly recommended.

^a Early HIV infection represents either acute or recent HIV infection.

^b Because of the current low rates of transmitted INSTI resistance in the United States, even when there is suspicion that HIV was acquired from a partner with virologic failure while on an INSTI, an INSTI-based regimen can be started while awaiting the results of the INSTI genotype.

Rating of Recommendations: A = Strong; B = Moderate; C = Optional

Rating of Evidence: I = One or more randomized trials with clinical outcomes and/or validated laboratory endpoints; II = One or more well-designed, nonrandomized trials or observational cohort studies with long-term clinical outcomes; III = Expert opinion

Intrapartum HIV Care

Updated: June 12, 2025

Reviewed: June 12, 2025

Panel's Recommendations

HIV Testing When Maternal HIV Status is Unknown in Labor

- Expedited antigen/antibody HIV testing should be performed when HIV status is unknown during labor and when there is increased risk of HIV infection but retesting was not performed in the third trimester **(AII)**. See [Pregnancy and Postpartum HIV Testing and Identification of Perinatal and Postnatal HIV Exposure](#) for more information.
 - If results are positive, an HIV-1/HIV-2 antibody differentiation test and an HIV-1 RNA assay should be done as soon as possible, and intravenous (IV) zidovudine (ZDV) should be initiated pending the result of the differentiation test **(AII)**.
 - If acute or recent HIV infection is suspected or if recent HIV exposure has occurred, an HIV RNA assay also should be done at the time of expedited antigen/antibody testing **(AII)**. See [Early \(Acute and Recent\) HIV Infection](#).

Intrapartum Antiretroviral Therapy, Zidovudine Prophylaxis, and Mode of Delivery in the Context of HIV During Pregnancy

- See [Table 9. Intrapartum Care and Recommended Interventions to Prevent Perinatal HIV Transmission](#) below.
- Patients should continue taking their antepartum antiretroviral therapy (ART) on schedule during labor and before scheduled cesarean birth **(AIII)**.
- **Based on laboratory and clinical information near the time of birth**, intrapartum IV ZDV should be administered in the following situations if—
 - HIV RNA >1,000 copies/mL,
 - Unknown HIV RNA,
 - Known or suspected lack of adherence since the last HIV RNA result, *or*
 - A positive expedited antigen/antibody HIV test result during labor **(AI)**.
- Begin IV ZDV when patients present in labor or at least 3 hours prior to scheduled cesarean birth **(AII)**.
- When HIV RNA is >1,000 copies/mL or is unknown near the time of birth, scheduled cesarean birth at 38 weeks gestation is recommended to minimize perinatal HIV transmission, irrespective of administration of antepartum ART **(AII)**. **Given the potential for rapid decreases in viral load with current ART options, individualized birth plans to extend these pregnancies beyond 38 weeks to avoid the need for a cesarean birth can be considered with expert consultation and shared decision-making.** Expert guidance from the [National Perinatal HIV/AIDS Clinical Consultation Center](#) (1-888-448-8765) may be helpful when choosing to develop an individualized birth plan.
 - Management of patients originally scheduled for cesarean birth because of HIV RNA >1,000 copies/mL who present in labor or with ruptured membranes must be individualized at the time of presentation **(BII)**. In these circumstances, evidence is insufficient to determine whether cesarean birth reduces the risk of perinatal HIV transmission. Consultation with an expert in perinatal HIV (e.g., telephone consultation with the [National Perinatal HIV/AIDS Clinical Consultation Center](#) [1-888-448-8765]) may be helpful for rapidly developing an individualized birth plan.

When ART is used and HIV RNA levels are $\leq 1,000$ copies/mL near the time of birth (within 4 weeks of birth):

- IV ZDV **is not required** when ALL of the following criteria are met: (1) ART is being taken, (2) HIV RNA levels are <50 copies/mL within 4 weeks of birth, and (3) adherence to the ARV regimen is achieved (**BII**).
- IV ZDV may be considered when HIV RNA levels are ≥ 50 copies/mL and $\leq 1,000$ copies/mL within 4 weeks of birth (**BII**). Data are insufficient to determine whether administration of IV ZDV when HIV RNA levels are between 50 copies/mL and 1,000 copies/mL provides any additional protection against perinatal HIV transmission. This decision can be made on a case-by-case basis, taking into consideration their recent ART adherence and preferences, and involving expert consultation if needed (**CII**).
- Scheduled cesarean birth performed solely for prevention of perinatal HIV transmission in those receiving ART with HIV RNA $\leq 1,000$ copies/mL near the time of birth is **not recommended (AII)**.
- When HIV RNA levels are $\leq 1,000$ copies/mL during pregnancy, if scheduled cesarean birth or induction of labor is indicated for non-HIV-related reasons, it should be performed at the standard time for obstetric indications (**AII**). Labor should not be induced to prevent perinatal HIV transmission.
- When ART is being taken and HIV RNA levels are $\leq 1,000$ copies/mL during pregnancy, longer duration of ruptured membranes is not associated with an increased risk of perinatal transmission and is not an indication for cesarean birth to prevent HIV transmission (**BII**).

Other Intrapartum Management Considerations (See [Table 9](#) Below)

- Fetal scalp electrodes should be avoided in pregnancies impacted by HIV when viral suppression is achieved and should not be used in pregnancies when viral suppression (≥ 50 copies/mL) is not achieved (**BIII**).
- Artificial rupture of membranes and operative vaginal birth with forceps or a vacuum extractor should follow standard obstetric indications but should be avoided, if possible, in those with HIV RNA ≥ 50 copies/mL (**BIII**).
- The ARV regimen a patient is receiving should be taken into consideration when using methergine to treat excessive postpartum bleeding caused by uterine atony.
 - In patients who are receiving a cytochrome P450 (CYP) 3A4 enzyme inhibitor (e.g., a protease inhibitor or cobicistat), methergine should be used only if no alternative treatments for postpartum hemorrhage are available and the need for pharmacologic treatment outweighs the risks. If methergine is used, it should be administered at the lowest effective dose for the shortest possible duration (**BIII**).
 - In patients who are receiving a CYP3A4 enzyme inducer—such as nevirapine, efavirenz, or etravirine—additional uterotonic agents may be needed because of the potential for decreased methergine levels and inadequate treatment effect (**BIII**).

Rating of Recommendations: A = Strong; B = Moderate; C = Optional

Rating of Evidence: I = One or more randomized trials with clinical outcomes and/or validated laboratory endpoints; II = One or more well-designed, nonrandomized trials or observational cohort studies with long-term clinical outcomes; III = Expert opinion

Postpartum HIV Management and Follow-Up

Updated: January 31, 2024

Reviewed: January 31, 2024

Panel's Recommendations
<ul style="list-style-type: none">• Continuous antiretroviral therapy (ART) currently is recommended for all individuals with HIV to reduce the risk of disease progression and prevent the sexual transmission of HIV (AI). <p>ART should be continued after delivery (AI). Any plans for modifying ART after delivery should be made in consultation with the individual and their HIV care provider, ideally before delivery, taking into consideration the recommended regimens for nonpregnant adults (AIII) and plans for future pregnancies.</p> <ul style="list-style-type: none">• Because the immediate postpartum period poses unique challenges to ART adherence and retention in HIV care, arrangements for new or continued supportive services should be made throughout pregnancy and before postpartum hospital discharge (AII). <p>Confirmatory testing should follow a positive HIV test during labor; see Pregnancy and Postpartum HIV Testing and Identification of Perinatal and Postnatal HIV Exposure. If testing confirms HIV infection, ART should be offered, and a supply of ART should be provided before postpartum hospital discharge to prevent treatment interruption (AII). Immediate linkage to HIV care and comprehensive follow-up also is needed (AII).</p> <p>When HIV is newly diagnosed in the intrapartum period, infants should begin presumptive HIV therapy, and ART should be provided before postpartum hospital discharge (AII) (see Antiretroviral Management of Infants with Perinatal HIV Exposure or HIV Infection).</p> <ul style="list-style-type: none">• In the context of HIV during pregnancy, evidence-based counseling should be provided to support shared decision-making about infant feeding options prior to and during pregnancy; counseling and plans for infant feeding should be reviewed again after delivery (AIII) (see Preventing HIV Transmission During Infant Feeding).• Clinicians should discuss future reproductive plans and timing, as well as the risks and benefits of conceiving while on specific antiretroviral (ARV) medications (AII). The use of appropriate contraceptive options to prevent unintended pregnancy and optimal interpregnancy intervals should also be discussed (AII) (see Prepregnancy Counseling and Care). <p>Contraceptive counseling should involve shared decision-making and should start during the prenatal period; a contraceptive plan should be developed before postpartum hospital discharge, as desired by the patient (AII).</p>
<p>Rating of Recommendations: A = Strong; B = Moderate; C = Optional</p> <p>Rating of Evidence: I = One or more randomized trials with clinical outcomes and/or validated laboratory endpoints; II = One or more well-designed, nonrandomized trials or observational cohort studies with long-term clinical outcomes; III = Expert opinion</p>

Preventing HIV Transmission During Infant Feeding

Updated: December 19, 2024

Reviewed: December 19, 2024

Panel's Recommendations

- When there is potential for perinatal HIV transmission, evidence-based, patient-centered counseling should be provided to support shared decision-making about infant feeding. Counseling about infant feeding should begin prior to conception or as early as possible in pregnancy; information about and plans for infant feeding should be reviewed throughout pregnancy and again after delivery (AIII). During counseling, inform that—
 - Replacement feeding with properly prepared formula or pasteurized donor human milk from a milk bank eliminates the risk of postnatal HIV transmission to the infant through breastfeeding.
 - Achieving and maintaining viral suppression through antiretroviral therapy (ART) during pregnancy and postpartum decreases breastfeeding transmission risk to less than 1%, but not zero.
- Replacement feeding with formula or banked pasteurized donor human milk is recommended to eliminate the risk of HIV transmission through breastfeeding when ART is not being taken and/or viral suppression has not been achieved during pregnancy (at a minimum throughout the third trimester), as well as at delivery (AI).
- When ART is being taken for HIV and a sustained undetectable viral load is achieved, counseling about the options of formula feeding, use of banked donor milk, or breastfeeding should be provided. Those who choose to breastfeed should be supported in this decision (AIII).
- If formula feeding is chosen, providers should support in this decision. Providers should ask about potential barriers to formula feeding and explore ways to address them (AIII).
- In the case of a detectable viral load during breastfeeding, the Panel on Treatment of HIV in Pregnancy and Prevention of Perinatal Transmission and the Panel on Antiretroviral Therapy and Medical Management of Children Living with HIV recommend breastfeeding be stopped temporarily or discontinued and replacement feeding initiated while the viral load is rechecked, causes for the viremia are assessed, and, when applicable, adherence counseling is reinforced (AII) (see Situations to Consider Stopping or Modifying Breastfeeding in the text below). Most experts recommend permanent discontinuation of breastfeeding when HIV RNA is ≥ 200 copies/mL (CIII).
 - Depending on the level and persistence of viremia, next steps may include initiating or modifying infant antiretroviral prophylaxis, permanently stopping breastfeeding, and considering the need for additional infant HIV testing (see [Antiretroviral Management of Infants With *In Utero*, Intrapartum, or Breastfeeding Exposure to HIV](#), Table 12. [Antiretroviral Management of Infants With Exposure to HIV During Breastfeeding](#), and [Table 13. Recommended Virologic Testing Schedules for Infants With Perinatal and Breastfeeding Exposure to HIV in *Diagnosis of HIV Infection in Infants and Children*](#)).
 - If the repeat parental viral load is undetectable, a joint decision should be made by the parent and providers about whether breastfeeding may resume (AIII).
- Engaging Child Protective Services or similar agencies is not an appropriate response to infant feeding choices impacted by HIV (AIII).
- Clinicians are encouraged to consult the [National Perinatal HIV/AIDS Hotline](#) (1-888-448-8765) with HIV-related questions about infant feeding (AIII).

Rating of Recommendations: A = Strong; B = Moderate; C = Optional

Rating of Evidence: I = One or more randomized trials with clinical outcomes and/or validated laboratory endpoints; II = One or more well-designed, nonrandomized trials or observational cohort studies with long-term clinical outcomes; III = Expert opinion

Antiretroviral Management of Infants With *In Utero*, Intrapartum, or Breastfeeding Exposure to HIV

Updated: December 19, 2024

Reviewed: December 19, 2024

Panel's Recommendations

Antiretroviral Management for Infants With Exposure to HIV During the *In Utero* and Intrapartum Periods

- All newborns with *in utero* (antepartum) or intrapartum exposure to HIV should receive one or more antiretroviral (ARV) drugs, dosed appropriately for the infant's gestational age and weight and initiated as close to the time of birth as possible, preferably within 6 hours (AII).

ARV regimen selection for infants with *in utero* or intrapartum exposure to HIV should be based on predicted risk for transmission, determined by maternal HIV RNA levels (see [Table 10](#), [Table 11](#), [Table 11.1](#), and [Figure 1](#) below) (AII).

Infants at high risk of HIV infection from *in utero* or intrapartum exposure, defined as being perinatally exposed to viremia (HIV RNA ≥ 50 copies/mL) in the 4 weeks prior to delivery, should be provided a three-drug ARV regimen, administered from birth for 2–6 weeks, that serves as presumptive HIV therapy or enhanced prophylaxis. If the duration of the three-drug regimen is shorter than 6 weeks, zidovudine (ZDV) should be continued alone to complete a total of 6 weeks of prophylaxis (AII).

- Infants at low risk of *in utero* and intrapartum HIV acquisition, defined as being perinatally exposed to HIV RNA levels < 50 copies/mL from 20 weeks of gestation through delivery, should receive ZDV alone for a duration of 2 weeks (AII).
- Infants not meeting criteria for high or low risk should have ARV regimens and durations based on case-specific factors related to the level and timing of viremia during the pregnancy (AII) (see [Table 11](#)).
- An HIV nucleic acid test (NAT) should generally be performed at birth for all infants (AII) but is not necessary for infants at low risk who are not being breastfed (BIII). See [Diagnosis of HIV Infection in Infants and Children](#) and [Table 13. Recommended Virologic Testing Schedules for Infants With Perinatal and Breastfeeding Exposure to HIV](#) for guidance about infant testing.

Antiretroviral Management for Infants With Exposure to HIV During the Breastfeeding Period

- Recommendations about extended ARV prophylaxis are based on the current and anticipated maternal virologic status during breastfeeding (see [Table 12](#) and [Table 12.1](#) below). Ideally, plans should be made during the antepartum period; reassessment should take place both at delivery and regularly during the breastfeeding period (AII).

For infants at low risk of HIV acquisition during breastfeeding, some Panel members do not recommend extended ARV prophylaxis; however, other Panel members do recommend extended ARV prophylaxis with either nevirapine (NVP) or lamivudine (3TC) (CIII). The Panel on Treatment of HIV During Pregnancy and Prevention of Perinatal Transmission and the Panel on Antiretroviral Therapy and Medical Management of Children Living With HIV (the Panels) did not reach consensus. Infants are considered at low risk of transmission during breastfeeding when (1) maternal antiretroviral therapy is being taken while breastfeeding and sustained maternal virologic suppression (HIV RNA < 50 copies/mL) was achieved for at least 3 months prior to delivery and (2) the provider and patient are confident that maternal ART adherence will be maintained during breastfeeding (AII).

- For infants currently at low risk of HIV acquisition during breastfeeding but with concerns for future risk, the Panels recommend extended ARV prophylaxis with either NVP or 3TC (BIII). Adherence support should always be provided during breastfeeding ([Table 12](#)) (AIII).

- **Extended ARV prophylaxis during breastfeeding, when used, should ensure continuous prophylaxis through the postnatal period.** Most experts recommend transitioning to NVP or 3TC after the completion of initial ZDV prophylaxis. However, either NVP or 3TC can be given from birth, replacing ZDV and providing both initial postnatal prophylaxis and extended prophylaxis during breastfeeding (BIII).
- **Extended ARV prophylaxis during breastfeeding, when used, should continue until either 6 weeks after the last exposure to breast milk or 6 weeks after concerns about maternal virologic suppression have resolved—whichever occurs first (BIII).**

Recommendations for Infant Antiretroviral Management When the Infant is Exposed to New Viremia

- Breastfeeding should be stopped temporarily or discontinued and replacement feeding initiated (see Situations to Consider Modifying or Stopping Breastfeeding in [Preventing HIV Transmission During Infant Feeding](#)) (AII). Most experts recommend permanent discontinuation of breastfeeding when HIV RNA is ≥ 200 copies/mL (CIII).
- An infant HIV NAT should be performed (AII) (see [Diagnosis of HIV Infection in Infants and Children](#) and [Table 13. Recommended Virologic Testing Schedules for Infants With Perinatal and Breastfeeding Exposure to HIV](#) for guidance about infant testing).
- **New viremia with HIV RNA ≥ 200 copies/mL:** If a maternal HIV RNA level ≥ 200 copies/mL (viremia) develops or there is presumed viremia (e.g., reports nonadherence to ARVs), the Panels recommend the initiation of a three-drug ARV regimen for the infant for 4–6 weeks (AII) (see [Table 12](#) and [Table 12.1](#)).
- **New viremia with HIV RNA < 200 copies/mL:** When maternal viremia that is quantifiable but < 200 copies/mL develops, some Panel members recommend the initiation of a three-drug presumptive HIV therapy, other members recommend the initiation of single-drug ARV prophylaxis (NVP or 3TC), and others recommend infant ARV management based on repeat maternal HIV RNA testing (CII). The Panels did not reach consensus on management; consultation with an expert is suggested (see [Table 12](#)).

Infant ARV Management When Perinatal HIV Exposure is Related to a New Diagnosis of HIV During Breastfeeding

- Infants exposed to newly diagnosed maternal HIV infection during breastfeeding should be managed like infants at high risk of *in utero* or intrapartum HIV acquisition and receive a three-drug presumptive HIV therapy regimen for 2–6 weeks (see [Table 12](#)) and replacement feeding. If the duration of the three-drug regimen is shorter than 6 weeks, ZDV should be continued alone to complete a total of 6 weeks of prophylaxis (AII). See [Diagnosis of HIV Infection in Infants and Children](#) and [Table 13. Recommended Virologic Testing Schedules for Infants With Perinatal and Breastfeeding Exposure to HIV](#) for guidance about infant testing.

Providers with questions about ARV management of perinatal HIV exposure or exposure to HIV during breastfeeding should consult an expert in pediatric HIV infection or the [National Perinatal HIV Hotline](#) (1-888-448-8765), which provides free clinical consultation on all aspects of perinatal HIV, including newborn care (AIII).

Rating of Recommendations: A = Strong; B = Moderate; C = Optional

Rating of Evidence: I = One or more randomized trials with clinical outcomes and/or validated laboratory endpoints; II = One or more well-designed, nonrandomized trials or observational cohort studies with long-term clinical outcomes; III = Expert opinion

Diagnosis of HIV Infection in Infants and Children

Updated: December 19, 2024

Reviewed: December 19, 2024

Panel's Recommendations

- Virologic assays (HIV RNA or HIV DNA nucleic acid tests [NATs]) that directly detect HIV must be used to diagnose HIV in infants and children aged <18 months with perinatal HIV exposure; HIV antibody and HIV antigen/antibody tests should not be used **(AII)**.
- Plasma HIV RNA or cell-associated HIV DNA NATs are generally equally recommended **(AII)**.
- An assay that detects HIV non-B subtype viruses or Group O infections (e.g., an HIV RNA NAT or a total DNA/RNA test) is recommended for use in infants and children perinatally exposed to known or suspected non-B subtype virus or Group O infections **(AII)**.
- Virologic diagnostic testing **using an HIV NAT** (see [Table 13](#) below) is recommended for all infants with perinatal HIV exposure at the following ages:
 - Birth **(AII)**
 - The test at birth generally should be performed in all infants with perinatal HIV exposure but is not necessary for infants at low risk of HIV acquisition (HIV RNA levels <50 copies/mL from 20 weeks of gestation through delivery put infants at low risk of HIV acquisition). Birth testing should be performed in infants at low risk of HIV acquisition if there are plans to breastfeed or there are concerns about loss to follow-up **(BIII)**.
 - 14 to 21 days **(AII)**
 - 1 to 2 months **(AII)**
 - 4 to 6 months **(AII)**
- For infants **who receive presumptive HIV therapy**, additional virologic diagnostic testing is recommended 2 to 6 weeks after **antiretroviral** (ARV) drugs are discontinued **(BII)**.
- A positive virologic test should be confirmed as soon as possible by a repeat virologic test **(AII)**.
- Definitive exclusion of HIV infection in non-breastfed infants is based on two or more negative virologic tests **(and no positive virologic tests)**, with one negative test obtained at age ≥ 1 month (and at least 2–6 weeks after discontinuation of infant ARVs) and one at age ≥ 4 months, or two negative HIV antibody tests from separate specimens that were obtained at age ≥ 6 months **(AII)**.
- Additional HIV testing (e.g., HIV NAT, HIV antibody, HIV antigen/antibody) is not needed routinely for non-breastfed infants who meet the criteria for definitive exclusion of HIV and who have had no known or suspected HIV exposure after birth **(AII)**.
- For infants with perinatal HIV exposure who are being breastfed, virologic diagnostic testing is recommended at birth, 14 to 21 days, 1 to 2 months, and 4 to 6 months of age **(AII)**. An additional virologic test should be performed if the gap between the **tests at ages** 1 to 2 months and 4 to 6 months is greater than 3 months. See [Preventing HIV Transmission During Infant Feeding](#).
 - Virologic diagnostic testing should be performed **at least** every 3 months during breastfeeding **(BII)**;
 - After cessation of breastfeeding, irrespective of when breastfeeding ends, virologic diagnostic testing should be performed at 4 to 6 weeks and **4** to 6 months after cessation **(BII)**.

Infants with potential HIV exposure after birth (e.g., **diagnosis of HIV during breastfeeding**, pre-masticated feeding, sexual abuse, contaminated blood products, percutaneous exposure) require additional testing using **HIV antigen/antibody and/or** HIV NAT assays, **based on age at time of exposure** and the maternal HIV status at delivery **(AII)**.

- Age-appropriate HIV testing is also recommended for infants and children with signs and/or symptoms of HIV, even in the absence of documented or suspected HIV exposure **(AII)**.
- For children aged **≥18 months**, HIV antibody (or HIV antigen/antibody) tests are recommended for diagnostic testing **(AII)**.
 - When **early** (acute or recent) HIV infection is suspected, additional testing with an HIV NAT may be necessary to diagnose HIV infection **(AII)**.

Note: The [National Perinatal HIV Hotline](#) provides consultations on issues related to the management of perinatal HIV infection, including diagnostic testing (1-888-448-8765; 24 hours a day, 7 days a week).

Rating of Recommendations: A = Strong; B = Moderate; C = Optional

Rating of Evidence: I = One or more randomized trials in children[†] with clinical outcomes and/or validated endpoints; I* = One or more randomized trials in adults with clinical outcomes and/or validated laboratory endpoints with accompanying data in children[†] from one or more well-designed, nonrandomized trials or observational cohort studies with long-term clinical outcomes; II = One or more well-designed, nonrandomized trials or observational cohort studies in children[†] with long-term outcomes; II* = One or more well-designed, nonrandomized trials or observational studies in adults with long-term clinical outcomes with accompanying data in children[†] from one or more similar nonrandomized trials or cohort studies with clinical outcome data; III = Expert opinion

[†] Studies that include children or children/adolescents, but not studies limited to post-pubertal adolescents

Initial Postnatal Management of the Neonate Exposed to HIV

Updated: June 12, 2025

Reviewed: June 12, 2025

Panel's Recommendations
<ul style="list-style-type: none">• All newborns perinatally exposed to HIV should receive appropriate antiretroviral (ARV) drugs as soon as possible, preferably within 6 hours after birth (see Antiretroviral Management of Infants With <i>In Utero</i>, Intrapartum, or Breastfeeding Exposure to HIV) (AI).• Longitudinal laboratory monitoring for adverse events is not needed in otherwise healthy infants receiving currently recommended ARV drugs for prophylaxis in the first 6 weeks of life (see Safety of Antiretroviral Drugs Used for Infant Prophylaxis in Antiretroviral Management of Infants with <i>In Utero</i>, Intrapartum, or Breastfeeding Exposure to HIV) (AII).• Nucleic acid tests (e.g., DNA and RNA polymerase chain reaction [PCR] assays) are required for diagnosing HIV infection in infants aged <18 months (see Diagnosis of HIV Infection in Infants and Children) (AII).• To prevent <i>Pneumocystis jirovecii</i> pneumonia (PJP), all infants perinatally exposed to HIV should begin PJP prophylaxis at age 4 to 6 weeks, unless adequate test information is available to presumptively exclude HIV infection (see Pneumocystis jirovecii Pneumonia in the Pediatric Opportunistic Infections Guidelines) (AII).• Health care providers should inquire routinely about infant feeding plans and/or breastfeeding^a desires, as well as the use of pre-masticated food (prechewed or prewarmed in the mouth). Counseling against pre-mastication and discussion of safe infant feeding options should be provided (see Preventing HIV Transmission During Infant Feeding) (AIII).• Screening for congenital cytomegalovirus (cCMV) is recommended in the first 21 days of life using a PCR assay in urine and/or saliva (see Cytomegalovirus in the Pediatric Opportunistic Infection Guidelines) (CIII). In certain states, universal newborn screening for cCMV using dried blood spots is recommended. This test currently serves as an adjunct to urinary and salivary testing for cCMV pending further validation.• Infants perinatally exposed to hepatitis B surface antigen (HBsAg) positive should be tested for HBsAg and should receive hepatitis B (HBV) immune globulin and the first dose of the HBV vaccine series as soon as possible, preferably within 12 hours after birth, followed by the routine HBV vaccine series. Post-vaccination serologic testing for HBV should be performed between 9 and 12 months of age (see Hepatitis B Virus/HIV Coinfection) (AI).• Infants with perinatal exposure to hepatitis C virus (HCV) should receive an HCV RNA PCR assay at age 2 to 6 months (see Hepatitis C Virus/HIV Coinfection) (AIII).
<p>Rating of Recommendations: A = Strong; B = Moderate; C = Optional</p> <p>Rating of Evidence: I = One or more randomized trials with clinical outcomes and/or validated laboratory endpoints; II = One or more well-designed, nonrandomized trials or observational cohort studies with long-term clinical outcomes; III = Expert opinion</p>

Long-Term Follow-Up of Infants Exposed to Antiretroviral Drugs

Updated: January 31, 2024

Reviewed: January 31, 2024

Panel's Recommendations
<ul style="list-style-type: none">• Children with perinatal exposure to HIV and antiretroviral (ARV) drugs who develop significant organ system abnormalities of unknown etiology, particularly of the nervous system or heart, should be evaluated for potential metabolic dysfunction (CIII).• It is important that the long-term medical record of a child without HIV includes information about perinatal HIV and ARV exposure (BIII).
<p><i>Rating of Recommendations: A = Strong; B = Moderate; C = Optional</i></p> <p><i>Rating of Evidence: I = One or more randomized trials with clinical outcomes and/or validated laboratory endpoints; II = One or more well-designed, nonrandomized trials or observational cohort studies with long-term clinical outcomes; III = Expert opinion</i></p>