

# HIV Testing for Pregnant Women and Newborns

The Centers for Disease Control and Prevention (CDC) has set a goal of eliminating perinatal human immunodeficiency virus (HIV) transmission in the United States. CDC defines elimination of transmission as a reduction of transmission to an incidence of less than 1 infection per 100,000 live births and to a rate of less than 1 percent among infants exposed to HIV.<sup>1</sup>

## Laboratory Testing for HIV Infection

HIV screening is recommended for pregnant women; however, commonly used antibody tests do not identify acute HIV infection.<sup>2</sup> In June 2014, CDC issued updated recommendations for HIV testing, [Laboratory Testing for the Diagnosis of HIV Infection: Updated Recommendations](#).

In the updated laboratory testing algorithm, CDC advises a sequence of tests used in combination, starting with antigen/antibody tests capable of detecting HIV-1 and HIV-2 antibodies and HIV-1 p24 antigen.<sup>2,3</sup> CDC maintains that adopting the antigen/antibody tests as the first step in the new testing protocol will reduce the “window period” during which false negative results are likely when using antibody tests alone. Antigen/antibody tests are highly sensitive during early HIV infection and will detect an infection by approximately 6 weeks after exposure to the virus.

Acute HIV infection is the interval between the appearance of detectable HIV ribonucleic acid (RNA) and the first detection of antibodies.<sup>2</sup> Extremely high levels of infectious virus become detectable in serum and genital secretions during acute HIV-1 infection and persist for 10-12 weeks.<sup>2</sup> Acute HIV infection is associated with an increased risk of perinatal<sup>4</sup> and sexual<sup>2,5</sup> transmission of HIV. Accordingly, diagnosis of acute HIV in a timely manner is essential to allow maximal time for interventions to reduce the risk of perinatal infection.

The new testing algorithm has several advantages over the previous recommendations, including:

- More accurate laboratory diagnosis of acute HIV-1 infection,
- Equally accurate laboratory diagnosis of established HIV-1 infection, and
- More accurate laboratory diagnosis of HIV-2 infection.

**Please note:** The HIV-1 Western blot and HIV-1 immunofluorescent assay (IFA), previously recommended to make a laboratory diagnosis of HIV-1 infection, are no longer part of the recommended algorithm.<sup>2</sup>

## Testing for HIV in Pregnant Women

- All women who are pregnant or planning to get pregnant should get tested for HIV as early as possible.
  - A diagnosis of HIV in a timely manner is essential to allow maximal time for intervention to reduce the risk of perinatal infection.<sup>4,6-7</sup>



- Initiating antiretroviral therapy (ART) early in the course of HIV disease adds additional years of life.
  - All HIV-infected pregnant women should receive ART to prevent perinatal transmission regardless of viral load and CD4 count.<sup>4</sup>
  - For the prevention of perinatal HIV transmission, the goal of ART is to maintain a viral load below the limit of detection throughout pregnancy.<sup>4</sup>
  - If a pregnant woman receives a confirmed positive HIV test, HIV virologic testing is used to determine HIV status in her baby after delivery.<sup>1,4,7</sup>
  - HIV diagnoses made during pregnancy may be too late to fully suppress a patient's viral load; when this happens, cesarean delivery is likely to be necessary to reduce the risk of perinatal HIV transmission.<sup>4</sup>
- Repeat HIV testing in the third trimester.
    - Recent HIV infection can be detected by repeat HIV testing later in pregnancy in women whose initial HIV test earlier in pregnancy was negative.<sup>4,8-9</sup>
    - CDC and the Department of Health and Human Services (HHS) panel recommend a second HIV test in the third trimester for pregnant women:
      - Who are known to be at risk of acquiring HIV,
      - Who receive care in facilities with an HIV incidence of at least 1 case per 1,000 pregnant women per year,
      - Who have had more than one sex partner during the current pregnancy,
      - Who are incarcerated, or
      - Who reside in jurisdictions with an elevated incidence of HIV or acquired immune deficiency syndrome (AIDS).<sup>4,8-9</sup> For a list of jurisdictions with elevated incidence of HIV or AIDS, see [Revised Recommendations for HIV Testing of Adults, Adolescents, and Pregnant Women in Health-Care Settings](#).
      - Women who have signs or symptoms consistent with acute infection.
  - Women who have declined testing earlier in pregnancy should be offered testing again during the third trimester.<sup>3-4,6-9</sup>

## **HIV Testing for Women With Unknown HIV Status During Labor and Delivery**

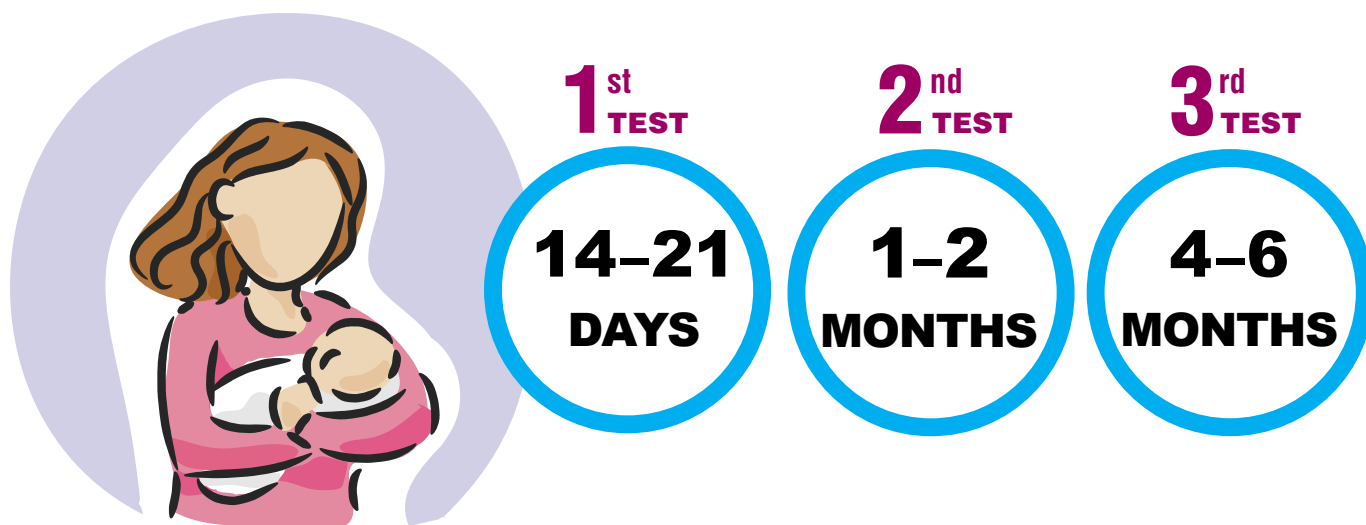
- Expedited HIV testing at the time of labor or delivery should be performed for any woman with undocumented HIV status.<sup>3-4,6-9</sup>
  - CDC recommends routine expedited (stat) HIV testing using an opt-out approach for women in labor whose HIV status is unknown.<sup>6</sup> Routinely offering expedited HIV testing to women whose HIV status is unknown during labor and delivery provides the opportunity to reduce transmission even among women who do not seek care until labor begins.<sup>6</sup> Testing in the intrapartum period provides an opportunity for a pregnant woman with HIV to begin prophylaxis before delivery if necessary.<sup>7,10</sup> A positive test obtained on a woman at this time also provides the opportunity to begin prophylaxis with two or three drugs for the infant.
  - Physicians must work with their laboratory to determine the test(s) that will be used to generate an expedited result.

- Expedited HIV testing should be available on a 24-hour basis at all facilities with a maternity service and/or neonatal intensive care unit (NICU).<sup>4</sup>
- If the HIV test result is negative, no further medical intervention is necessary. However, if there is suspicion of acute HIV infection during labor, and the expedited testing could not detect acute infection, tests such as antigen/antibody testing or virologic testing should be used.<sup>4</sup>
- If the expedited HIV test result is positive, the clinician should tell the woman that she may have HIV infection and that the baby may be exposed to HIV. The clinician should also assure her that additional testing is being done without delay but advise her that it is possible the results will not be available before delivery.<sup>4,7</sup> The clinician should explain that the initial test result is preliminary, and that false positive results are possible, but that it would be best to start antiretrovirals as soon as possible to reduce the risk of HIV transmission to the baby.<sup>7</sup> All antiretroviral prophylaxis should be discontinued if supplemental testing is negative.<sup>2,4,9</sup>

## Testing for HIV in Newborns and Infants

For babies born to women with HIV, the HHS panel recommends performing a series of virologic HIV tests at different intervals. Antibody testing in a newborn is not an accurate way to determine whether HIV infection has occurred in the infant.<sup>4</sup> HIV antibody tests, including newer tests, do not establish the presence of HIV infection in infants because of transplacental transfer of maternal antibodies to HIV.<sup>3</sup> Virologic HIV tests, however, look directly for HIV in the blood and therefore should be used.<sup>1,3</sup> Virologic diagnostic testing at birth should also be considered for HIV-exposed infants at high risk of perinatal HIV transmission. This is becoming a common practice.

- The first HIV test should be performed at 14 to 21 days after birth, the second test at 1 to 2 months, and the third test at 4 to 6 months.<sup>4</sup>



## Confirming HIV Test Results in Infants

- Results on two virologic tests must be negative to be sure that a baby is not infected with HIV.<sup>4</sup>
  - The first negative result should be from a test done when a baby is 1 month or older, and the second result should be from a test done when a baby is 4 months or older.
- Results on two HIV virologic tests must be positive to know for certain that a baby is infected with HIV.

For the latest HIV/AIDS perinatal medical guidelines, please visit <https://aidsinfo.nih.gov/guidelines>.

## Additional Considerations

- Acute HIV infection during breastfeeding is associated with an increased risk of perinatal transmission of HIV.<sup>4</sup> Women with possible acute HIV infection who are breastfeeding should cease breastfeeding immediately until HIV status is determined.<sup>3</sup>
- To identify sero-discordant couples, obstetric providers should inquire on the HIV status of partners of pregnant women.
- Women who are HIV-negative but have an HIV-positive partner should consider pre-exposure prophylaxis (PrEP), to protect them and their babies during pregnancy and while breastfeeding.
- CDC recommends that physicians use the appropriate Current Procedural Terminology (CPT) code when ordering antigen/antibody testing for pregnant women:

CPT Code for HIV Antigen/Antibody Testing	
Code	Description
<b>80081</b> <b>(Obstetric Panel)</b>	This new code is similar to the 80055 code (Obstetric Panel) but includes HIV-1 antigen(s), with HIV-1 and HIV-2 antibodies, single result (87389). <sup>11</sup> In order to bill this code, all components of the panel must be performed. <sup>11</sup>

## Sources

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