

Guide to Interpreting Maternal HIV Test Results

Maternal HIV test results are used to determine whether the infant has been exposed to HIV, which in turn determines whether the infant requires HIV prophylaxis. **Infant HIV test results cannot be used to discontinue infant prophylaxis**. Decisions regarding infant prophylaxis are determined by the mother's HIV test results.

Interpretation of maternal HIV test results at the time of delivery:

Maternal HIV Serology*	Maternal HIV PCR*	Interpretation & Action
Non-reactive (negative)	Non-reactive (no HIV RNA detected)	<p>No evidence of maternal HIV infection at the time of delivery, but there may be ongoing risk.**</p> <ul style="list-style-type: none"> • Infant prophylaxis can be discontinued if no intent to breastfeed. No further infant testing is routinely required. • If considering breastfeeding, careful assessment is recommended as the mother may be recently infected with HIV and in the window period, or may remain at high risk of acquisition of HIV while breastfeeding. Please contact the Oak Tree Clinic to discuss prior to initiating breastfeeding in case of recent risk activities.
Non-reactive (negative)	Reactive (HIV RNA detected)	<p>Suggestive of acute maternal HIV infection.</p> <ul style="list-style-type: none"> • Continue infant triple prophylaxis. • Call Oak Tree Clinic for further guidance.
Reactive (positive)	Non-reactive (no HIV RNA detected)	<p>Possible false-positive serology test.</p> <ul style="list-style-type: none"> • Repeat maternal serology and order HIV viral load. Breastfeeding is contraindicated until maternal HIV status clarification. • Call Oak Tree Clinic for further guidance.
Reactive (positive)	Reactive (HIV RNA detected)	<p>Consistent with established HIV infection.</p> <ul style="list-style-type: none"> • Continue infant triple prophylaxis. • Call Oak Tree Clinic for further guidance.

*Refer to the back of this page for definitions & further explanations of serology and PCR testing.

**HIV test results can be falsely negative early in the infection. The window period for HIV PCR is approximately 7-12 days, while the 4th generation HIV serology test has a window period of approximately 2-3 weeks.

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DEFINITIONS

Serology:

The current 4th generation serology tests are extremely sensitive enzyme immunoassays (EIA) that detect HIV antibodies as well as a viral protein called the p24 antigen. After an individual has acquired HIV, it can take 2-3 weeks to develop enough antibodies for the HIV serology tests to become reactive ('positive'). Serology is the initial diagnostic test for HIV infection in older children and adults, but is not a reliable test for diagnosing HIV in infants up to 18 months of age. Rapid HIV tests are a type of serology test.

Note about HIV serology tests in infants: *Antibody tests are not reliable for infants, because infants of HIV-positive mothers will have maternal HIV antibodies in their blood for up to 18 months after birth. A reactive ('positive') result in a child under 18 months could represent either persistent maternal antibody in an HIV-uninfected child or antibody newly produced by an HIV-positive child. For this reason, serology cannot be used to diagnose HIV infection in infants born to HIV-positive mothers.*

Polymerase Chain Reaction (PCR or NAT):

PCR is a type of nucleic acid amplification test (also called NAAT or NAT) that can identify the presence of specific types of RNA. PCR is used to confirm HIV infection because it is the most sensitive and specific test for identifying the presence of the HIV virus. After an individual has acquired HIV, it takes 7-12 days for the PCR test to detect the virus.

Note about HIV PCR tests in infants: *Infant HIV PCR results must be interpreted with caution. Infant HIV PCR has a low sensitivity in the first few weeks of life, and may be falsely negative if the infant is taking antiretrovirals. For these reasons, infant test results cannot be used to discontinue infant prophylaxis. Please contact the Oak Tree Clinic if you have any questions.*

Q: What is the difference between PCR and viral load? Are they the same thing?

A: *Diagnostic PCR (performed at the BC CDC laboratories) is used to confirm the diagnosis of HIV in a child less than 18 months old; the result is reported as "HIV RNA detected" or "No HIV RNA detected".*

Viral load (performed at St. Paul's Virology laboratory) is used to quantify the amount of virus present in a patient known to have HIV; the result is reported as a number (e.g. 600 copies/mL). Currently, the lowest limit of detection of the viral load test is 40 copies/mL. Therefore, a patient with an 'undetectable' viral load will be reported as "<40 copies/mL".

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