

Changes to Syphilis Testing

March 15, 2017

Treponema IgG/IgM assay to replace RPR for syphilis screening, including prenatal panels.

Reverse algorithm to be used for diagnosis of syphilis.

New RPR orders available for monitoring known cases of syphilis and for neonates.

Use	Test Name	Collect
Screening for syphilis	Syphilis Antibody, IgG IgM Serum	One 5mL gold top serum separator tube or one 7 mL plain red top tube.
	Prenatal Panel	
	Prenatal Panel with HIV	
Monitoring known cases of syphilis (active or past)	RPR, Monitoring	
Neonate testing when mother has confirmed reactive Syphilis results.	RPR, Neonate	Two serum microtainers

Guidance for Using the Reverse Syphilis Serological Testing Algorithm					
Test Outcomes	Test Sequence			Interpretation	Follow-up
	Step 1	Step 2	Step 3		
	IgG/IgM Treponemal	RPR Non-Treponemal	TP-PA Treponemal		
	Non-reactive	Not Indicated	Not Indicated	No serological evidence of exposure to syphilis	None, unless clinically indicated (i.e. early syphilis suspected)
	Reactive RPR reflexed	Reactive RPR Titer Performed	Not Indicated	Evidence of untreated or recently treated syphilis.	Refer to CDC treatment guidelines. Monitor RPR titers.
Reactive RPR reflexed	Non-reactive TP-PA reflexed	Non-reactive	Treponemal antibodies not confirmed. Inconclusive for syphilis infection. Potential early infection, false positive likely.	No follow-up testing unless at risk for syphilis. Repeat RPR in several weeks.	
Reactive RPR reflexed	Non-reactive TP-PA reflexed	Reactive	Treponemal antibodies detected. Consistent with past or potential early syphilis infection.	Historical and clinical evaluation required.	

See page 2 for additional information and references.

Questions?

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Testing Schedule:

Test	Outpatient	Inpatient
Syphilis, IgG IgM	Monday-Friday, results available by 4 PM	7 days per week, available all 3 shifts
RPR, reflexed	Monday-Friday, results available by 4 PM	7 days per week
RPR, Monitoring		Performed once daily, results available
RPR, Neonate		by 4 PM
TP-PA, reflexed	Sent to Reference Lab; Performed Monday – Friday; Results available 2-4 days.	

Serologic diagnosis of syphilis requires detection of two types of antibodies, non-treponemal and treponemal. The reverse algorithm starts with the treponemal assay and automatically reflexes to RPR, non-treponemal assay when the initial results are reactive. If the supplemental RPR is non-reactive, TP-PA is automatically reflexed and the sample sent to our reference lab to aid in differentiating between a true positive or false positive.

Quick facts about the Treponemal assay:

- The Treponema IgG/IgM assay is more sensitive than RPR, detecting syphilis earlier and with fewer false negatives during late syphilis.
- Fewer false positives than non-treponemal assays such as RPR since the assay detects specific antibodies against *T. pallidum*.
- The IgG antibody reactivity can persist over a lifetime. The assay detects active and past infections and cannot be used to monitor response to therapy.
- High throughput – no need to batch for once daily testing.
- High reproducibility/precision
- Objective result interpretation
- Not recommended for neonate testing since results are difficult to interpret for the neonate.

Quick facts about RPR, non-treponemal assay:

- Useful for monitoring response to therapy. Successful treatment should result in a four-fold decrease in titer.
- Does not detect past infections.
- Results are subjective leading to increased variability.
- More false positives (lupus, pregnancy, viral hepatitis).
- Might be negative in very early syphilis and late syphilis, even if never treated.
- Some patients retain a low-titer, despite successful treatment. These patients are considered to be “serofast”.

<http://www.cdc.gov/std/tg2015/syphilis.htm>

https://www.aphl.org/programs/infectious_disease/std/Pages/Syphilis.aspx

<http://www.cdc.gov/std/tg2015/syphilis-pregnancy.htm>

<http://www.cdc.gov/std/tg2015/congenital.htm>



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