

# Syphilis Lab Interpretation and Treatment Guide

TEST			INTERPRETATION		
Syphilis Screen (Screening Test e.g. EIA, CMIA, CLIA)	RPR (Non-Treponemal)	TTP-PA (Treponemal)	Most Likely Interpretation (results should be interpreted in conjunction with history and clinical findings)	Alternative Causes for Reactive Serological Tests	
				False Positive Results for Non-Treponemal Tests	False Positive Results for Treponemal Tests (Screen e.g. EIA, CMIA, CLIA)/TP-PA/FTA-ABS)
Reactive	Reactive (dilutions may vary)	Reactive	<p>a. Infectious syphilis (primary, secondary, early latent), especially if titre &gt; 1:8 &amp; history of symptom(s), contact with an infected partner, or other risk factors; <b>OR</b></p> <p>b. Late latent syphilis or latent syphilis of unknown duration, especially if titre &lt;1:8 &amp; no history of treatment; <b>OR</b></p> <p>c. Old treated syphilis; <b>OR</b></p> <p>d. In persons from endemic countries, Yaws (e.g. Caribbean), Pinta (e.g. Central America), or Bejel.</p> <p><b>PLAN:</b> repeat blood work in 2-4 weeks to assist with staging or diagnosis</p>	<p><b>Infectious</b></p> <ul style="list-style-type: none"> <li>• bacterial endocarditis (e.g. rheumatic heart disease)</li> <li>• chancroid</li> <li>• chickenpox</li> <li>• infectious mononucleosis (e.g. EBV)</li> <li>• leprosy (e.g. Hansen's disease)</li> <li>• lymphogranuloma venereum (LGV)</li> <li>• malaria</li> <li>• mumps</li> <li>• mycoplasma pneumonia</li> <li>• pneumococcal pneumonia</li> <li>• rickettsial disease</li> <li>• tuberculosis</li> <li>• viral hepatitis</li> <li>• viral pneumonia</li> <li>• other treponemal infections: yaws, pinta, or bejel</li> </ul> <p><b>Non Infectious</b></p> <ul style="list-style-type: none"> <li>• advancing age</li> <li>• chronic liver disease (e.g. hepatitis)</li> <li>• connective tissue disease (e.g. rheumatoid arthritis)</li> <li>• immunizations</li> <li>• injection drug use</li> <li>• malignancy</li> <li>• multiple myeloma</li> <li>• pregnancy</li> <li>• ulcerative colitis</li> </ul>	<p><b>Infectious</b></p> <ul style="list-style-type: none"> <li>• brucellosis</li> <li>• genital herpes</li> <li>• infectious mononucleosis (e.g. EBV)</li> <li>• leprosy</li> <li>• leptospirosis</li> <li>• lyme disease</li> <li>• malaria</li> <li>• other treponemal infections: yaws, pinta, or bejel</li> </ul> <p><b>Non Infectious</b></p> <ul style="list-style-type: none"> <li>• advancing age</li> <li>• chronic liver disease (e.g. hepatitis)</li> <li>• drug addiction</li> <li>• hyperglobulinemia</li> <li>• scleroderma</li> <li>• systemic lupus erythematosus</li> <li>• thyroiditis</li> </ul>
Reactive	Non-Reactive	Reactive	<p>a. Usually late latent syphilis or latent syphilis of unknown duration, with no history of treatment; <b>OR</b></p> <p>b. Old treated syphilis; <b>OR</b></p> <p>c. In persons from endemic countries, Yaws (e.g. Caribbean), Pinta (e.g. Central America), or Bejel; <b>OR</b></p> <p>d. Incubating infectious syphilis (primary), especially if history of symptom(s), contact with an infected partner, or other risk factors.</p> <p><b>PLAN:</b> repeat blood work in 2-4 weeks to assist with staging or diagnosis</p> <ul style="list-style-type: none"> <li>• if results change, reinterpret</li> <li>• if results are the same consider (a), (b), or (c)</li> </ul>		
Reactive	Non-Reactive	Non-Reactive/Indeterminate	<p>a. Usually incubating infectious syphilis (primary), especially if history of symptom(s), contact with an infected partner, or other risk factors; <b>OR</b></p> <p>b. Late latent syphilis or latent syphilis of unknown duration, with no history of treatment; <b>OR</b></p> <p>c. Old treated syphilis; <b>OR</b></p> <p>d. In persons from endemic countries, Yaws (e.g. Caribbean), Pinta (e.g. Central America), or Bejel.</p> <p><b>PLAN:</b> repeat blood work in 2-4 weeks to assist with staging or diagnosis</p> <ul style="list-style-type: none"> <li>• if RPR becomes reactive, consider primary syphilis (especially, if titre &gt; 1:8)</li> <li>• if results are the same consider (b), (c), or (d)</li> </ul>		
Reactive	Non-Reactive	Non-Reactive	<ul style="list-style-type: none"> <li>• Usually biological false positive</li> </ul> <p><b>PLAN:</b> repeat blood work in 2-4 weeks to assist with staging or diagnosis</p> <ul style="list-style-type: none"> <li>• if results change reinterpret</li> </ul>		
Non-Reactive	Test not done	Test not done	<ul style="list-style-type: none"> <li>• No syphilis or within 12 week window</li> </ul> <p><b>If history of clinical manifestation repeat in 2-4 weeks; consider presumptive treatment of asymptomatic contacts within 12 week window</b></p>		

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Stage	Incubation Period	Disease Manifestations	Treatment For alternative treatment to penicillin allergy, contact HNHU or refer to Canadian STI Guidelines	Post Treatment Serology		Partner Notification (time period)
				Monitoring schedule following treatment	Adequate Response (2-tube drop=4 fold drop e.g. from 1:32 to 1:8)	
<b>Primary</b> (infectious)	3-90 days (avg. is 21 days)	Chancre, and/or regional lymphadenopathy	Benzathine penicillin G 2.4 million units IM as single dose	3, 6, 12 months	4-fold drop at 6 months 8-fold drop at 12 months	3 months prior to onset of symptoms
<b>Secondary</b> (infectious)	2-12 weeks	Rash, fever, malaise, lymphadenopathy, mucous lesions, condyloma lata, alopecia, (for meningitis, headaches, uveitis, and/or retinitis, refer to neurosyphilis)	Benzathine penicillin G 2.4 million units IM as single dose	3, 6, 12 months	8-fold drop at 6 months 16-fold drop at 12 months	6 months prior to onset of symptoms
<b>Early Latent</b> (infectious)	< 1 year	Asymptomatic	Benzathine penicillin G 2.4 million units IM as single dose	3, 6, 12 months	4-fold drop at 12 months	1 year prior to diagnosis
<b>Late Latent Syphilis or Latent Syphilis of unknown duration</b> (not infectious)	> 1 year	Asymptomatic	Benzathine penicillin G 2.4 million units IM weekly for 3 doses	12, 24 months	Response will be variable	As late latent syphilis is not considered infectious, consider assessment of marital or other long-term partners and children as appropriate
<b>Tertiary</b> (not infectious Cardiovascular and Psychiatric manifestations)	10-30+ years	Aortic aneurysm, aortic regurgitation, and/or coronary artery ostial stenosis. Memory loss and/or personality changes	Benzathine penicillin G 2.4 million units IM weekly for 3 doses	12, 24 months	Response will be variable Refer to <a href="#">Canadian STI Guidelines</a>	Assess marital and other long term partners and children as appropriate
<b>Neurosyphilis</b>	can occur at any stage	Cerebrospinal examination to diagnose. Symptoms include headaches, vertigo, personality changes, dementia, ataxia, meningitis, auditory symptoms, cranial nerve abnormalities, uveitis, and/or retinitis	Refer to a neurologist or infectious disease specialist	6, 12, 24 months		
<b>Gumma</b>	1-46 years (most cases 15 years)	Tissue destruction of any organ; manifestations depend on site involved	Benzathine penicillin G 2.4 million units IM weekly for 3 doses	12, 24 months		

## Important Considerations:

- **PREGNANT WOMAN/Early Congenital** refer to [Canadian STI Guidelines](#)
- Presumptive treatment is recommended for contacts of syphilis within the 12 week window period
- An RPR is stable with at least 2 lab results at 1:4 or less (or RPR is non-reactive)

- If 4-fold increase, consider reinfection, contact public health
- For clients with HIV coinfection – contact HIV care provider or public health

Adapted from: Public Health Agency of Canada [2021 Canadian Guidelines on Sexually Transmitted Infections](#)