

Syphilis Cheat Sheet for Health Care Providers

September 2023



Syphilis

- Caused by *Treponema pallidum* (spirochete bacterium)
- Primarily spreads from person-to-person by direct contact with a primary lesion (chancre) or secondary skin or mucosal lesions, usually during vaginal, oral or anal intercourse
- Vertical transmission in pregnancy – as early as 9 weeks transplacental, up to and including during delivery with contact of genital lesions
- Primary lesions may be internal or go unnoticed/undiagnosed, they can occur on or around the penis, vagina, anus, rectum, lips or mouth
- Historically, syphilis has disproportionately affected men who have sex with men, but as of lately, many health units have been reporting an increase in syphilis affecting men who have sex with women, and women of childbearing age (Infectious Disease Trends in Ontario-Interactive Tool, Public Health Ontario).

Recommended Screening

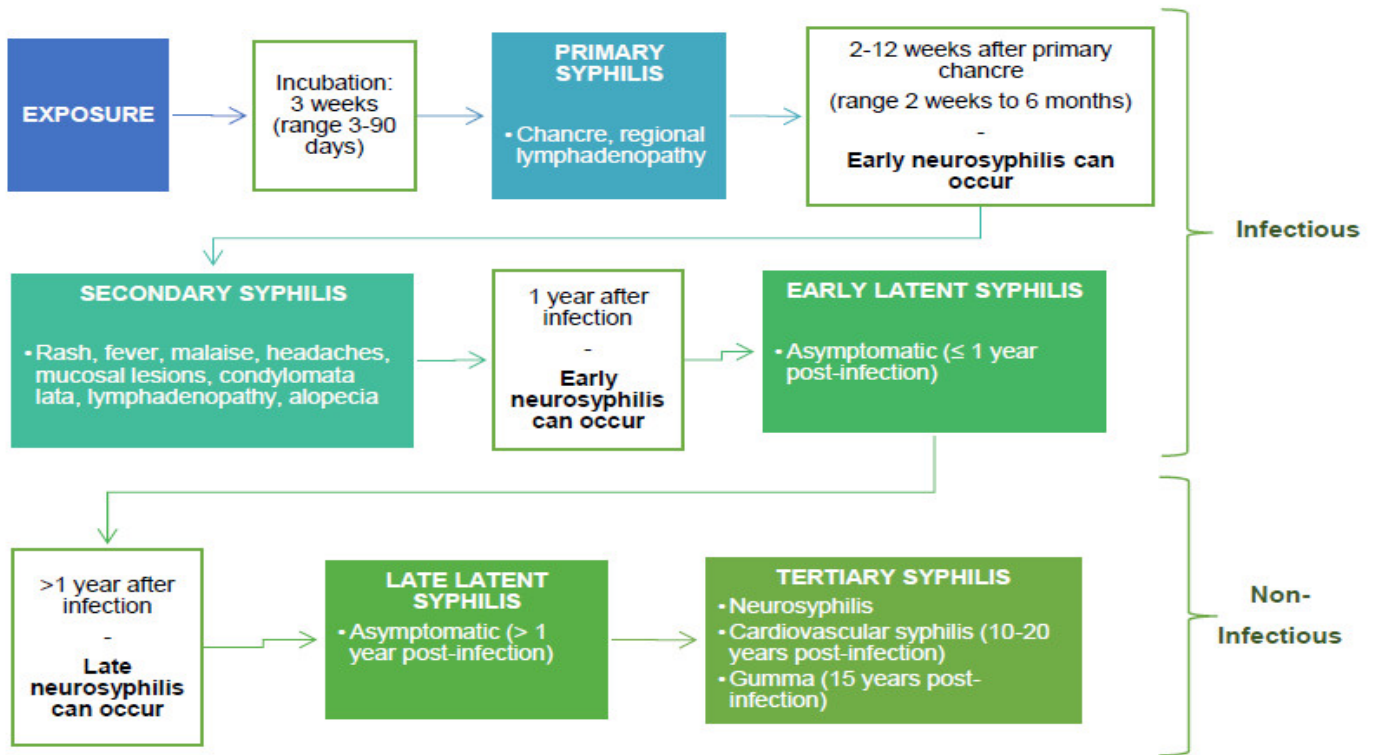
- All pregnant people (in first trimester, and consider repeat screening for those at ongoing risk)
- Symptomatic people, or clinical suspicion of syphilis
- People with the following risk factors:
 - Unprotected sexual activity - oral, genital, anal
 - Sexual contact with known case
 - Sexual contact with partner from country/region with high prevalence
 - Previous syphilis, HIV infection, other STBBI
 - Born to person diagnosed with infectious syphilis during pregnancy
 - Member of vulnerable populations
 - Other - anonymous sexual partnering, substance abuse

Testing

- Serology - automated RPR test system
 - screen with CMIA -> if reactive, confirm with RPR -> if non-reactive, confirm with TPPA
- Lesions - direct fluorescence
 - serous exudate from chancre or lesions ****see PHO instructions on how to obtain sample and also complete serology for staging****
- CSF - lumbar puncture
 - suspected cases of neurosyphilis
 - monitoring of treatment of diagnosed neurosyphilis
 - patients with HIV and any stage of syphilis
 - infants with suspected congenital syphilis

****consider testing for other ST-BBIs (Chlamydia, Gonorrhea, HIV)**

History/Manifestation of Syphilis



Source: Syphilis in Canada; PHAC 2020

Interpretation of serology results

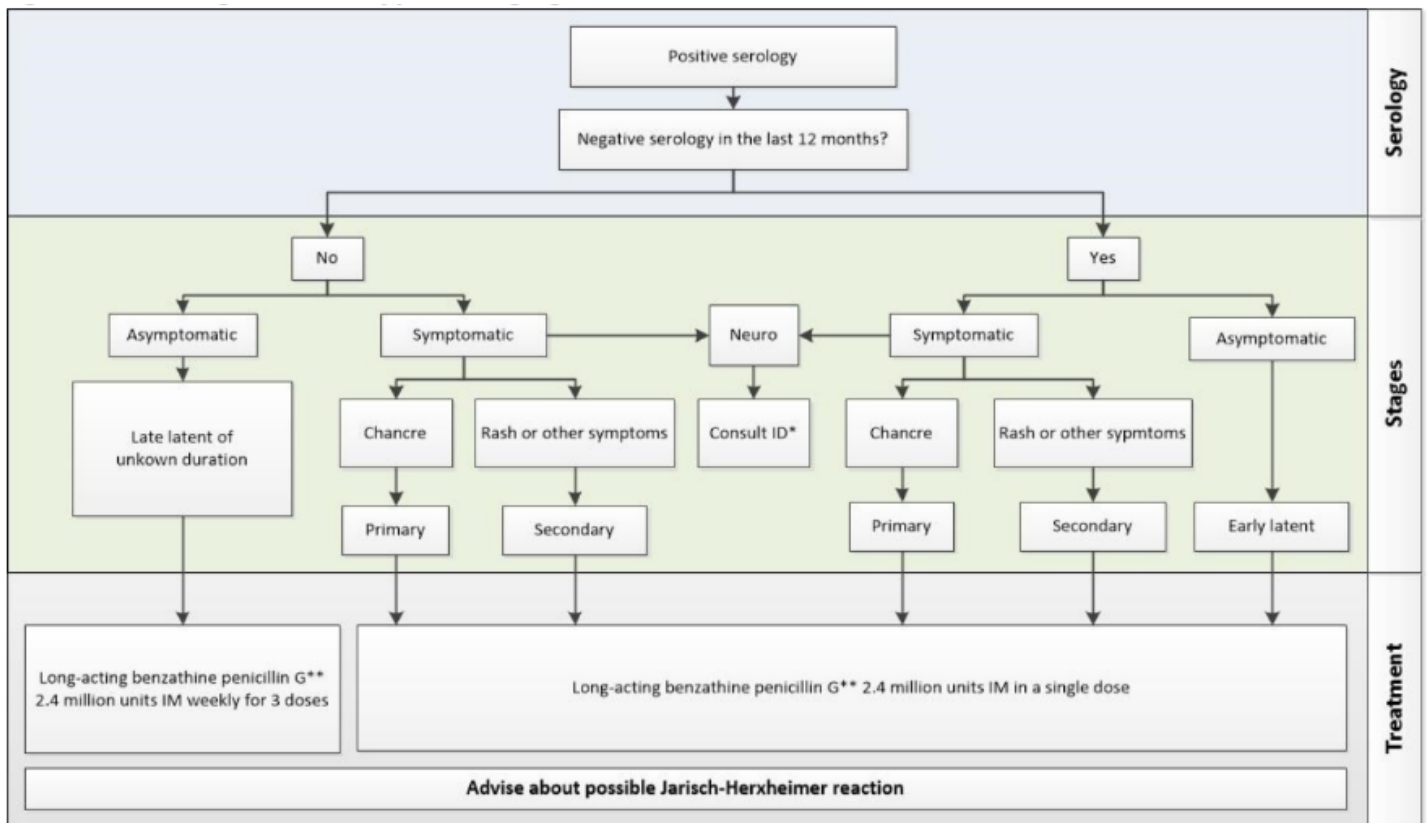
Screening Test (CMIA)	Confirmatory Test (RPR)	Confirmatory Test (TPPA)	Possible Interpretations/ Recommendations
Reactive	Reactive	Indeterminate	Consistent with recent or prior syphilis infection
Reactive	Invalid	Not tested	Inconclusive syphilis serology results <ul style="list-style-type: none"> Advise Follow-up sample
Age < 12 Months Reactive	Reactive		<ul style="list-style-type: none"> Maternal antibody (can be present in infant for up to 12 months) Congenital infection If congenital or early syphilis is suspected, consider ordering repeat serology at the recommended intervals according to the PHAC Canadian Guidelines on Sexually Transmitted Infections, Section 5-10, Table 8(b) (see references)
Age < 12 Months Reactive	Non-reactive	Reactive	<ul style="list-style-type: none"> Maternal antibody (can be present in infant for up to 12 months) Does not rule out congenital infection If congenital or early syphilis is suspected, consider ordering repeat serology at the recommended intervals according to the PHAC Canadian Guidelines on Sexually Transmitted Infections, Section 5-10, Table 8(b) (see references)

Syphilis

Screening Test (CMIA)	Confirmatory Test (RPR)	Confirmatory Test (TPPA)	Possible Interpretations/ Recommendations
Non-reactive	Not tested	Not tested	No confirmatory testing is performed if syphilis screen result is non-reactive <ul style="list-style-type: none"> • Early incubating syphilis can be non-reactive before antibodies have developed. • If clinical suspicion of early syphilis, suggest single repeat serology in 4 weeks if not repeated already.
Reactive	Reactive	Not tested	Consistent with recent or prior syphilis infection
Reactive	Non-reactive	Reactive	Consistent with recent or prior syphilis infection
Reactive	Non-reactive	Non-Reactive	<ul style="list-style-type: none"> • Results consistent with false reactive screening test. • Rare alternate interpretations include early syphilis, previously treated, or late latent syphilis. • Repeat serology in 4 weeks if not already repeated.
Reactive	Non-reactive	Indeterminate	Inconclusive syphilis serology results <ul style="list-style-type: none"> • Possible interpretations include false positive, or early, old treated or untreated syphilis. • Repeat serology in 4 weeks if not already repeated.

Source: Syphilis (Treponema pallidum) Serologic testing update; Public Health Ontario Labstract Nov 2020

Staging and Treatment



Source: Syphilis in Canada; Public Health Agency of Canada 2020

Syphilis

Recommended treatment of syphilis in non-pregnant adults		
Stage	Preferred treatment	Alternative treatment for people with penicillin allergies
Primary, secondary and early latent syphilis	Benzathine penicillin G-LA 2.4 million units IM as a single dose	<ul style="list-style-type: none"> • Doxycycline 100 mg PO BID for 14 days • In exceptional circumstances and when close follow-up is assured: <ul style="list-style-type: none"> ○ Ceftriaxone 1 g IV or IM daily for 10 days
Latent, late latent, cardiovascular syphilis and gumma	Benzathine penicillin G-LA 2.4 million units IM weekly for three (3) doses	<ul style="list-style-type: none"> • Consider penicillin desensitization <ul style="list-style-type: none"> ○ Doxycycline 100 mg PO BID for 28 days • In exceptional circumstances and when close follow-up is assured: <ul style="list-style-type: none"> ○ Ceftriaxone 1 g IV or IM daily for 10 days
All adults: Neurosyphilis	Refer to a neurologist or infectious disease specialist	

Recommended treatment for infectious syphilis in pregnancy	
Preferred treatment	Alternative treatment for people with penicillin allergies
Benzathine penicillin G-LA 2.4 million units IM as a single dose or Benzathine penicillin-LA G 2.4 million units IM as a single dose weekly for two (2) doses.	Strongly consider penicillin desensitization followed by treatment with penicillin There is no satisfactory alternative to penicillin for the treatment of syphilis in pregnancy. Insufficient data exist to recommend ceftriaxone in pregnancy

Recommended serological test follow-up after treatment

Stage	Frequency of post treatment serology test
Primary, secondary and early latent	• 3, 6 and 12 months
Late latent and tertiary syphilis (except neurosyphilis)	• 12 and 24 months
Neurosyphilis	• 6, 12 and 24 months
Co-infected with HIV	• 3, 6, 12 and 24 months and yearly thereafter regardless of stage

Adequate serologic response in infectious syphilis

Stage	Frequency of post treatment serology test
Primary syphilis	<ul style="list-style-type: none"> • 4-fold drop at 6 months • 8-fold drop at 12 months
Secondary syphilis	<ul style="list-style-type: none"> • 8-fold drops at 6 months • 16-fold drop at 12 months
Early latent syphilis	• 4-fold drop at 12 months

Source: Public Health Agency of Canada, Syphilis Guide 2023 [Syphilis guide: Treatment and follow-up - Canada.ca](#)

For more in depth information, consult the [Syphilis guide: Key information and resources - Canada.ca](#)