DECISION MAKING IN SYPHILIS

1 Indications for testing

Clinical indicators:

Symptoms and signs
- rash
- genital lesion
- unexplained clinical syndromes or laboratory results

Clinical context
- pregnancy
- any STI test
- any HIV test
- any STI diagnosis
- any contact with a case of syphilis (must also presumptively treat)
- PrEP

Presence of Risk Factors:

Behavioural
- new partner
- MSM
- substance misuse
- sex work

Populations
- < 30 years old
- Aboriginal and Torres Strait Islander people
- Remote communities

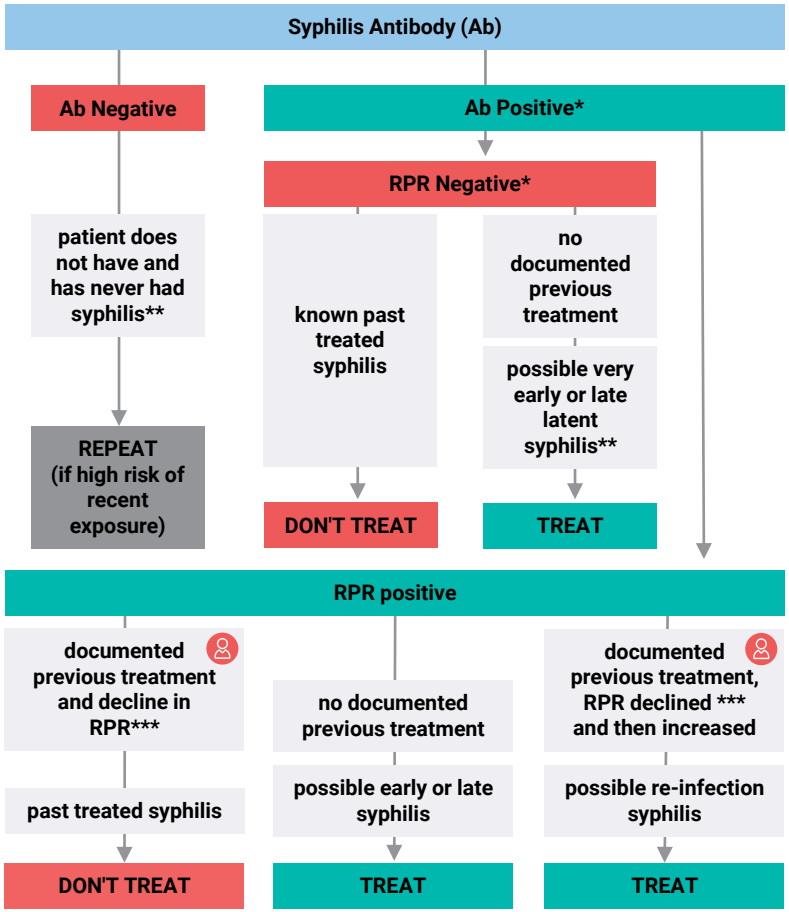
When gaining informed consent before testing, discuss:
- Preferred gender of healthcare provider
- Need for an interpreter
- Reason for test
- Personal implications of a positive test result
- Availability of curative treatment

2 How to test

To diagnose and determine disease stage of syphilis, diagnosis is by a combination of serology, PCR of lesions, past testing and treatment history and clinical assessment.

Baseline screening, request:	Further information
Syphilis serology - Syphilis antibody	Laboratory to perform initial syphilis specific antibody (CMIA/EIA) testing and confirmatory testing if positive (TPPA/TPHA)* and RPR as a marker of disease activity and treatment response***.
Syphilis NAAT or PCR swab of lesion.	Additional test if lesions present. Swab lesion. Must be accompanied by serology.
In addition, recommend comprehensive screening:	
HIV serology	Always co-test HIV unless known HIV positive (refer to Australian STI Management Guidelines for Use in Primary Care - HIV)
Hepatitis B and Hepatitis C serology	Unless not required (refer to Australian STI Management Guidelines for Use in Primary Care – hepatitis B & Australian STI Management Guidelines for Use in Primary Care – hepatitis C)
Gonorrhoea/ chlamydia	Standard asymptomatic check-up

3 Interpretation of syphilis serology



*Positive CMIA/EIA is confirmed by reflex TPPA/TPHA by the laboratory. Uncommonly, positive CMIA/EIA and negative TPPA/TPHA and negative RPR may be a false positive or indicate very early infection. Repeat testing if high index of suspicion.
**Very recent infection may also be antibody negative. Assess for symptoms and signs and repeat serology prior to treating.
*** The RPR is a marker for disease activity and treatment response. It declines after treatment and often reverts to non-reactive. 4-fold change required. Consult with a specialist when RPR is rising, or a 4-fold drop is not achieved by 12 months.

Disclaimer: Guidance provided on this resource is based on guidelines and best-practices at the time of publication. This quick-reference guide is not intended to be a comprehensive list of all available options.
For further information, refer to the Australian STI Management Guidelines for Use in Primary Care: https://sti.guidelines.org.au/sexually-transmissible-infections/syphilis/
CMIA – Chemiluminescent microparticle immunoassay; EIA – Enzyme immunoassay; TPPA - Treponema pallidum Particle Agglutination Assay;
TPHA - Treponema pallidum Hemaglutination Assay; RPR – Rapid plasma reagin; VDRL - Venereal Disease Research Laboratory test; NAAT – Nucleic Acid Amplification Test
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4 Disease staging and symptoms

	Disease Stage (often not distinct)	Symptoms and signs (most patients do not have all or most of these)
Infectious	Primary syphilis	Genital, anal or oral ulcer. Inguinal lymph enlarged.
	Secondary syphilis	Fever, malaise, headache, lymphadenopathy, rash, alopecia, oral, anal or genital lesions
	Neurosyphilis	May arise in context of secondary or less commonly tertiary syphilis. **Neurological symptoms or signs:** visual changes, tinnitus, deafness, cranial nerve palsies, severe headache or meningitis.
	Early Latent (<2 years) syphilis	Positive syphilis serology no clinical symptoms or signs no evidence of adequate past treatment. Negative test or a 4-fold increase in RPR within past 2 years.
Non-infectious	Late latent (>2 years) syphilis	Positive syphilis serology no clinical symptoms or signs no evidence of adequate past treatment. No negative test within 2 years.
	Tertiary syphilis	Destructive skin, cardiovascular or neurological disease.
Congenital syphilis		Severe multi-organ disease with very high mortality and morbidity in both in-utero and in neonatal periods.

These stages are often not distinct, most patients do not develop all or most of these symptoms and signs.

5 Treatment

Refer to sections *3 Interpretation of syphilis serology* and *4 Disease staging and symptoms* before commencing treatment. Repeat syphilis serology at day of treatment (baseline)

Syphilis treatment

Symptoms or signs of primary or secondary syphilis. Consult with a specialist if not familiar with these. OR documented negative serology in past 2 years OR documented treatment in past 2 years with decline in RPR OR PCR positive	all other cases	penicillin allergy or unavailable	Pregnant OR Child OR Neurological symptoms or signs
Benzathine benzylpenicillin 2.4 MU (1.8g), stat, given as two injections containing 1.2 MU (0.9g)	Benzathine benzylpenicillin 2.4 MU (1.8g), stat, given as two injections containing 1.2 MU (0.9g)	seek expert advice	Urgently refer
stat x 1	weekly x 3		

Repeat syphilis serology at 3, 6 and 12 months. Test and presumptive treatment of all partners of infectious syphilis.

Consult with a specialist:

- Before commencing on treatment. Interpretation of syphilis serology is complex.
- Diagnosed during pregnancy. Seek urgent specialist advice for congenital syphilis.
- Positive syphilis results in a child. Additionally, discuss results urgently with child protective services.
- Unable to obtain Benzathine benzylpenicillin which is supplied as 1.2MU pre-filled syringes.
- Allergy to principal treatment choice and seeking alternative treatment option.
- Complicated syphilis. Refer those with acute neurological signs, symptoms or suspected tertiary disease to local sexual health or infectious diseases clinic.
- HIV co-infection.
- RPR is rising or a 4-fold drop is not achieved by 12 months.
- Contact tracing is unclear.

6 Follow-up

Contact tracing:

- **Primary syphilis:** 3 months plus duration of symptoms
- **Secondary syphilis:** 6 months plus duration of symptoms
- **Early latent:** 12 months
- **Late latent syphilis:** long term partners only

- ✓ Advise no sexual contact for 7 days after treatment is administered.
- ✓ Advise no sex with partners from the last 3 months (primary syphilis), 6 months (secondary syphilis) or 12 months (early latent) until the partners have been tested and treated if necessary.
- ✓ Contact tracing and presumptive treatment of partners.
- ✓ Provide patient with factsheet.
- ✓ Notify the state/territory health department according to local procedures.