

TEST OPTIONS FOR SYPHILIS SCREENING and PRESUMPTIVE DIAGNOSIS

TREPONEMA PALLIDUM (SYPHILIS) SCREENING CASCADE

- REVERSE SCREENING CASCADE [Algorithm outlined on page 2](#)
- Order Code: LAB101002
- Offers earlier detection and a reduction of ambiguous results [Reverse Cascade summary is provided on page 3](#)

RPR WITH REFLEX TO CONFIRMATORY SYPHILIS ANTIBODY AND RPR TITER

- TRADITIONAL SCREENING CASCADE [Algorithm outlined on page 4](#)
- Order Code: LAB494

Please note: The TREPONEMA PALLIDUM (SYPHILIS) SCREENING CASCADE and RPR WITH REFLEX TO CONFIRMATORY SYPHILIS ANTIBODY AND RPR TITER include automatic reflexing in accordance with the Center for Disease Control (CDC) testing guidance.

TEST OPTION FOR MONITORING A PATIENT THROUGH TREATMENT

RPR WITH TITER (MONITORING)

- Only use for monitoring; order LAB101002 or LAB494 for screening and diagnosis.
- Order Code: LAB10519

TEST OPTION IF RPR PERFORMED AND REACTIVE REQUIRING CONFIRMATION

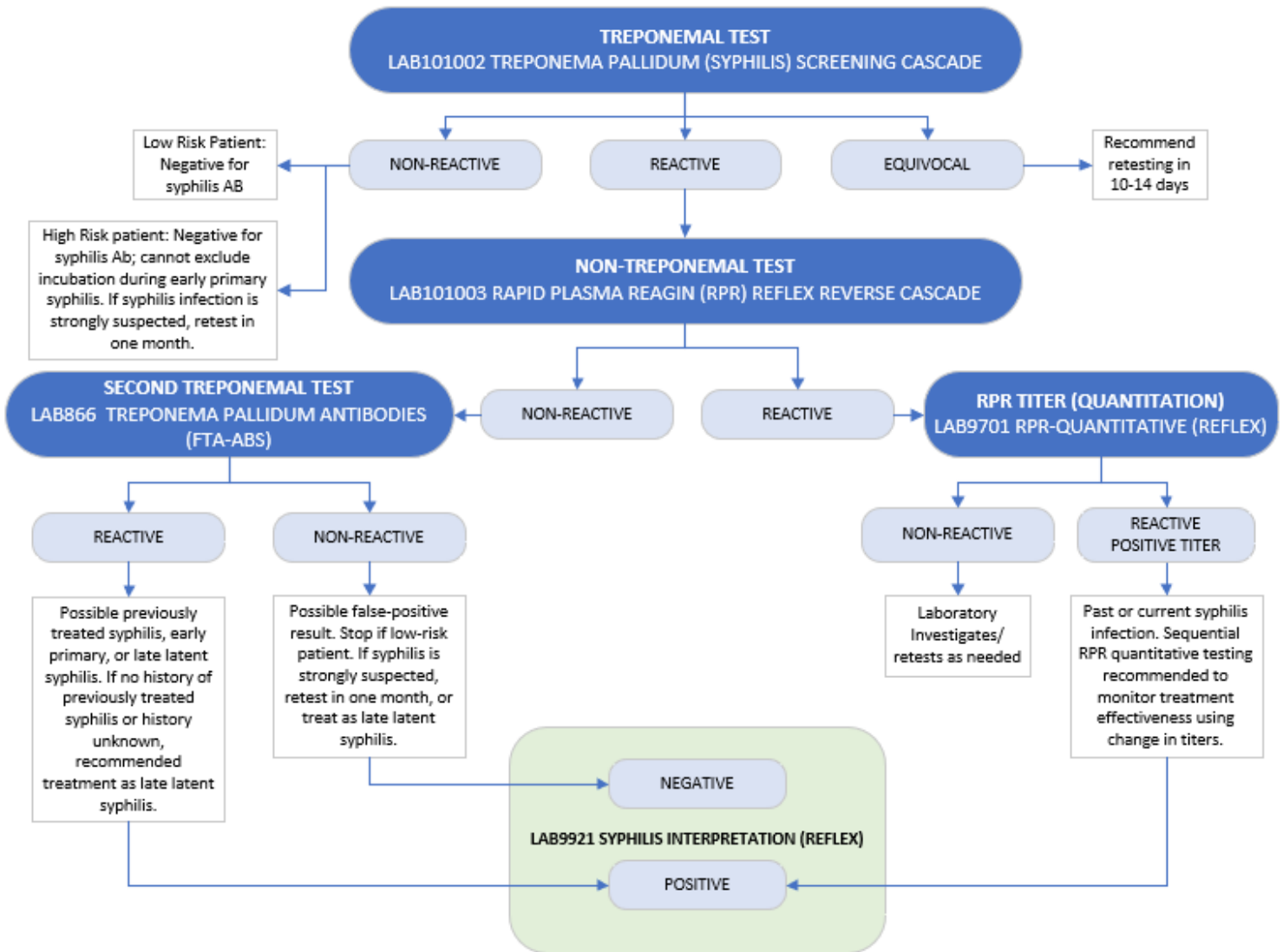
SYPHILIS ANTIBODY IGG/IGM WITH REFLEX TO RPR QUANTITATIVE

- For completion of the Traditional cascade when an RPR has been performed and RPR is reactive.
- This option is ONLY for the scenario where the RPR has been performed and additional testing is needed for the completion of the TRADITIONAL CASCADE.
- Order Code: LAB9616

RESOURCES/REFERENCES:

- Center for Disease Control (CDC): [Syphilis - STI Treatment Guidelines \(cdc.gov\)](#)
- California Public Health Department (CPHD): [Syphilis \(ca.gov\)](#)
- County Public Health agencies may provide direction on the testing algorithm to be used for your region.

PDL Syphilis Screening: REVERSE Cascade



Reverse Cascade Summary: Persons with a positive treponemal screening test should have a standard quantitative nontreponemal test with titer performed reflexively by the laboratory to guide patient management decisions. If the

nontreponemal test is negative, the laboratory should perform a treponemal test different from the one used for initial testing, a treponemal assay based on different antigens than the original test, to adjudicate the results of the initial test.

The use of the reverse cascade is outlined in the Center for Disease Control (CDC) and Prevention Morbidity and Mortality Weekly Report (MMWR) Recommendations and Reports /Vol. 70/No. 4 July 23, 2021 Sexually Transmitted Infections Treatment Guidelines, 2021. STI Treatment Guidelines available on the CDC website:

<https://www.cdc.gov/std/treatment-guidelines/STI-Guidelines-2021.pdf>

Benefits for using the Reverse Cascade:

- The reverse cascade can detect syphilis in some patients with syphilis who would not have been identified if a nontreponemal test was used initially. This includes those with very early syphilis, those with prior treated syphilis, and those with late or late latent syphilis whose nontreponemal test has become nonreactive over time.¹
- The reverse sequence algorithm for syphilis testing can identify persons previously treated for syphilis, those with untreated or incompletely treated syphilis, and those with false-positive results that can occur with a low likelihood of infection.²
- Up to 30 percent of infected patients who progress to late-stage syphilis have negative results with nontreponemal tests.³⁻⁵
- The CDC, in its evaluation of data from four New York labs adopting a reverse algorithm approach, noted the potential to detect previously untreated syphilis at a higher frequency with the reverse screening algorithm.⁶
- Newer treponemal tests may also show increased sensitivity (especially if they detect both IgM and IgG antibodies) compared to nontreponemal tests in early- and late-stage disease.^{7,8}
- Multiple studies demonstrate that high quantitative index values or high signal-to-cutoff ratio from treponemal EIA or CIA tests correlate with TP-PA positivity

References:

1. JAMA. 2016 Jun;315(21):2328-37
2. Ortiz DA, Shukla MR, Loeffelholz MJ. The traditional or reverse algorithm for diagnosis of syphilis: pros and cons. Clin Infect Dis 2020;71(Suppl 1):S43–51. PMID:32578864 <https://doi.org/10.1093/cid/ciaa307>
3. Diggory P. Role of the Venereal Disease Research Laboratory test in the detection of syphilis. Br J Vener Dis. 1983 February;59(1):8-10
4. Talwar S, Tutakne MA, Tiwari VD. VDRL titres in early syphilis before and after treatment. Genitourin Med. 1992 April;68(2):120-2
5. Pope V. Use of treponemal tests to screen for syphilis. Infec Med. 2004;21(8):399-404
6. Syphilis testing algorithms using treponemal tests for initial screening— four laboratories, New York City, 2005-2006. MMWR Morb Mortal Wkly Rep. 2008 August;57(32):872-5
7. Sena AC, White BL, Sparling PF. Novel Treponema pallidum serologic tests: a paradigm shift in syphilis screening for the 21st century. Clin Infect Dis. 2010 September;51(6):700-8
8. Ratman S. Laboratory diagnosis of syphilis. Can J Infect Diseases. 2012;16(1):45-51

PDL Syphilis Testing: TRADITIONAL Cascade

