

ASO(Antistreptolysine O)

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ASO

- **Definition:**
- Antistreptolysin O (ASO) titer is a blood test to measure antibodies against streptolysin O, a substance produced by group A streptococcus bacteria.
- Antibodies are proteins our bodies produce when they detect harmful substances, such as bacteria.

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- Immunological testing for specific antibodies provides useful information about the degree of the streptococcal infection and the course of disease.
- The determination of the level of antistreptolysin O antibodies (ASO) is the most widely used.

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- Eighty-five percent of patients with acute rheumatic fever show increased ASO levels.
- ASO levels should be monitored several times at weekly intervals to obtain useful data.
- The titre development can indicate either a successful antibiotic treatment or the persisting antigen stimulus even if the clinical signs of the infection have already disappeared.

Normal ASO value

- An ASO test value below 200 is considered normal.
- In children under the age of 5, the test value should be less than 100.
- Results will vary by laboratory. If your results show that you have an elevated ASO value, you may have a post-streptococcal complication.

What causes high ASO levels?

- False positive ASO titers can be caused by increased levels of serum beta-lipoprotein produced in liver disease and by contamination of the serum with *Bacillus cereus* and *Pseudomonas*.
- ASO titers are elevated in 85% of patients with rheumatic fever but may not be elevated in cases involving skin or renal sequelae.

Rapid latex agglutination test

- **Principle:**

- The detection of anti-streptolysin O antibodies is based upon the neutralization of the streptolysin O hemolytic activity by antibodies present in the test serum. The antigen-antibody immunological complexes that are formed are revealed by the addition of a suspension of sheep erythrocytes.

- It is a rapid latex agglutination test for the qualitative and semi-quantitative determination of anti-streptolysin-O antibodies (ASO) in serum.
- In infections caused by β -hemolytic streptococci, streptolysin-O is one of the two hemolytic exotoxins liberated from the bacteria that stimulates the production of ASO antibodies in the human serum.
- The presence and the level of these antibodies in the serum may reflect the nature and severity of the infection.

ASO latex reagent

- ASO latex reagent is a stabilized buffered suspension of polystyrene latex particles that have been coated with Streptolysin O.
- When the latex reagent is mixed with a serum containing ASO, agglutination occurs.
- The sensitivity of the latex reagent has been adjusted to yield agglutination when the level of ASO is greater than 200 IU/ml, a level determined to be indicative of disease by epidemiological and clinical studies. Sera having titers of between 200 IU/ml to 3500 IU/ml will be reactive.

ASO latex reagent test

- Qualitative method
- Quantitative method

Latex agglutination



Aso titre



ASO Positive



ASO Negative



ASO Negative

Result interpretation of quantitative test

- ASO TITRE = Highest dilution of serum showing agglutination
×sensitivity of the test

Indications

- Assist in establishing a diagnosis of streptococcal infection
- Evaluate patients with streptococcal infections for the development of acute rheumatic fever or nephritis
- Monitor response to therapy in streptococcal illnesses

- Thank you.