**Widal test:**

The Widal test is a presumptive serological test for **enteric fever** or **undulant fever** where by bacteria causing **typhoid fever** are mixed with serum containing specific antibodies obtained from an infected individual.

In case of **Salmonella infections**, it is a demonstration of the presence of **O-somatic** and **H-flagellar**  antigens

**Typhoid fever** **diagnosis**

**1**-Serological tests, the rise in antibody levels needed to perform the diagnosis takes 7–14 days, which limits it applicability in early diagnosis. **2-**Other means of diagnosing Salmonella typhi (and paratyphi) include **cultures** of blood, urine and faeces. These organisms produce **H2S** from thiosulfate and can be easily identified on differential media such as Bismuth sulfite agar .

**PROCEDURE :**

Often **2-mercaptoethanol** is added to the Widal test. This agent more easily denatures the **IgM** class of antibodies, so if a decrease in the titer is seen after using this agent, it means that the contribution of IgM has been removed leaving the **IgG** component. This differentiation of antibody classes is important; as it allows for the distinction of **a recent** (IgM) from an **old** infection (IgG).



The Widal test is **positive** if **TO** antigen titer is more than **1:160** in an active infection, or if **TH** antigen titer is more than **1:160** in past infection or in immunized persons. A single Widal test is of little clinical relevance due to the number of **cross reacting** infections, including **malaria**.

**Serology diagnosis for Brucellosis:**

Serology is the science dealing with blood serum and especially their immunological reactions and properties. Blood sent for “serology” means the serum will be tested for antibodies, antigens, and other immune system properties.

**Brucellosis :**

Brucellosis caused by a class of bacteria called Brucella. There are several strains of these bacteria that can lead to problems in humans. These are :

Brucella melitensis

Brucella abortus

**Serology diagnosis for Brucellosis:**

The bacteria that cause brucellosis are not passed easily from animals to humans. Also, many people do not come into contact with animals that normally carry Brucella. As a result, testing will likely be ordered when **symptoms** are present and the person was in a situation where infection could have occurred.

**Procedure**

The Procedure for a Serologic Test for Brucellosis

If your doctor **suspects** you have **brucellosis**, you will need to provide a blood sample to be analyzed. This is not a complicated procedure, by insert a needle into a vein and collect a small amount of blood in a vial. It will then be analyzed in the lab. The test usually used to analyze your blood is called a **Brucella agglutination test**

**Results:**

Understanding the Results of Serology for Brucellosis Antibodies are produced in response to the brucella infection. Therefore, a person who **was not exposed** to Brucella should **not** have any **antibodies** for the bacteria in their blood. An **absence** of Brucella antibodies is classed as a **normal** result. If you **do have** these **antibodies**, it means you are or were likely **infected** with the bacteria.

**Reliability**

**False Positives**

1-Some other types of bacteria can cause a false positive (i.e., testing positive for the presence of Brucella when it is, in fact, not present

2-Some immunizations can cause a test to be positive when there is no infection

**A positive test**

1-does not always mean the person has **a current infection**. It could mean they were exposed to Brucella at some point in **the past**.

2-It might also mean they have an immunity against this type of bacteria.

If a person was **recently exposed** to the Brucella antigen, there may be too few antibodies to be detected by the test