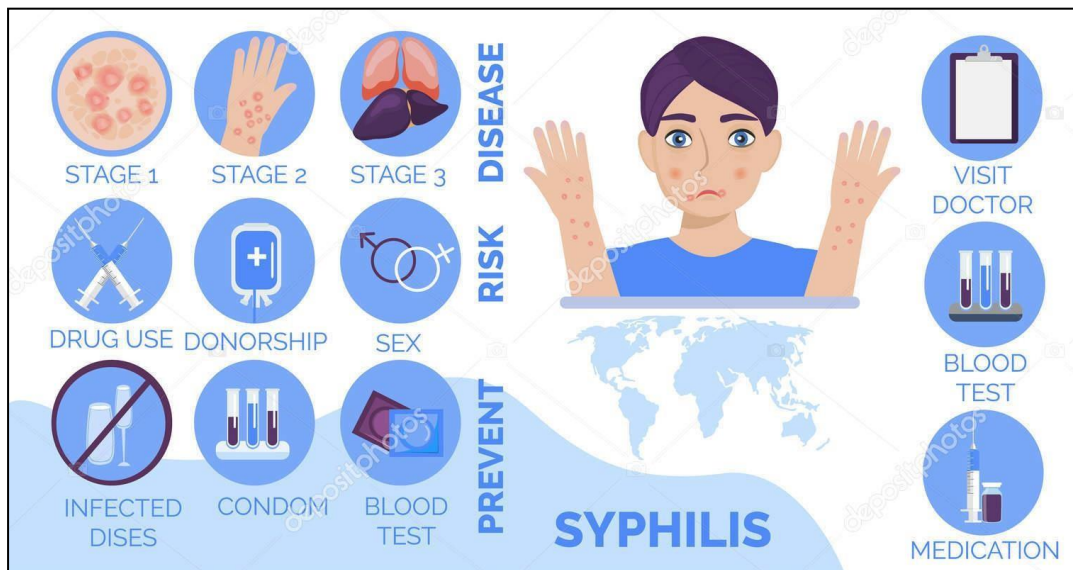
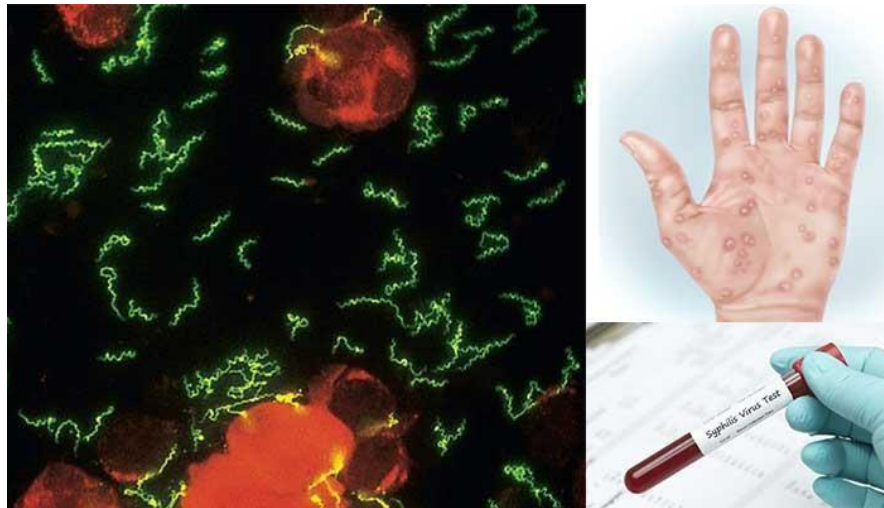


## Syphilis diagnostic tests

- **Syphilis** is a sexually transmitted disease caused by the bacteria *Treponema pallidum*.
- **Syphilis** may be transmitted from mother to fetus and cause congenital infections.



## Stages of Syphilis

- Untreated syphilis can progress through four stages: primary, secondary, latent, and tertiary.

**1- Primary stage:** begins about 2-3 weeks after infection.

Some **chancres** may appear on the **sexual organs**, and disappear within **4-6 weeks**.

**2- Secondary stage:** if primary syphilis is untreated, secondary syphilis may occur from **6 weeks to 6 months** after the chancre first appears.

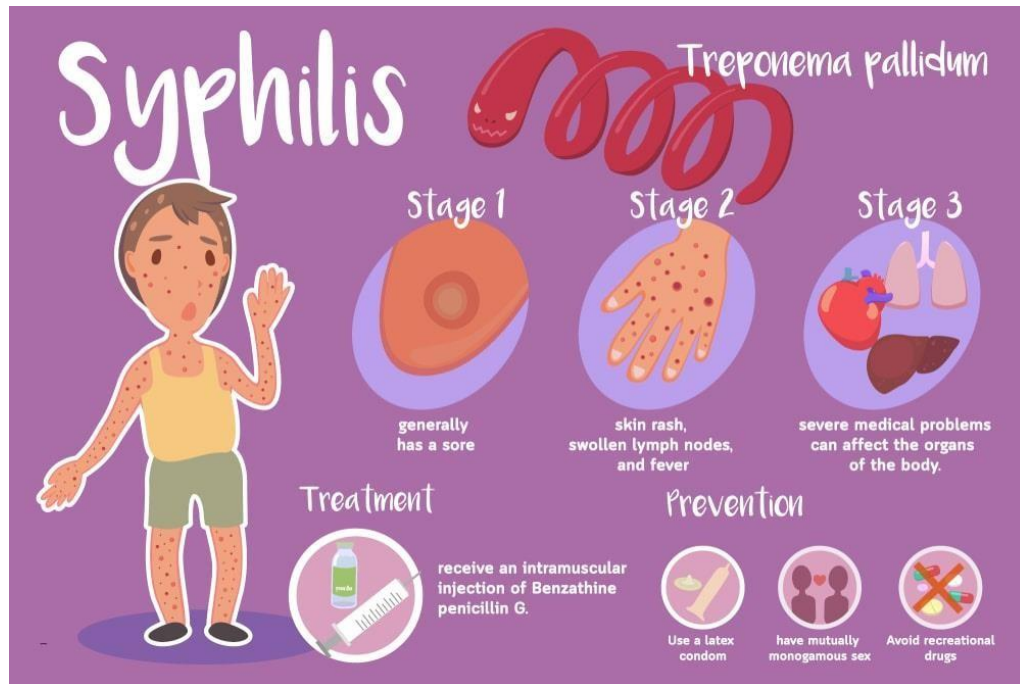
Symptoms of the second stage include **lymphadenopathy**; **tiredness**; **fever**; **sore throat**; and a **rash** on the **skin** and **mucous membranes**.



**3- Latent stage:** if secondary syphilis is untreated, may continue into a latent stage, an infected person has **no symptoms**, and the infection may continue **for years**.

**4- Tertiary stage:** about one-third of the individuals untreated will develop tertiary syphilis.

In these cases, the bacteria can **damage** the **heart, eyes, brain, nervous system, bones, joints**, or almost any other part of the body. When the **central nervous system** is affected, it is called **neurosyphilis**.



## Laboratory diagnosis

- Traditional laboratory tests for syphilis can be classified into three main types: **direct detection**, **nontreponemal antibody tests**, and **treponemal antibody tests**.
- These vary in their ability to detect syphilis at different stages of the disease.
- **Direct detection tests:** to detect the syphilis bacteria itself or its DNA in recent infection, by taking samples from a skin sore or a lymph node.

### These tests include:

- 1- **Darkfield microscopy:** detect syphilis from a sample of a skin lesion or a lymph node.
  - 2- **Polymerase chain reaction (PCR) test:** detect syphilis DNA from a swab of a skin lesion if you've been recently infected.
- **Nontreponemal antibody tests:** are usually used as an initial screening test and a positive result must be confirmed with another type of test.

These tests detect the antibodies produced in response to **phospholipid** material released from the **damaged host** cell such as **cardiolipin** (cell membrane component), which is called **reagin**.



**These tests include:**

- 1- Rapid plasma reagin (RPR) test**
- 2- Venereal Disease Research Laboratory (VDRL)**
- **Treponemal antibody tests:** detect antibodies that are produced after **T. pallidum** infection.

These tests are usually performed to confirm an infection after a patient has a positive result on a nontreponemal screening test.

**These tests include:**

- 1- Fluorescent treponemal antibody absorption (FTA-ABS) test**
- 2- Microhemagglutination assay for antibodies to Treponema pallidum (MHA-TP)**
- 3- Treponema pallidum hemagglutination assay (TPHA)**
- 4- Treponema pallidum enzyme immunoassay (TP-EIA)**

