

# SYPHILIS

## Causative Pathogen:

- *Treponema pallidum* (gram-negative spirochete bacterium).STD
- **Key Features:**
  - Spiral-shaped, microaerophilic.
  - **Cannot be cultured** in vitro. 3 flagella from each end .
  - Visualized via **dark-field microscopy** (too slender for Gram/Giemsa stain).
  - **Motility:** Corkscrew rotation & rapid longitudinal axis rotation.
  - **Immune Evasion:** Coats itself in host fibronectin → avoids phagocytosis.

## TRANSMISSION

- **Exclusively human-to-human:**
  - Sexual contact (most common).
  - Direct contact with infectious lesions (e.g., chancre, mucous patches).
  - Vertical (mother to fetus) → *Congenital syphilis (excluded from exam)*.

## PATHOPHYSIOLOGY

### 1. Initial Invasion:

- *T. pallidum* adheres to skin/mucosa → produces **hyaluronidase** → invades tissues.
- Develops **chancre** (primary ulcer) at inoculation site.

### 2. Dissemination:

- Spirochetes spread via lymphatics/bloodstream → systemic infection.

### 3. Hallmark Pathology:

- **Obliterative endarteritis:**
  - Endothelial thickening → vessel lumen narrowing/occlusion → **tissue ischemia**.
  - Targets arterioles/capillaries.

### 4. Immune Response:

- Delayed-type hypersensitivity (tertiary stage).

## CLINICAL STAGES

(Progressive if untreated)

Stage	Timeline	Key Features
<b>Primary</b>	3-90 days post-exposure	<ul style="list-style-type: none"> <li>- <b>Chancere:</b> <b>Painless</b>, indurated ulcer (genital 95%/extra-genital 5%).</li> <li>- Heals spontaneously in 4-6 weeks.</li> <li>- Regional lymphadenopathy (nontender).</li> </ul>
<b>Secondary</b>	2-12 weeks after primary  2-6 weeks duration	<ul style="list-style-type: none"> <li>- <b>Systemic symptoms:</b> Fever, malaise, lymphadenopathy painless .</li> <li>- <b>Rash:</b> Nonpruritic, copper\ red \ red-brown-colored maculopapular lesions (trunk, palms, soles).</li> <li>- <b>Mucous patches:</b> Oral/genital erosions.silver-gray color</li> <li>- <b>Condylomata lata:</b> Moist, papular lesions painless in intertriginous areas (highly infectious).(perianal,vulva,scrotum,,oral) pink ,gray-white color \ cauliflower like</li> </ul>
<b>Latent</b>	Early: <1 yr; Late: >1 yr after initial	<ul style="list-style-type: none"> <li>- <b>Asymptomatic</b> but seropositive.</li> <li>- Early latent: Can relapse to secondary.</li> <li>- Late latent: No transmission, but can progress to tertiary.</li> </ul>
<b>Tertiary</b>	1-30 years post-initial infection	<ul style="list-style-type: none"> <li>- <b>Immune-mediated destruction</b> (33% of untreated cases)by delayed type-hypersensitivity reactions:</li> <li>A- <b>Gummas:</b> Destructive granulomas (skin, bones, organs).</li> <li>B- <b>Cardiovascular:</b>(large vessels) Aortitis, <u>Ascending</u> aortic aneurysm-thoracic , aortic regurgitation.</li> <li>C- <b>Neurosyphilis:</b> <ul style="list-style-type: none"> <li>- <u>1 Paretic neurosyphilis:</u> =general paresis of the insane –invade cerebral cortex espial (frontal\temporal lobes)</li> <li>- <u>2 Tabes dorsalis:</u> Loss of vibration/proprioception, lightning pains.</li> <li>- <u>3 Argyll Robertson pupils:</u> (Accommodate=constriction in near vision task ) but don't react to light.(bilateral fail to constrict in response ti bright light )</li> </ul> </li> </ul>

## TREATMENT

- **First-line for ALL stages: Penicillin G.**
- Penicillin allergy: ceftriaxone

### STAGE PROGRESSION FLOWCHART

Primary (chancre)

↓

Secondary (rash, systemic)

↓

Latent (asymptomatic) → Early latent (relapse possible)

→ Late latent (no relapse)

↓

Tertiary (33% untreated) → Gummas / Cardiovascular / Neurosyphilis