

# TETANUS

# Session objectives

1. Definition
2. Signs and symptoms
3. Complications
4. Agents
5. Diagnosis
6. Epidemiology (Occurrence, Reservoir, Transmission, incubation period, Communicability, Susceptibility and resistance)
7. Methods of control(Preventive measures &Control of pt and contacts)

Tetanus is an acute disease induced by an exotoxin of the tetanus bacillus, which grows anaerobically at the site of an injury.

\*Characterized by :

1. Painful muscular contractions


Primarily of the masseter and neck muscles secondarily of trunk muscles.

2. Generalized spasms frequently induced by sensory stimuli. The spores release bacteria that spread and make a poison called tetanospasmin. This poison blocks nerve signals from the spinal cord to the muscles, causing severe muscle spasms.

3. Typical features are position of opisthotonus and risus sardonicus expression.



Back muscle spasms often cause arching, called **opisthotonos**.



\*Case – fatality rate = 10 – 90% according to:

1. Age (high among infants and elderly).

2. Incubation period (inverse relation ).

3. Availability of experienced intensive care.

\*Laboratory confirmation is of little help.

\*Infections agent is clostridium tetani.



## Occurrence :

- \*World wide sporadic disease.
- \*More common in agriculture regions and underdeveloped areas.
- \*In rural and tropical areas people are especially at risk & tetanus neonatorum is common.
- \*Addiction on parenteral drugs can result in individual cases.

## Reservoir:

Intestine of horses and other animals including humans.  
Soil contaminated with animal and human feces.

## Mode of transmission:

1. Tetanus spores usually introduced through contaminated wound puncture .
2. Through lacerations ,burns and trivial or unnoticed wounds.
3. Through injectable contaminated street drugs.
4. Occasionally follows surgical procedures including circumcisions.

## Incubation periods:

Usually (3 -21) days .However its range is (1 day – several months .

Average is 10 days.

The shorter period means the worst prognosis.

## **Period of communicability :**

No person to person transmission .

## **Susceptibility and resistance :**

- Susceptibility is general.
- Active immunity is by tetanus toxoid which persist for (10 years) after full immunization.
- Transient passive immunity by tetanus immunoglobulin (TIG) or tetanus antitoxin (equine origin ).
- Infants of actively immunized mothers acquire passive immunity against neonatal tetanus.
- Recovery from tetanus may not result in life long immunity , thus a second attack can occur .Primary immunization after recovery is indicated.





## Preventive Measures:

1. Educate public about necessity of complete immunization and risk of puncture wounds contamination that need active or passive prophylaxis.
2. Universal active immunization with adsorbed tetanus toxoid  
→ protection for at least (10 years).




### 3. Prophylaxis in wound management through:-

- a. Careful assessment of wound state of contamination.
- b. Immunization status of patient.
- c. Proper use of tetanus toxoid and /or tetanus immunoglobulin
- d. Wound cleaning.
- e. Surgical debridement and antibiotics use.



## Control Measures:

1. Report to local health authority.
2. Investigation of contacts and source of infection ( case investigation to determine circumstances of injury).
3. Specific treatment:-
  - a. TIG (3000 - 6000)IU intramuscularly .( if not available give tetanus antitoxin equine origin in single large dose I.V.
  - b. I.V. metronidazole large doses for (7-14) days.
  - c. Wound debridment if possible

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- d. Maintain adequate airway and give sedation.
  - e. Muscle relaxant drugs with tracheotomy or nasotracheal intubation and mechanical respiration may be life saving .
  - f. Active immunization should be initiated.