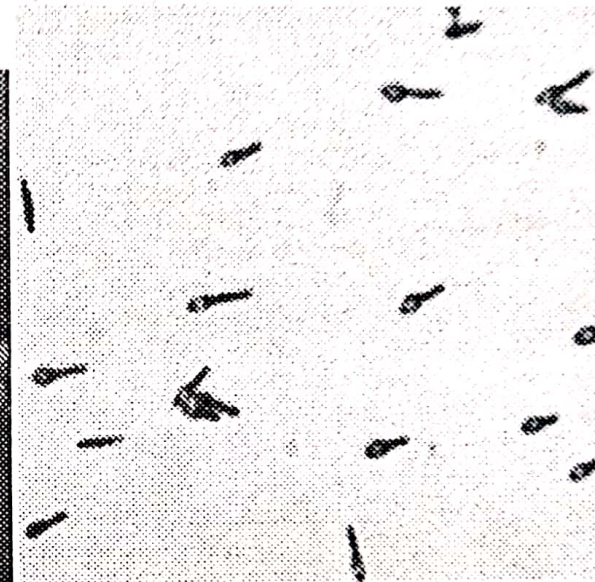
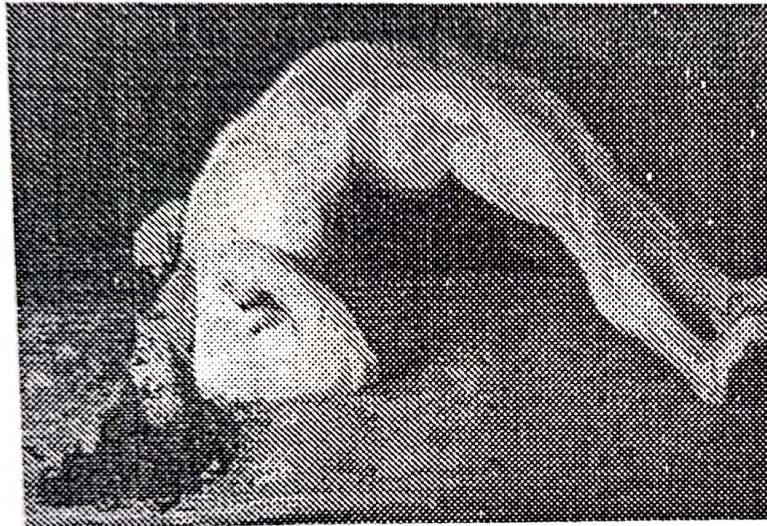


Clostridium tetani SGD

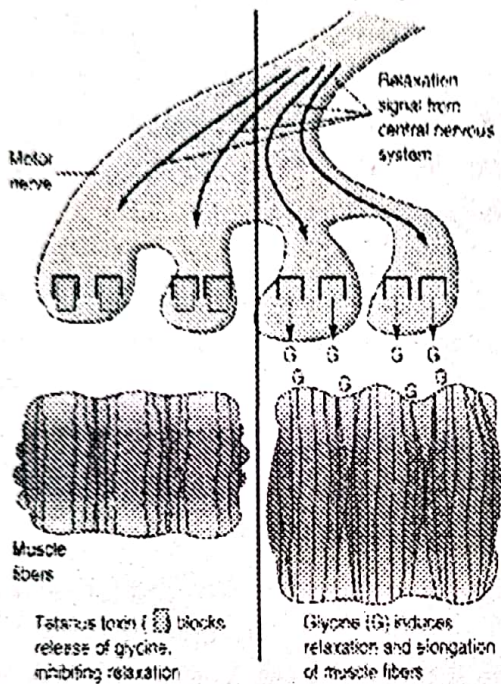
28 year male presented to emergency department with locked jaw and history of fall from motorbike. Gram staining revealed the following results.



1. Name the causative agent and the disease?
2. What is the pathogenesis of this disease?
3. Is this organism aerobe or anaerobe?
4. What are the means of prevention of this disease?

KEY

1. Tetanus & Clostridium tetani
2. Tetanus toxin (tetanospasmin) exotoxin produced by vegetative cells at wound site. Polypeptide toxin carried intra-axonally (retrograde) to central nervous system, where it binds to ganglioside receptors & blocks release of inhibitory neurotransmitter (e.g., glycine & GABA) at spinal synapses.



3. Anaerobe
4. Immunization with tetanus toxoid (formaldehyde-treated toxin) in childhood & every 10 years thereafter. Given to children in combination with diphtheria toxoid & acellular pertussis vaccine (DTaP).
Tetanus immune globulin (tetanus antitoxin): administration of both immune globulins and tetanus toxoid (at different sites in the body) is an example of passive-active immunity.