



SNS COLLEGE OF ALLIED HEALTH SCIENCES
SNS Kalvi Nagar, Coimbatore - 35
Affiliated to Dr MGR Medical University, Chennai



DEPARTMENT: ALLIED HEALTH SCIENCES
COURSE NAME: PATHOLOGY

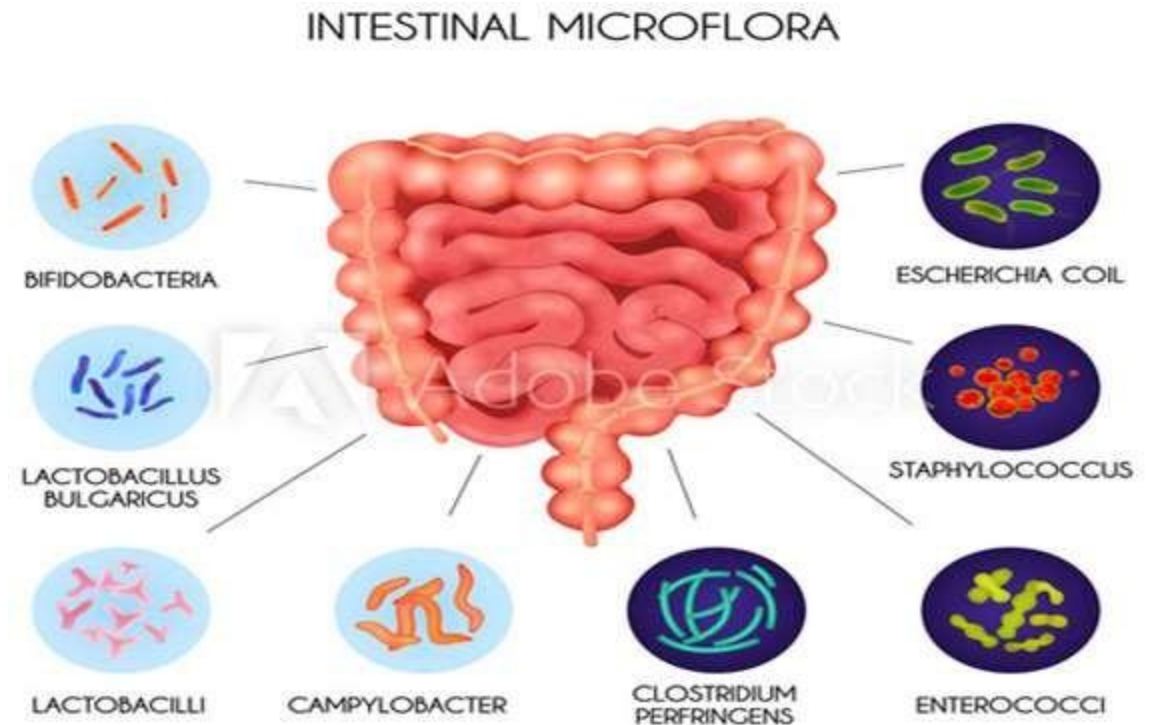
Topic: General principles of microbial pathogenesis

Characteristics of Microbe

- Depending on the relationship of microbes with respect to humans, they may be divided into 2 broad groups:
- **Free living:** microbes living in natural habitat such as soil & water. E.g. Clostridium, Actinomyces and Micrococcus.
- **Saprophyte** : bacteria living on dead and decaying
- organic matter.



- **Parasites:** an organism which lives on a living host and derives nutrition from it, without any benefit to the host.
- **Commensals:** which live in complete harmony with the host without causing any harm to it. They constitute the normal bacterial flora of the body. Eg., E.coli.
- **Pathogen:** microorganism capable of producing disease in host.

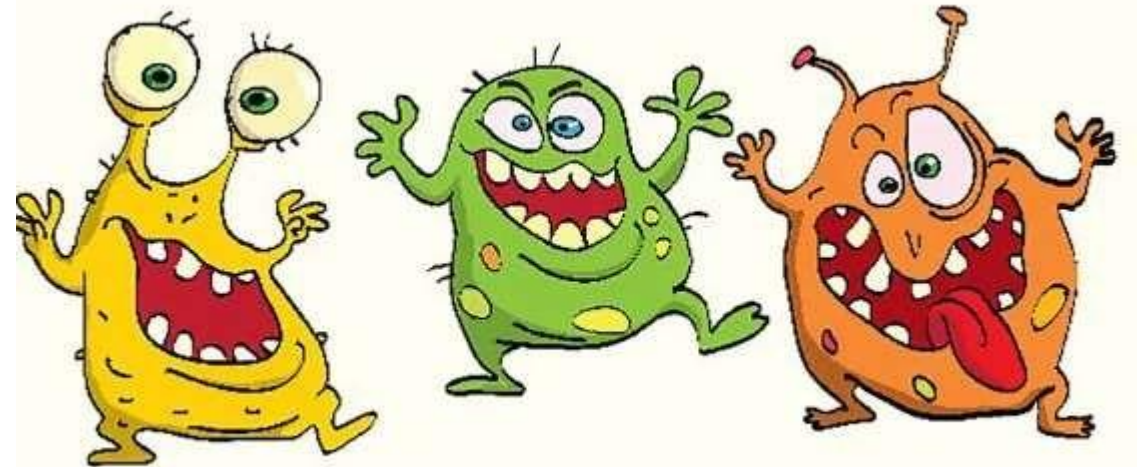




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- **Opportunistic pathogen:** pathogen produce disease
- when body resistance is lowered.
- **Pathogenicity:** refers to the ability of a class of microbe to produce disease.
- **Virulence:** degree of pathogenicity of a microbe.



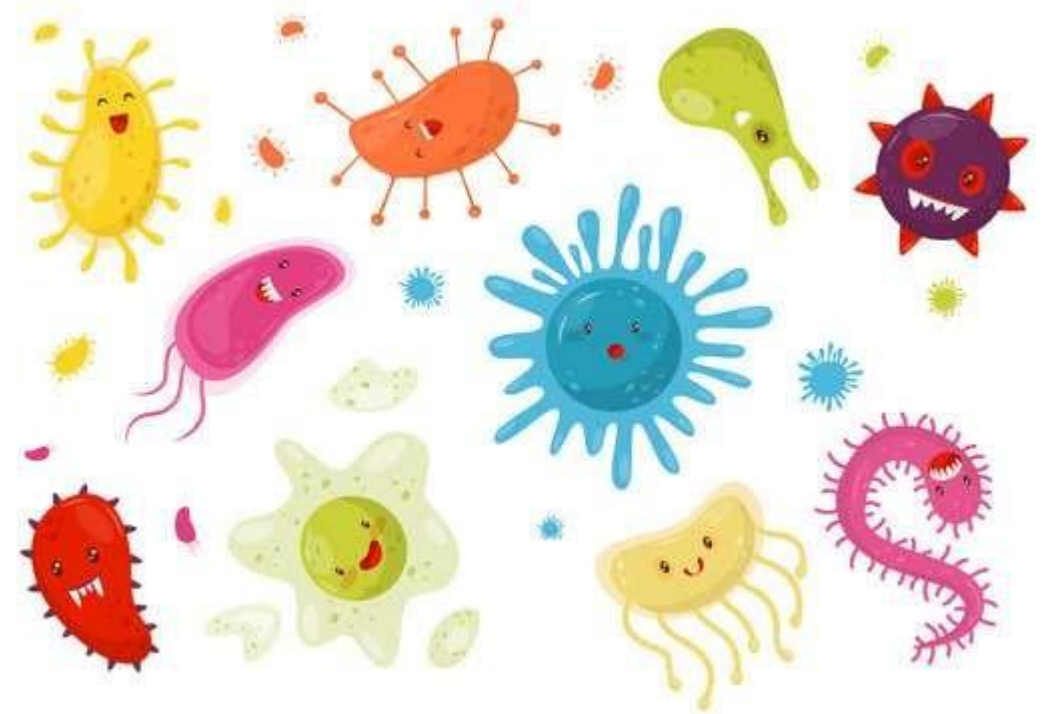
Virulence Factors of Pathogen



Definition



- **Infection:** the lodgement and multiplication of an infectious agent in the body by Colonization & Infestation





Classification of infection



- **Primary infection:** initial infection with a parasite in a host
- **Reinfection** : subsequent infection with the same parasite in the same host.
- **Secondary infection:** When body resistance is lowered by a pre existing disease, a new infection via new parasite.
- **Focal infection**-Due to localised infection generalised effects are produced
- **Cross infection:** when a patient already suffering from a disease acquires new infection from another host.
- **Nosocomial infection:** cross infection acquired in
 - hospitals.
- **Subclinical infection:** when clinical symptoms of an infection are not apparent.
- **Iatrogenic infection:** physician induced infection resulting from drug therapy or investigative procedures.



Source of infection



- Depending on the source of infection:
 1. Endogenous: inside (normal flora, latent pathogen)
 2. Exogenous : outside (patient, carrier, animal)



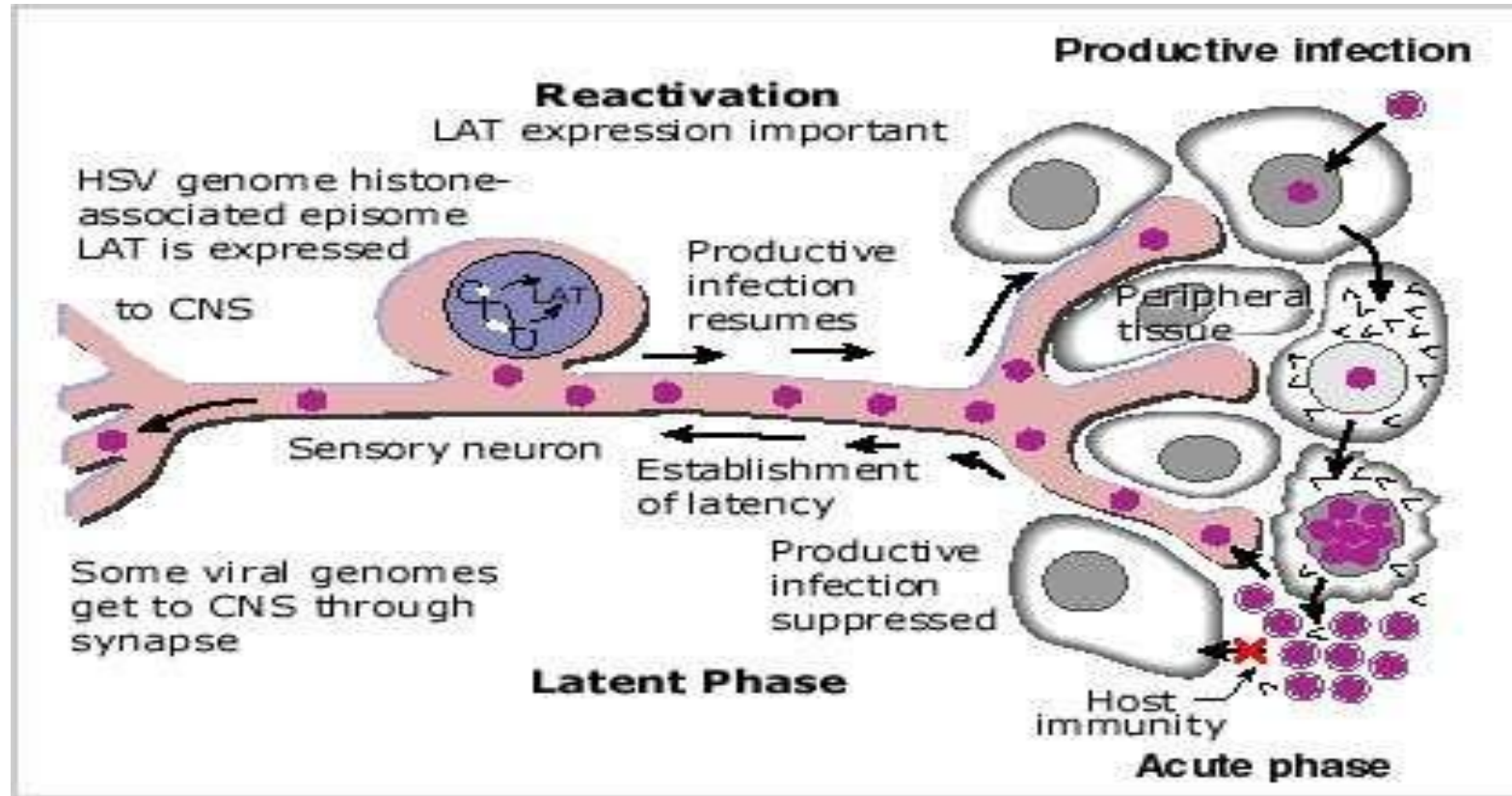


Clinical manifestation



- Based on clinical manifestations infections are:
- **Asymptomatic/in-apparent**- active infection but no noticeable symptoms.
- Symptomatic: 2 types
- **Acute** - symptoms last for short period
- **Chronic** - symptoms persist for a long period.
- **Latent infection** - infection that is inactive or dormant but is capable of reactivating later.
- **Atypical infection** : usual manifestations of disease are not present atypical symptoms.

Latent infection

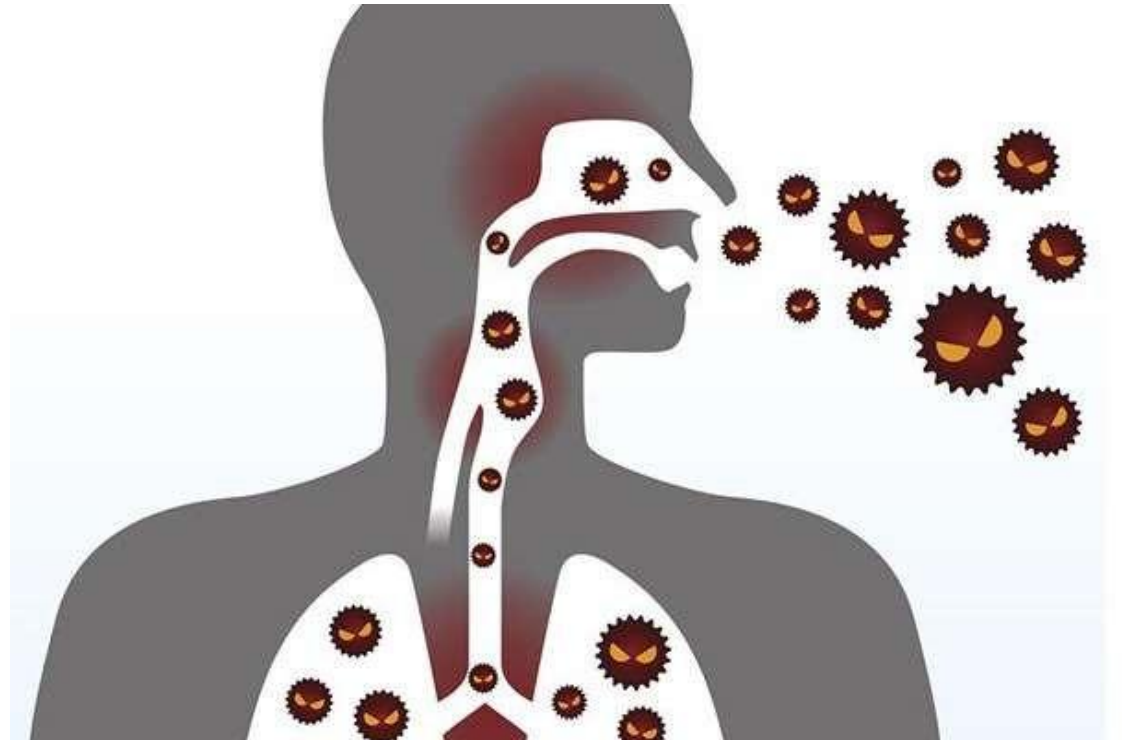




Infection entry



- **Portal of entry:** through oral, respiratory, genitourinary, conjunctiva or cutaneous routes.
- **Incubation period:** the time interval between the entry of infective agent and the onset of clinical manifestation of disease





Type of infectious disease



- **Localised infection**
 - An infection that is limited to a specific body part and has local symptoms.
 - There is Acute inflammatory reaction at the site of invasion to arrest infection. Eg., ulcers.
- **Generalized / systemic infection**
 - An infection that has entered the blood stream and has general systemic symptoms such as fever, chills, and low blood pressure. Eg., typhoid fever.