

# Gram-negative coccobacilli and cocci

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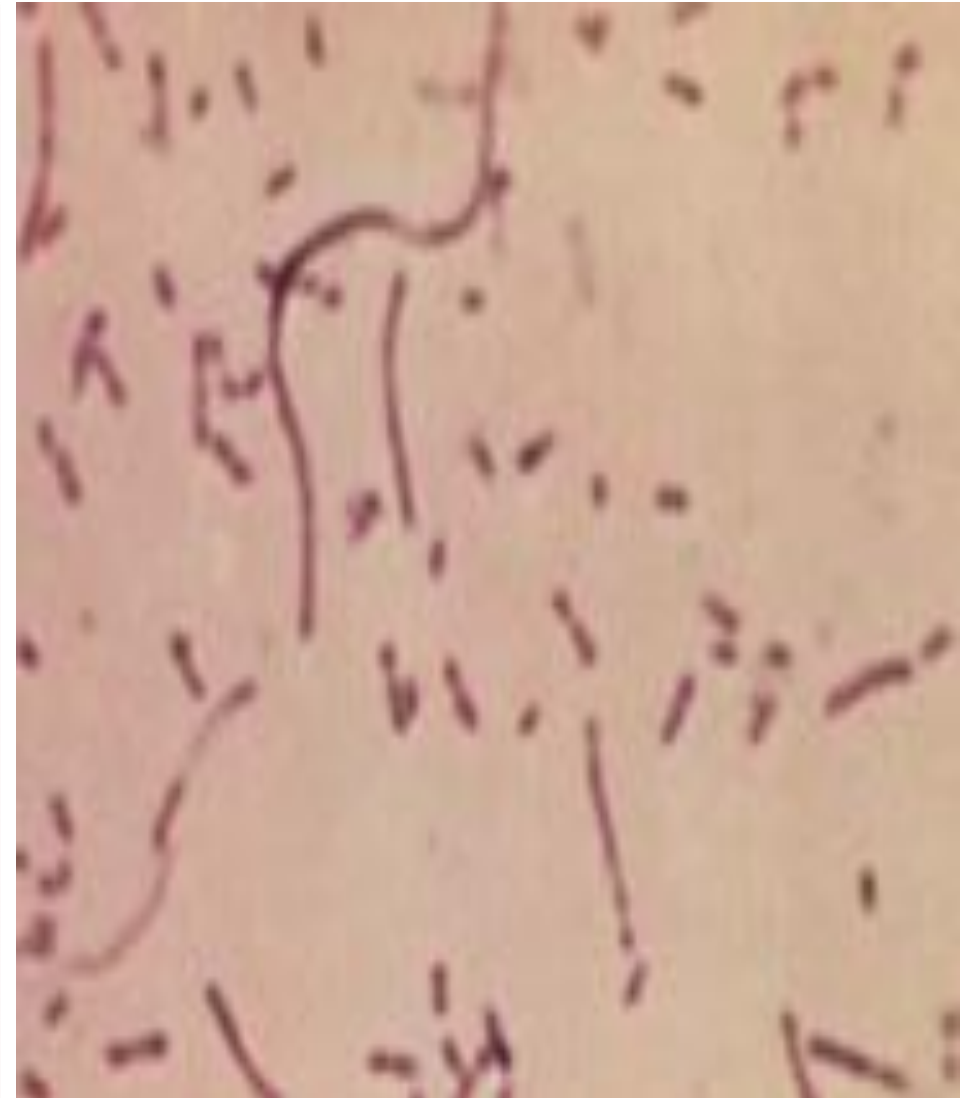
# Haemophilus Group

- Gram-negative coccus/large- thin bacilli.. Aerobic.. Requires growth factors ( **V- X-factors**).. Grow around hemolytic *Staphylococcus* spp.
- Normal Flora.. Human Respt. Tract.. Died Rapidly Outside Body( 30 minutes) Many Haemophilus sp.

Virulence factors: Endotoxin & Capsule..

- **H. influenzae type b**: Most common pathogenic species.. capsulated .. Causing Localized and Invasive Infect.. Sore Throat, Otitis Media, Sinusitis, Conjunctivitis, Brochopneumonia, Septicemia & Meningitis.. Children 6 Months-5 Years.
- Lab Diagnosis: Blood, CSF & Others Culture.. Chocolate & blood agar included X & V Factors.. Antibiotics.. **Hib-Vaccine**.. Infants > 2 months old.

# Haemophilus colonies growth surrounding Staphylococcus colonies



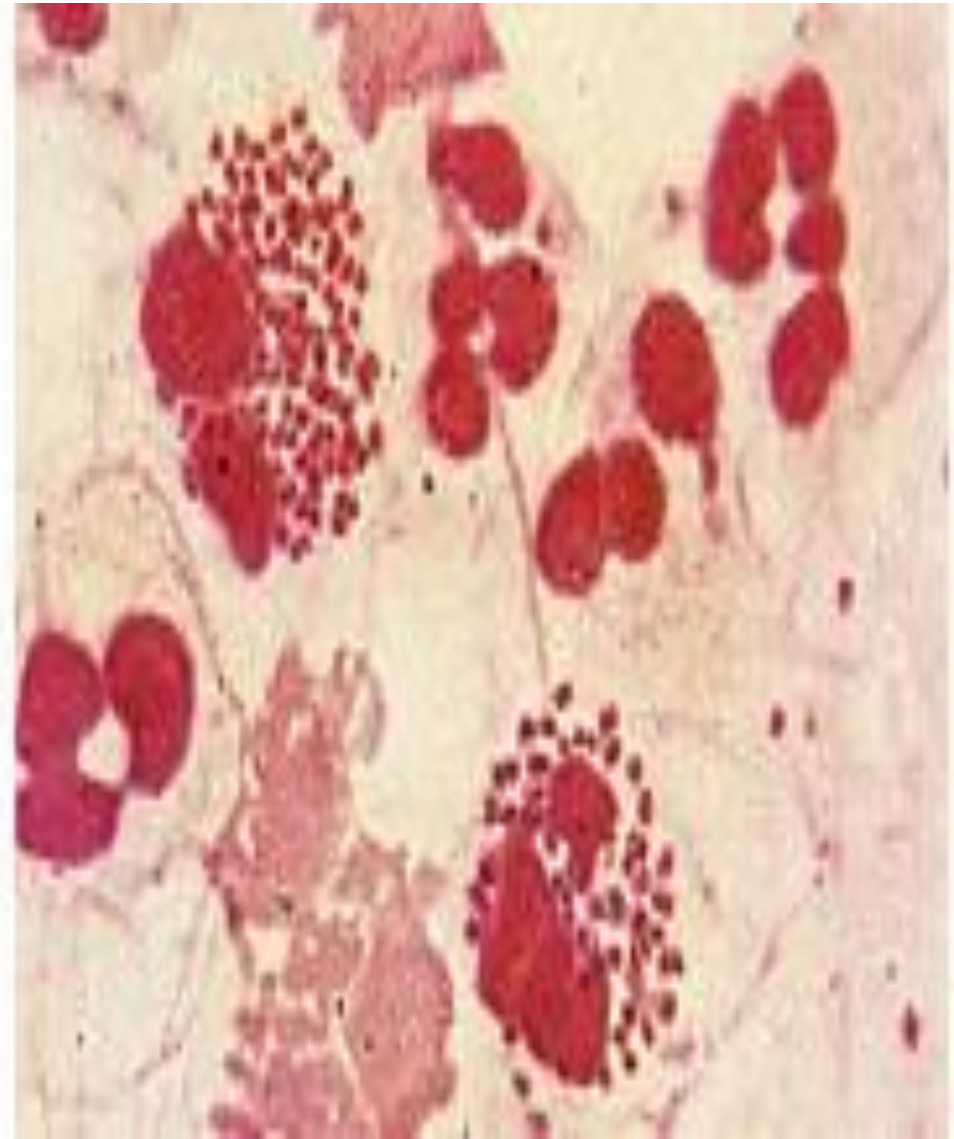
# Bordetella pertussis

- Gram-negative coccobacilli.. Aerobic.. Highly **Communicable agent**.. Droplets Infection..close contact.. Mucosa Respiratory Tract.. Produce **Pertussis Toxin**.. Whooping Cough/ paroxysmal cough.. Pertussis.. Infants Children more susceptible than adults, high fatal in Adults than in children. Antibiotics are useful in first stage
- Prevention: DTP vaccine within first 2 -4-6 Ms.
- Diagnosis: Clinical signs and Symptoms. Less Culture & Lab tests.

# Neisseria & Moraxella Groups

- **Neisseria spp., Moraxella spp.:** Gram-negative diplococci, Facultative anaerobes, **Oxidase/Catalase+ve**, Highly susceptible to Low/High Temp... Dryness, Rapid Autolysis .. Room Temp. Normal Flora Respiratory Tract.. Rare Non-pathogens (N. sicca, N. flava, M. Mucosa).. Common Pathogens.. ***N. gonorrhoea, N. meningitidis***.
- **1-N.gonorrhoea:** Pili, IgA-Protease, LPS, Colonization Mucosa.. Invasion..Inflammation.. Genitourinary Tract, Rectum,Throat, Sexually Transmitted Diseases.. Acute/Subacute/Asymptomatic Infections.. Uretral/Vaginal Discharge, Urethritis, Cervicitis, Salpingitis.. Common Reinfection..

# Neisseria Gramstain-Intracellular Presence in Urethral Discharge



# Follow/2

- **Lab diagnosis**: Direct Gram-stain.. Intracellular G-ve diplococci in WBCs (pus cells).. Rapid Culture in Blood/chocolate Agar.. Antibiotics, No Vaccine.
- **2- N. meningitidis**: Capsular Polysaccharides, LPS, IgA-Protease, Serotypes A,B,C, Invasive, Exogenous Infect. Respt.Tract.. Sore Throat.. Septicemia.. Meningitis.. Acute disease with high Mortality without treatment. Children (6-Months-5 years) more susceptible than adults. Epidemic outbreaks.
- Protective Vaccine is available.
- **3- M. catarrhalis**: Part of normal Respiratory tract.. Opportunistic pathogen.. Pneumonia.. Rarely Septicemia.. Compromised Lung/heavy smokers.
- **Lab Diagnosis**: Direct-Gram-stain, Culture Blood/chocolate Agar, Biochemical tests, Antibiotics,