- Gram+
  - Cocci
    - Sterptococcus
Catalse (-)
Sensitive to drying .heat .and disinfection
      - Hemolysis of RBcs
        - None y
          - Enterovoccus
        - Complete b
          - S.agalactiae
          - S.pyogens
Group-A streptococci (GAS).
b- hemolytic.
Most serious streptococcal pathogen.
Inhabits throat, nasopharynx, occasionally skin.
Diseases:
Pharyngitis.
Skin infections.
Necrotizing infections.
Systemic infections
        - Partial a
          - Viridans streptococii
          - S .pneumonia

Pneumonia-inflammatory condition of the lung.
Inhabits nasopharynx of healthy people.

May also infect brain: (pneumococcal meningitis) and blood stream (pneumococcus septicemia).
    - *Staphylococcus catalase (+)*

In skin and mucous membrane
Sphrical cells arrange in irregular clusters
Produces many viral factors
      - Coagulase (+)
S.aures

1.Food poisoning
2.localized infection (abscess formation)
3.spreading infection
4.necrotizing infection
5 systemic infection(osteomyleitis)
      - coagulase (-)
Involved in nosocomial and opportunitics infectio
        - S.sarpophyic
Live in skin .intestine .vagina
UTI تسبب
        - S.epidermidis
Live in skin and mucous membraes
1. Bacteremia تسبب
2.endocardites
3UTI
  - Rods
    - Branching filament
      - Nocadia
Aerobe .acid fast
      - Actinomyces
Anaerobe not acid fast
    - Bacillus
      - Bacillus cereus
        - Grows in foods, spores survive cooking/ reheating.
Ingestion of toxin-containing food causes nausea, vomiting, abdominal cramps, diarrhea; 24 hour duration.
No treatment.
Increasingly reported in immunosuppressed
      - Bacillus anthracis
        - Large, block-shaped rods
Central spores
Virulence factors –polypeptide capsule/exotoxins
3 types of anthrax:
Cutaneous–spores enter through skin, black sore; least dangerous.
Pulmonary–inhalation
    - Corcorynebacterum
      - Corynbacterium diptheriae:
Virulence factors: diphtherotoxin.
Vaccine (DPT).
Causes a pseudomembrane which can cause asphyxiation.
Acquired via respiratory droplets from carriers or actively infected individuals.
    - Listeria
      - Listeria monocytogenes:
Found in soil, water, luncheon meats, hot dogs, cheese.
Resistant to long storage and refrigeration, heat, salt, pH extremes and bile.
    - Mycobacterium
      - Gram-positive irregular bacilli.
Acid-fast staining: mycolic acids.
Strict aerobes.
Grow slowly.
Virulence factors -contain complex waxes that prevent destruction by lysosomes or macrophages
    - Clostridem
      - Clostridium difficile
        - •Normal flora colon, in low numbers.
•Causes antibiotic associated colitis
•Due to treatment with broad-spectrum antibiotics that kills other bacteria: C. difficile overgrowth
•Enterotoxins that damage intestines.
•Major cause of diarrhea in hospitals.
•Treatment: stop antimicrobials/fluid electrolyte replacement.
      - Clostridium perfringens (Gas Gangrene
        - Soft tissue :wound infections: myonecrosis
Predsposing factors: infection of all types of wounds.
Virulence factors (lytic enzymes)
Treatment: antibiotics/amputation
      - Clostridium tetani: Tetanus
        - Common resident :of soil and GI tracts of animals.
Causes tetanus or lockjaw, a neuromuscular disease.
Most commonly among IV drug abusers and neonates in developing countries.
      - Clostridium Botulinum: Flaccid paralysis
        - Botulism–intoxication associated with inadequate food preservation
Toxin carried to neuromuscular junctions: blocks the release of acetylcholine: necessary for muscle contraction to occur.
Clinically
Double or blurred vision
Difficulty swallowing
Neuromuscular symptoms