- Gram +ve spore forming – Clostridia
- Gram –ve non spore forming – Bacteroides & Fusobacterium

EXAMPLES OF HUMAN CLINICAL CONDITIONS ASSOCIATED WITH ANAEROBIC ORGANISMS

1. Brain abscess
2. Periodontal infections
3. Intraabdominal infections
4. Infections of wounds secondary to trauma
5. Abscesses in inner tissues – lung abscess
6. Pelvic abscess & endometritis
7. Post traumatic abortion infections
8. Bacteriaemia or septiceamia

- Specimens examined depend on the clinical manifestations
  - Include:
    - Body fluids
    - Pus from deep abscesses
    - Aspirates
    - Infected tissue

LAB EXAMS
Collection & transport of specimens
- Proper collection and transport of specimens require application of necessary precautions to enable successful isolation
b. Collection – Contamination is avoided; Exposure to air is avoided or minimized.
c. Transportation – Exposure to air avoided/minimized by use of proper systems which include:
  - Thioglycollate broth
  - Syringe used in aspiration with the needle bent

Culture for isolation and identification
- Media can be –
  - Semi solid- Non selective, enrichment and selective
    - Selective media where required contain blood agar as a base plus antibiotics – Kanamycin & Neomycin
  - Liquid media – Broth medium containing reducing substances – Sodium thioglycollate
SOME ANAEROBIC CULTURE SYSTEMS

- Various techniques – Aim at exclusion of O₂ from incubation environments involve:
  o Growth media as above
  o Evaluation of air and replacement with inert gases:
    ▪ By use of suction & pumping
    ▪ Use of gas generating chemical reactions
      • Methods in 2 (above) involve the use of anaerobic jars:
        o McIntosh– Fildes
        o Gaspak
        o Oxoid
    ▪ Any O₂ left in the jar is removed by reacting it will H₂ under Pallidium catalyst to form H₂O. Catalyst is heated before incubation to activate it.
  o Other systems
    ▪ Anaerobic glovebox technique
    ▪ Anaerobic cabinets
    ▪ Anaerobic chambers
    ▪ Copper coated steel wool to react with O₂

- All the culture processes require quality control:
  o Chemical – Use of indicators which change colour when O₂ is completely removed and when O₂ is detected
  o Biological – Use of organisms which grows only in O₂ present or one which grows only in O₂ absence.

CLOSTRIDIUM

MICROSCOPY
- Relatively large, gram +ve bacilli, spore forming
- Spores have a diameter larger than the width of the cells can be placed centrally, sub-terminally or terminally
- Most species are flagellated or motile

PHYSICAL PROPERTIES
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HABITAT
- Environment, decomposing animals and plants
- Play role in putrefaction
- Some species are normal flora of animals and human intestines – potential pathogens---cause contamination of environment when passed out with feces.

LAB GROWTH
A. MEDIA – a variety including BA RCM