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## Gastrointestinal tract

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- Midgut
- Hindgut

Anal membrane	गुदा झिल्ली
Anterior intestinal portal	अग्र आंत द्वार
Branchial cleft	
Bucconasal membrane	गंडनासिका झिल्ली
Buccopharyngeal membrane	गंडग्रसनी झिल्ली
Caecal sacculles	अंधनाल थैलिका
Caecul bud	अंधनाल कलिका
Cloacal membrane	अवस्कर झिल्ली
Cystic bud	पित्ताशय कलिका
Dorsal mesogastrum	पृष्ठ आंत्रयोजिनी
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Pharyngeal cleft	ग्रसनी विदर
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Tracheoesophageal septum	श्वासनाल -ग्रासनली पट्ट
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Primitive rectum	आद्य मलाशय
Pancreatic buds	अग्न्याशय कलिका

- Primitive tubular gut
  - buccopharyngeal membrane ( cephalic end )
    - primitive **mouth** cavity or stomodaeum
  - Foregut
    - cephalic or pharyngeal part of foregut

- funnel shaped expansion compressed dorsoventrally
  - dorsal wall or roof
    - notochord
    - hindbrain
    - pair of dorsal aorta
  - ventral wall or floor
    - ectodermal stomodaeum
    - forward bulging of pericardial sac
    - developing heart
    - septum transversum
  - two lateral walls
    - separated from overlying surface ectoderm by
      - splanchnic mesoderm
        - undergoes segmentation
          - mesodermal bars / branchial or visceral arches
  - Each arch contains
    - surface ectoderm
    - core of mesoderm
    - inner lining of pharyngeal endoderm
    - extends ventrally and medially
      - along floor or ventral wall of pharynx
        - meets the corresponding arch of opposite side
  - Between each arch
    - closely approximated membranes
      - in fishes they rupture
    - in terrestrial
      - series of ectodermal grooves called branchial or visceral cleft / ectodermal cleft
      - same on inner side endodermal pouches / pharyngeal pouches are formed
        - FIRST POUCH
          - dorsal part extends in to mesenchyme outwards
            - medial part of this recess persists as auditory tube
            - lateral part forms primitive tympanic cavity
              - mucous lining of tympanic cavity
              - mastoid antrum , mastoid air cells
              - mucous layer of tympanic membrane
          - the thin layer of mesoderm between First pouch and first cleft
            - this region forms tympanic membrane ( tridermal in nature )
        - SECOND POUCH
        - THIRD POUCH
        - FOURTH POUCH
          - Floor of primitive pharynx

- developing **tongue**
- thyroid diverticulum
- laryngo-tracheal groove
- FIFTH POUCH
- FIRST ARCH ( श - स - ष ) ectoderm - mesoderm - endoderm
  - श -
    - forms skin over the
      - upper jaw , lower jaw and tragus of auricle
  - स -
    - Artery - first aortic arch which disappears
    - **Nerve** -
      - pre trematic accompanies caudal border or preceding arch
        - Chorda Tympani **nerve**
      - post trematic follows cephalic border of succeeding arch
        - Mandibular **nerve**
    - **Muscle**
      - Tensor tympani , tensor veli palatini
      - Muscles of Mastication , Mylohyoid
      - Anterior belly of digastric
    - Skeletal -
      - central axis of mesodermal core is chondrified
        - cartilaginous **bar** is enveloped by perichondrium
          - dorsal maxillary process
          - Ventral Mandibular process ( called as meckel's cartilage )
            - dorsal part ossified to form
              - malleus and incus
            - ascending part regresses
              - fibrous part persists as
                - anterior ligament of malleus
                - sphenomandibular ligament
              - fibrous part is ossified to form
                - **body** of mandible
                  - from mandibular foramen to mental foramen
- SECOND ARCH
  - S -
    - **Muscle** -
      - Stapedius , stylohyoid ,
      - Platysma , posterior belly of digastric
      - Auricular , epicranium
    - Skeletal -
      - Cartilaginous **bar** is called as reichert's cartilage
        - dorsal part of cartilage ossified to form
          - stapes
        - succeeding part forms

- styloid process of temporal bone ,  
stylohyoid ligament
- Ventral part is converted
  - lesser cornu
  - upper part of **body** of hyoid bone
- THIRD ARCH
  - S
    - **muscle**
      - stylopharyngeus
    - skeletal -
      - cartilaginous **bar**
        - dorsal part disappears
        - ventral part is ossified
          - greater cornu of hyoid bone and lower part of hyoid bone
- FOURTH ARCH
  - S
    - **muscle**
      - cricothyroid
    - Skeletal
      - cartilaginous **bar**
        - dorsal part disappears
        - Ventral part forms lamina of thyroid cartilage
- FIFTH ARCH
  - DISSAPEARS
- SIXTH ARCH
- S
  - **muscle**
    - all intrinsic muscles except cricothyroid
  - Skeletal
    - Cartilaginous **bar**
      - Dorsal part disappears
      - Ventral part forms cricoid and arytenoid cartilage
- Anterior intestinal portal
  - termination of bile duct in second part of **duodenum**
- Midgut
- posterior intestinal portal
- Hindgut
- cloacal membrane (caudal end)

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