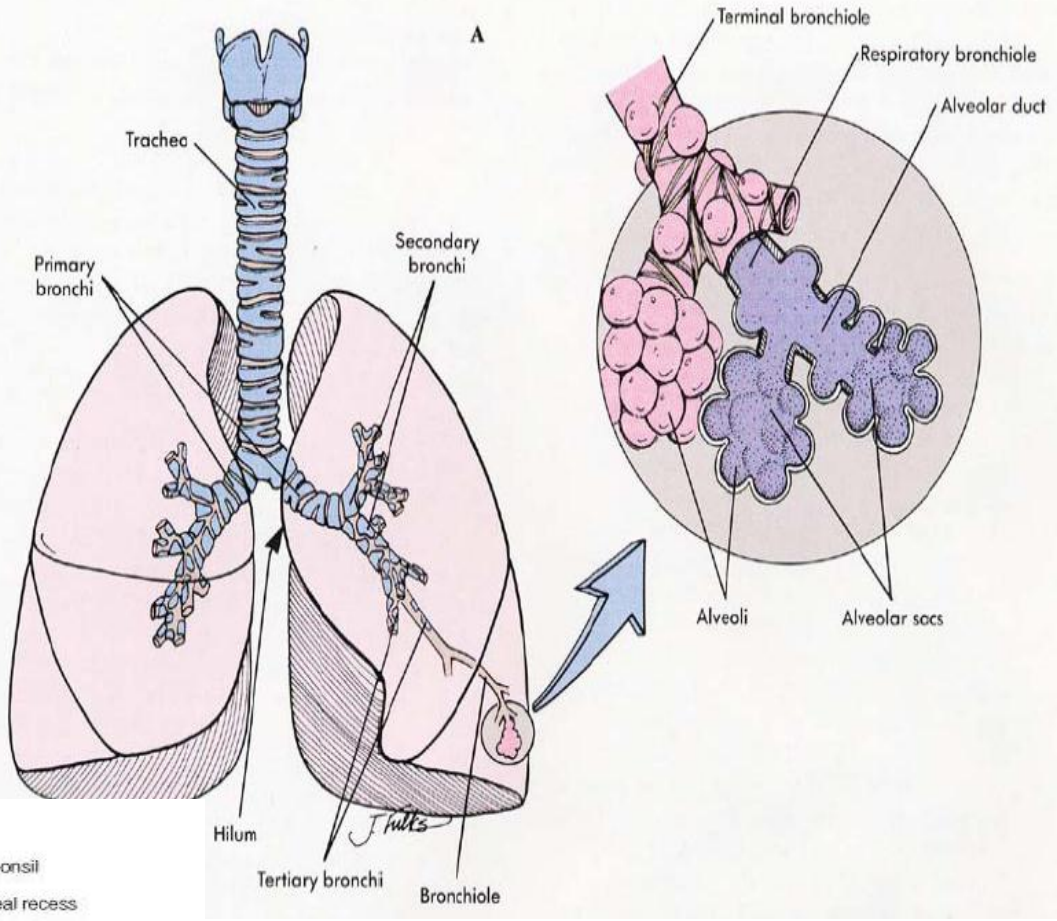
IN THE NAME OF GOD

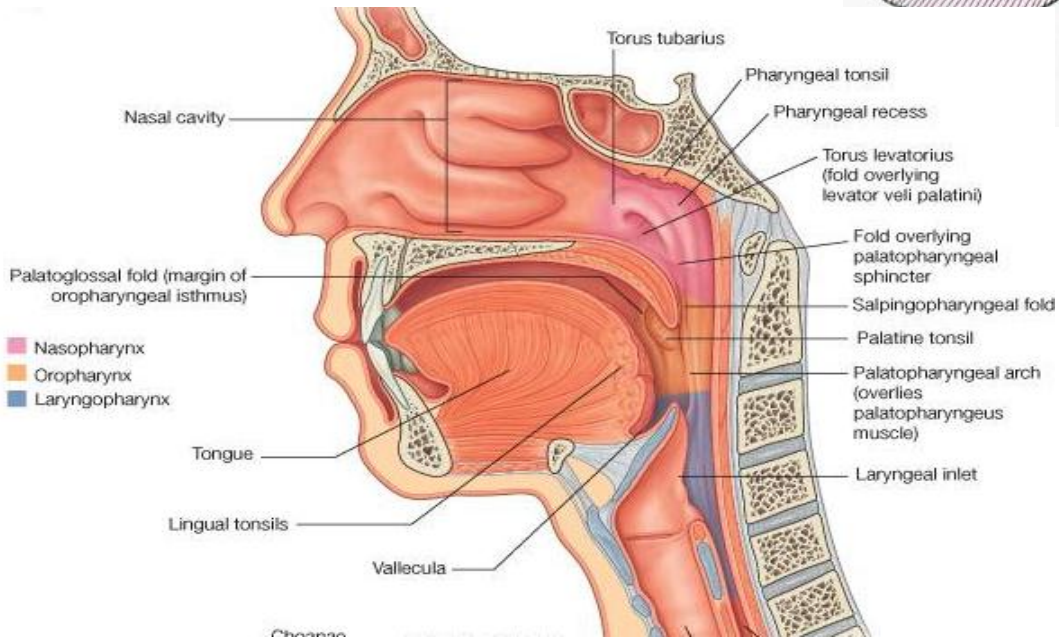
Respiratory System

Respiratory System

Adult anatomy

- Nasal cavity
- Pharynx
- Larynx
- Trachea
- Primary Bronchi
- Secondary Bronchi
- Tertiary Bronchi
- Bronchiole
- Terminal Bronchiole
- Respiratory Bronchiole
- Alveolar Duct
- Alveolar Sac





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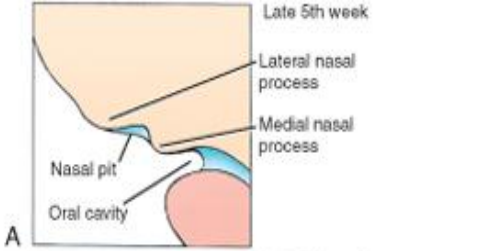
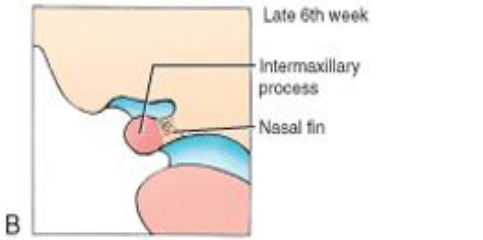
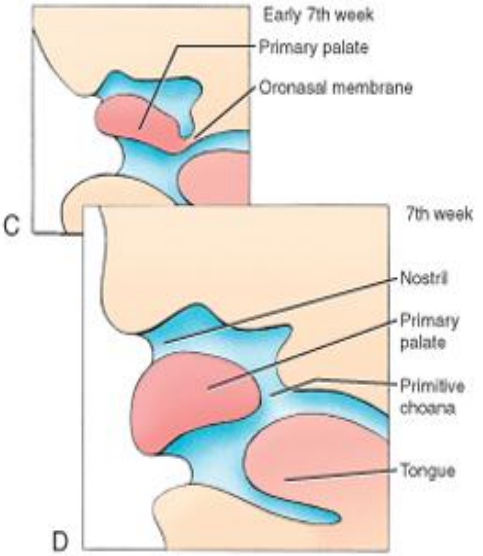
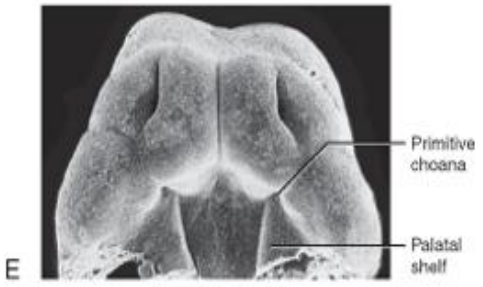


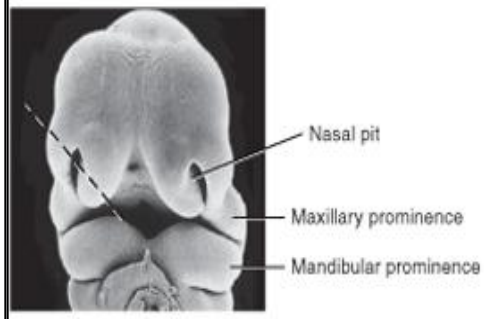




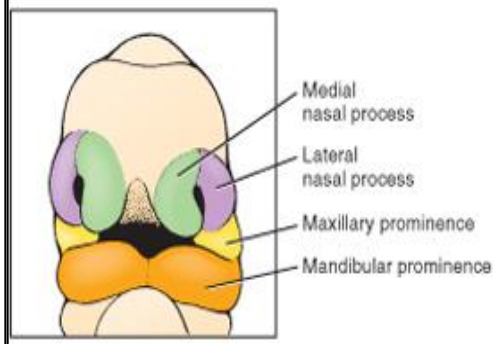


Early 7th week

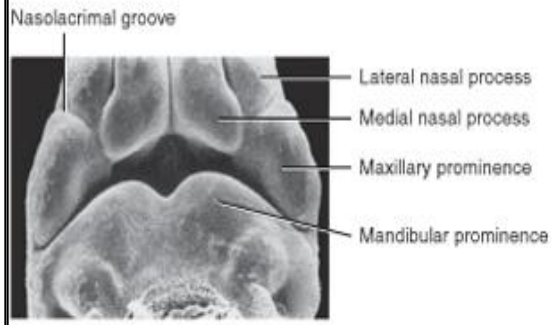
Nasofrontal prominence



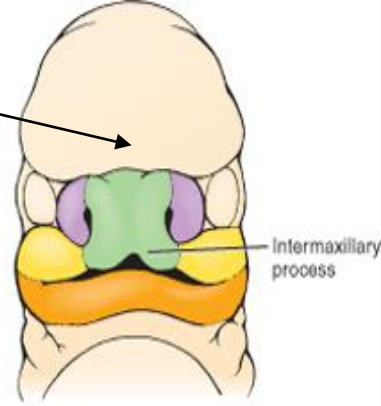
A Early 6th week



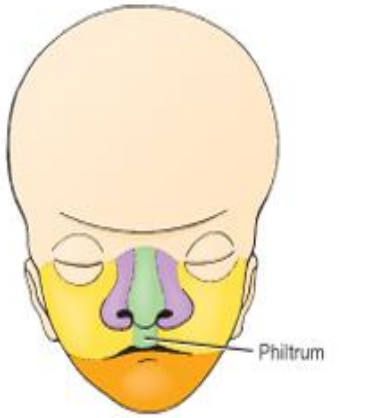
B Early 6th week



C Early 7th week

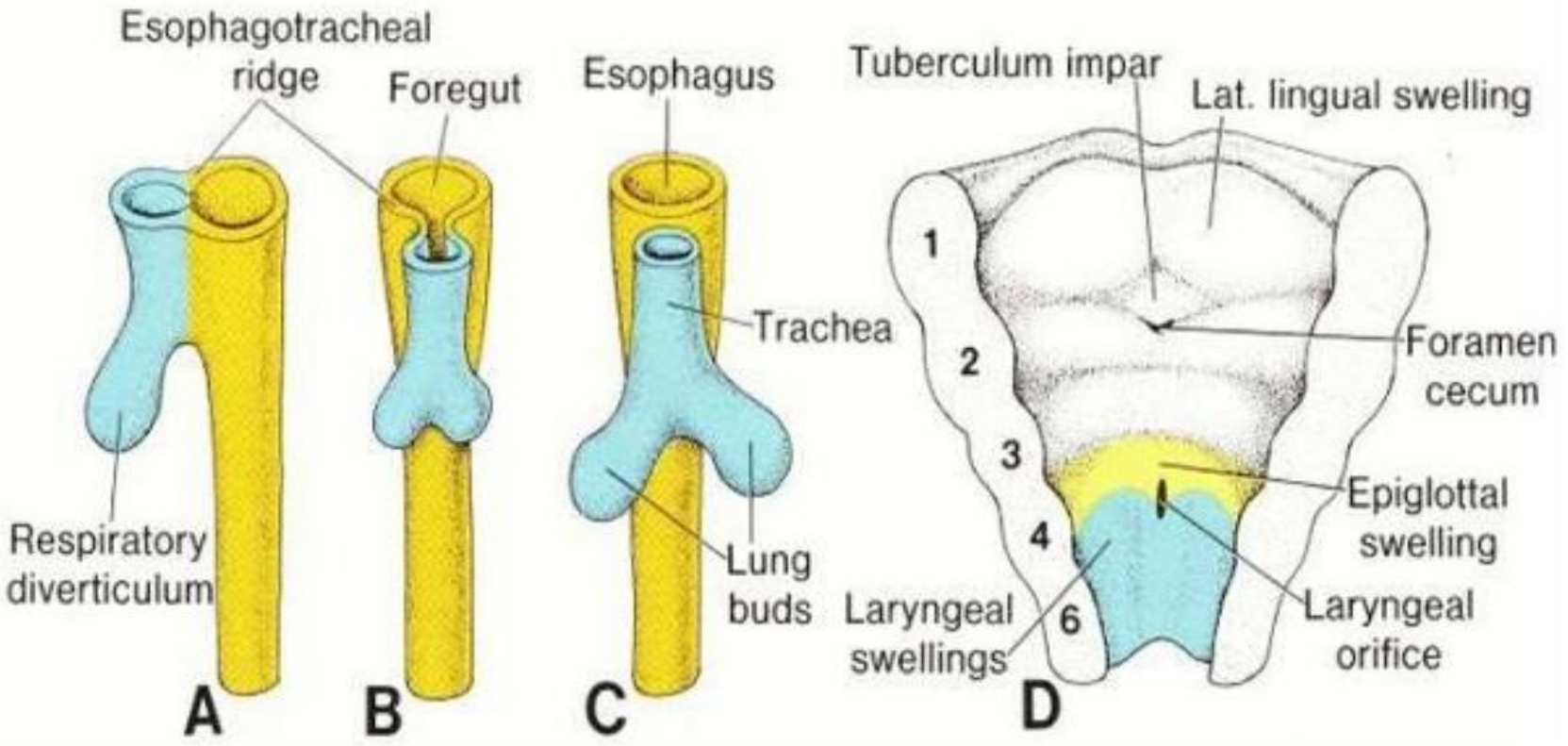


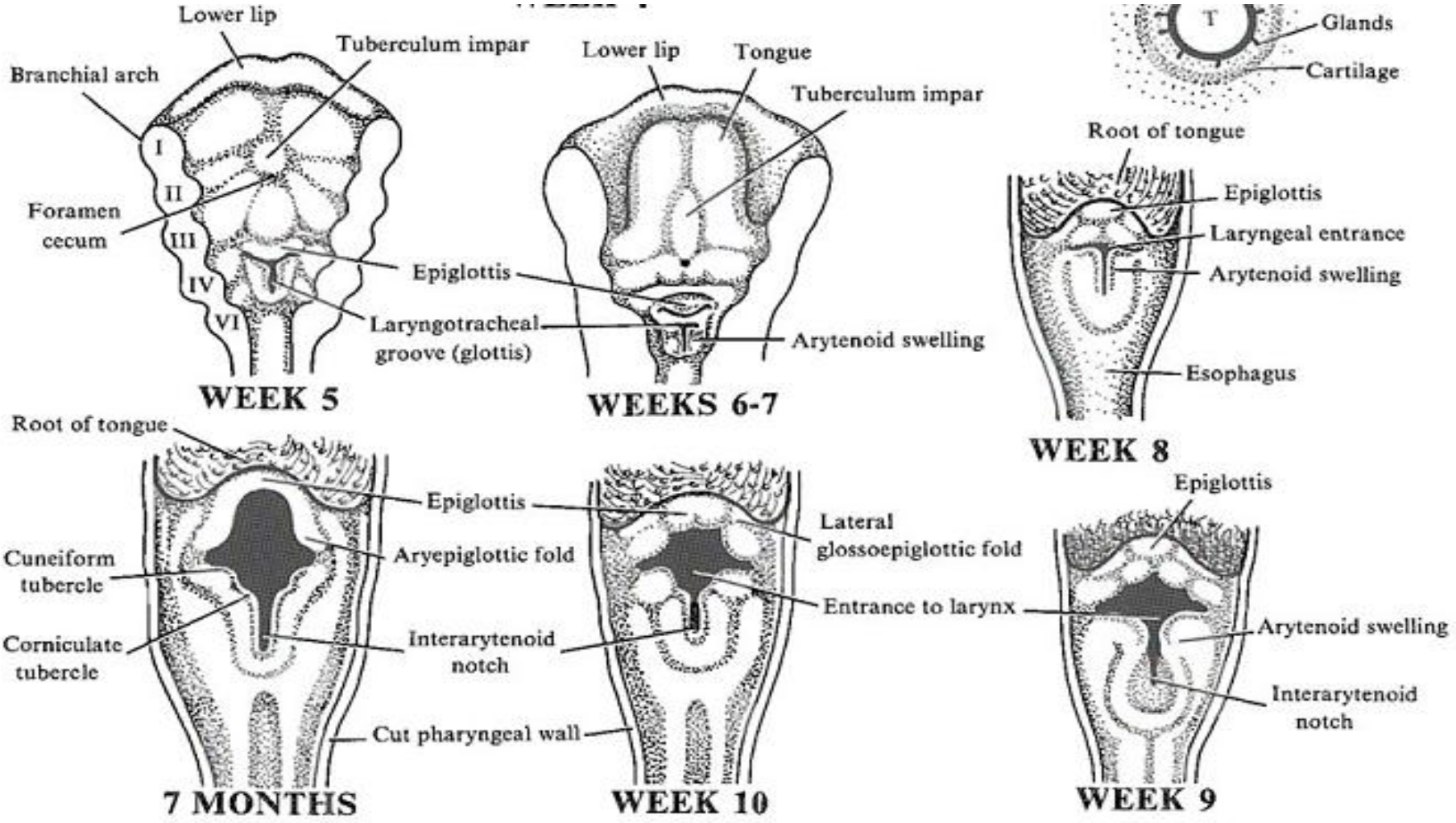
D Late 7th week

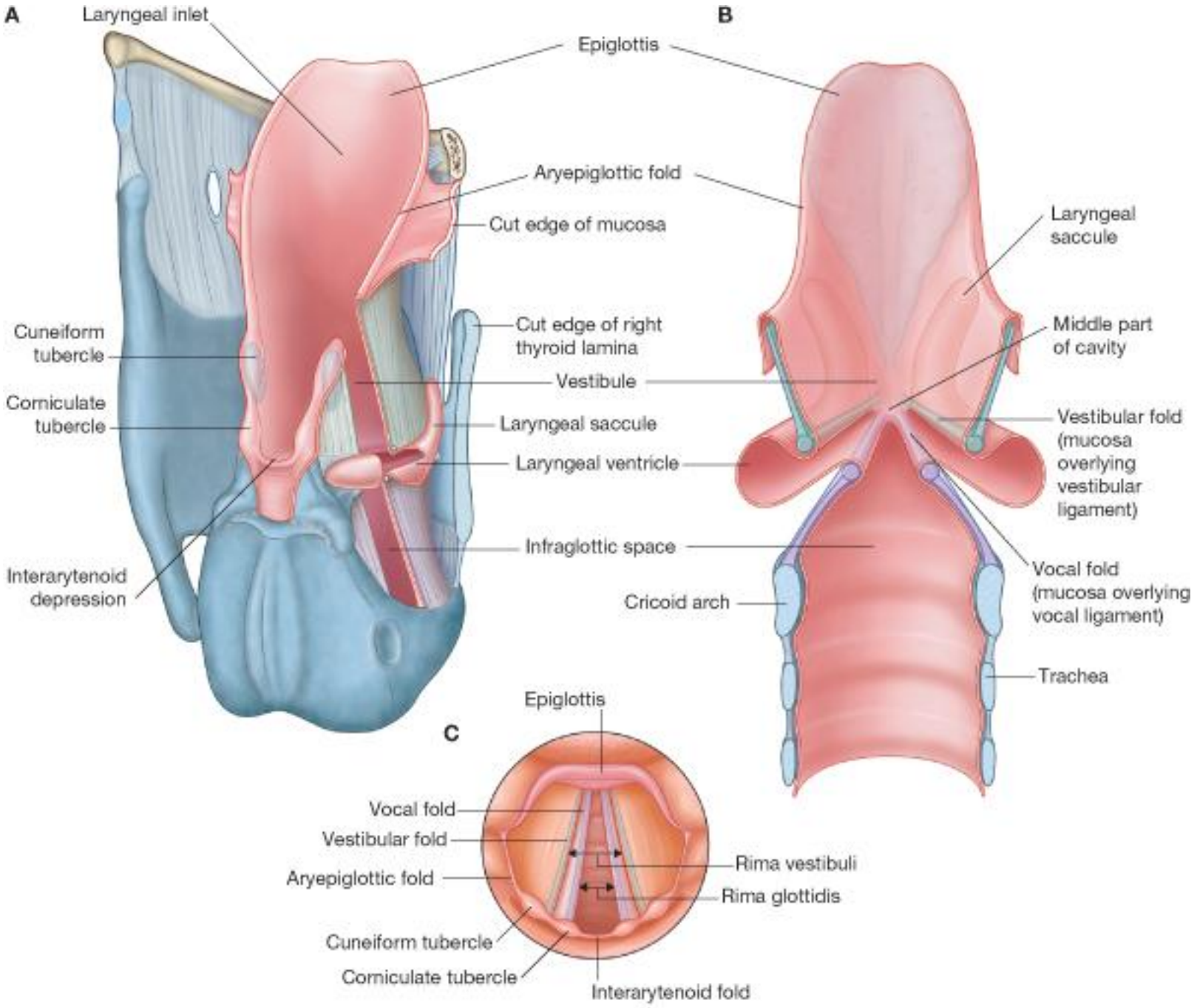


E 10th week

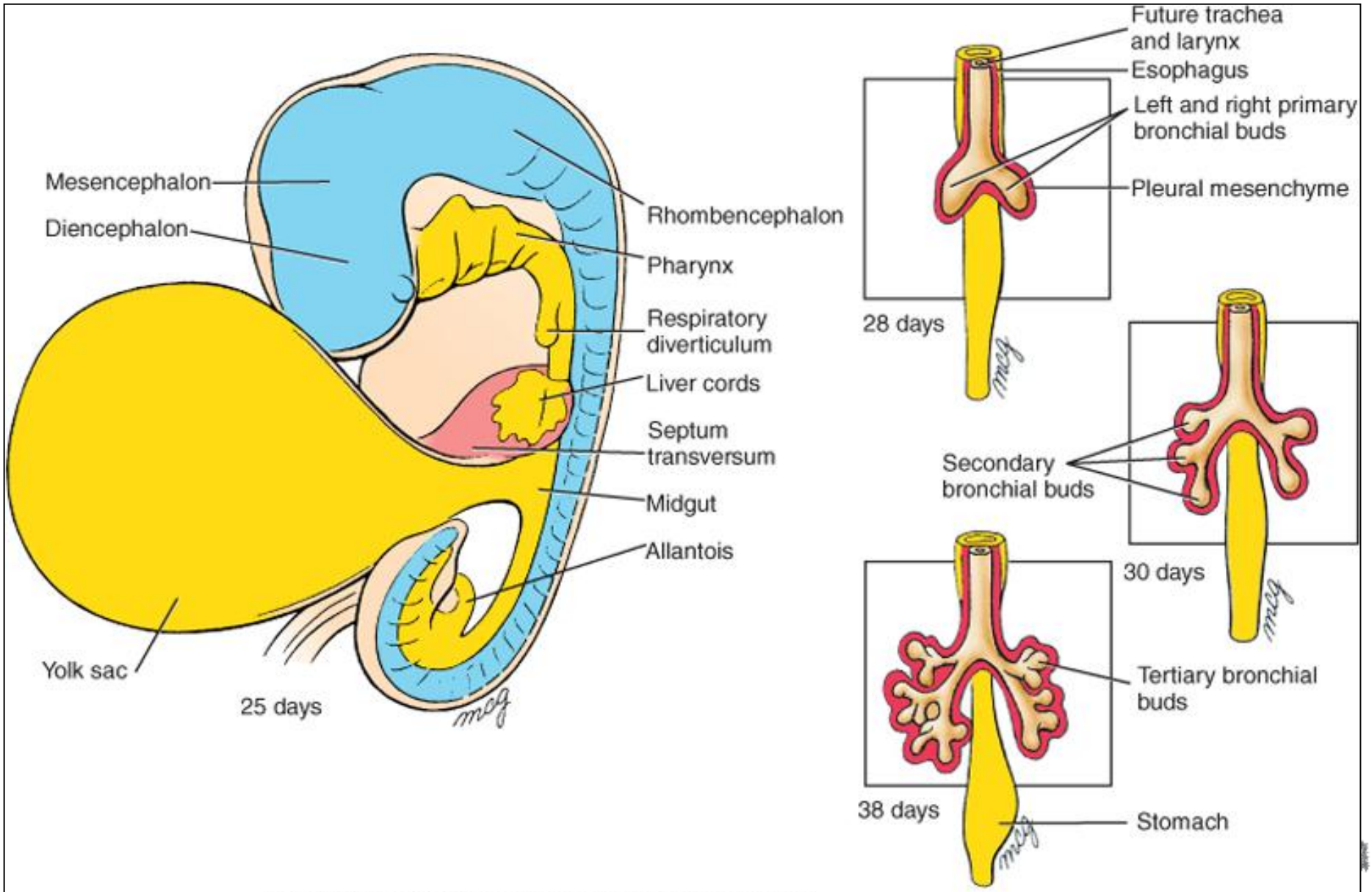
Larynx Pharyngeal arch 4 and 6

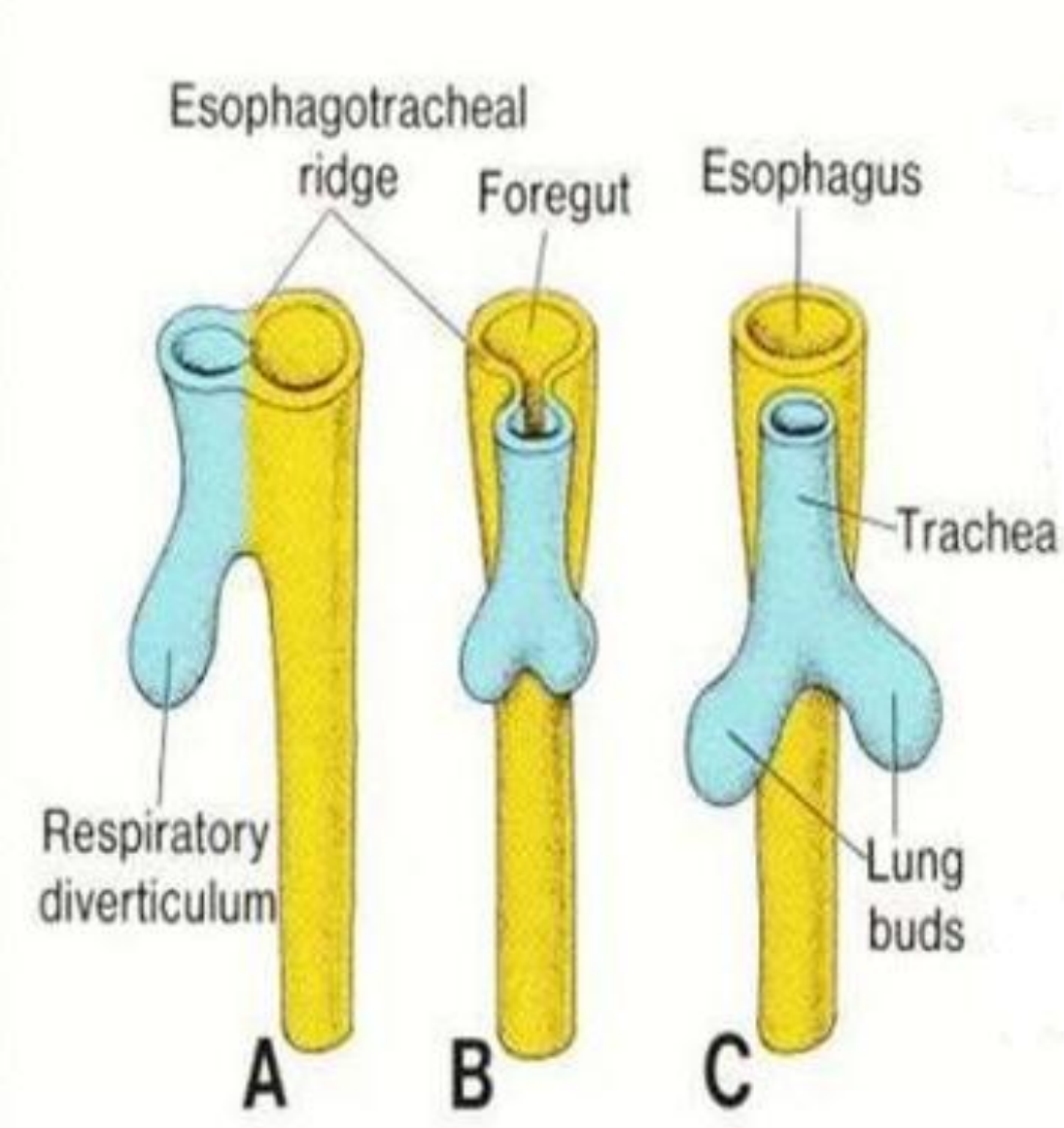



Lower lip
Tuberculum impar
Branchial arch
I
II
III
IV
VI
Foramen cecum
Epiglottis
Laryngotracheal groove (glottis)
WEEK 5
Lower lip
Tongue
Tuberculum impar
Arytenoid swelling
WEEKS 6-7
T
Glands
Cartilage
Root of tongue
Epiglottis
Laryngeal entrance
Arytenoid swelling
Esophagus
WEEK 8
Root of tongue
Epiglottis
Aryepiglottic fold
Cuneiform tubercle
Corniculate tubercle
Interarytenoid notch
Cut pharyngeal wall
7 MONTHS
Epiglottis
Lateral glossoepiglottic fold
Entrance to larynx
WEEK 10
Epiglottis
Arytenoid swelling
Interarytenoid notch
WEEK 9



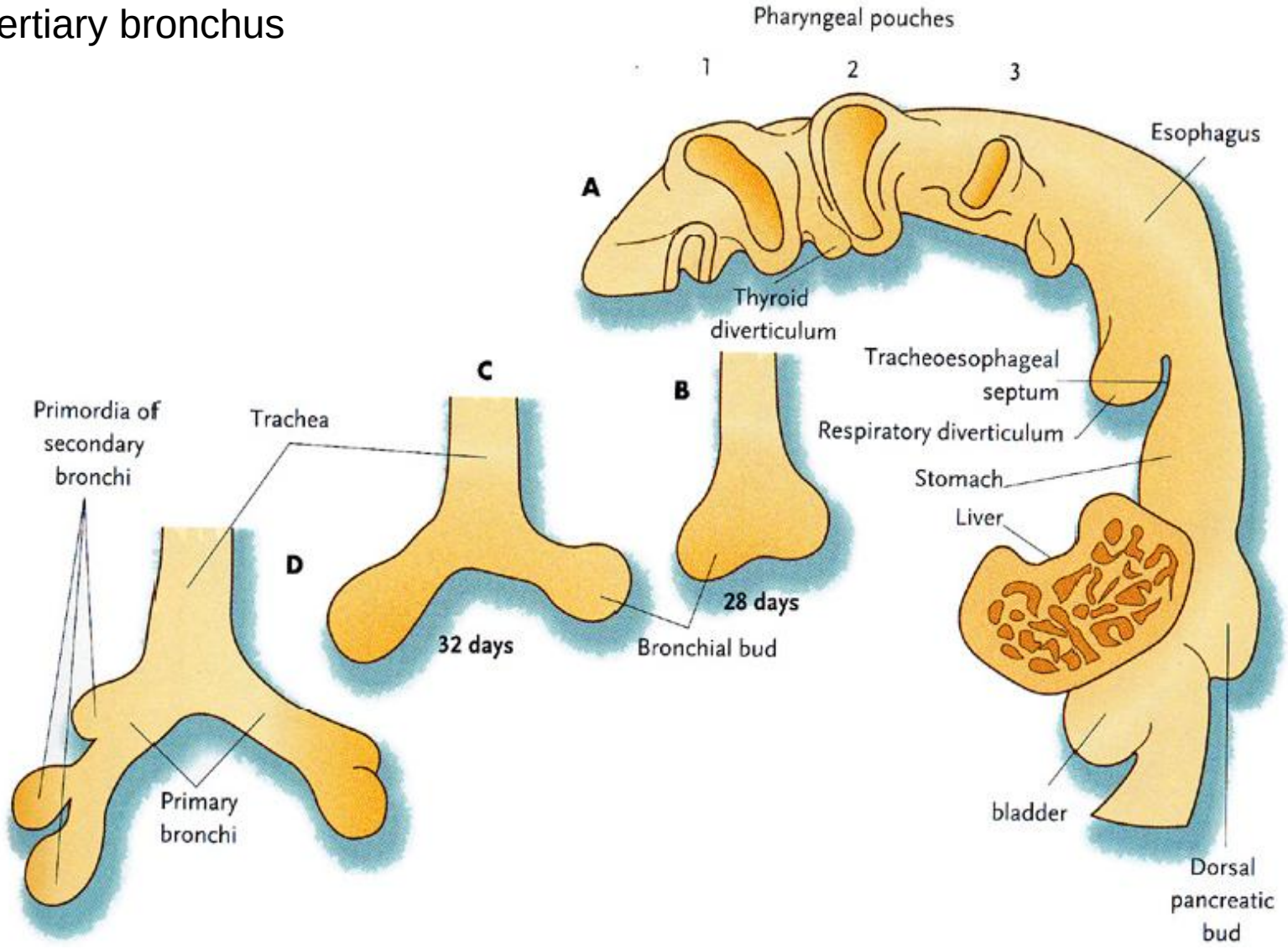
Tubular branching system -controlled by inductive interactions between the mesoderm (RA) and the endoderm (TBX4).

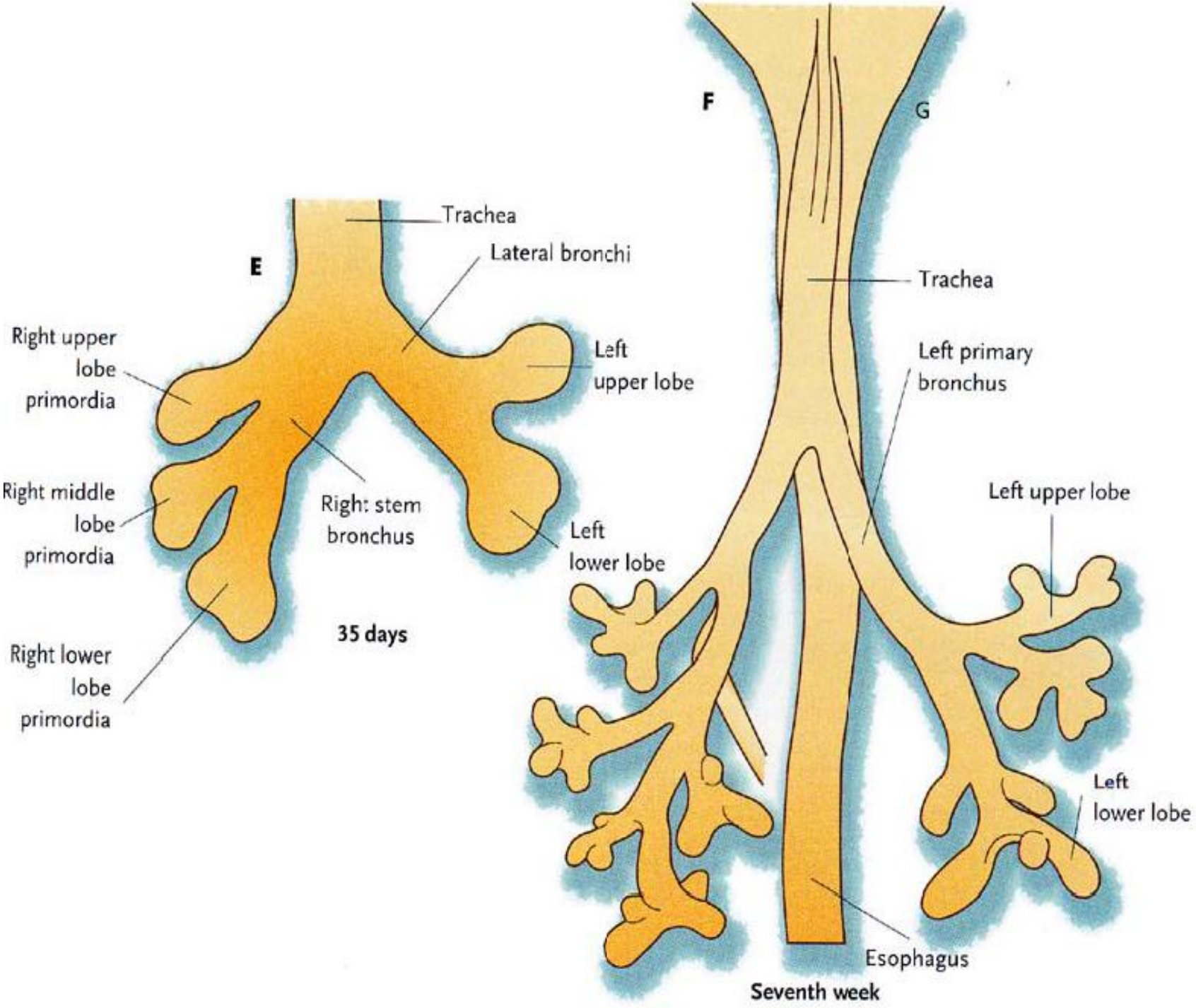



Esophagotracheal ridge
Foregut
Esophagus
Trachea
Respiratory diverticulum
Lung buds
A
B
C

Embryonic Period (26 day to 5 week)

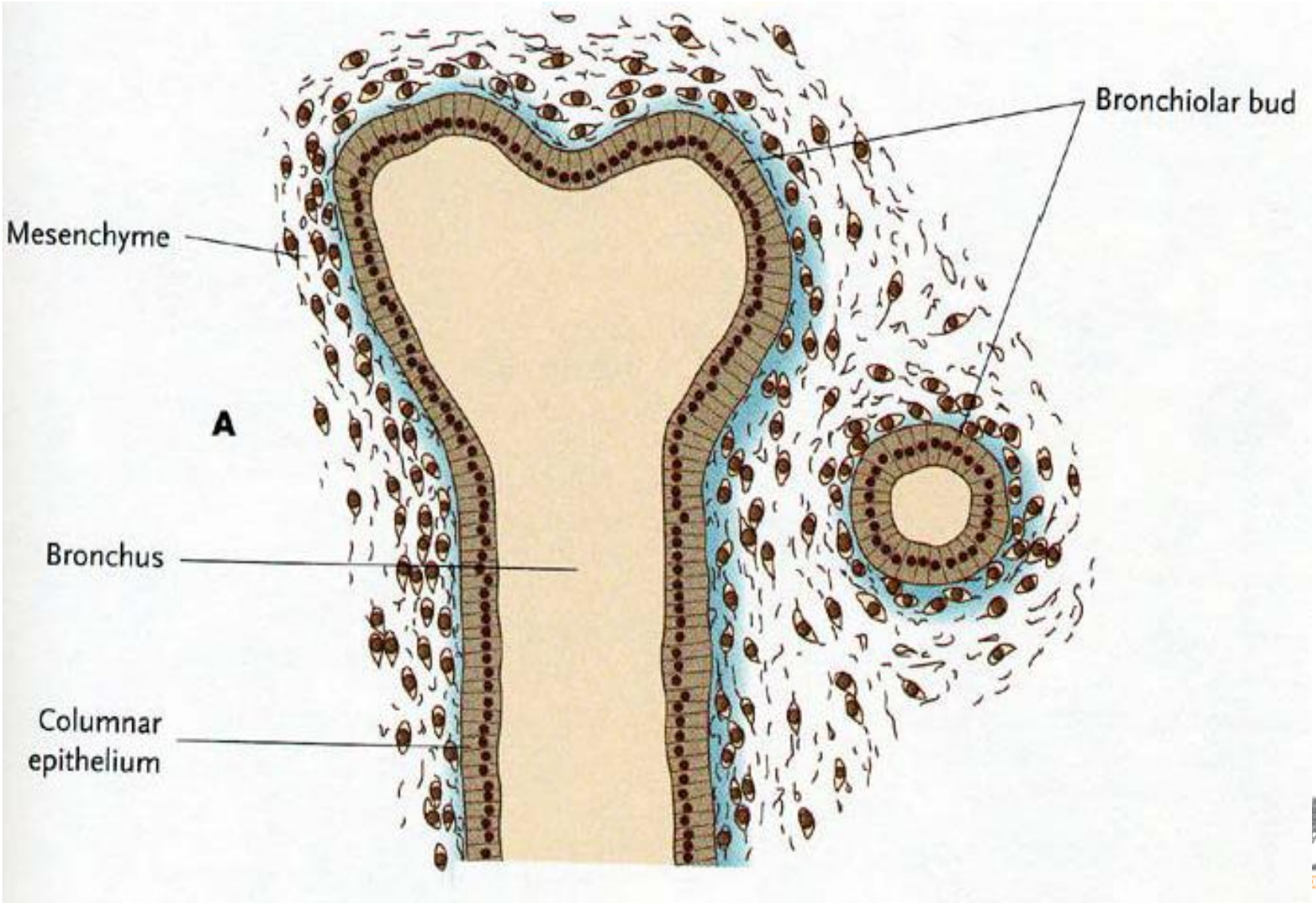
- Primary bronchus
- Secondary bronchus
- Tertiary bronchus




E
Trachea
Lateral bronchi
Right upper lobe primordia
Left upper lobe
Right middle lobe primordia
Righ: stem bronchus
Left lower lobe
Right lower lobe primordia
35 days
F
G
Trachea
Left primary bronchus
Left upper lobe
Left lower lobe
Esophagus
Seventh week

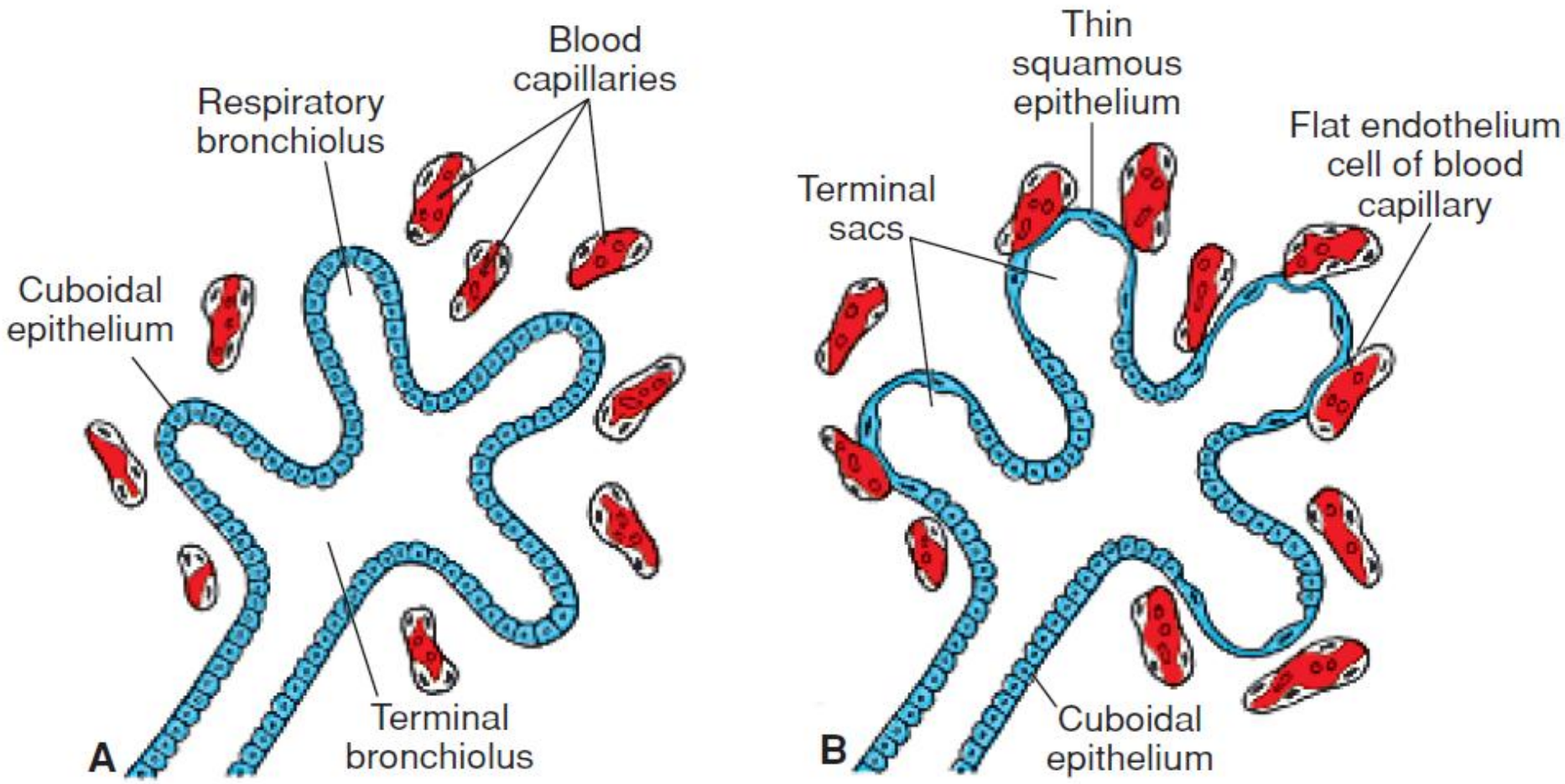
Pseudoglandular Period (5-16 weeks)

14 more branching to form the respiratory tree -producing terminal bronchioles



Canalicular Period (16-26 weeks) and Terminal Sac Period (26 weeks -Birth)

- Terminal bronchiole divides into 2 or more respiratory bronchioles
- Final branching of respiratory bronchioles associated with dense network of capillaries -terminal sacs or primitive alveoli.

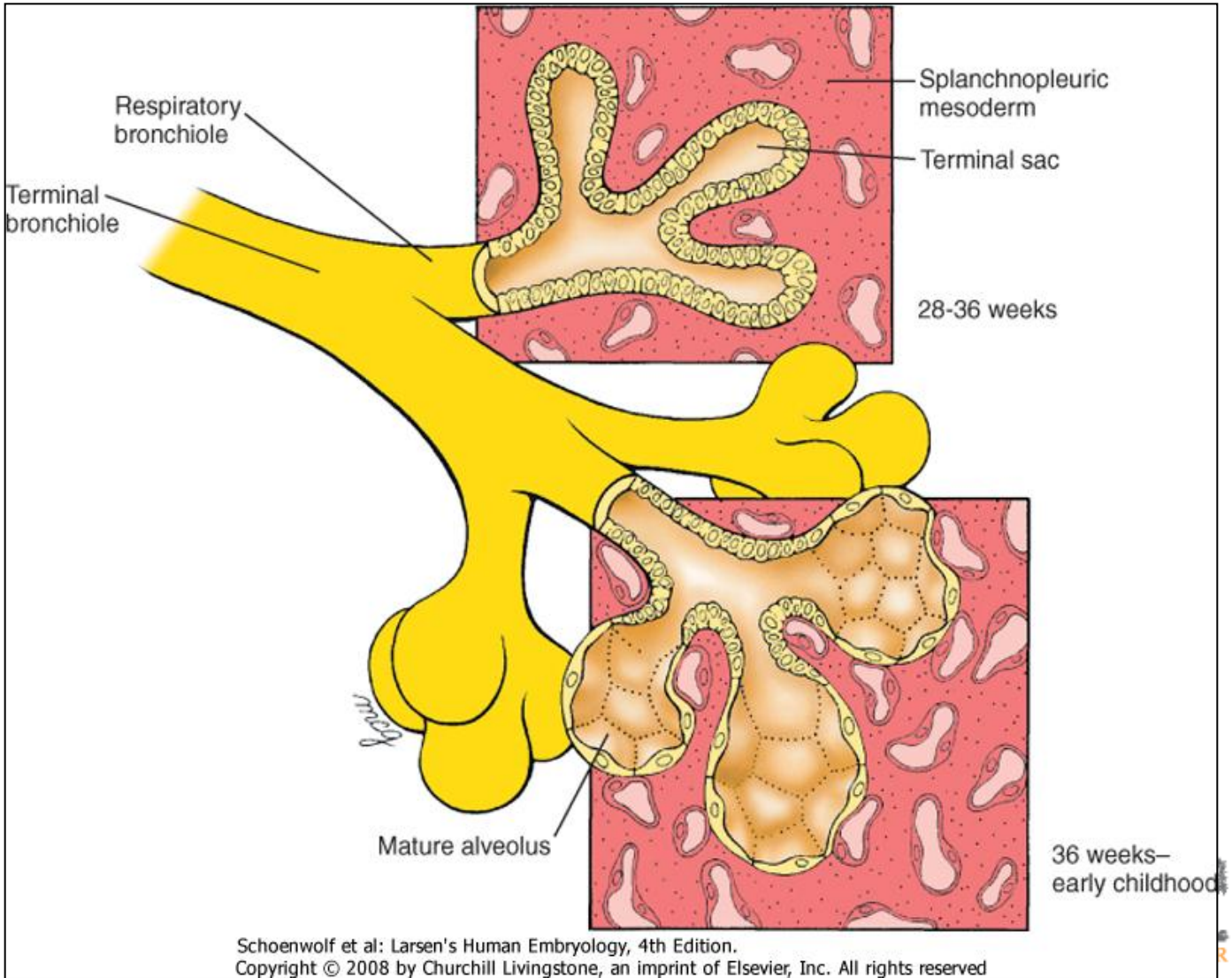


Alveolar Period (8 month to 8year)

Maturation of alveoli -thinning of epithelial lining of terminal sac; increase in capillary network (6-7 branching)

Mature lung has 300-400 million terminal sacs.

•Differentiation continues until 8 years old.

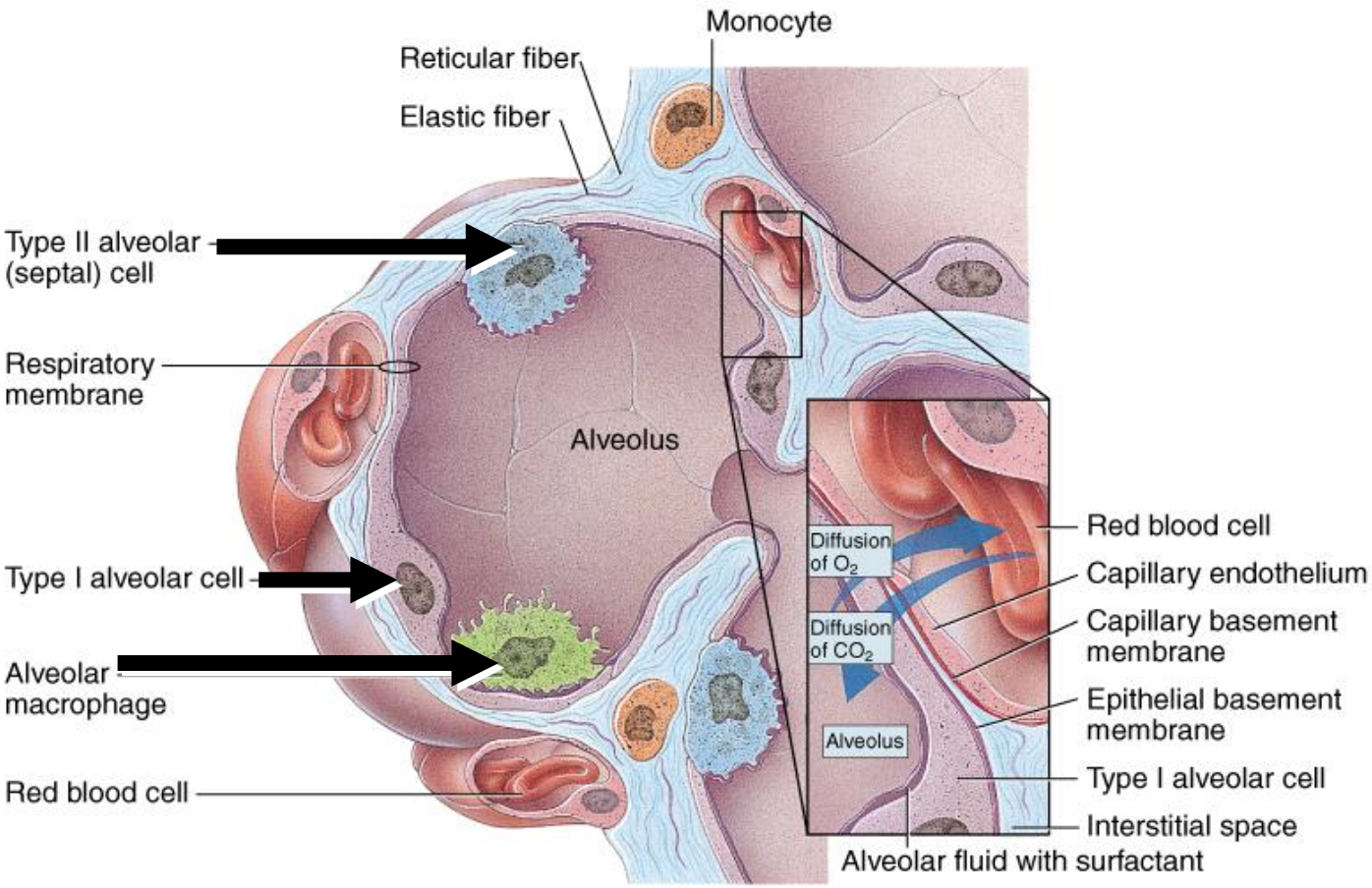


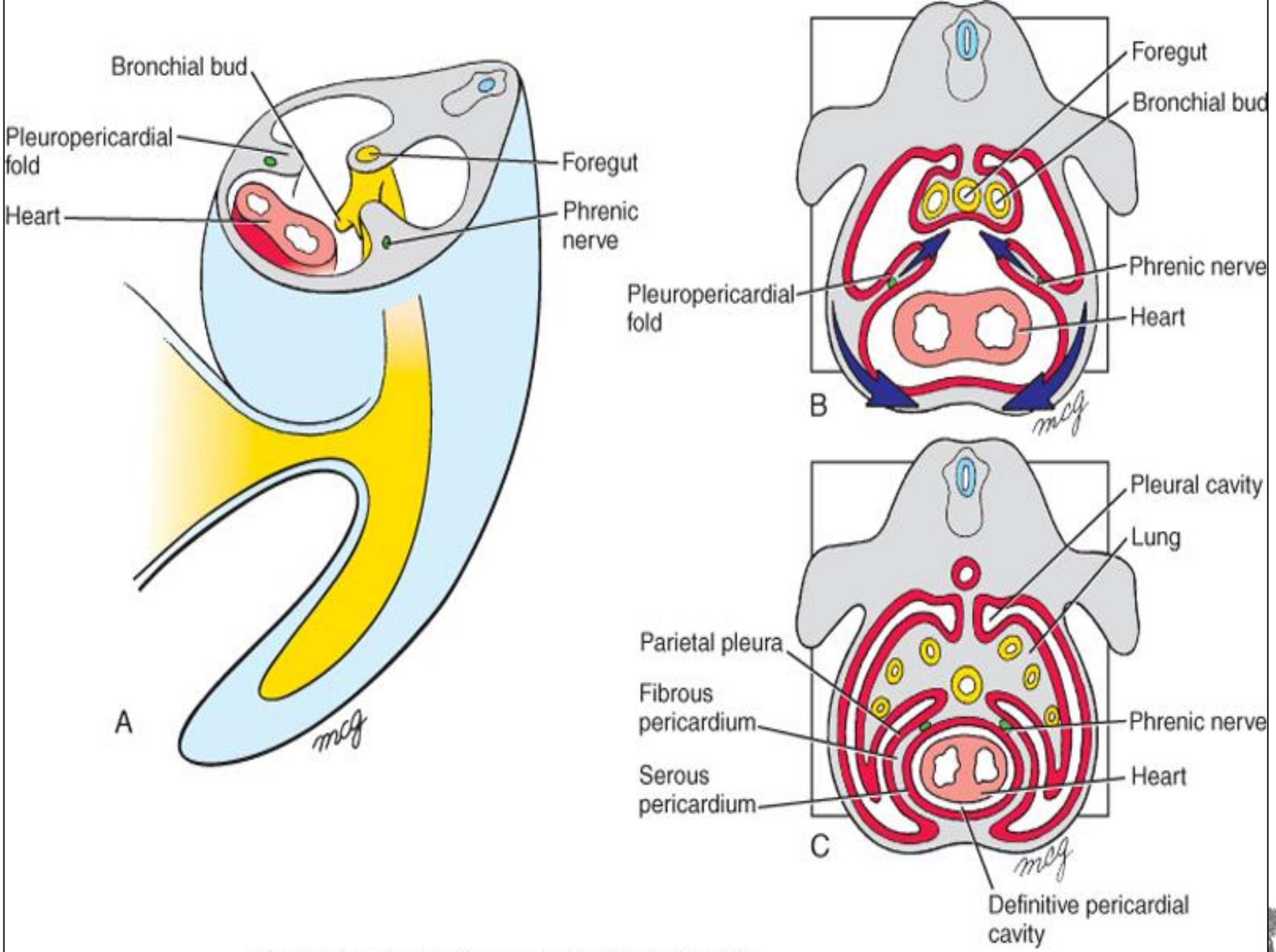
Differentiation of cells

- **Type I alveolar cells (pneumocytes):** gas exchange

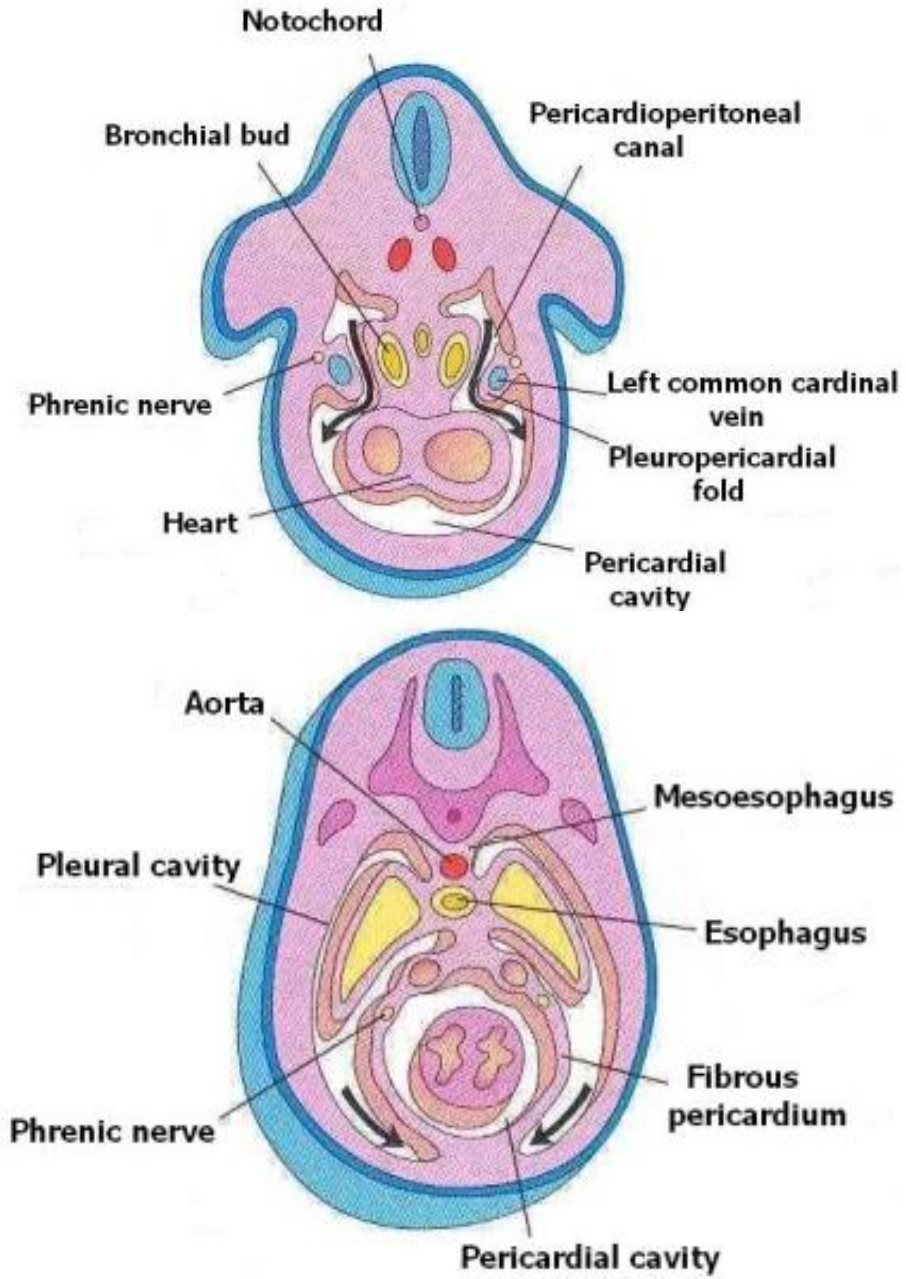
Blood-air barrier

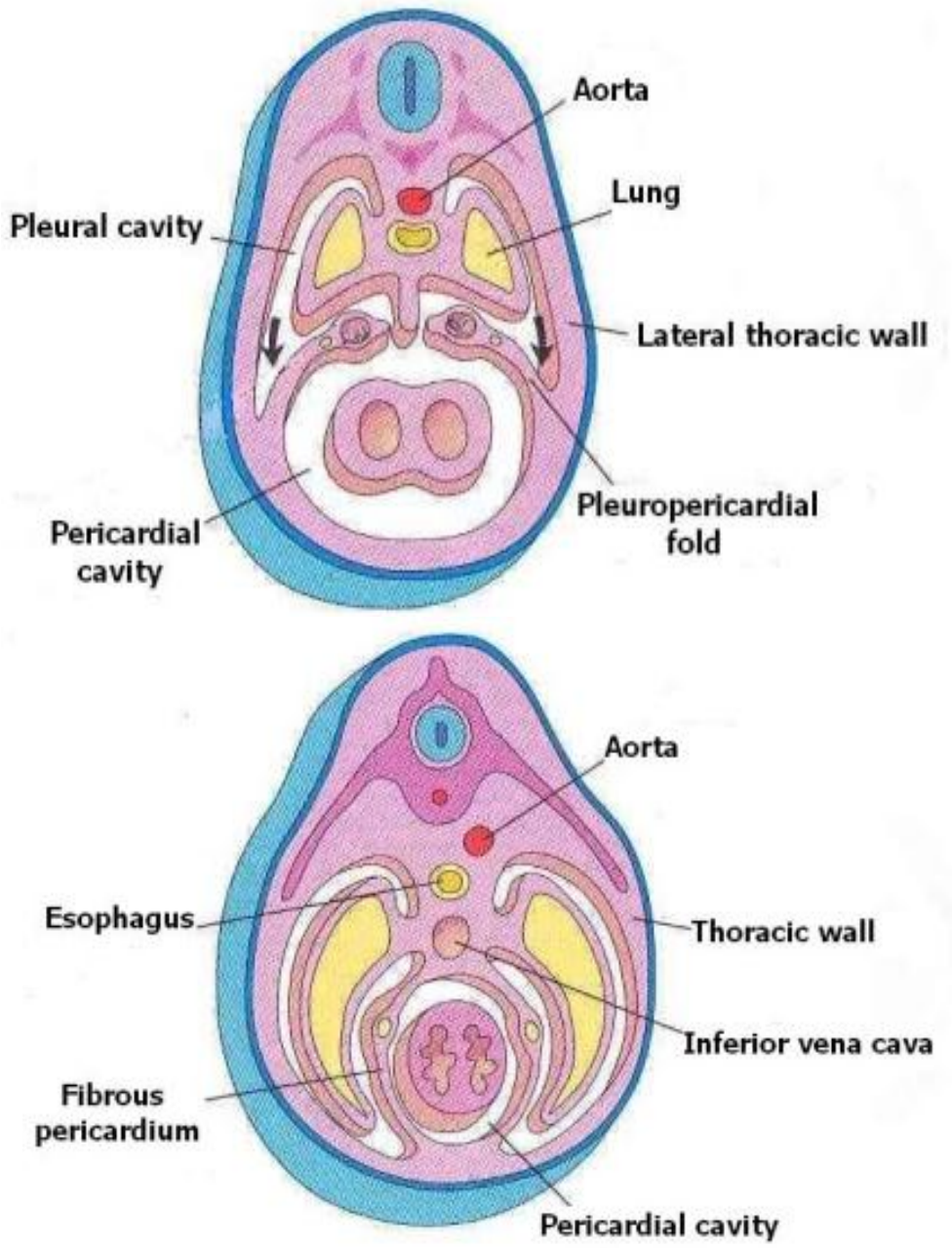
- **Type II secretoryalveolar cells:** pulmonary surfactant production

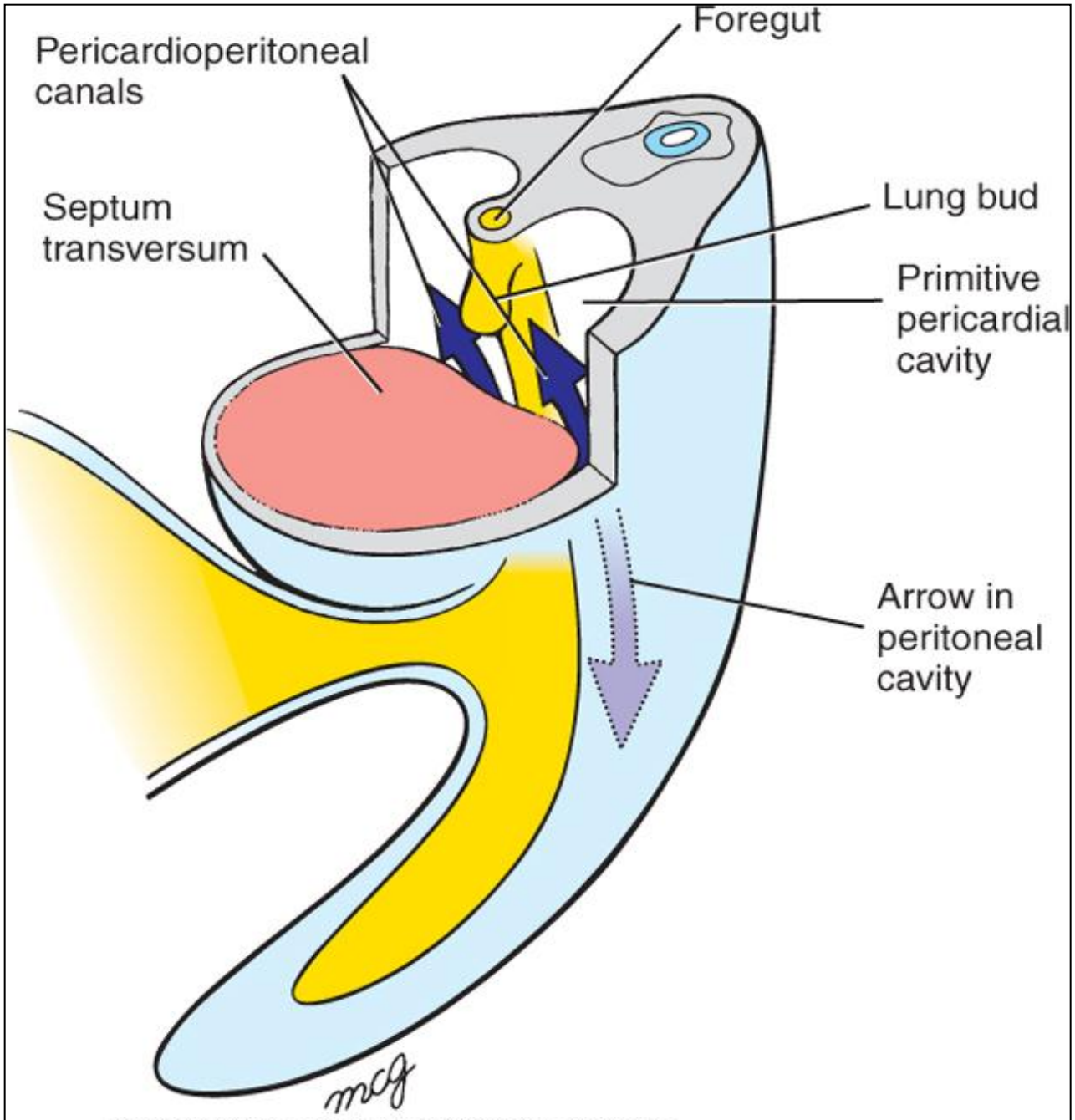


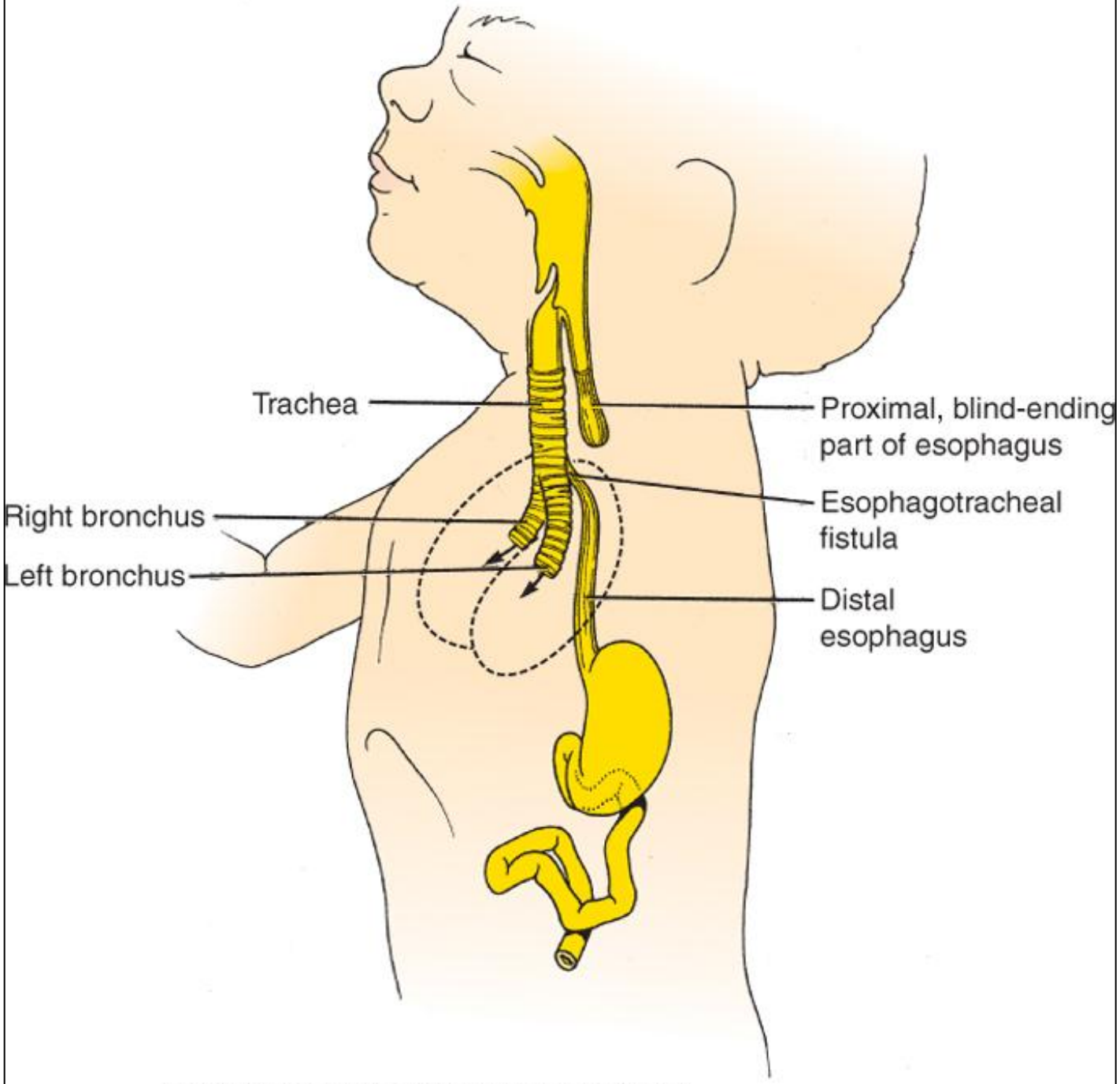


Pleuropericardial Membranes

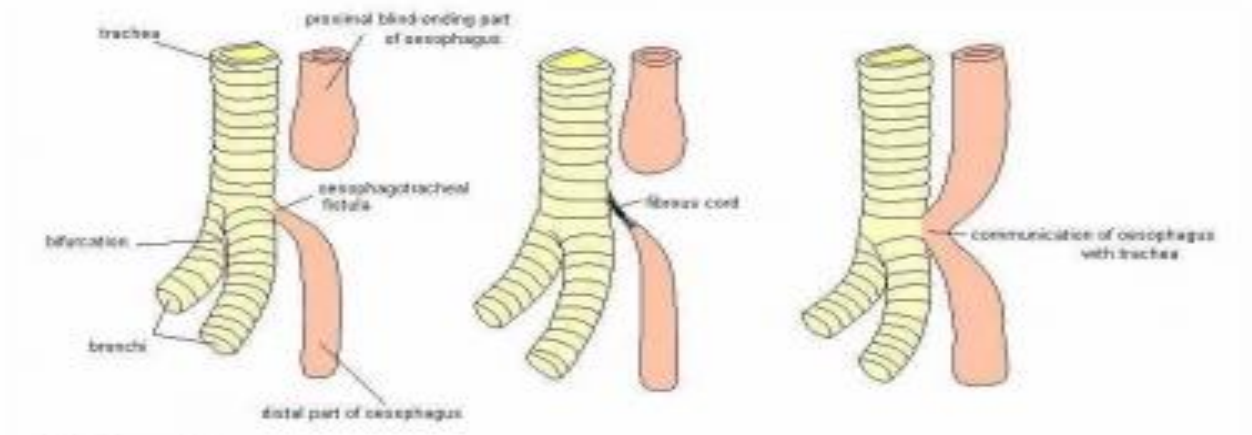






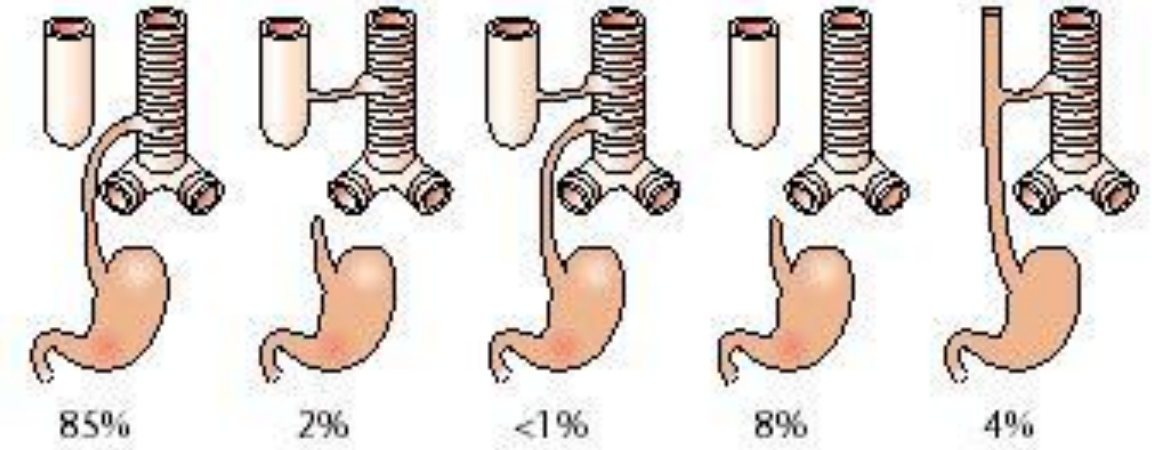


Tracheoesophageal Fistula



By far, most common

vomit milk



Anatomical variations of oesophageal atresia and tracheooesophageal fistula, indicating relative frequency

Have a good day

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