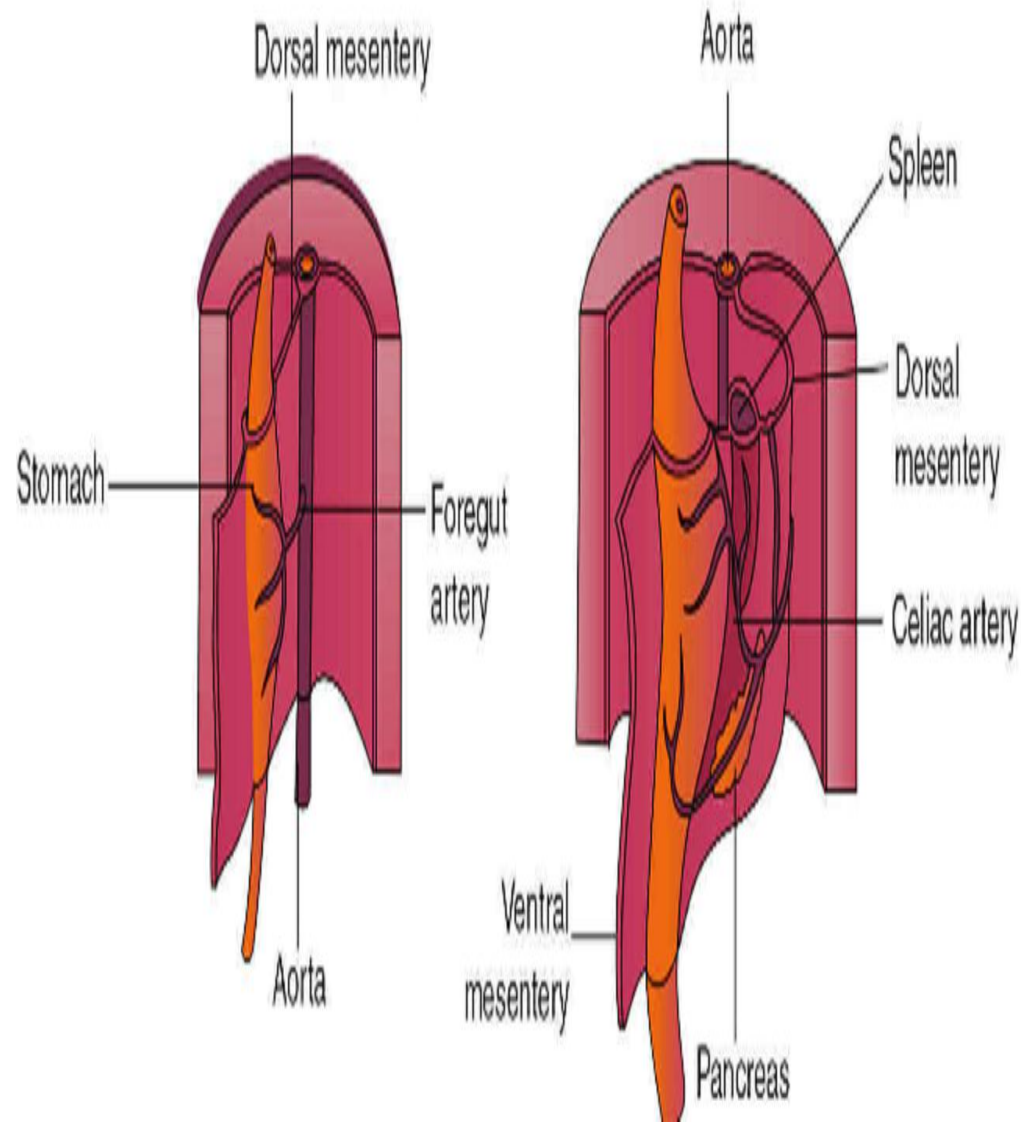
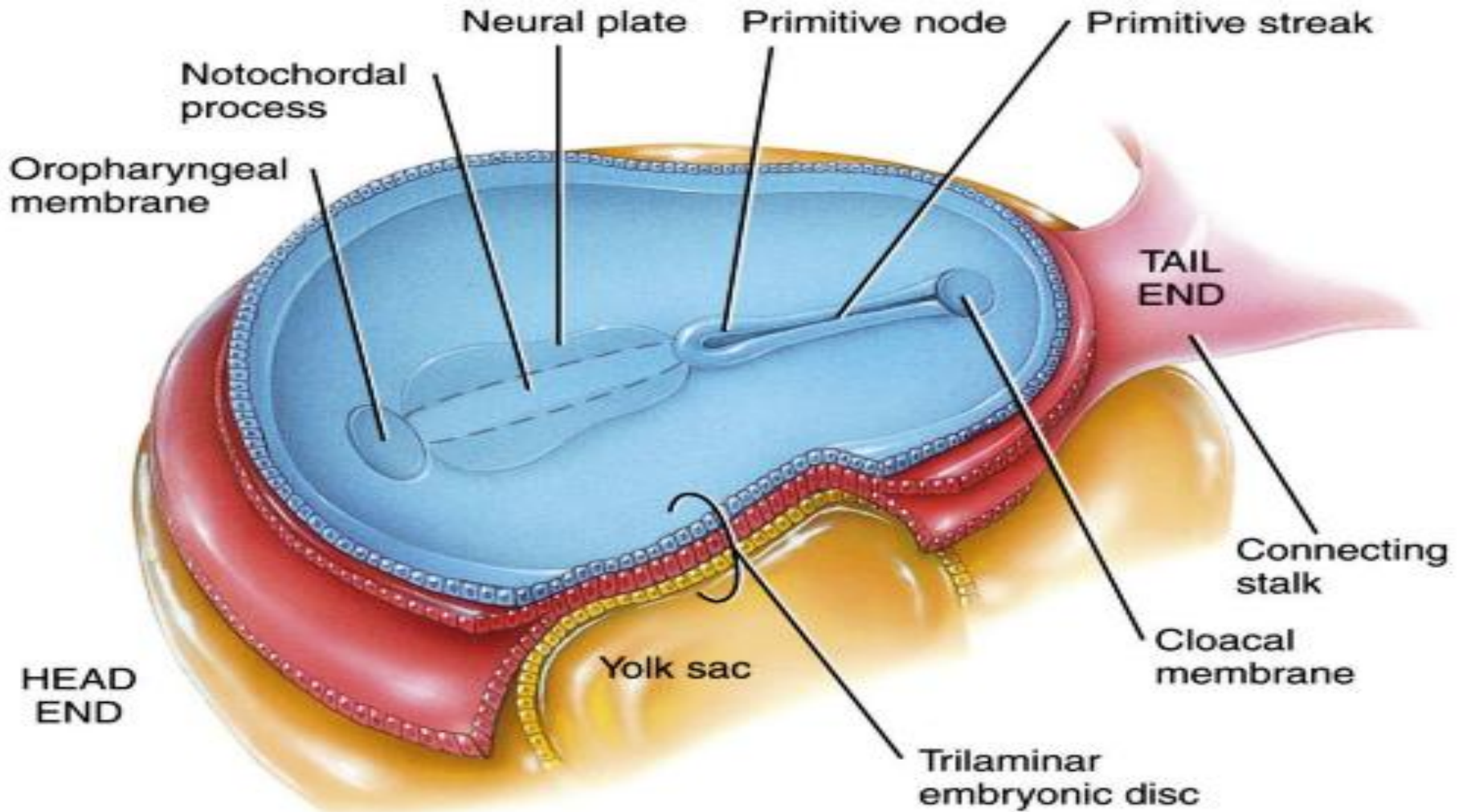


DEV. OF ESOPH. , STOMACH & DUO.



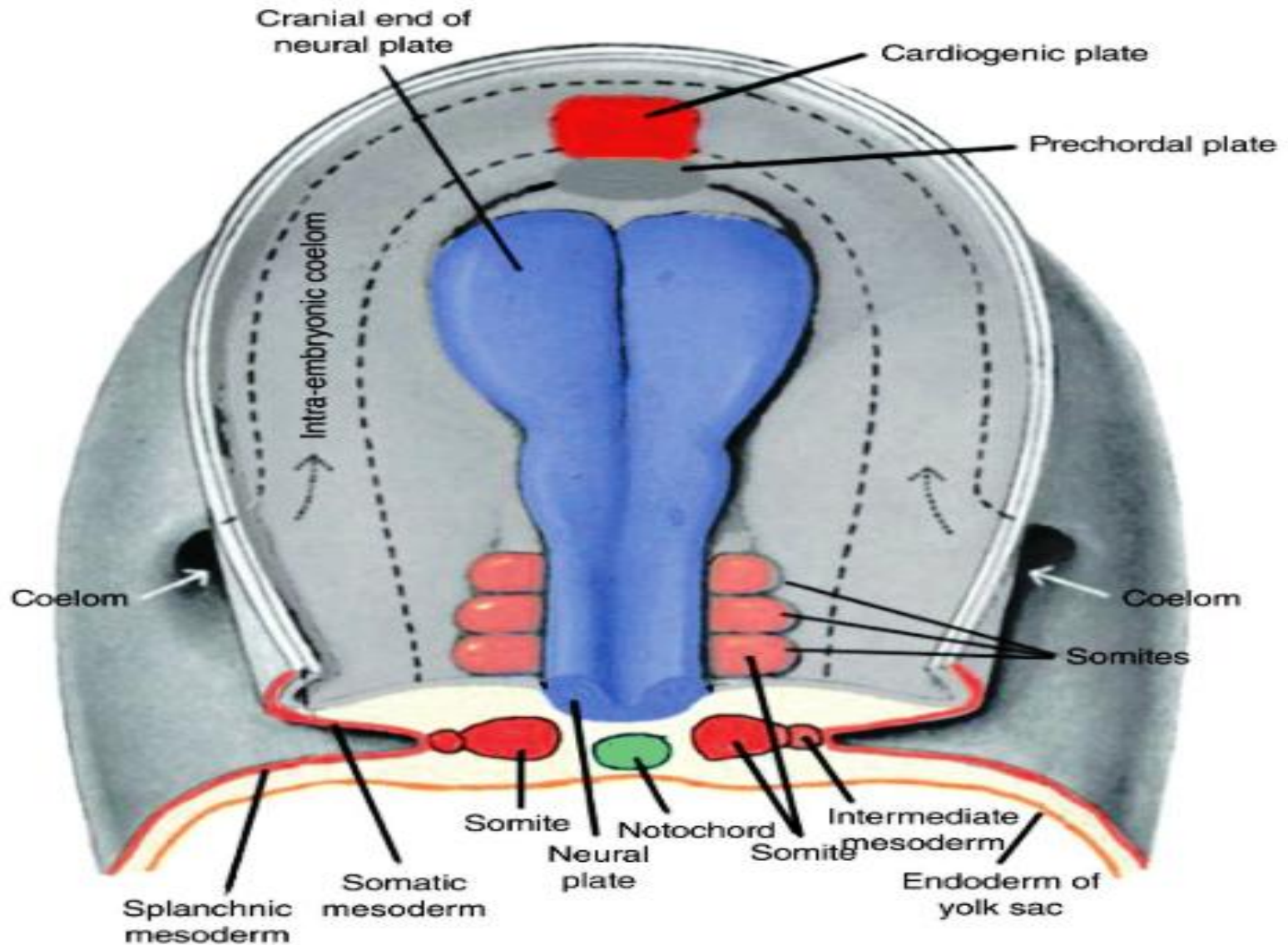
BY
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REV.

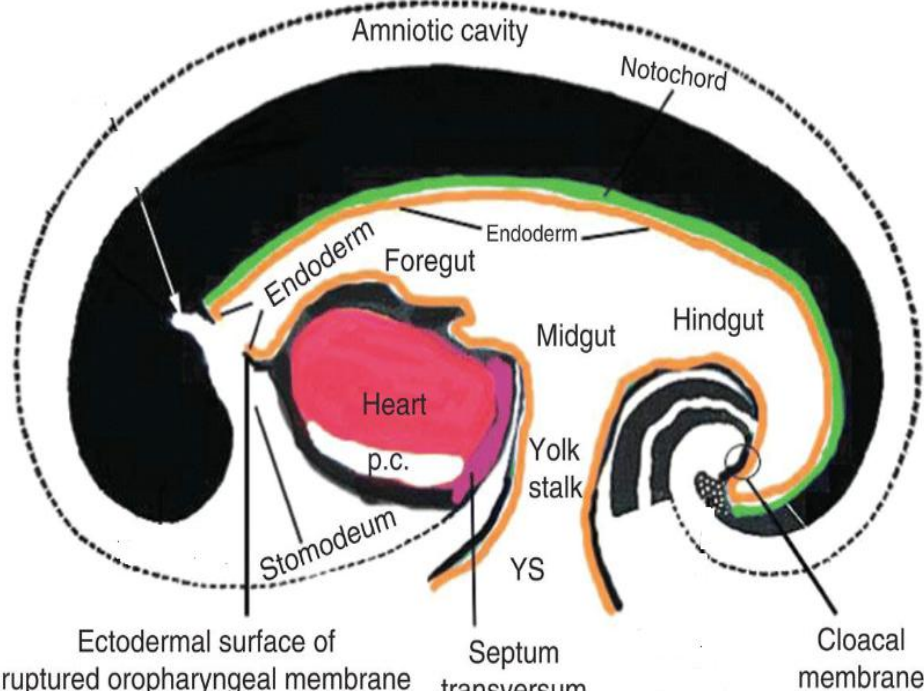
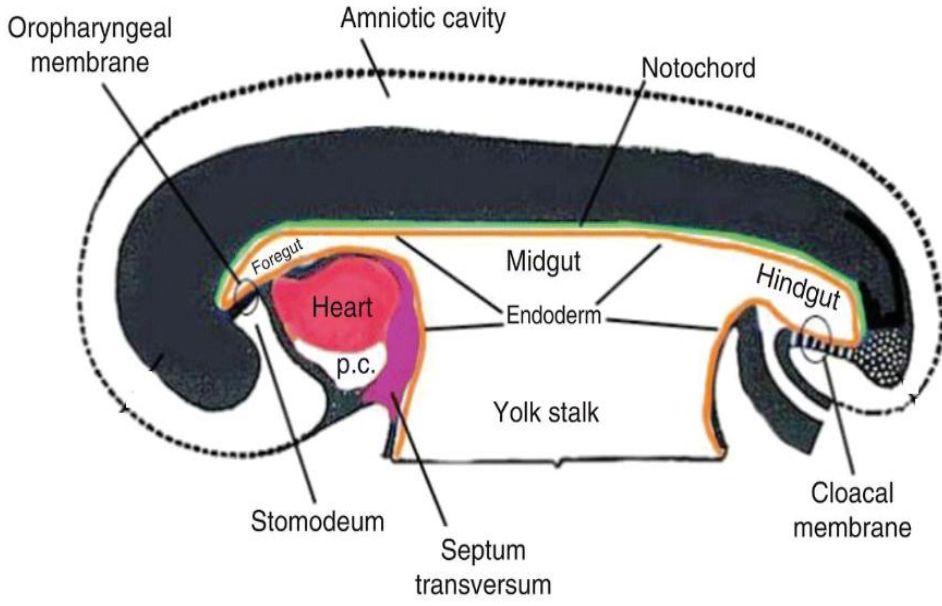
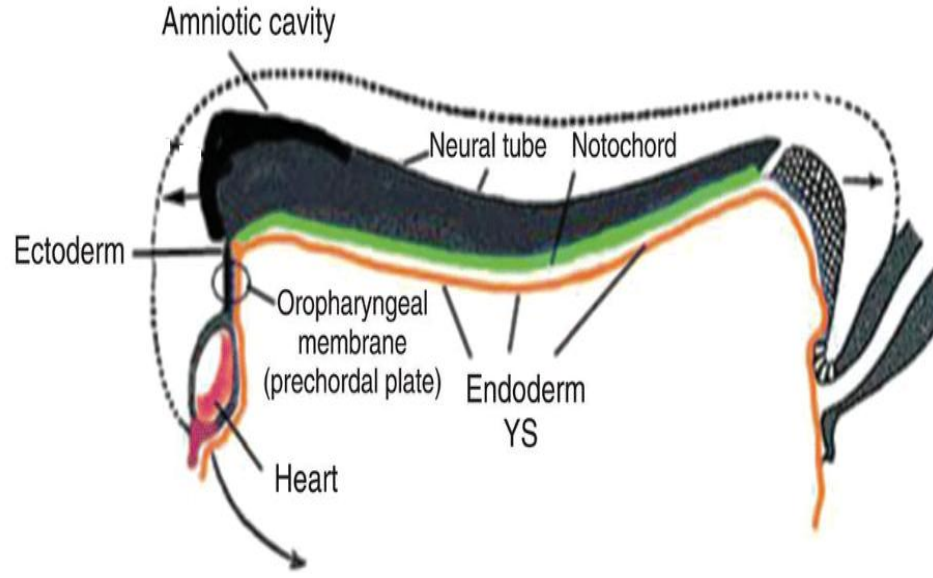
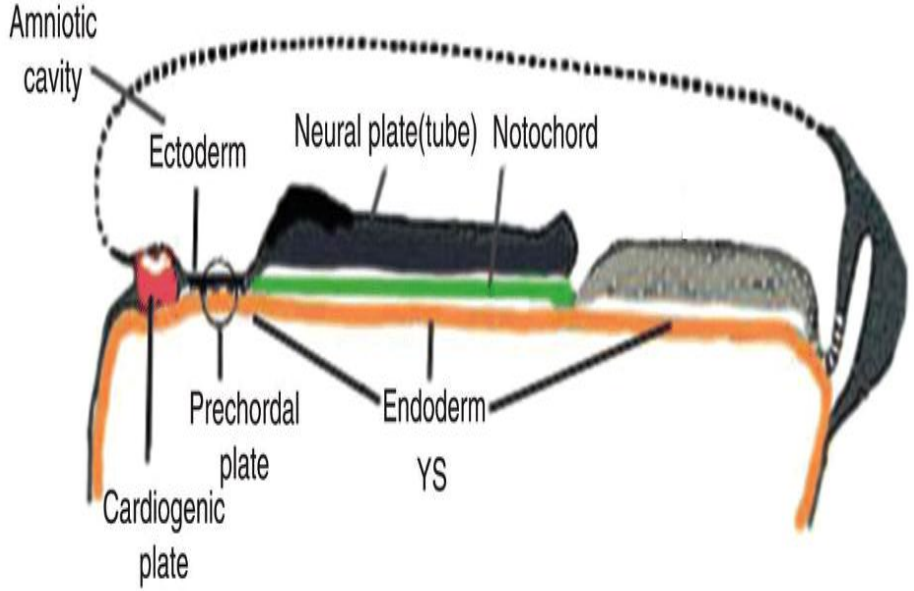


(a) Dorsal and partial sectional views of trilaminar embryonic disc, about 16 days after fertilization

REV.



REV.



DIVISIONS OF GUT

-folding of embryonic disc leading to incorporation of large part of the yolk sac (lined by endoderm) inside embryo leading to formation of the primitive gut
primitive gut is divided into 3 parts:

1- foregut: included in head fold & ends blindly by BPM

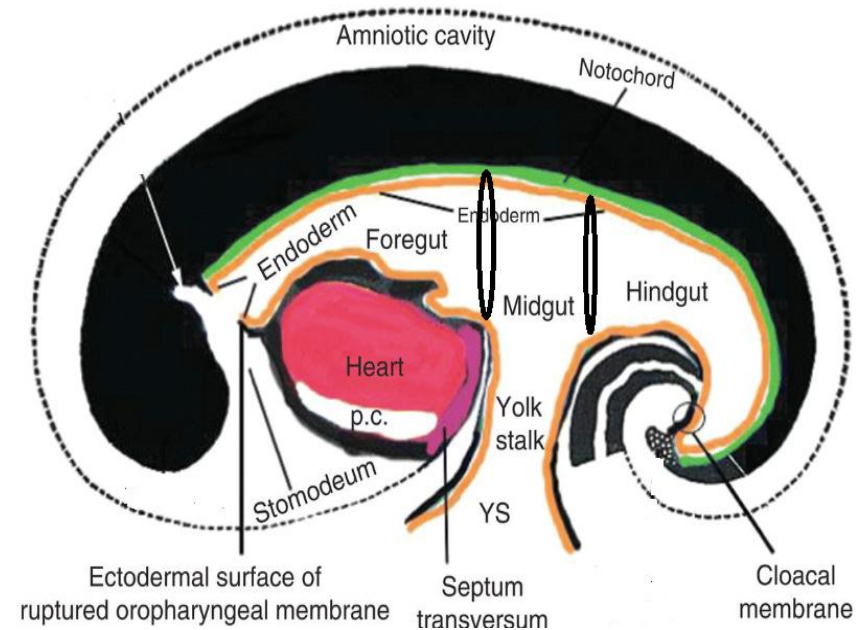
2- hindgut: included in tail fold & ends blindly by CM

3-midgut: middle part & is connected to the yolk sac by vitellointestinal (vitelline) duct

ant. intestinal portal: junction () foregut and midgut

post. intestinal portal: junction () midgut and hindgut.

-The wall of gut is formed of endodermal lining & covering of visceral (splanchnic) mesoderm.



FOREGUT

Extents:

from buccopharyngeal membrane BPM
to ant. intestinal portal (origin of liver bud).

Parts & derivatives :

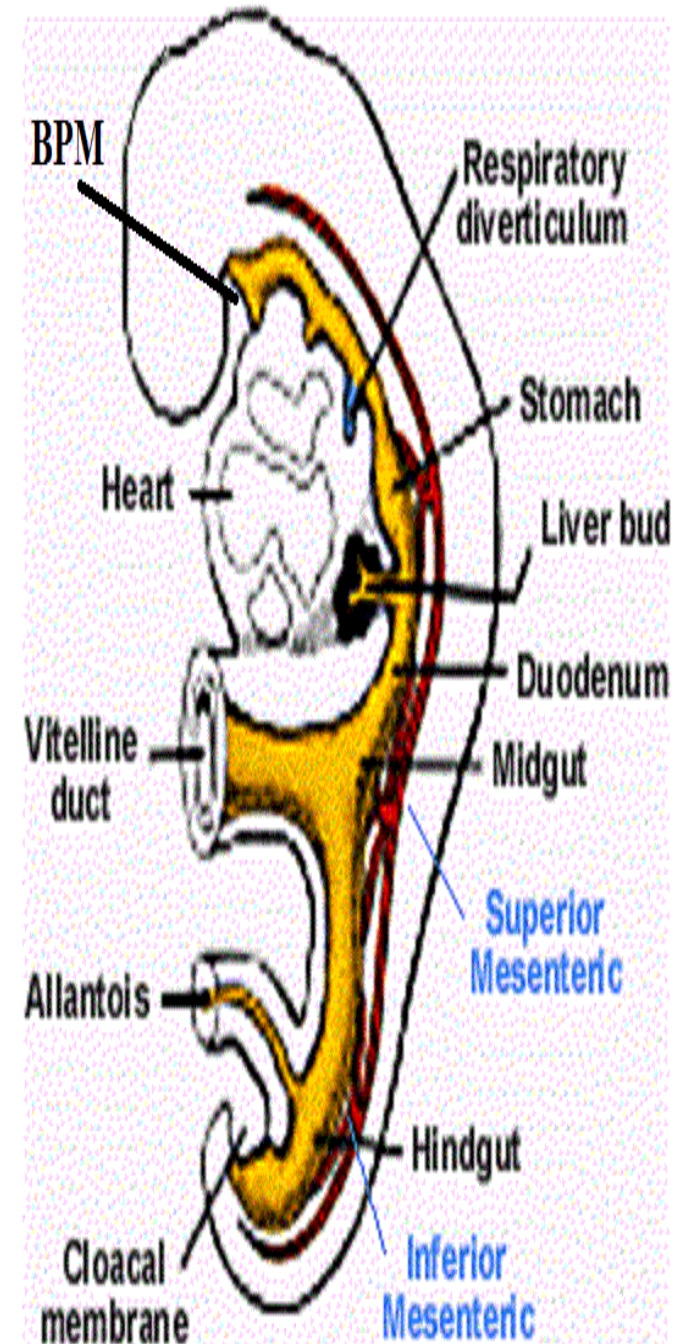
divided by laryngeotracheal(respiratory)
diverticulum into:

1- cranial (pharyngeal) part:

- from the BPM to
- the laryngeotracheal diverticulum
- will form: post. Part mouth cavity and pharynx

2- caudal part:

- from the laryngeotracheal diverticulum
to origin of liver bud
- will form esophagus, stomach ,
upper half of duodenum
liver, pancreas and biliary system



MESENTERY

Def. :- 2 layers of peritoneum connect the organs to posterior & anterior abdominal wall

Ventral mesentery:-

Site:- Connect the gut to anterior abdominal wall

extent:- from lower end of the esophagus

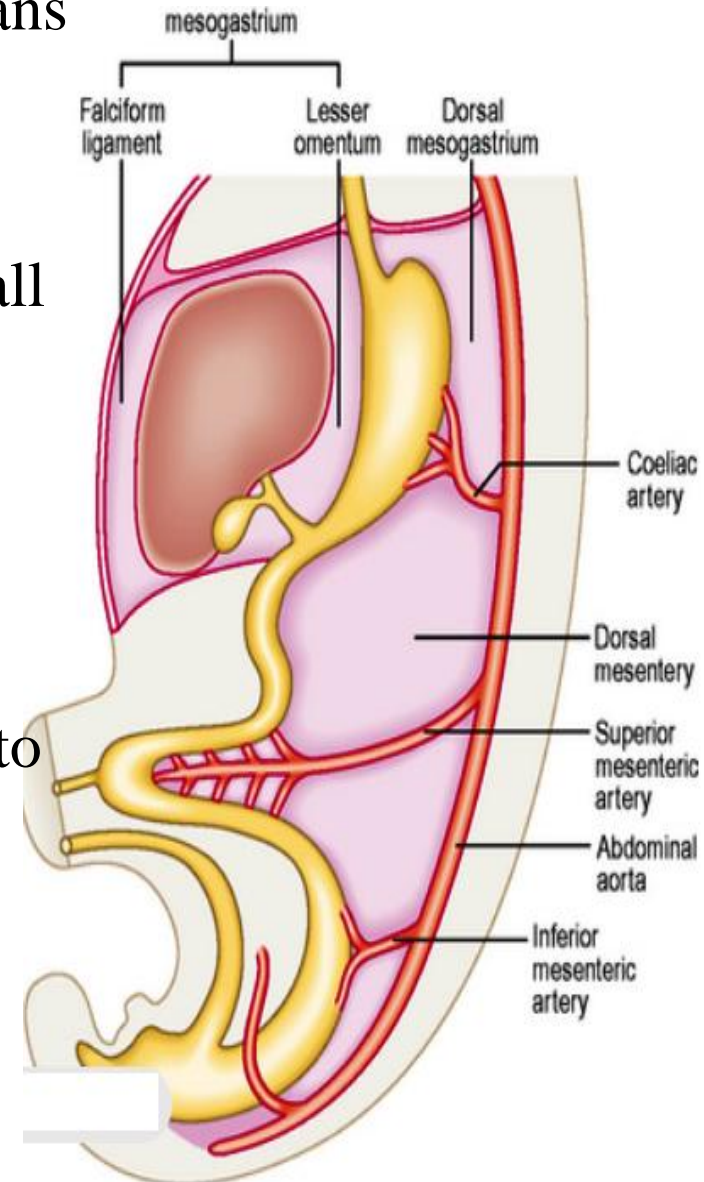
to 1st inch of duodenum

(the part opposite the stomach is called ventral mesogastrium)

Fate:- liver will develop inside it dividing it into

Lesser omentum :- between the liver & gut

falciform ligament:- between the liver & anterior abdominal wall



MESENTERY

Dorsal mesentery:-

Site:- Connect the gut to posterior abdominal wall

extent:- from lower end of the esophagus to rectum

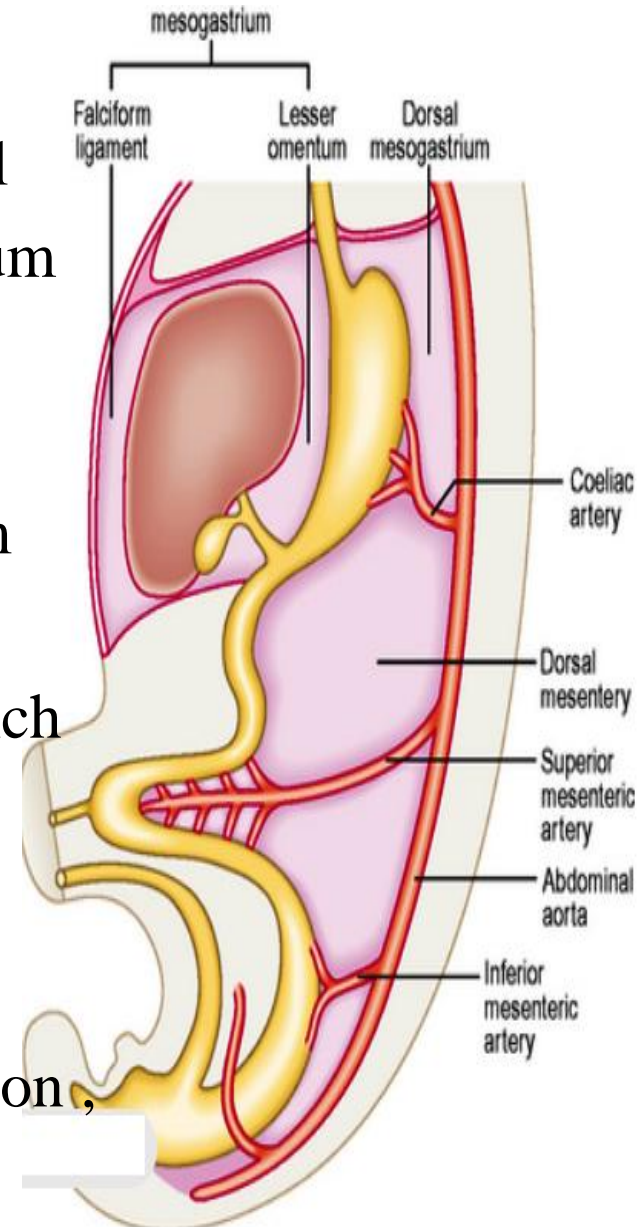
Parts & Fate:-

Dorsal mesogastrium :- opposite the stomach
will form greater omentum

Dorsal mesoduodenum :- opposite the duo.
Will disappear except 1st inch

Mesentery proper:- opposite the jejunum & ileum
will form the mesentery

mesocolon :- opposite the colon
will disappear except transverse mesocolon,
sigmoid mesocolon, mesoappendix



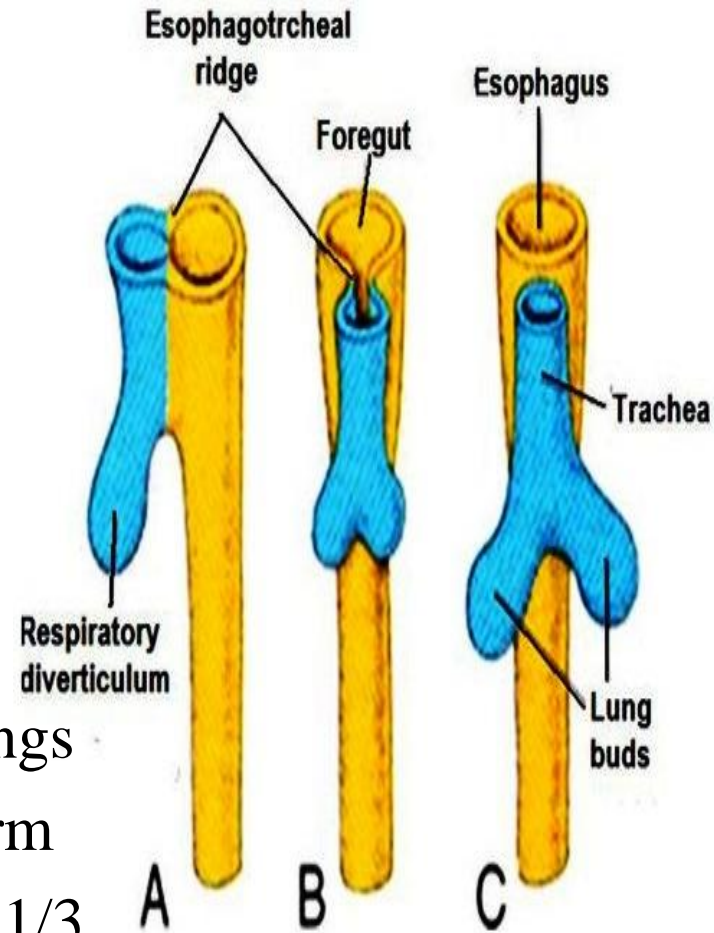
ESOPHAGUS

A- developmental source:

caudal part of foregut,
from pharynx
(level of laryngeotracheal diverticulum)
to stomach

B- development:

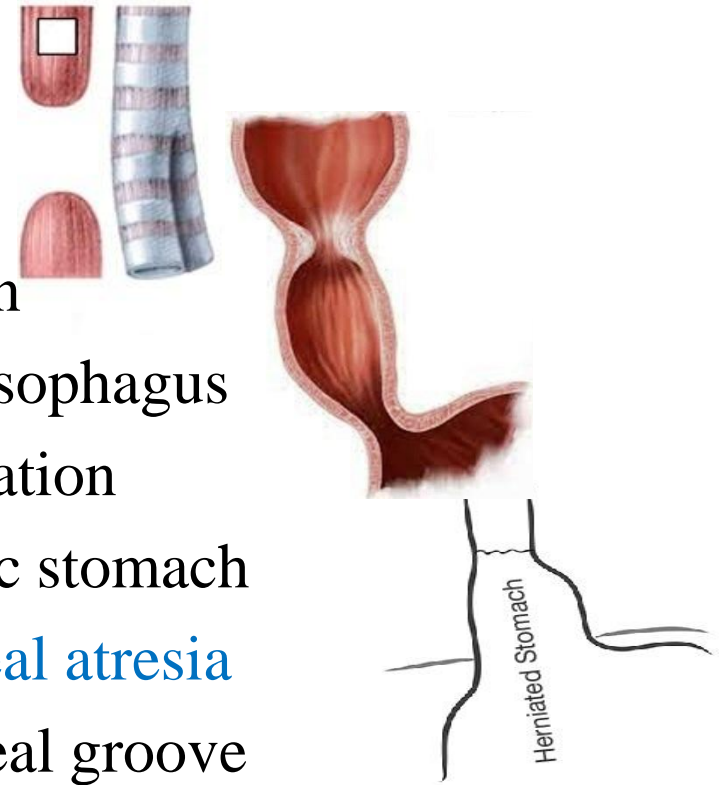
- at 4th week esophagus is short but elongates with the descent of the heart and lungs
- muscles develop from surrounding mesoderm & are striated in upper 2/3 & smooth in lower 1/3
- proliferation of the lining endoderm then recanalization to change epithelium from columnar to stratified squamous
- closure of edges of laryngeotracheal groove to separated esophagus from trachea



ESOPHAGUS

C- congenital anomalies:

- 1- esophageal atresia: obliterated esophagus
due to failure of recanalization
- 2- esophageal stenosis: local narrowing of esophagus
due to incomplete recanalization
- 3- short esophagus: accompanied by thoracic stomach
- 4- trachea- esophageal fistula with esophageal atresia
 - due to defective closure of laryngeotracheal groove
 - commonest anomaly
 - forms
 - a- fistula above atresia
 - b- fistula below atresia: commonest
 - c- fistula above & below atresia
 - d- H shaped fistula without atresia



STOMACH

A- development source:

caudal part of foregut

B- development:

- it appears in median plane as fusiform dilation with side to side flattening it has
- 2 borders

ant.: attached to ant. abd. wall by ventral mesogastrium

post.: attached to post. abd. wall by dorsal mesogastrium

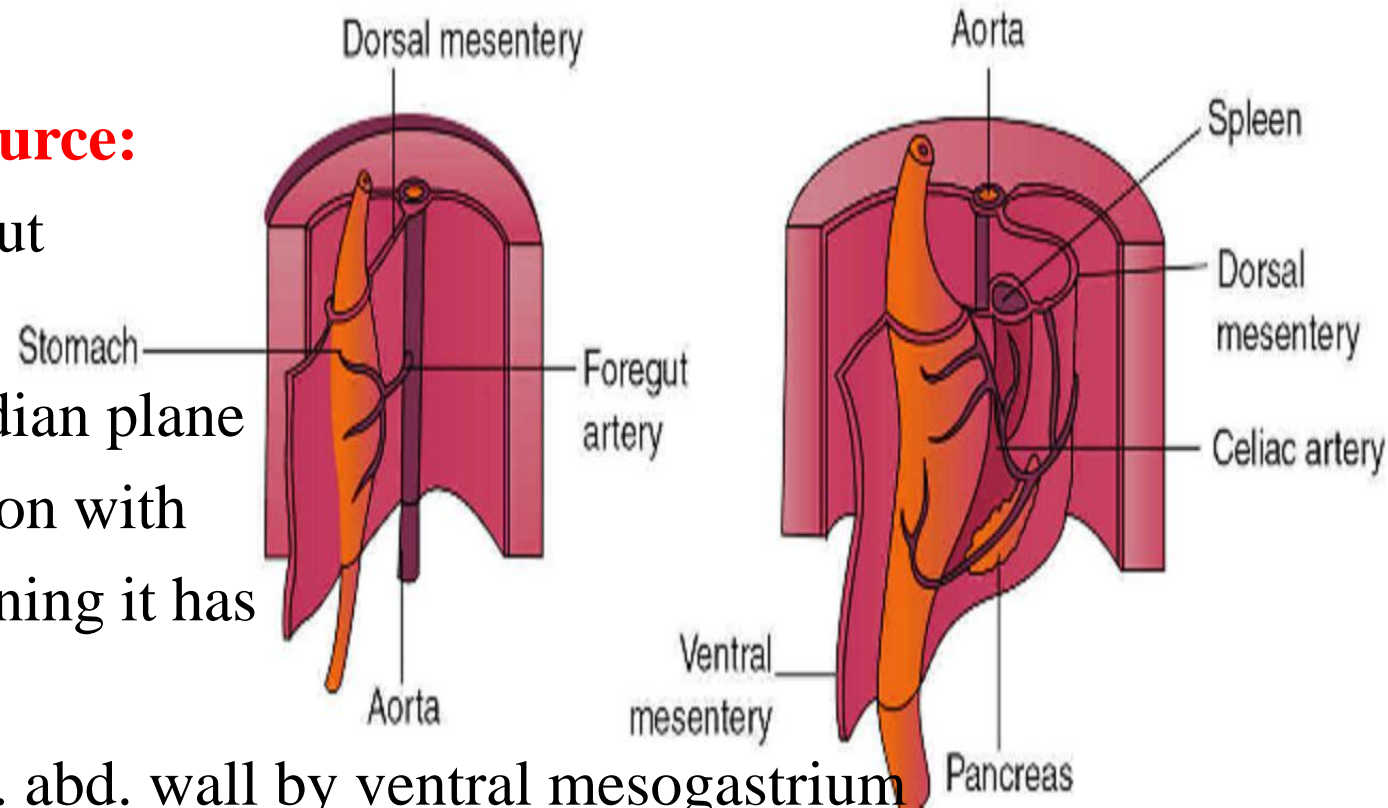
-2 surfaces

Rt: supplied by Rt vagus **Lt:** supplied by Lt vagus

- change in shape: by differential growth

-post. border grows rapidly forming the greater curvature.

-ant. border grows slowly forming the lesser curvature



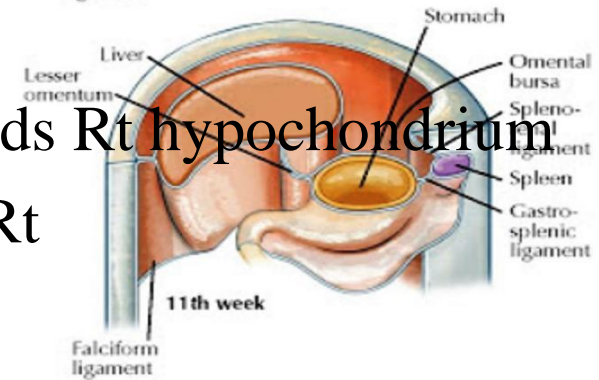
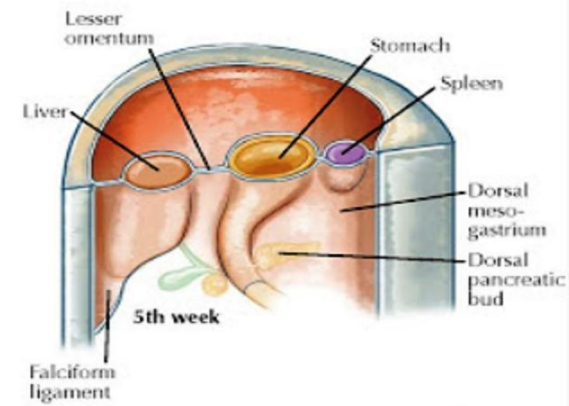
STOMACH

B- development:

□ change in position: by rotation

1st rotation:

- 90 to Rt (clockwise) around its longitudinal axis
- by growth of liver in ventral mesogastrium towards Rt hypochondrium
- results in 1- lesser curvature become directed to Rt
, greater curvature become directed to Lt
- 2- Rt surface become post. & Rt vagus become post. gastric N.
Lt surface become ant. & Lt vagus become ant. gastric N.
- 3- The Rt part of peritoneal cavity becomes the lesser sac behind stomach
- 4- Ventral mesogastrium forms lesser omentum & peritoneal lig. of liver
Dorsal mesogastrium forms gastrosplenic lig. , gastrophrenic lig. ,
lienorenal lig. and greater omentum



STOMACH

B- development:

change in position:

2nd rotation:

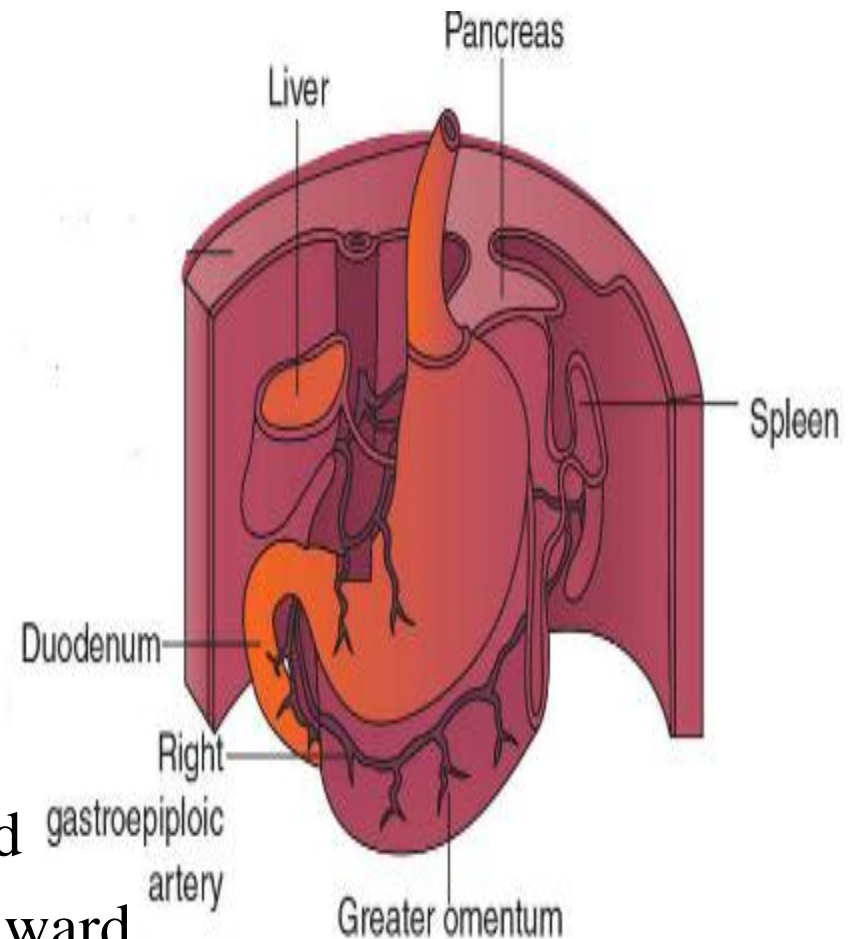
- 90° to Rt (clockwise) around antero-posterior axis
- Due to presence of diaphragm
- results in

lesser curvature become directed upward
greater curvature become directed downward

□ muscles develop from surrounding splanchnic mesoderm

proliferation of circular layer at pyloric end

To form pyloric sphincter



STOMACH

C- congenital anomalies:

1- hypertrophic pyloric stenosis

one of the commonest anomalies of stomach.

due to abnormal thickening of pyloric sphincter.

2- Hour-glass stomach

stomach with local constriction

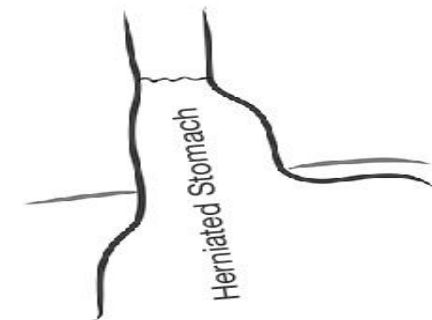
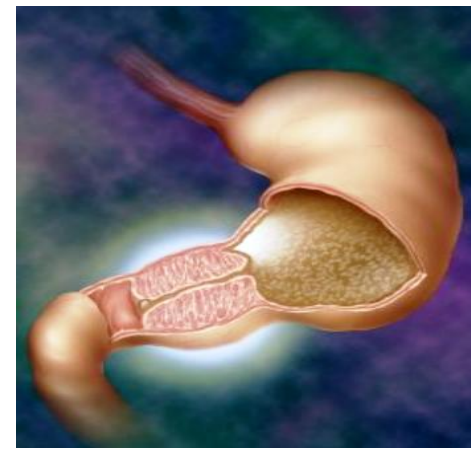
dividing it into 2 parts

3- thoracic stomach

stomach in thoracic cavity due to short esophagus

4- transposition of stomach

stomach in Rt hypochondrium due to abnormal growth of liver to Lt hypochondrium



DUODENUM

developmental sources:

1- upper part from terminal part of foregut

2- lower part from proximal part of midgut

N.B: junction () foregut & midgut is marked in adult by

opening of bile duct in second part of duodenum

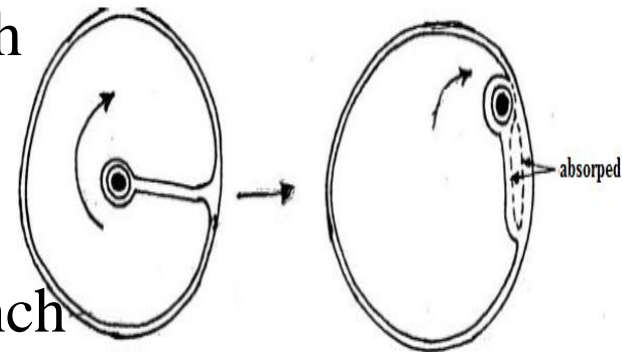
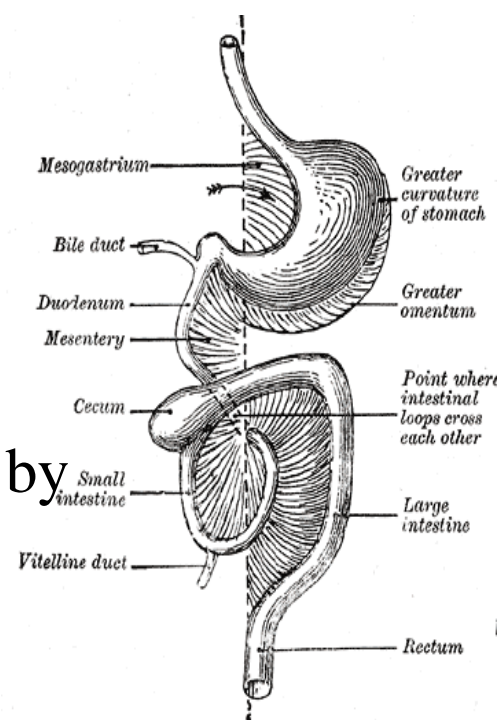
development:

□ terminal part of foregut & proximal part of midgut grow rapidly
formation of u shaped duodenal loop that is convex ant. & covered by peritoneum & attached to post. abd. wall by mesoduodenum

□ loop rotate 90° to Rt due to rotation of stomach
convexity become to Rt

□ Fixation: Mesoduodenum degenerate

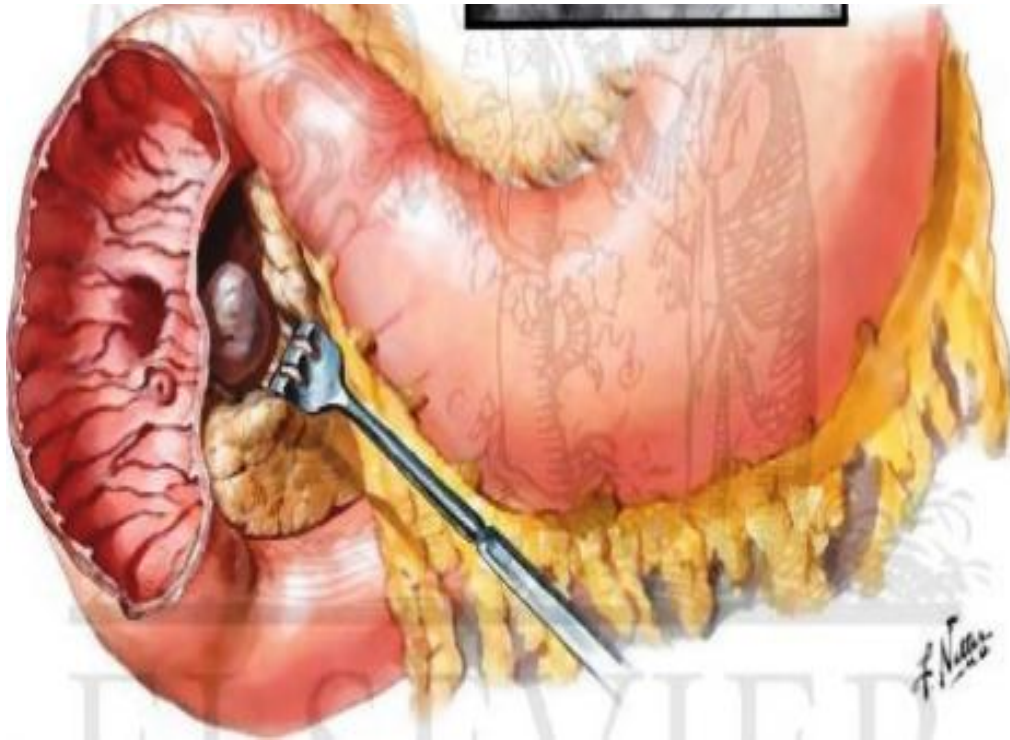
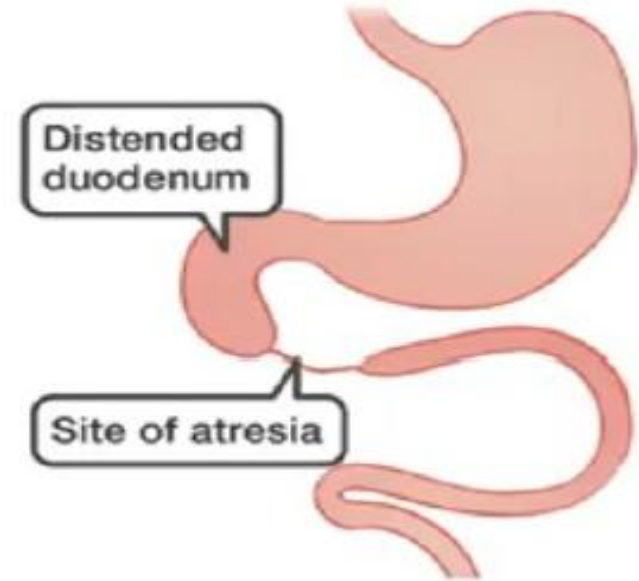
□ duodenum become retroperitoneal except 1st inch



DUODENUM

Congenital anomalies:

- 1- atresia & stenosis
- 2- diverticulae
- 3- persistence of mesoduodenum



THANQ