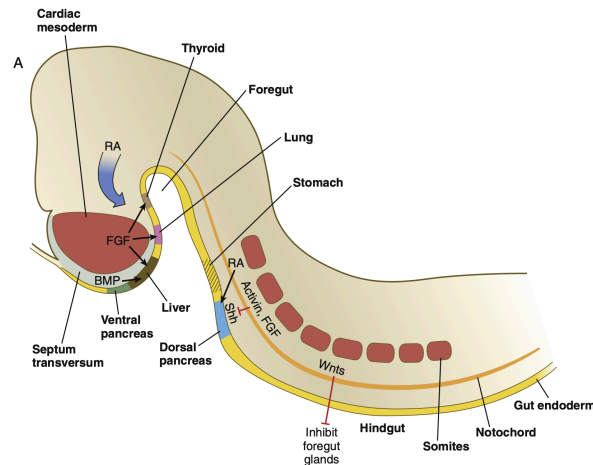


1. Which part of the primitive gut is enclosed by the head fold and its derivatives?

答案: the foregut

解析: the gut can be divided into a foregut, an open-bottomed midgut, and a hindgut. During neurulation, while the head bends sharply to create the foregut, the ventral foregut endoderm is closely opposed to two mesodermal masses: the cardiac mesoderm and the primordium of the septum transversum

(文字P318 图P321)



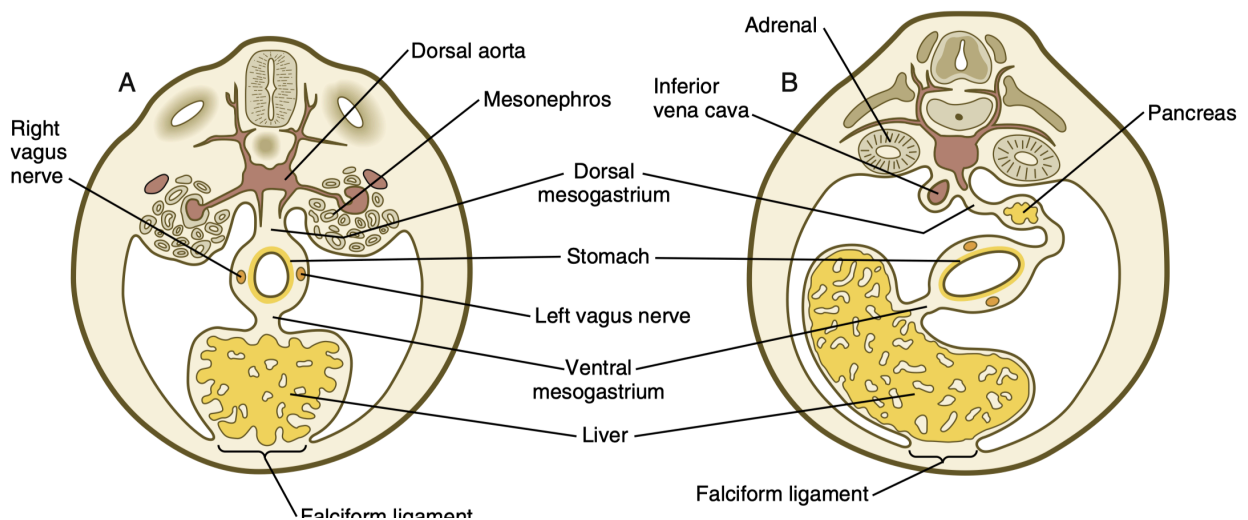
2. This structure appears during the 4th week as a “ballooning” of the caudal foregut.

答案: the stomach (这个没解析 气球一样的只有胃 直接选就行)

3. This thin sheet of mesoderm joins the stomach to the body wall?

答案: Dorsal Mesogastrium

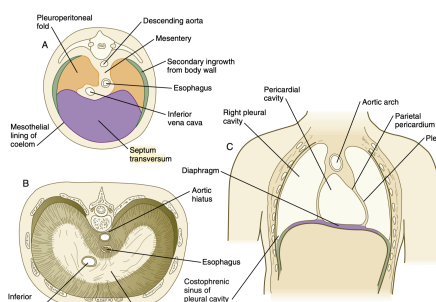
解析: The early stomach is suspended from the dorsal body wall by a portion of the dorsal mesentery called the dorsal mesogastrium. It is connected to the ventral body wall by a ventral mesentery that also encloses the developing liver (P323)



4. This mass of cranial mesoderm contributes to the diaphragm?

答案: Septum Transversum

解析: The diaphragm, which separates the thoracic cavity from the abdominal cavity in adults, is a structure derived from several embryonic components (see Fig. 15.39). The large ventral part of the diaphragm arises from the septum transversum, which fuses with the ventral part of esophageal mesentery (文字P350 图P352)



thoracic
composite
component
of the

5. From which fibrous tissue are the blood vessels and Kupffer cells derived?

答案: septum Transversum

解析: 那么首先要知道 Kupffer cells是liver cell 这题就能解了 书中的337页提到了一嘴“Kupffer cells, which serve a macrophage-like function in the liver, migrate to the liver from precursor cells in the yolk sac.”

接下来去看liver formation那一段就知道答案了 在书上的335页 “These cells can give rise to other endodermal derivatives besides the liver. After initial induction by the cardiac mesoderm and the septum transversum”

6. What is the source of endocrine cells in the pancreas?

答案: Dorsal and Ventral Pancreatic Buds

解析: The pancreas begins as separate dorsal and ventral primordia within the duodenal endoderm. The pancreas grows out as dorsal and ventral pancreatic buds, which ultimately fuse to form a single pancreas. (P356)

7. The development of the lower respiratory tract begins with the formation of the?

答案: laryngotracheal groove

解析: 这题我们首先要知道 lower respiratory tract begins with the trachea. 那么再找什么形成trachea 就行 这个要在 developmental biology 12th edition那本书里找 在文件849页有一句话 “laryngotracheal endoderm becomes the lining of the trachea” 因此得出答案 (这题真脑瘫啊)

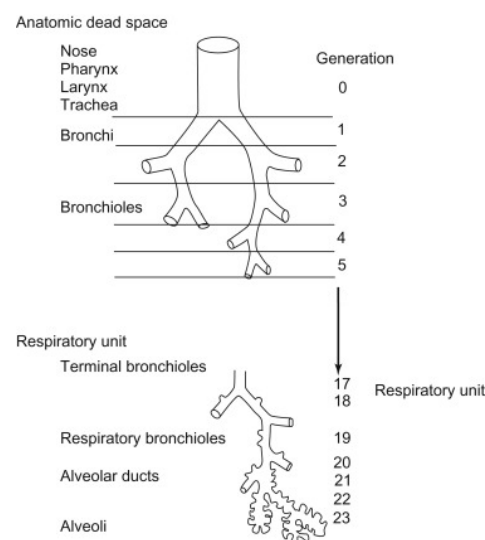
8. How many levels of bronchial branching are present at birth?

答案: 17 levels

解析: Thus the airways from the nose to the alveoli consist of a **conducting zone** of generations 0–16 and a **respiratory zone** in series with the conducting zone, with the respiratory zone consisting of generations 17–23.

(图文来自The Mechanics of Breathing

Joseph Feher, in Quantitative Human Physiology (Second Edition), 2017 ps: 这个在notes和书上都找不到 只能查论文了)



9. What type of epithelium do you find in immature alveoli?

答案: simple cuboidal

解析: 这个在notes里有句话 “Each of these ducts ends in a bulging **terminal sac (primitive alveolus)** that is lined with cuboidal epithelium.”

10. What type of epithelium do you find in mature alveoli?

答案: simple squamous

解析: The sacs are initially composed of a simple cuboidal epithelium but this is converted to a simple squamous epithelium as the alveoli become functional.

11. What type of molecules are the main component of pulmonary surfactant?

答案: phospholipids

解析: A functionally important aspect of fetal lung development is the secretion of pulmonary surfactant by the newly differentiating type II alveolar cells of the lung, starting around 24 weeks' gestation. **Surfactant is a mixture of phospholipids** (P439)

12. The diaphragm is innervated by which pair of cervical nerves?

答案：phrenic nerves

解析：The diaphragm is made up of skeletal muscle and tendon and is supplied by the left and right **phrenic** nerves. （在第五周的最后一个ppt里的30页）