

1. How many pairs of somites are formed in a human embryo?

答案: 42-44 somites

解析: Initially, **42-44** pairs of somites are formed during human embryogenesis, but this is later reduced to 36-38 as most caudal somites (of the tail) are destroyed.

2. How many cervical pairs of somites are formed in a human embryo?

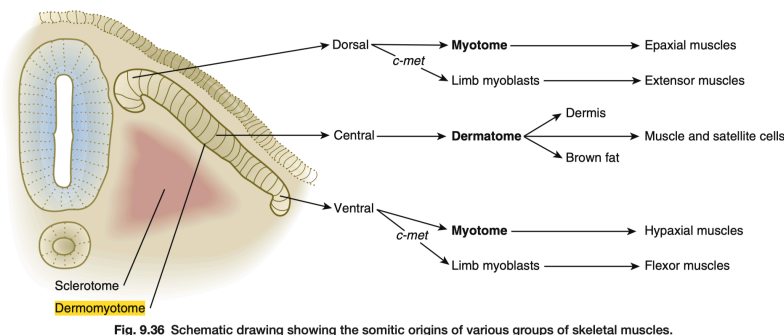
答案: 8 Pairs

解析: There are 7 cervical vertebrae, but because somites resegment when forming vertebrae there are actually 8 somites that contribute to these 7 cervical vertebrae. Each vertebra is formed by when posterior cells of one somite fuse with anterior cells of the following somite.

3. The ventral medial wall of each somite breaks down to form a loose mesenchymal population. What name is given to this population of cells?

答案: sclerotome

解析: 记住sclerotome 形成vertebrae, dermatome形成epidermis(就是皮肤之类的) myotome形成其他骨骼肌。这题看到vertebra秒选sclerotome。给大家放书上的P172图 和P96的表格



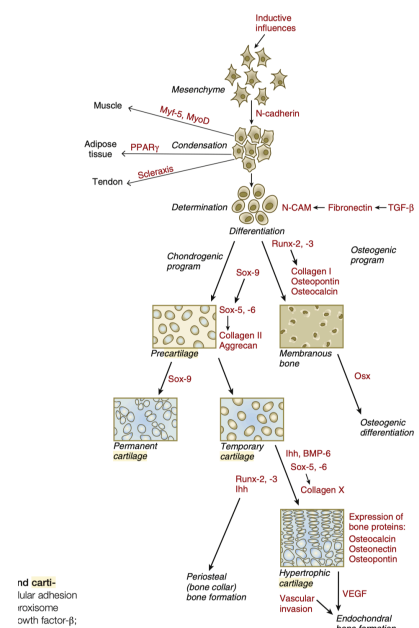
BOX 6.1 Somite Compartments and Their Derivatives	
SCLEROTOME	
Ventral:	vertebral bodies and their intervertebral disks
Lateral:	distal ribs, some tendons
Dorsal:	dorsal part of neural arch, spinous process
Central:	pedicles and ventral parts of neural arches, proximal ribs, or transverse processes of vertebrae
Medial (meningotome):	meninges and blood vessels of meninges
ARTHROTOME	
	Intervertebral disks, vertebral joint surfaces, and proximal ribs
DERMATOME	
	Dermis, blade of scapula, brown adipocytes
MYOTOME	
Dorsomedial:	intrinsic back muscles (epaxial), extensor muscles of limbs
Ventrolateral:	muscles of ventrolateral body wall (hypaxial), flexor muscles of limbs

4. What tissue is formed by this mesenchymal population of cells?

答案: cartilage and bone

解析: The mesenchymal cells that are the progenitors of cartilage and bone are also competent to form other tissues, as well (图文P158-159)

其实用上一道题的解析可以排出其他选项。因为其他选项不出现在vertebra中 而sclerotome只形成vertebra。



5. Which myotomes form the skeletal muscles of the tongue?

答案: Occipital Myotomes

解析：Corresponding to its innervation by the hypoglossal nerve (cranial nerve XII), the musculature of the tongue migrates from a considerable distance (the occipital [postotic] myotomes). (P331 书上有一大段都在讲formation of the tongue)

6. What signaling molecule induces the sclerotome region of somites?

答案：SHH

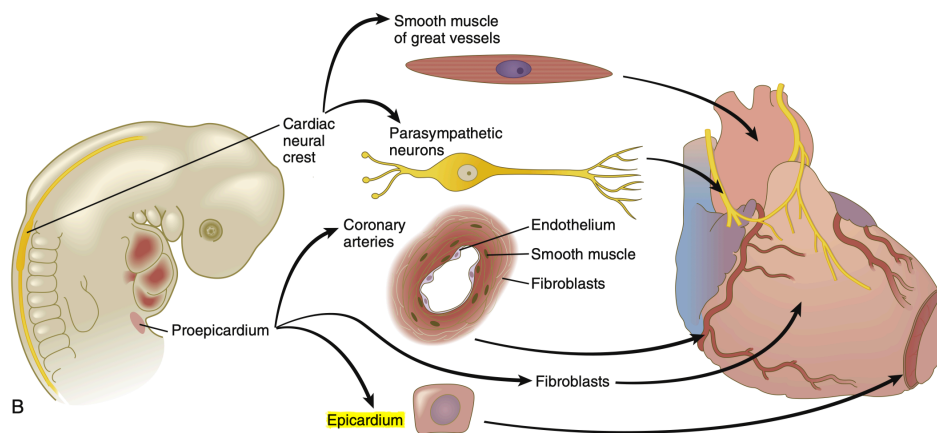
解析：Shortly after the formation of the epithelial somite, the cells of its ventromedial wall are subjected to an inductive stimulus in the form of the signaling molecules sonic hedgehog and noggin, originating from the notochord and the ventral wall of the neural tube. The response is the expression of Pax1 and Pax9 in the ventral half of the somite, which is now called the sclerotome (P95)

The breakup of the ventral part of the epithelial somite into mesenchyme under the influence of sonic hedgehog and noggin coming from the notochord leads to the formation of the early sclerotome. (P96)

7. What tissue is formed by endocardial tubes?

答案：endocardium

解析：The endocardium arises by a process of vasculogenesis within the forming cardiac tube. The endocardial cells arise from mesodermal cells of the cardiac crescent, but it is uncertain whether, within the crescent, endothelial precursor cells are already fully committed to the endothelial lineage or whether the precursor cells are bipotential and also capable of differentiating into cardiac muscle cells. (p409)



8. What is the name of the input chamber of the 4-5 week old heart?

答案：sinus venosus

解析：Repositioning of the Sinus Venosus and the Venous Inflow Into the Right Atrium

During the stage of the straight tubular heart, the sinus venosus is a bilaterally symmetrical chamber into which the major veins of the body empty (文字P414 图P408)

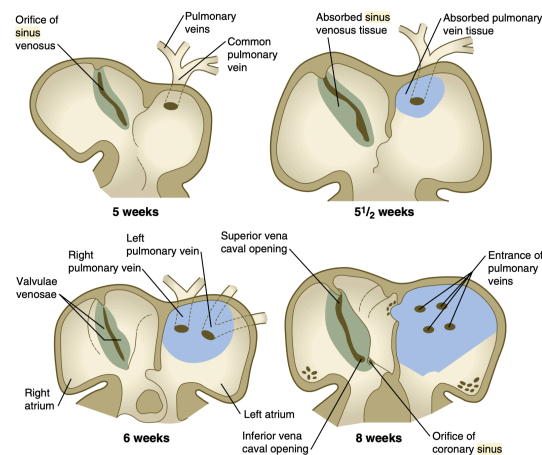
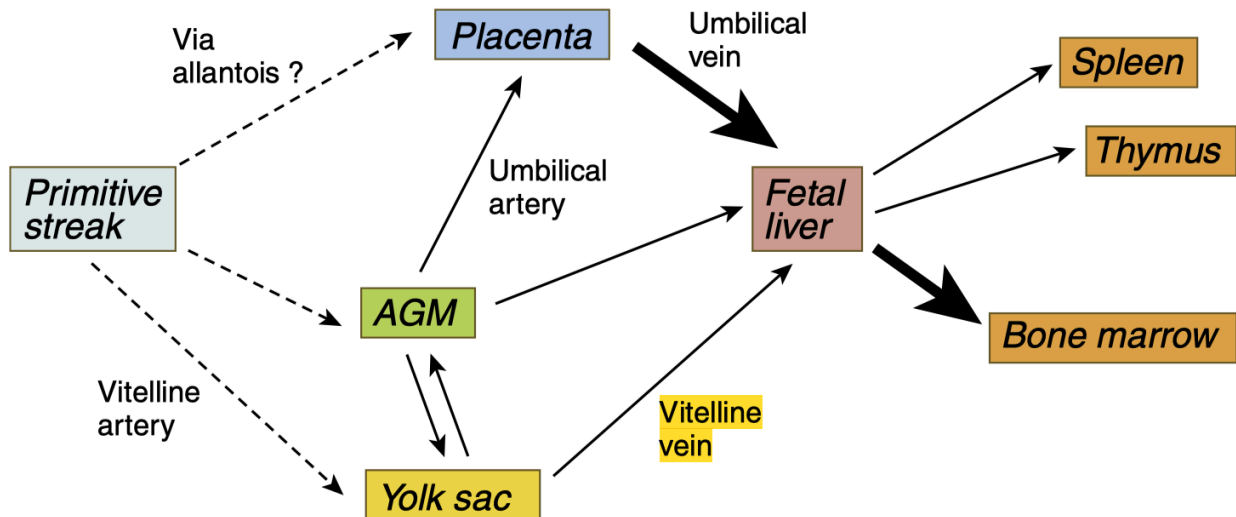


Fig. tion of vein the w chan of the right

9. From what tissue do the vitelline veins carry blood?

答案: yolk sac

解析: 一张P392页的图完爆一切moodle的垃圾解析



10. The primitive heart tube is suspended in the pericardial cavity by what tissue?

答案: dorsal mesocardium

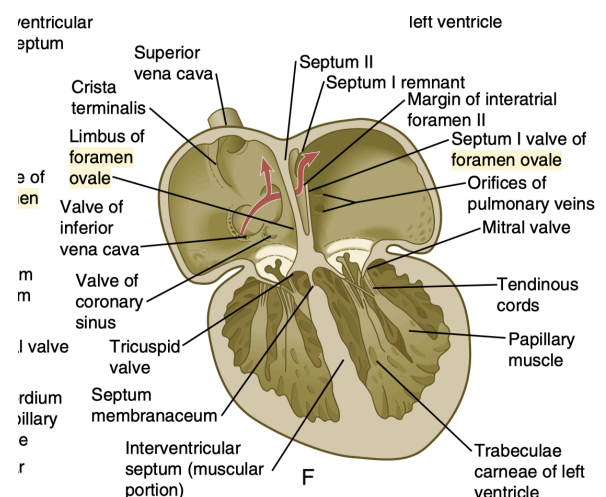
解析: Further cranially, the tubular primordium of the heart is similarly supported by a dorsal mesocardium and briefly by a ventral mesocardium, which soon breaks down. (p348).

11. After birth the septum primum and the septum secundum fuse to close what valve?

答案: the foramen ovale.

解析: Shortly after the appearance of the foramen secundum, a crescentic septum secundum begins to form just to the right of the septum primum. This structure, which grows out from the dorsal to the ventral part of the atrium, forms a foramen ovale. The position of the foramen ovale allows most of the blood that enters the right atrium through the inferior vena cava to pass directly through it and the foramen secundum into the left atrium.

(文字P413 图P414)



12. In the fetal circulation this vessel allows blood to bypass the pulmonary artery?

答案: ductus arteriosus

解析: 这个ppt上的图清楚 在week 7的最后一个ppt里的第30页

