Insight

Coronary artery disease

(Build your own heart at http://www.fpnotebook.com/_media/CvHeartBlock.jpg

Cardiovascular System – Heart (Ch. 20)

Human Anatomy lecture

I. Overview of circulation Fig 20.1

A. The heart is a double pump

pulmonary circuit	**systemic** circuit
-- sends O_2 poor blood to lungs	-- sends O_2 rich blood to tissues
Right heart	Left heart
↓	↓
Lungs ↗	aorta
	↓
	body organs
	↵

B. The heart is located in the mediastinum (**Fig. 20.2**)

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II. Pericardium -- Fig. 20.4

A. Structure - Triple layer bag (although your text says "double")

pericardium = pericardial sac + epicardium (visceral serous pericardium)

↳ = fibrous pericardium + parietal serous pericardium

-- insert sketch--

B. Heart wall itself has 3 layers, one of which is the inner layer of the pericardium
-- from outer to inner:

epicardium

myocardium

endocardium

C. Function – Why a triple layer bag?

1. reduces friction from the heart beating
2. protects
3.
4.

IV. Chambers and external anatomy

Fig. 20.3 -- KNOW! "front & back; top to bottom" -- practice sketching

R. atrium	R. ventricle	L. atrium	L. ventricle
auricle	pulmonary trunk	auricle	ascending aorta
superior & inferior vena cava	L. & R. pulmonary arteries	L. & R. pulmonary veins	aortic arch
	anterior interventricular sulcus		ligamentum arteriosum
coronary sinus in coronary sulcus	posterior interventricular sulcus		apex

V. Internal anatomy and path of blood flow: KNOW FIG. 20.7! & 20.10

A. Right atrium

1. pectinate muscles -
   ↳"comb"
2. interatrial septum =
   - fossa ovalis -
3. receives blood from
   -
   -
   -

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4. outflow through the tricuspid valve
(right atrioventricular [AV])

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B. Right ventricle
1. trabeculae carnae
"beams" "fleshy"
2.
3.
4. Blood pumped out to pulmonary trunk, then L. & R. pulmonary arteries through pulmonary semilunar valve

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C. Left atrium
1. same internally as the right
2. receives blood from
-
-
3. outflow through the bicuspid (mitral or left atrioventricular [AV]) valve

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D. Left ventricle
1. thicker walls than the right
2. pumps blood out to the body through the aortic semilunar valve into the ascending aorta

E. Fibrous skeleton (Fig. 20.8)
- dense c.t. rings around and between 4 valves
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VI. Blood supply: coronary (cardiac) circulation

Fig. 20.11, but will get details in lab

L. & R. coronary arteries from base of ascending aorta

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multiple anastomoses (collateral circulation)

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capillaries

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cardiac veins

⬇

coronary sinus

⬇

R. atrium

-- insert sketch--

VII. Conduction system

- specialized, non-contractile cardiac muscle fibers that form pacemaker and rapid conduction fibers throughout the heart
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