KEY

The Heart Review

the two side-by-side pumps

1. What is the function of the right side of the heart? The left side?

Ventricle

* Right side: pumps blood to lungs, gets rid of CO_2, picks up O_2
  - pulmonary circuit (heart → lungs → heart)
* Left side: pumps blood to body tissues
  - systemic circuit (heart → body → heart)

2. List the chambers of the heart and their function.

Receiving chambers

* right atrium: receives blood from systemic circuit
* left atrium: receives blood from pulmonary circuit

(circuits switch sides for atria)

pumping chambers

* right ventricle - pumps blood through pulmonary circuit
* left ventricle - pumps blood through systemic circuit

3. What is the pericardium? What does it consist of?

* double-walled sac that surrounds the heart
  - superficial fibrous pericardium
  - deep serous pericardium
    - parietal layer
    - visceral layer

4. List the layers of the heart wall.

1. epicardium
2. myocardium
3. endocardium

Outer ↓ inner

5. The superior chambers of the heart are the:
   a. Atria
   b. Ventricles – inferior chambers
   c. Septum
   d. Coronary sulcus

6. What is the interatrial septum? Interventricular septum?

* interatrial septum: separates atria
* interventricular septum: separates ventricles

"inside / within"

7. What does the right atrium receive? The left atrium?

* right atrium: deoxygenated blood from body (systemic circuit)
* left atrium: oxygenated blood from lungs (pulmonary circuit)

8. What is the difference between the superior and inferior vena cava?

"above" → * superior vena cava: returns blood from the body above the diaphragm

"below" → * inferior vena cava: returns blood from the body below the diaphragm

9. What does the right ventricle do? Left ventricle?

* right ventricle: pumps blood into pulmonary trunk (pulmonary circuit) — passage for blood to the lungs
* left ventricle: pumps blood into aorta (systemic circuit) — passage for blood to body

10. What are the functions of heart valves?

* ensure unidirectional blood flow through the heart
* open and close in response to pressure changes

11. List the major types of valves and their location.

* atrioventricular valves: between atria and ventricles
* semilunar valves: between ventricles and major arteries

12. Why is it not a problem that heart valves are not between major veins and atria?

* inertia of incoming blood prevents backflow

"resistance to change in motion" — The flow of blood coming in is stronger than any blood that may travel backward

* heart contractions compress venous openings

squeeze / make smaller

smaller opens = less can get through... more difficult

cusps → segments or "flaps" that make up the valve

tricuspid → 3 cusps

bicuspid → 2 cusps

13. List the AV valves. What is their overall function? Composition? Location?

* tricuspid valve: 3 cusps, is between right atria and ventricle

* bicuspid valve: 2 cusps, is between left atria and lventricle.

Function → prevent backflow into atria when ventricles contract

14. List the SL valves. What is their overall function? Composition? Location?

* pulmonary SL valve: 3 cusps, is between right ventricle and pulmonary trunk

* aortic SL valve: 3 cusps, is between left ventricle and aorta

Function → prevent backflow from major arteries back into ventricles

15. What is *incompetent valve*?

* blood backflow, so heart pumps the same blood over and over again

opposites problems

16. What is *valvular stenosis*?

* stiff flaps that constrict opening

* heart needs to exert more force to pump blood

17. What are the two main components of coronary circulation? What are their functions?

"of or relating to the heart"

* coronary arteries: supply arterial blood to heart

* coronary veins: collect blood from capillary beds (where gas is exchanged)

coronary circulation provides O_2 for the heart

18. What is *angina pectoris*?

Thoracic pain caused from fleeting deficeiny in blood delivery to myocardium (middle layer of heart wall)

19. What is *myocardial infarction*?

* heart attack

* caused by prolonged coronary blockage

blockage within the circulation that provides O_2 for the heart