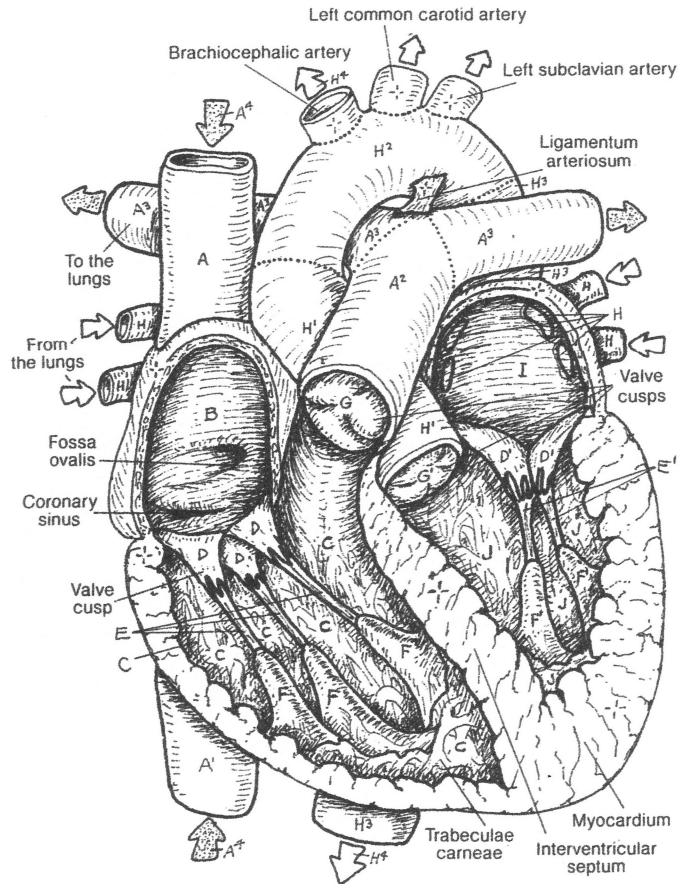


CHAMBERS OF THE HEART

CN: Use blue for A-A⁴, red for H-H⁴, and your lightest colors for B, C, I, and J. All dotted arrows (A⁴) receive a blue color; all clear arrows (H⁴) receive a red color. (1) Begin with the arrows A⁴ above the title list and above the superior vena cava (A) in the illustration at upper right and color the structures in the order of the title list (A-H³). (2) Color the circulation chart at lower right, beginning with the arrow A⁴ leading into the right atrium (numeral 1). Color the numerals in order from 1 to 4 and related arrows. Do not color the chambers or the vessels in this drawing at lower right.

- ↓ A⁴
- SUPERIOR VENA CAVA_A
- INFERIOR VENA CAVA_{A'}
- RIGHT ATRIUM_B
- ↓
- RIGHT VENTRICLE_C
- A-V TRICUSPID VALVE_D
- CHORDAE TENDINEAE_E
- PAPILLARY MUSCLE_F
- ↓
- PULMONARY TRUNK_{A²}
- PUL. SEMILUNAR VALVE_G
- PUL. ARTERY_{A³}
- ↓ H⁴
- PULMONARY VEIN_H
- LEFT ATRIUM_I
- ↓
- LEFT VENTRICLE_J
- A-V BICUSPID (MITRAL) VALVE_{D'}
- CHORDAE TENDINEAE_{E'}
- PAPILLARY MUSCLE_{F'}
- ↓
- ASCENDING AORTA_{H¹}
- AORTIC SEMILUNAR VALVE_{G'}
- AORTIC ARCH_{H²}
- THORACIC AORTA_{H³}

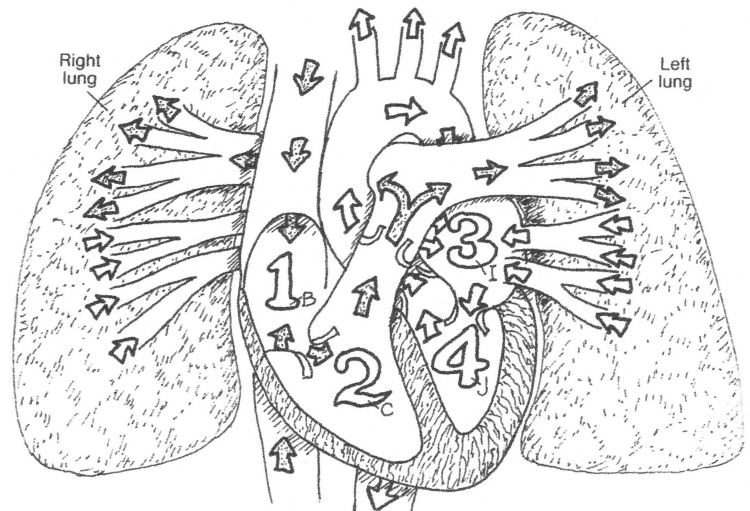
ANTERIOR VIEW OF HEART CAVITIES AND GREAT VESSELS



CIRCULATION THROUGH THE HEART

OXYGEN-RICH BLOOD H⁴ →

OXYGEN-POOR BLOOD A⁴ →



The heart is the muscular pump of the circulatory system. It contains four cavities (chambers): two on the right side (pulmonary heart), two on the left (systemic heart). The pulmonary "heart" includes the right atrium and right ventricle. The thin-walled *right atrium* receives poorly oxygenated blood from the *superior* and the *inferior vena cava* and from the *coronary sinus* (draining the heart vessels). The thin-walled *left atrium* receives richly oxygenated blood from pulmonary veins. Atrial blood is pumped at a pressure of about 5 mm Hg into the *right and left ventricles* simultaneously through the atrioventricular orifices, guarded by the 3-cusp *tricuspid valve* on the right and the 2-cusp *bicuspid valve* on the left. The cusps are like panels of a parachute, secured to the *papillary muscles* in the ventricles by tendinous *chordae tendineae*. These muscles contract with the ventricular muscles, tensing the cords and resisting cusp over-flap as ventricular blood bulges into them during ventricular contraction (systole). The right ventricle pumps oxygen-deficient blood to the lungs via the *pulmonary trunk* at a pressure of about 25 mm Hg (right ventricle), and the left ventricle pumps oxygen-rich blood into the *ascending aorta* at a pressure of about 120 mm Hg simultaneously. This pressure difference is reflected in the thicker walls of the left ventricle compared to the right. The pocket-like *pulmonary and aortic semilunar valves* guard the trunk and aorta, respectively. As blood falls back toward the ventricle from the trunk/aorta during the resting phase (diastole), these pockets fill, closing off their respective orifices and preventing reflux into the ventricles.