

Exercise walk-through

2.2

Heart, blood and CHD (4.2.2.2–4.2.2.4)

AQA · GCSE · Biology

Exercises 2.1-2.3

2.1 Name the blood vessels carrying blood to and from the lungs. [2]

2.2 Give two adaptations of red blood cells and say what each is for. [2]

2.3 Explain why the left ventricle wall is thicker than the right. [2]

3 Exam-style questions

Exercises 2.1·2.3

2.1 Name the blood vessels carrying blood to and from the lungs. [2]

2.1 Pulmonary artery (to lungs, B1); pulmonary vein (from lungs, B1).

2.2 Give two adaptations of red blood cells and say what each is for. [2]

2.2 No nucleus – more room for haemoglobin to carry oxygen; biconcave shape – large surface area for fast oxygen uptake and release. [max 2 pairs]

2.3 Explain why the left ventricle wall is thicker than the right. [2]

3 Exam-style questions

2.3 The left ventricle pumps blood around the whole body, needing higher pressure, so a thicker muscular wall; the right only pumps to the nearby lungs.

Exercises 3.1-3.3

3.1 Explain how the structure of an artery is adapted to its function. [4]

3.2 A patient has CHD. Evaluate stents against statins for treatment. [4]

3.3 The coronary arteries of a patient are 35% blocked.

(a) Explain why the patient gets chest pain during exercise. [3]

(b) Name one other treatment if stents fail. [1]

Exercises 3.1-3.3

3.1 Explain how the structure of an artery is adapted to its function. [4]

3.1 Thick muscle layer withstands and maintains high pressure; elastic fibres stretch and recoil, smoothing the pulse; small lumen maintains pressure to push blood to the tissues.

3.2 A patient has CHD. Evaluate stents against statins for treatment. [4]

3.2 Stents: mechanical opening – restores blood flow immediately, but surgery carries risks and does not stop new deposits forming. Statins: reduce blood cholesterol, slowing the build-up, but are a lifelong daily drug with side effects such as liver damage.

3.3 The coronary arteries of a patient are 35% blocked.

(a) Explain why the patient gets chest pain during exercise. [3]

(b) Name one other treatment if stents fail. [1]

3.3 (a) The blockage restricts blood flow through the coronary arteries; during exercise heart muscle needs more oxygen; the narrowed supply cannot meet the demand, so the muscle aches from respiration without enough oxygen – chest pain. (b) Any one: bypass surgery / heart transplant / artificial heart.