B3.2 Transport

Checklist

What you should know

After studying this subtopic you should be able to:

- Describe the structures of the arteries, capillaries and veins and explain how they are adapted for their functions.
- Outline different methods of measuring pulse rate.
- Outline the causes and consequences of occlusion of the coronary arteries.
- Explain how water is transported from the roots to the leaves during transpiration.
- Outline the adaptation of the xylem vessels for the transport of water.
- Draw and annotate plan diagrams from micrographs showing the distribution of tissues in a transverse section of the stem of a dicotyledonous plant, and dicotyledonous root.

Higher level (HL)

- Describe how tissue fluid is released and taken back up by the capillaries.
- Compare and explain the composition of plasma and tissue fluid.
- Outline how excess tissue fluid is drained into lymph ducts.
- Compare the single circulation of bony fish to the double circulation of mammals.
- Explain the adaptations of the mammalian heart for delivering pressurised blood to the arteries.
- Outline the stages of the cardiac cycle.
- Explain how root pressure is generated in xylem vessels.
- Outline the adaptations of phloem sieve tubes and companion cells for the translocation of sap.

Practical skills

Once you have completed this subtopic, go to Practical 6: Investigating the effect of physical activity on heart rate (https://app.kognity.com/study/app/bio/sid-422-cid-755105/book/investigating-the-effect-of-physical-activity-id-46705/) in which you will measure the heart (pulse) rate of humans at rest and after performing vigorous exercise.