

## **Weeks 9 & 10: Cardiovascular**

### **Learning Outcomes**

After producing the presentation on your topic, attending and taking notes at the other presentations, and revising these notes before the examination you should be able to:

1. Describe peripheral pulses.
2. Discuss coronary and peripheral artery disease.
3. Describe the control of heart rate.
4. Describe the aetiology of deep venous thrombosis.

This practical is not assessed directly but the material covered in this practical will form part of the examination.

#### **NOTE:**

Descriptions of all problems can be found at:

<http://mac-huwis.lut.ac.uk/~wis/lectures/>

## **Problem 1.**

A company wants to build a new pulse-rate monitor and has asked you to give them a presentation illustrating the places where peripheral pulses can be felt. They are interested in the ease with which these pulses can be felt, the underlying anatomy, and any problems that might occur if their device was set with too high a pressure and occluded an artery.

### Key Points:

- What is a pulse?
- Where can they be felt and why?
- Which arteries are involved?
- What structures do they supply?
- How easy are they to feel?

## **Problem 2.**

You have been asked to give a presentation to the sales team of a firm specialising in balloon arterioplasty equipment. They want you to describe the process of balloon arterioplasty both for coronary and femoral artery disease.

### Key Points:

- What is balloon arterioplasty?
- What does it do?
- Why is it done?
- Where can the balloon be inserted?
- What route does the balloon take?

### **Problem 3.**

You have been asked to give a presentation to prenatal class on the changes in the blood circulation observed at birth. The class is interested in the anatomical and physiological reasons, as well as any problems that might occur and what can be done about them.

#### **Key Points:**

- What is the fetal blood circulation?
- What is the adult blood circulation?
- What changes at (or shortly after) birth?
- What physiological benefits are there?

## **Problem 4.**

A company producing pacemakers is rewriting their publicity pack. They would like you to produce a presentation illustrating the normal electrical function of the heart, and how their devices help maintain rhythmic contraction.

### Key Points:

- What is the normal pattern of electrical activity in the heart?
- Define: SAN, AVN, Purkinje Fibres?
- What nervous and hormonal control of heart rate is there?
- How does a pacemaker work?

## **Problem 5.**

An airline company has asked you to come and give them a presentation on deep venous thrombosis. They would like to know the anatomical basis for this disease and what they can do in terms of seat design, clothing choice, or activity patterns that might be useful in preventing this problem.

### **Key Points:**

- What is deep venous thrombosis?
- Why does air travel cause venous thrombosis?
- What is a pulmonary embolism?
- How is it related to DVT?
- What can be done to prevent DVT?