Listening 1

A heart condition

1 🎧 Listen to Mr Lawson's wife talking to the doctor in A&E. What do you think the patient's condition is? Why?

2 Describe the doctor's manner and the mood of the patient's wife. Give reasons.

3 🎧 Listen again and write down notes on what is said about

1 the GTN spray
2 the time when the pain started
3 thrombolysis
4 prognosis.

4 🎧 Work in groups. Compare your notes and listen again. Discuss the possible differential diagnosis of the patient's condition.

5 Choose one member to report back to the whole class.

6 Work in pairs. Take turns role-playing the conversation between a patient's spouse and a doctor with the same presentation as in **1**.

Vocabulary

Avoidance of technical terms

1 In these sentences, the speaker is trying to avoid using one of the technical words or phrases in the list below. Match each word to a sentence.

a hypokalaemia
b titrate to effect
c diuretic
d contraindication
e arrhythmia
f line
g secure venous access
h reperfuse
i thrombolysis
j tolerate

1 If we can, we give him a drug to dissolve any clots, then we increase his chances of getting better.
2 My heart is not beating in a normal rhythm.
3 There are several reasons why this drug should not be used.
4 You have no side effects with this drug.
5 We're going to give you something to help reduce the swelling in your ankles.
6 As soon as the patient is brought in, we need to get into a vein.
7 We'll increase the painkiller by the same amount each time until it kicks in.
8 This drug will get the blood flowing back again through the heart.
9 If this doesn't work, we'll move onto the next stage of treatment.
10 You've got very low levels of potassium.

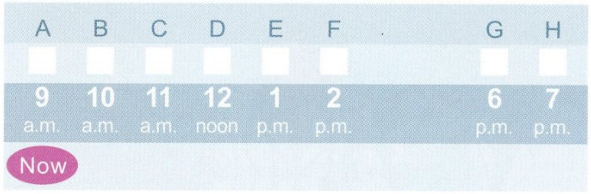
Language spot

The future

1 Work in pairs. What tenses are used in these sentences?

1 The ward round starts at 10, so we have half an hour.
2 She normally stops at 12, but today, I think she'll have finished her rounds well before 11.30.
3 The ward round is finishing at 12 noon.
4 So we'll definitely be sitting in the canteen at 1.10.
5 We'll have been working for 12 hours by 1.00 this afternoon.

2 Work in pairs. Read all the sentences 1–6 below, then match them with the relevant points or periods on the diagram.



1 We'll have had eight hours on duty by the end of the day.
2 We're having an hour for lunch.
3 We'll have just finished lunch by the time the consultant arrives for her ward rounds.
4 The weekly presentation, which will last two hours, will end just before lunch.
5 Dr Ian Garfield will be starting the presentation as soon as he arrives.
6 The shift today starts at 10.00 with a presentation.

3 Work in pairs. Put the verbs in brackets into the correct future form in the active or passive.

1 If his progress so far is anything to go by, he _____ (be) up and about in a few days.
2 He _____ (send) home this Saturday.
3 She _____ (soon move) out of intensive care.
4 That means in ten minutes, it _____ (be) roughly 60 minutes since the pain first came on.
5 He _____ (walk) around without any problem in a matter of days.
6 _____ (he be able) to go into a rehabilitation unit before he comes out?
7 What _____ (he have) to eat by the time I get there today?
8 The consultant _____ (come) round at about 1.00 p.m., so we _____ (see) him then.

4 Work in pairs. Prepare three or four questions about what you will have done, are planning to do, will be doing, and will do today. Give your questions to your partner and then ask each other the questions.

Patient care

1 Work in pairs. How would you respond to the statements below, made by the spouse of a patient who has just been brought into A&E suffering from a heart attack?

1 He's been in the theatre for ages now.
2 Things are looking bad, aren't they?
3 Will he be OK?
4 He looks rather well.
5 I'm a bit anxious about what'll happen with the procedure you described.
6 How long's he going to be in here?
7 He thinks he's going to die, doctor.

2 Compare your statements with other students. Then discuss them with the class.

3 Work in pairs. What type of word is missing in the blank spaces (noun, verb, etc.)? Complete the responses below with one word.

a Oh. It's only a _____ of days now. In fact, he'll be seeing the consultant tomorrow morning and if he's happy, you can ...

b Yes, he does. And if _____ goes according to plan, this time next week I expect he'll be sitting at home with you.

c It's not _____ to feel this, but you got him here quickly, which'll _____ help him.

d It's actually not as bad as it seems. The machines and tubes, I'm _____, don't make things look good, but they're there to help him. He'll be like this for a little _____ and then ...

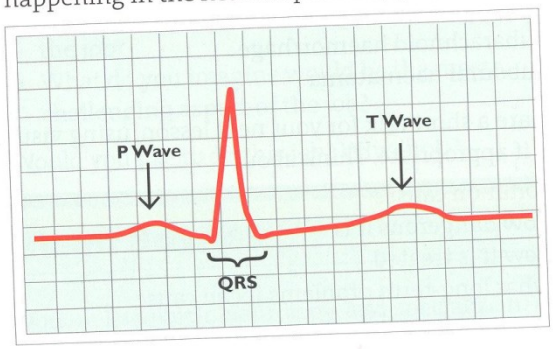
e Yes. We expect he'll be ready to leave in a couple of days. It's the anaesthetic and the painkillers; they're making him a bit confused, but that'll soon _____ off.

f It always seems longer when you're sitting waiting. I'm sure he'll be _____ shortly; in fact, here's the nurse now.

g It's only _____ to feel worried; everybody would be, but I can assure you it'll help him.

Match each response a–g to a statement in **1**.

1 Work in pairs. Look at the ECG. Try to explain what is happening in the heart at points P, QRS, and T.



5. Fill in the following verbs:

cause, fill, push, relax, contract, force, reach, return.

A heartbeat has three phases. In the first, diastole, the heart _____1 and blood _____2 the atria. This appears as a flat line on the ECG (electrocardiogram).

In the second phase, an electrical impulse ____3 the atria to _____ 4 and _____ 5 blood into the ventricles. This is point P on the ECG.

In the third phase, the electrical impulse ____ 6 the ventricles. These contract, _____ 7 blood to the lungs and to the rest of the body. This phase includes points Q, R, and S on the ECG. The heart then _____ 8 to its relaxed state, marked by point T.

A Uses of an ECG

An **electrocardiogram** (ECG) is a **tracing**, or drawing, produced by an **electrocardiograph** – a device which records electrical activity in the heart. An ECG can be used for:

- deciding if the heart is performing normally or suffering from abnormalities, for example cardiac arrhythmia – extra or **skipped heartbeats**
- indicating damage to heart muscle, such as heart attacks, or ischaemia of heart muscle (**angina**)
- detecting **conduction abnormalities**: heart blocks and bundle branch blocks (BBB)
- **screening for** ischaemic heart disease during an **exercise tolerance test**, often carried out on an exercise bike or treadmill
- providing information on the physical condition of the heart, for example in patients with left ventricular hypertrophy (LVH)
- detecting **electrolyte disturbances**, for example low plasma potassium levels.

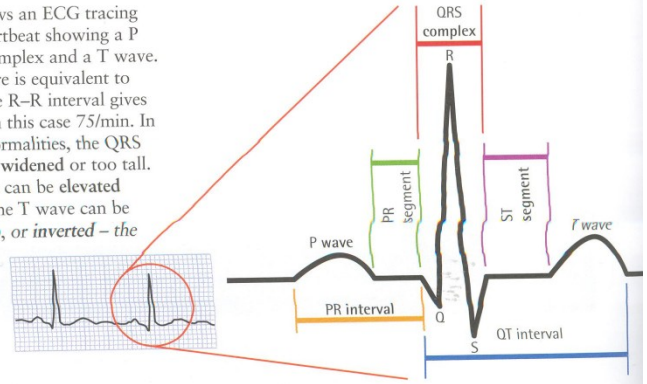
B *ECG procedure*

Here is an extract from a medical textbook.

1 The patient should lie down and relax.
2 **Calibrate** the ECG machine – a standard signal of 1mV should move the **stylus** two large squares (1 cm) vertically.
3 Attach the **limb leads**: left arm (**LA**), right arm (**RA**), left leg (**LL**), and right leg (**RL**).
4 **Record** the six standard leads: **I, II, III**, augmented voltage right arm (**AVR**), augmented voltage left arm (**AVL**), and augmented voltage foot (**AVF**) – three or four **complexes** (see C below) for each.
5 Apply the electrode to the six **chest positions** in turn, recording three to four complexes of each. If the rhythm does not appear to be **sinus** (normal rhythm), a rhythm strip of 6–10 complexes in a single lead should be recorded.

C A normal ECG

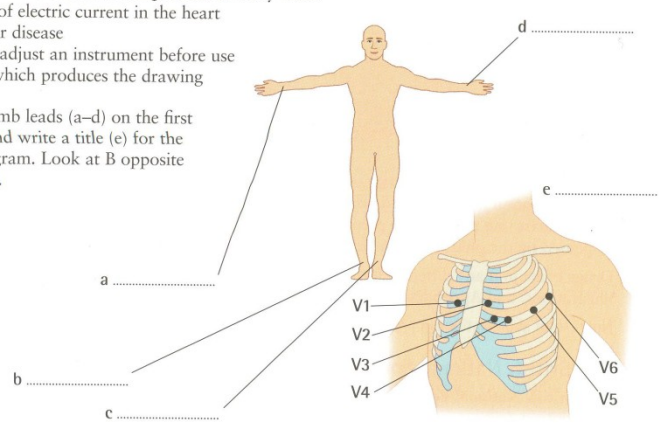
The picture shows an ECG tracing of a normal heartbeat showing a P wave, a QRS complex and a T wave. Each large square is equivalent to 0.2 seconds. The R–R interval gives the **heart rate**, in this case 75/min. In the case of abnormalities, the QRS complex can be **widened** or too tall. The ST segment can be **elevated** or **depressed**. The T wave can be the right way up, or ***inverted*** – *the wrong way up.*



39.1 Find words and phrases in A and B opposite with the following meanings.

1 the marks produced by an ECG stylus
2 a test which determines how well a patient copes with physical exercise
3 a missed heart beat
4 a change in the chemical composition of body fluids
5 the flow of electric current in the heart
6 testing for disease
7 check or adjust an instrument before use
8 the pen which produces the drawing

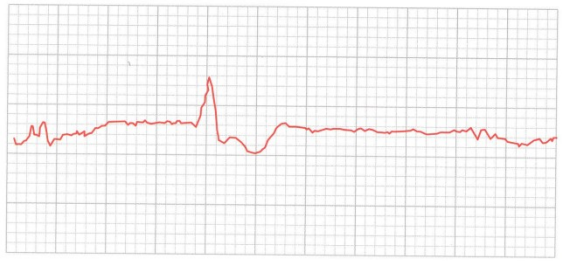
39.2 Label the limb leads (a–d) on the first diagram, and write a title (e) for the second diagram. Look at B opposite *to help you.*



39.3 Complete the text using words from the box. Look at C opposite to help you.

complexes	leads	wave	interval	rate

This very abnormal ECG shows a (1) ..... of approximately 33/min; a single long pause of approximately 4 seconds between ventricular complexes with atrial activity; widened QRS (2) ..... in keeping with (R)BBB. Deep T (3) ..... inversion in II, III, AVF and some chest (4) ..... (V4–V6). Deep QRS complexes in V2 and V5 in keeping with LVH. One atrial ectopic. QT (5) ..... is normal.



Lead II

Over to you

Describe an ECG tracing of one of your patients to a colleague.