

Occupational English Test
Listening sub-test
Practice test transcript

Part B: Cardiac investigations

Occupational English test. Listening test. This test has two parts. Part B. In this part of the test you will hear a talk on cardiac investigations. You will hear the talk once only, in sections. As you listen, you must answer the questions in the spaces provided on the answer paper. Turn over now and look quickly through Part B. You have one minute to do this.

PAUSE: 60 SECONDS

You may write as you listen and there will be pauses during the talk for you to complete your answers and to read the following question. Remember, you will hear the tape once only and you should write as you listen. **Now read Question 1. Question 1 has been done for you.**

PAUSE: 15 SECONDS

My name's Doctor Neil Strathmore ... I'm a cardiologist, and today I'm going to talk about cardiac investigations ... and try and tell you which test is right for which patient.

PAUSE: 10 SECONDS

Now read question two.

PAUSE: 20 SECONDS

Now listen, and answer question two.

Patients who present with heart problems present with a variety of symptoms, such as chest pain, shortness of breath, palpitations, syncope, and oedema. In addition patients come along because a problem has been picked up ... by another doctor, such as high blood pressure, a heart murmur, an abnormal lipid profile, or patients present for assessment of cardiac risk to see whether they're likely to have a heart attack.

PAUSE: 20 SECONDS

Now read question three.

PAUSE: 20 SECONDS

Now listen, and answer question three.

Let's look at the most common cardiac symptom that presents, which is chest pain. Obviously, the first thing to do is to take a careful history of the pain – where it is, and how severe it is, and in particular its relationship to exertion. Often patients don't describe this as a pain but as a pressure. The examination is often not helpful in ah trying to sort out the cause of chest pain, but one should note the blood pressure and see if there're any cardiac murmurs because aortic stenosis can also cause chest pain. It's important to note the risk factors: a technique that's very useful for assessing cardiac risk is to use the, ah, population data from the Framingham study in the United States to assess five- and ten-year cardiovascular risk. It's important to remember that women often have an atypical history of pain.

PAUSE: 20 SECONDS

Now read question four.

PAUSE: 20 SECONDS

Now listen, and answer question four.

So the next step is to do some sort of test to look for the cause of the chest pain, and most of the tests are what are called functional tests which see the effect of stress or exercise on the heart, and see whether that changes something which can give us a diagnosis. The simplest test is an exercise ECG. The patient exercises on a bicycle or a treadmill while an ECG is being recorded. The parameters that are measured are the heart rate and blood pressure, and then changes on the ECG, in particular ST depression. ST depression occurs because ischemia occurs during exercise. This is a relatively simple test and inexpensive. The main problem is that its sensitivity and specificity are probably only of the order of seventy to eighty percent, and seem to be a lot lower in women. Remembering that the test can be inaccurate, means that even a patient who has a very good story of chest pain, that sounds like angina and has multiple risk factors, should still be considered to have angina, even if the exercise test is negative.

PAUSE: 20 SECONDS

Now read question five.

PAUSE: 20 SECONDS

Now listen, and answer question five.

A more accurate test is an exercise echocardiogram. This is a more complex test in that the patient has an echocardiogram looking at the heart, particularly the left ventricular size and function, before they exercise and then immediately after they finish the exercise on the treadmill or the bicycle. It's much more accurate, with sensitivity and specificity above ninety percent, and it gives much more information ... it ... particularly about the heart size and the heart function, about the nature of the heart valves, and the presence of previous myocardial infarction. This is obviously done in addition to the ECG so it gives additional information to the exercise ECG.

PAUSE: 20 SECONDS

Now read question six.

PAUSE: 20 SECONDS

Now listen, and answer question six.

Another test that's very accurate and is widely done is an exercise nuclear scan. Here the patient is, as in the previous tests, exercised in the same way as in the previous tests, but is given a radioactive tracer. The tracers that are commonly used are thallium, or a more recent tracer called sestamibi, which is bound to radioactive technetium. These tracers go to the heart muscle in proportion to the degree of blood flow. So the test, so usually the patient is stressed, and then at the height of stress is given an injection of the tracer. The patient is then placed under a gamma camera, and images are taken. These days, the images can be done in the same form as a CT scan, so slices of the heart in all three dimensions can be obtained. In a patient who has ischemia, there'll be less blood flow in that area and therefore less tracer, and this will show up on the gamma camera picture. In a patient who's had a myocardial infarction, however, there's obviously no blood flow to that area and so that area will remain without tracer.

PAUSE: 20 SECONDS

Now read question seven.

PAUSE: 20 SECONDS

Now listen, and answer question seven.

The other problems that patients present with, such as shortness of breath or palpitations, or a heart murmur, are best looked at by doing an echocardiogram. An echocardiogram is an ultrasound of the heart and is done using a, often using Doppler ... technology, and this gives the ... a ah, very good idea of cardiac structure and function ... in fact it's the best test for structure and function. A particular use of echocardiography is in patients who present with shortness of breath. The question is, is the shortness of breath due to heart failure? Well, the echo is really the best test. You should look for reduced left ventricular function, or left ventricular hypertrophy, but other..other things can cause shortness of breath that can be seen on an echo, such as pulmonary hypertension, valve disease, or congenital defects. Echocardiography is the definitive test for diagnosing heart murmurs. These days, we would not rely just on the stethoscope to diagnose a heart murmur, and we would definitely want to use an echo to measure the severity of any valve lesion, rather than just on clinical parameters, which are not as reliable. In hypertension, the echo is helpful because it can measure left ventricular hypertrophy. For arrhythmias, particularly atrial fibrillation, the echo can look for associated cardiac defects. A particular, ah, issue is the question of whether a patient has endocarditis. The patient who presents with a fever plus a heart murmur, or with a fever of unknown origin, may well have endocarditis – an infection on the heart valves – and an echocardiogram can be very helpful to look at the valves and to see whether there are any vegetations.

PAUSE: 20 SECONDS

Now read question eight.

PAUSE: 20 SECONDS

Now listen, and answer question eight.

Patients who have, ah, palpitations, arrhythmias, or blackouts ... also need to be assessed very carefully. It's often hard to pick ah, the time when a patient will have these symptoms. Twenty-four hour ambulatory ECG monitoring, or Halter monitoring is used. Halter was the doctor who invented the technology. The patient wears an ECG monitor connected to a tape recorder or electronic disc, which measures their heart rhythm over a twenty-four hour period. The patient can press a button if they have a symptom, and that will be recorded on the tape. At the end of the, ah, twenty-four hours the patient hands back the device and that's scanned with a computer looking for abnormal rhythms, and also looking for the times when at when the patient pressed the button. This gives an excellent correlation between symptoms and rhythm. Sometimes patients have a symptom, but their rhythm is normal. Sometimes they have an abnormal rhythm, but no symptoms. However, because these symptoms are intermittent, it's sometimes hard to pick them up just on twenty-four hours. An event monitor is something the patient can wear for a week or two weeks. It's a much smaller device and has a usually only two electrodes that the patient can change each day after they've had a shower. The patient presses the button when, on the monitor, when they have an event, when they have a symptom ... and that stores the ah rhythm immediately before and immediately after the event. So, the device isn't recording the whole rhythm for seven days, just for the few minutes around each event. The ultimate way of testing for these sort of of very rare events, is to implant a loop recorder. This is a small device that is implanted under the skin on the chest that can measure the heart ah ECG and can record either when the patient places a a device over this to trigger it, or if the recorder automatically picks up an arrhythmia. For patients with very ah rare rhythms, this is a ... a device which can be very, very helpful.

PAUSE: 20 SECONDS

Now read question nine.

PAUSE: 20 SECONDS

Now listen, and answer question nine.

Some other tests that are being looked at include CT scanning to look at the coronary arteries. This this sort of test is now being done in a number of centres and can give very accurate pictures of the coronary arteries. However, it hasn't quite reached the degree of experience that the other tests have, and so we're not using it as frequently, and in addition it exposes the patient to quite a high radiation dose from the CT scan. MRI scanning is very useful for cardiac structure and also for cardiac function. Ah, it may be useful for the coronary arteries in the future, but isn't quite at that stage yet. Some patients find the MRI scan quite difficult to take because of claustrophobia.

PAUSE: 20 SECONDS

Now read question ten.

PAUSE: 20 SECONDS

Now listen, and answer question ten.

A number of other tests are being trialled ... and, and looked at, trying to get an idea particularly of the coronary arteries, ah, and to try and predict which patients will have a..have a myocardial infarct. At the moment we can't see small plaques in the coronary arteries, and that really is the gold standard in the future, if we were able to predict which patients would have a heart attack. Thank you for your attention.

PAUSE: 20 SECONDS

That is the end of Part B. You now have 2 minutes to check your answers.

PAUSE: 120 SECONDS

That is the end of the listening test.