

<p style="text-align: center;"><b>Module 1</b> <b>Running for the Train</b></p>
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**STRUCTURE AND FUNCTION IN HEALTH AND DISEASE**

- Explore causes of breathlessness other than cardiac eg. Obesity, COPD, Kussmaul
- Describe the use of medical terminology (anatomical)
- Describe the gross and surface anatomy of the thorax
- Describe the basic anatomy of the heart, and cardiovascular systems
- Describe the basic physiology of the heart, conducting system, and cardiovascular system
- Discuss the cellular and molecular events underlying cardiac contraction and relaxation
- Discuss the cardiovascular consequences of exercise in health and disease
- Compare and contrast voluntary, involuntary and cardiac muscle
- Explain pharmacological principles of reducing the risk of further myocardial infarction.

**POPULATION PERSPECTIVE**

- Define: population perspective on health (using the 'seven pointers'); critical appraisal; public health; epidemiology; epidemic
- Interpret summary measures for categorical and continuous data (and be aware of practical uses of the Normal and other frequency distributions such as Poisson and binomial)
- Define: probability; data and different data types (continuous, discrete, categorical), with reference to their statistical summary measures (including measures of location and spread for quantitative data); data collection methods (questionnaire, interview, focus group, record abstraction)
- Outline the key features of a randomized controlled trial related to the classification of descriptive, observational/analytical, intervention studies and types of bias
- Evaluate the evidence obtained by different study designs/techniques

**INDIVIDUALS, GROUPS, AND SOCIETY**

- Describe the transtheoretical model of behaviour change
- Describe how individuals respond to and manage stressful situations
- Describe the psychobiological mechanisms involved in heart disease
- List and explain the psychological factors involved in symptom interpretation and illness belief

**PROFESSIONAL AND PERSONAL DEVELOPMENT**

- Define: ethics, ethical, moral; personal development

- Define the role of the health care 'professional'
- Outline ethical frameworks that can be applied to clinical decision-making
- Reflect on what it is to be ethical (adherence to moral principles and rules, right attitudes).
- To be able to distinguish between ethical (or moral) norms or codes of behaviour and other norms or codes of behaviour (say, legal norms, norms of etiquette).
- Reflect on reasons why we attach great importance to ethics.
- *Discuss* of the complexities of the ethical dimension (e.g. possibility of conflict between principles / values, sometimes conflict might even be irresolvable).
- *Explore* sources of ethical guidelines (e.g. BMA, GMC).

### **HARC**

- Mediastinum and heart
- CXR/CT/?MUGA of the heart
- Read HARC manual and Introduction resources

### **CLINICAL SKILLS**

- ECG
- Auscultation of the heart
- Measurement of pulse and blood pressure

**SCENARIO – Module 1: Running for the Train**

James Gibson is a 45 year-old stockbroker who is married with a son of 22 and a daughter of 20. He has always considered himself to be 'Healthy'.

Recently, he has been smoking more cigarettes than usual, and attributes this to being "*stressed about the state of the Stock Market*". He has also been travelling abroad on business more frequently.

One day, James is late leaving for work and, having to run for the train, experiences some "*tightness*" in the chest. He is very breathless and his heart seems to be beating more rapidly than usual. On the train, the heavy breathing takes some time to settle down and James worries that he might have "*strained my heart*". He has always wondered how the muscle in his heart is different from other muscles – pumping for a whole lifetime. Have I got a weak heart like Dad?" he ponders. His father had 'angina' and James has always wondered what the word actually means – so many people use medical terms in day to day conversation and sometimes they are not always quite right! He wants to be sure he has not had a heart attack and is sure his father would have lived longer on the medication available these days – 30 years later.

James decides that he does not want anyone else following in his father's footsteps. He is sure he should try to give up smoking, but is not really convinced that all the stress at work is particularly bad for his heart, as "*it just keeps me on my toes*". He also wondered what is the cause of the breathlessness.

James makes an appointment with his general practitioner, Dr Singh, to get his heart checked out and to seek advice about improving his lifestyle (as he considers Dr Singh to be very 'professional'). When James arrives for the appointment he overhears a medical student say to her colleague "*I never realised that so many people worked in primary care these days. I wonder whether with the demands on doctors today they are still able to always practise in an ethical manner.*" To which the other student replies, "*Yes, of course they do. We should also be aware that there are a number of Guidelines to help those of us working in health care, such as those devised by the DOH, BMA and the GMC.*"

Later James reads a poster from the local public health department about the prevalence of heart disease and ways of improving the population's health. When he goes in to see the practice nurse, Nurse Riley, measures his pulse and blood pressure and takes an ECG. James asks how good is the research

**about the probability of getting heart disease and “whether there really is an epidemic or whether people interpret information as it suits them” Nurse Riley says, “It’s funny you should ask that as Dr Singh is likely to ask you to participate in a local Randomised Controlled Trial (RCT) about changing lifestyle”. James is confused by “RCT” and wonders why Dr Singh has chosen to collect information this way. James really wants to know about his children’s chances of getting similar health problems and asks whether his they should also be checked or whether heart disease is so common in the general population anyway that it’s not worth bothering about.**