

## 5

## Medical practitioners 1

## A

## Practitioners

In Britain, doctors, also known as **medical practitioners**, must be **qualified**: have a university degree in medicine. They must also be **registered** – included in the General Medical Council's list, or **register** – in order to **practise** (see Unit 13). A doctor who **treats patients**, as opposed to one who only does research, is called a **clinician**. A doctor who provides primary care for patients is known as a **general practitioner (GP)**, or family doctor. GPs usually work in a **group practice**. Larger group practices work in a building called a **health centre**.

Note: In British English, the verb is spelt **practise** and the noun is spelt **practice**.

## B

## Specialties

**Specialist doctors**, for example **paediatricians**, generally work in hospitals. However, those who work outside the NHS, providing **private health care**, may have **consulting rooms** outside a hospital – for example in the famous Harley Street in London.

The two main branches of medicine are **surgery** and **internal medicine**, and the doctors who practise these branches are called **surgeons** and **physicians**, respectively. In Britain, male surgeons are addressed as Mr and females as Ms – so Dr Smith is a physician, and Ms Smith is a surgeon.

|                 |                                      |   |
|-----------------|--------------------------------------|---|
| A cardiologist  | specializes in<br>is a specialist in | diseases of the heart and circulation, or <b>cardiology</b> . |
| A geriatrician  |                                      | diseases of elderly patients, or <b>geriatrics</b> .          |
| An anaesthetist |                                      | <b>anaesthetics</b> .   |

Note: Names of specialties usually end in **-ology**; names of specialists usually end in **-ologist**. If the name of a specialty ends in **-ics**, the name of the specialist ends in **-ician**. There are some exceptions, e.g. **anaesthetics** and **anaesthetist**.

## C

## Choosing a specialty

Jill Mathews has just graduated from medical school and is talking about her future.

'I haven't decided what to **specialize in** yet. I need more experience before I decide, but I'm quite attracted to the idea of paediatrics because I like working with children. I'd certainly prefer to work with children than, say, elderly patients – so I don't fancy geriatrics. I was never very interested in detailed anatomy, so the **surgical specialties** like **neurosurgery** don't really appeal. You have to be good with your hands, which I don't think is a problem for me – I've assisted at operations several times, and I've even done some minor ops by myself – but surgeons have to be able to do the same thing again and again without getting bored, like tying off cut arteries and so on. I don't think that would be a problem for me, but they need to make decisions fast and I'm not too good at that. I like to have time to think, which means surgery's probably not right for me.'

Note: The collocation **good with** is followed by a noun – *He's good with children*. The collocation **good at** is followed by the **-ing form (gerund)** of a verb, or by a noun – *She's good at explaining procedures*. *She's good at explanations*.



5.1 Write sentences to describe the work of the specialist in each branch of medicine. Look at B opposite to help you.

- 1 dermatology A dermatologist specializes in diseases of the skin.
- 2 rheumatology
- 3 traumatology
- 4 paediatrics
- 5 obstetrics

5.2 Complete the table with words from A, B and C opposite and related forms. Put a stress mark in front of the stressed syllable in each word. The first one has been done for you.

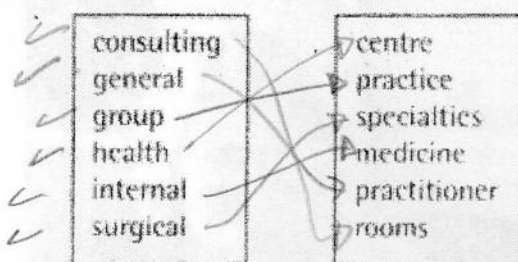
| Verb        | Noun (person)        | Noun (activity or thing) |
|-------------|----------------------|--------------------------|
| 'specialize | specialist           | specialities             |
| practise    | practitioner         | practice                 |
| consult     | consultant           | consultation             |
| assist      | assistant            | assistance               |
| graduate    | graduate             | graduation               |
| qualify     | <del>qualifier</del> | qualification            |

5.3 Find prepositions in C opposite that can be used to make word combinations with the words in the box. Then use the correct forms of the words to complete the sentences.

good      interested      specialize      work

- 1 A pathologist specializes in diagnosing disease through examining cells and tissue.
- 2 A paediatrician must enjoy working children.
- 3 An oncologist is interested in the diagnosis and treatment of cancer.
- 4 A psychiatrist must be good at counselling.
- 5 A neurosurgeon must be good with her hands.

5.4 Make word combinations using a word from each box. Two words can be used twice. Look at A, B and C opposite to help you.



### Over to you

Re-read what Dr Jill Mathews says about surgeons in Section C. Make a list of the qualities she thinks are needed to be a good surgeon. Then make a similar list of qualities for another specialty.

If you are a student, which branch of medicine do you think you have the qualities for? If you have already completed your training, why did you choose your particular branch of medicine?



## A

## Hospital staff

The people who work in any type of workplace, including hospitals, are called the **staff**. The medical staff in a British hospital belong to one of four main groups:

- A **pre-registration house officer (PRHO)**, or **house officer**, is a newly graduated doctor in the first year of postgraduate training. After a year, he or she becomes a registered medical practitioner. In the current system of training, the **Foundation Programme**, the name for these junior doctors is **Foundation Year 1 doctor (FY1)**. (See Unit 12)
- A **senior house officer (SHO)** is in the second year of postgraduate training. The title is now **Foundation Year 2 doctor (FY2)**, but the old terms **senior house officer** and **SHO** are still used.
- A **specialist registrar (SpR)** is a doctor who has completed the **Foundation Programme**, and is training in one of the medical specialties. There are also some **non-training registrar** – doctors who have completed their training but do not wish to specialize yet.
- A **consultant** is a fully qualified specialist. There may also be some **associate specialists** – senior doctors who do not wish to become consultants. In addition, there is at least one **medical (or clinical) director**, who is responsible for all of the medical staff.

## B

## Medical teams

Consultant physicians and surgeons are responsible for a specific number of patients in the hospital. Each consultant has a **team** of junior doctors to help care for those patients. In many hospitals, there are **multidisciplinary teams** which consist not only of doctors but also of physiotherapists and other allied health professionals (see Unit 8).

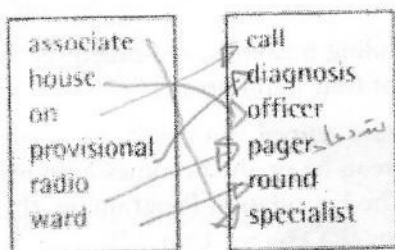
When patients enter – or are admitted to – hospital, they are usually seen first by one of the junior doctors on the ward where they will receive treatment and care. The junior doctor **clerks** them – **takes their medical history** (see Units 47–49) – and examines them. Some time later, the registrar also sees the patients, and may order **investigations** or **tests**, for example X-rays or an ECG, make a provisional **diagnosis**, and begin treatment. The consultant usually sees the new **admissions** – people who have recently been admitted to the ward – for the first time on one of the regular **ward rounds**, when the management of the patients is discussed with the registrar. Consultants also decide when a patient is ready to be **discharged** (sent home). On the ward round, the consultant is accompanied by the team and a nurse, and they visit all the patients in the consultant's care.

## C

## Shifts

Junior doctors now normally **work in shifts**, which means they normally work for eight hours every day, for example 7 am to 3 pm, and are then free until 7 am the next day. After a week they change to a different shift, for example 3 pm to 11 pm or 11 pm to 7 am. The alternative system is to work from 9 am to 5 pm every day and to take turns to be **on call** – available to return to the hospital if necessary – from 5 pm to 9 am the next day. Days on call are set out in a **rota**, or list of names and times. Doctors on call carry a **radio pager**, or **bleeper**, a device which makes a noise when someone is trying to contact them.

6.1 Make word combinations using a word from each box. Look at A, B and C opposite to help you.



6.2 Match the descriptions (1-5) with the job titles (a-e). Look at A and B opposite to help you.

- 1 Dr Graham has been a paediatrician for eight years and is responsible for treating the children admitted to Ward 60.
  - 2 Dr Stewart has just started the second year of her Foundation Programme.
  - 3 Dr Singh has started his training as a surgeon.
  - 4 Dr Phillips has just graduated and is working in a large hospital in Birmingham.
  - 5 Dr Millar is in charge of the medical staff in the Birmingham hospital.
- a specialist registrar
  - b medical director
  - c consultant
  - d SHO
  - e PRHO or house officer

6.3 Are the following statements true or false? Find reasons for your answers in A, B and C opposite.

- 1 A medical graduate becomes registered two years after <sup>one year</sup> graduation. F
- 2 The system of training doctors in Britain is called the Foundation Programme. T
- 3 The name senior house officer is no longer used in Britain. F
- 4 The consultant is usually the first doctor to see new patients. F → junior doctor
- 5 When working in shifts, all doctors take turns to be on call. F → juniors

6.4 Complete the text of a PRHO describing her job. Look at A, B and C opposite to help you.

When I get to the ward, the first thing I do is talk to the house officer who was on duty during the last (1) shift, to find out if there have been any new (2) admission. Then I generally see the charge nurse. He tells me if there is anything that needs to be done urgently, such as intravenous lines to put up or take down. Later in the morning, I (3) check any new patients, which basically involves taking a history. On Tuesday and Friday morning the consultant does her ward (4) round, and I have to make sure I'm completely up to date on her patients. After that, there are usually lots of things to do, like writing up request forms for blood (5) tests, and so on. In the afternoon, I have to prepare for any patients who are to be (6) discharged the next day. They're usually happy to be going home! And then of course there are the lectures and tutorials in the (7) Foundation programme on Monday and Wednesday.

### Over to you

How does the hospital training of doctors in your country differ from the British system? How would you explain it to a colleague from another country?



# 7 Nurses

## A Nursing grades

Nurses working in a hospital have the following grades:

|               |  |
|---------------|--|
| student nurse | a nurse who is still in training   |
| staff nurse   | a nurse who has completed the training course  |
| charge nurse  | a more experienced nurse who is in charge of, or responsible for, a ward or department |
| nurse manager | a nurse who is in charge of several wards  |

Note: The old term *sister* is still sometimes used for a female charge nurse. A female nurse manager may be called **matron**.

Dr James is talking to Sister Watkins.

## B Support workers

The **clinical support worker**, who has done a short course and obtained basic qualifications, and the **nursing auxiliary**, who is usually unqualified, both assist nursing staff. There may also be **ward clerks**, whose duties include making sure patients' notes and information are up to date, and answering the telephone.

## C Specialization

Like doctors, nurses can specialize:

- A **midwife** has specialized from the beginning by doing a course in midwifery, the management of pregnancy and childbirth.
- **District nurses** visit patients in their homes.
- **Health visitors** also work in the community, giving advice on the promotion of health and the prevention of illness.

## D The nurse's role

The nurse's role has changed considerably in recent years. In addition to general patient care, checking temperatures, pulse rates and blood pressures, changing dressings, giving injections and removing sutures, nurses now do some of the things previously reserved for doctors, such as prescribing drugs, and ordering laboratory tests. More responsibility for nurses is planned, as the following article demonstrates.

### Nurses carry out surgery in effort to cut patient waiting lists

Nurses in Scotland trained to **perform** minor surgery have entered the operating theatre for the first time in an effort to cut patient waiting times. Five nurses who have passed a new course at Glasgow Caledonian University are now qualified to **carry out** such **procedures** as the removal of small lesions, benign moles and cysts.

*The Scotsman*

The verbs **perform** and **carry out** are used with all types of procedures. They are often used in the passive form.

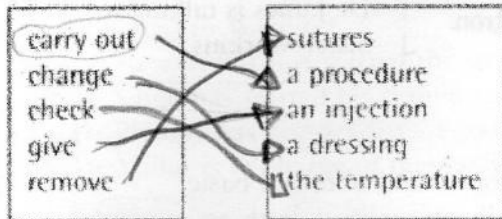
|           |                |
|-----------|----------------|
| perform   | an examination |
| carry out | an operation   |
|           | a procedure    |
|           | an experiment  |
|           | a test         |
|           | a biopsy       |

The procedure was performed/carry out by a nurse.

7.1 Complete the sentences. Look at A, B and C opposite to help you.

- 1 Someone who specializes in delivering babies is a midwife.
- 2 Someone who is qualified to assist nurses is a .....
- 3 Someone who is not qualified but is able to assist nurses is a .....
- 4 A nurse who has qualified is a ..... nurse.
- 5 A nurse who specializes in health promotion is a health visitors.
- 6 A nurse who looks after a ward is a ..... nurse.
- 7 A nurse who works in the community is a health care nurse.
- 8 Someone who answers the ward telephone is a ward clerk.

7.2 Make word combinations using a word or phrase from each box. Look at D opposite to help you.

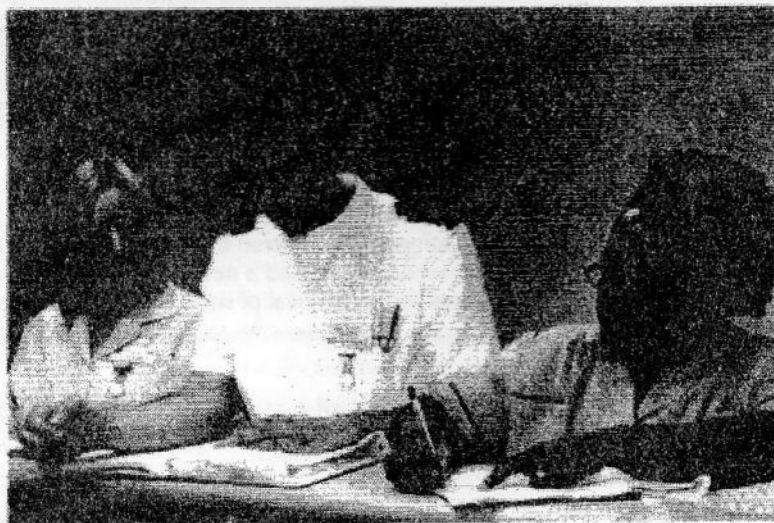


7.3 Complete the sentences with the correct grammatical form of *perform*.

- 1 An isotope brain scan is painless and easy .....
- 2 Biopsy of the pancreas ..... last March.
- 3 If the patient's condition deteriorates, a laparotomy should .....
- 4 If a diagnosis of meningitis is suspected a lumbar puncture must .....
- 5 Last year we ..... a randomized, double blind group study.

7.4 Complete the sentences with the correct grammatical form of *carry out*.

- 1 I now intend ..... a larger study.
- 2 Unfortunately few properly controlled trials ..... so far.
- 3 A number of studies ..... recently to look at this question.
- 4 A right hemicolectomy ..... and the patient made a full recovery.
- 5 This procedure can ..... in the emergency department.



### Over to you

What kind of tasks do nurses carry out in your country? Are nurses' responsibilities increasing? What are the implications of this?

# Functions in the Human body

## Vocabulary

|          |                  |                   |         |      |            |
|----------|------------------|-------------------|---------|------|------------|
| Skeleton | Digestive system | Glands            | Minute  | Cell | Jelly-like |
| Dejected | Waste            | Epithelial tissue | Process |      |            |

The human body is made up of a number of different systems. Each system has a separated function, but some work together. One system is the skeleton, which serves to support the body and protect the internal organs. The respiratory system enables us to breathe and take oxygen into blood, which moves around the body by means of the circulatory system. The digestive system enables us to take in food needed for growth. Waste matter is dejected from the body by means of the urinary system.

The endocrine system consists of various glands, such as thyroid, sex and adrenal glands. The function of these glands is to secrete chemical, known as hormones, into the blood. These hormones control various processes in the body, such as growth, sexual activities and digestion. The nervous system controls the other systems and enables human beings to think.

Each system is made up of organs. The lungs, for example, are part of the respiratory system. The heart is the organ in the circulatory system. The liver functions as part of the digestive and other systems.

Every organ is composed of several kinds of tissue. Epithelial tissue, which includes the skin, forms a covering over organs. Connective tissue supports and holds together parts of the body and includes bone and cartilage. Other types of tissue include nerve tissue and blood tissue.

All tissues consist of cells. These are so small that they are measured in thousands of millimeter and can only be seen with a microscope. Each cell is covered with a thin membrane which surrounds a nucleus, and jelly-like substance, called cytoplasm. This in turn contains minute particles, each with its own special function.



Complete the table with the information in the text.

| Systems     | Organs                         | Functions  |
|-------------|--------------------------------|--|
| Skeleton    | - bone<br>- hands.<br>- skull. | 1... support the body<br>2... protect the internal organs                                    |
| respiratory | lungs                          | 1... to breathe and take $O_2$ into blood<br>2... to exhaled $CO_2$                          |
| Circulation | - heart                        | 1... to move blood $O_2$ in the hole of the body<br>2... the nutrition of the organs         |
| Urinary     | bladder/urine                  | 1... to excrete the waste matter from the body<br>2... ..                                    |
| endocrine   | Glands                         | 1... secrete chemical hormones in the blood<br>2... to control various processes in the body |
| Nervous     | cephalic neurons               | 1... to think... control the other system<br>2... ..   |
| Digestive   | stomach<br>pancreas            | 1... take in food needed $\rightarrow$ growth<br>2... ..                                     |



## Case Study

### Case Study 2-1: Health Problems on Return From the Rain Forest

E.G., a 39-year-old archaeologist and university professor, returned from a 6-month expedition in the rain forest of South America suffering from a combination of physical symptoms and conditions that would not subside on their own. He was fatigued, yet unable to sleep through the night. He also had a mild fever, night sweats, occasional dizziness, double vision, and mild crampy abdominal pain accompanied by intermittent diarrhea. In addition, he had a nonhealing wound on his ankle from an insect bite. He made an appointment with his family doctor, an internist.

On examination, E.G. was febrile (feverish) with a temperature of 101°F. His heart and lungs were normal, with a slightly elevated heart rate. His abdomen was tender to palpation (touch), and his bowel sounds were active and gurgling to auscultation (listening with a stethoscope). His skin was dry and warm. He had symmetrical areas of edema (swelling) around both knees and tenderness over both patellae (kneecaps). The ulceration on his left lateral ankle had a ring of necrosis (tissue death) surrounding an area of granulation tissue. There was a small amount of purulent (pus-containing) drainage.

E.G.'s doctor ordered a series of hematology lab studies and stool cultures for ova and parasites. The doctor suspected a viral disease, possibly carried by mosquitoes, indigenous to tropical rain forests. He also suspected a form of dysentery typically caused by protozoa. E.G. was also possibly anemic, dehydrated, and septic (infected). The doctor was confident that after definitive diagnosis and treatment, E.G. would gain relief from his insomnia, diplopia (double vision), and dizziness.

#### CASE STUDY QUESTIONS

Multiple choice: Select the best answer and write the letter of your choice to the left of each number.

- \_\_\_\_\_ 1. Diplopia, the condition of having double vision, has the suffix:
  - a. lopia
  - b. opia
  - c. ia
  - d. pia
  - e. ploia
  
- \_\_\_\_\_ 2. The adjective *septic* is formed from the noun:
  - a. sepsis
  - b. septosis
  - c. septemia
  - d. septery
  - e. anemia
  
- \_\_\_\_\_ 3. E.G. was suspected of having anemia (diminished hemoglobin). The adjective form of the noun *anemia* is \_\_\_\_\_, and the field of health science devoted to the study of blood is called \_\_\_\_\_.
  - a. anemic; hematology
  - b. hematosia; hematism
  - c. dehemia; hematomegaly
  - d. anemic; parasitology
  - e. microhematic; hemacology



## Case Study, continued

Write the suffix that means "condition of" in each of the following words:

4. necrosis \_\_\_\_\_
5. dysentery \_\_\_\_\_
6. insomnia \_\_\_\_\_

Write the adjective ending of each of the following words:

7. febrile \_\_\_\_\_
8. symmetrical \_\_\_\_\_
9. anemic \_\_\_\_\_

Write the singular form of each of the following words:

10. patellae \_\_\_\_\_
11. ova \_\_\_\_\_
12. protozoa \_\_\_\_\_

Write a word from the case study that means each of the following:

13. The word *virus* used as an adjective \_\_\_\_\_
14. The noun form of the adjective *necrotic* \_\_\_\_\_
15. Expert in the field of archeology \_\_\_\_\_
16. Expert in the field of internal medicine \_\_\_\_\_
17. The noun *abdomen* used as an adjective \_\_\_\_\_

## CHAPTER 2 Answer Section

### Answers to Chapter Exercises

#### EXERCISE 2-1

1. -ism
2. -y
3. -ia
4. -ism
5. -sis, -osis
6. -sis, -asis
7. -ia

8. -sis, -osis
9. -y

#### EXERCISE 2-2

1. -ist
2. -logy
3. -iatrics
4. -ist
5. -iatry
6. anatomist



20

## Scientific Terms

Life science refers to the study of life, what we call in technical terminology is **Biology**. It studies the life in all its aspects that is its beginning, development and all related fields like micro biology, genetics, bio chemistry, bio informatics, bio physics, bio technology etc. The study of basic elements of the life science is started from the school level itself.

### **Branches of Life Science**

Life science or **biology** is divided into following basic branches:

**Botany** is the science or study of plant life. It is one of the two main branches of **biology**. There are over 350,000 different species of plants in the world. Scientists called botanists study all aspects of plant life, including where plants live and how plants grow.

**Zoology** is the study of animals. **Zoologists** try to answer many problems about animals. For example, researches were conducted on activities of animal lives. They also examine how different species are related to one another and how species have evolved (changed over long periods). Zoologists observe the ways animals interrelate with one another and their surroundings. Effect of animals and people on each other was tried to found out by zoologists.

### **Molecular Biology**

**Molecular biology** is the learning of those molecules that regulate the molecular course in cells. For example, genetic information is stored in huge molecules in the cells of organisms. The way in which these molecules alter their information into chemical reactions gives a living being its particular individuality and characteristics and is necessary for its existence. Molecular biology is a relatively new area of biology and has provided a greater understanding of what life is and how life works.

**Anatomy** studies the structure of living things. Anatomists investigate how parts are related in organisms. Histology studies tissues, and cytology with the tiny structures of individual cells. Relative anatomy studies similarities and differences in the body structure of animals and provides evidence to how certain animals might have changed over the period of time.

Other advance branches of the subject include bio informatics, genetics, etc.

### **Life Science Textbooks**

The content of the textbooks of life science varies according to the target readers. For the beginners of the subject, like for the grade seven student a basic introduction of the

subject is there as a content of the book like the **basic features and essential characteristics of living things**, classification of plants and animals etc. As the level of education rises, the content of the textbooks also rises to the finer elements of the subject like respiration in living beings, cell division, reproduction in living beings and function of various parts of cells.

For the students who take **life science** as the subject of further study, their textbooks are based on the deeper aspects of subject and associated fields like zoology, botany, modern branches of subject like bio chemistry, **bio technology**, genetics etc. Various life science journals are also published by the researching bodies across the globe for updating the researchers about the latest development of the subject.

### **Life Science Projects**

**Life science projects** also depend upon the number of factors like that of science experiments. **Basic projects** comprise of the models of various parts and processes of the subject and are used for illustrative purposes.

On the other hand, various projects like bio diesel and other bio fuels which are environment friendly, **Recombinant DNA technology**, projects on medicinal plants etc are undertaken by the government of the nation for the purpose of scientific progress and development.

### **Life Science Industries**

The scope of **industries** related with the subject of life science ranges from pharmaceutical sector to raw and processed food industry to **leather sector** etc. Constant research and innovation in the field of life science is the fuel of the industry and they are benefited by the new **researches** in the subject to a great extent. After the globalization of many countries, this industry is soaring new heights as the benefits of various researches and findings are exchanged by many countries mutually. Due to the ever growing tendency of this industry, there is a great and prospective career apart from the traditional career of doctor and **health care executive**. There is a great demand of **life science** experts in pharmaceutical sector at all the levels, in food industry for quality and standard functions etc. Now days, there is also a great and lucrative career in the industries which manufacture healthcare equipments.