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Medical Issues

Проблемы медицины

Учебное пособие для студентов
IV курса отделения английского языка
переводческого факультета

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UNIT I

HEALTHCARE IN THE UK AND THE USA

Medicine in Britain

In Britain there is a National Health Service (the NHS) which is paid for by taxes and National insurance and in general people do not have to pay for medical treatment. Every person is registered with a doctor in their local area, known as a general practitioner or GP.

This means that their name is on the GP's list, and they may make an appointment to see the doctor or may call the doctor out to visit them if they are ill. People do sometimes have to pay part of the cost of drugs that the doctor prescribes. GPs are trained in general medicine but are not specialists in any particular subject. If a patient needs to see a specialist doctor, they must first go to their GP and then the GP will make an appointment for the patient to see a specialist at a hospital or clinic.

Although everyone in Britain can have free treatment under the NHS, it is also possible to have treatment done privately, for which one has to pay. Some people have private health insurance to help them pay for private treatment. Under the NHS, people who need to go to hospital may have to wait a long time on a waiting list for their treatment. If they pay for the treatment, they will probably get it more quickly.

Medicine in the USA

Unlike Britain, the USA does not have a national health care service. The government does help pay for some medical care for people who are on low incomes (through the Medicaid scheme) and for old people (through the Medicare scheme) but most people buy insurance to help pay for medical care. Some people cannot afford insurance but are not poor enough to get government help. The cost of medical insurance and the problems of those who cannot afford it are an important political subject.

When people are ill, they usually go first to a general practitioner (or internist). Unlike in Britain, however, people sometimes go straight to a specialist, without seeing their general practitioner first.

Children are usually taken to a pediatrician. Many women make yearly appointment to see a gynecologist, as well as going to their general doctor when they are ill. As in Britain, if a patient needs to see a specialist doctor, their general doctor will usually give them the name of one. Doctors do not go to people's homes when they are ill. People always make appointments to see the doctor in the doctor's office.

In emergencies, people call for an ambulance. Hospitals must treat all emergency cases, even if the patient does not have medical insurance. The government would then help pay for some of the cost of the medical care.

Longman Dictionary of English Language and Culture, 1992

I. Answer the Following Questions.

1. How is the NHS subsidized?
2. What are the people entitled to if they are registered with a GP?
3. What is the difference between GPs and specialists?
4. Where do these groups of doctors see their patients?
5. How can a patient get a referral to a specialist?
6. Why do some people opt for private healthcare in Great Britain?
7. Describe the way healthcare is provided in the USA.
8. What groups of people are eligible for free healthcare?
9. What are the downsides of the health insurance system?
10. Do doctors pay home visits in the USA?
11. What help is provided in emergencies?

II. Say it in Russian.

The NHS; GP; health insurance; Medicaid; Medicare; internist; pediatrician; call for an ambulance; emergency case.

III. Say it in English.

Вызвать врача, получить подготовку в области общей медицины, лечиться частным образом, медицинская страховка, ожидать очереди на госпитализацию, медицинское обслуживание малообеспеченных граждан, кабинет врача; больной, нуждающийся в срочной госпитализации.

IV. Compare and contrast the way medical care is provided in Great Britain and the USA.

V. Describe medical services and facilities in our country. Speak for and against public and private provision for medical care in Russia.

Great British Institutions: The National Health Service

The NHS stands at the centre of our country's 'cradle to grave' benefits system. How does it work? Do we think it still works as well as it did in the past?

Some countries find it hard to see the true advantages of a free healthcare service such as our NHS and some may even criticise the system for its service provision (or perceived lack of it). Most Brits, however, have a realistic view of the welfare state in general and its advantages and disadvantages.

The National Health Service was created in 1948 as part of a broader state welfare and benefits system that aimed to care for people from the 'cradle to the grave'. It was first suggested by Economist William Beveridge in a 1942 report. Before this point, our medical system worked mostly on a private basis. If you

needed treatment and couldn't afford to pay for it, your options were limited or, in some cases, non-existent.

In the years following its foundation, healthcare in the country became more coherent and centralised and every citizen had the right to free healthcare. The service may have been established with a single focus but things have changed over the years. The NHS is often criticised for offering different levels and quality of care on a geographical basis and it is now split into separate and self-managed strands that cover England, Wales and Scotland.

So, how does the NHS work today? Is free healthcare still free? Well, the core principles remain the same. You can see a GP free and get any necessary medical treatment you need from them, from a hospital or from a medical specialist at no cost. Generally, with some exceptions, we pay for any medications that are prescribed to us. If you are aged over 60, under 16 (or under 18 if you are in full-time education), are pregnant, on benefits, have certain types of condition or disability or are being treated in hospital, then the drugs you are prescribed are free.

The system also extends to eye / dental care as well although there are more restrictions here. Our children get free eye tests until they are 16 (or 19 in full-time education) as do people with relevant clinical conditions (or a family history of certain eye problems) and those on benefits. In some cases, the NHS will also give vouchers towards the cost of glasses or contacts. NHS dentists also treat children, pregnant women and people on benefits free although the services offered for qualifying adults may not be as broad as those given by private treatment and NHS dentists who are willing to treat adults are few and far between and / or usually over-subscribed.

People in countries without a free healthcare system often point to the shortcomings of our system rather than its benefits. There is also an argument that our NHS isn't actually free as workers pay towards it via the general taxation system. But, these contributions are a drop in the ocean compared to the costs of private health insurance.

No healthcare system is perfect but, as with any other service, there will be stories from people for whom the NHS hasn't worked and stories from those who are happy with it. Generally, most of us do not want to see the service change from its 'free for all' status and most are not happy with negative changes to the system. Many Brits would rather see more investment in the NHS and its staff than a move towards private healthcare.

We do, of course, have a choice, which puts us at a bit of an advantage compared to people who live with privatised healthcare alone. You can stick with the NHS, take out private healthcare insurance or even mix and match if you want to pay for certain non-critical treatments to speed up the process. We don't, however, have to deal with other problems that we see around the world.

We know that we are always entitled to free healthcare and people don't have to bankrupt themselves or fail to get treatment because they can't afford medical insurance.

April 22, 2013
Carol Finch

I. Answer the Following Questions.

1. What is "cradle to grave" system?
2. What do British people think of the NHS?
3. When was the NHS created?
4. What was medical treatment like before?
5. Why is the NHS criticized?
6. What are the core principles of healthcare provision in Great Britain?
7. What groups of patients can get the prescribed drugs at no cost?
8. Describe the way eye and dental care works in GB.
9. What shortcomings of the NHS do its opponents notice?
10. What do Brits feel about privatized healthcare?
11. What options do UK citizens have while choosing healthcare provision?
12. What are the main advantages of the NHS, in your view?

II. Say it in Russian.

Non-existent; coherent; oversubscribed; to take out a private health care insurance; mix and match; non-critical treatments.

III. Say it in English.

Предоставление услуг, на частной основе, базовые принципы, право на бесплатное медицинское обслуживание, прописать лекарство, проверить зрение бесплатно, указать на недостатки, капля в море.

IV. Paraphrase the Following Expressions.

Welfare state; limited options –
To split into separate self-managed strands –
To extend to dental care –
Relevant clinical conditions –
Few and far between –
To move towards private healthcare –

V. Insert Prepositions.

To work ... private basis; to have the right ... free healthcare; to change ... the years; to get medical treatment ... no cost; people ... benefits; negative changes ... the system; to put somebody ... a bit of an advantage; to be entitled ... free healthcare.

VI. Explain the Difference that the Following Synonyms Reveal.

Medication – drug – medicine – remedy

To treat – to cure – to heal

Shortcoming – demerit – drawback – disadvantage – downside

Disease – illness – condition – ailment

NHS Services Explained

This section provides an overview of the most common services provided by the NHS in England, such as emergency and urgent care, general practitioners (GPs) or dental services. Explore each service and find out what you should expect from the NHS and how to access particular services.

Visting an A&E department

An A&E department (also known as emergency department or casualty) deals with genuine life-threatening emergencies, such as:

- loss of consciousness
- acute confused state and fits that are not stopping
- persistent, severe chest pain
- breathing difficulties
- severe bleeding that cannot be stopped
- severe allergic reactions
- severe burns or scalds

Less severe injuries can be treated in urgent care centres or minor injuries units (MIUs). An A&E is not an alternative to a GP appointment. If your GP practice is closed you can call NHS 111, which will direct you to the best local service to treat your injury. Alternatively, you can visit an NHS walk-in centre (WIC), which will also treat minor illnesses without an appointment.

How to find your nearest A&E?

Not all hospitals have an A&E department. You can use the find services search on this site to see if there is one near you. Alternatively, many hospitals have their own website and generally describe the urgent and emergency care services they offer.

If you dialled 999 for an ambulance and you have to be taken to hospital, then the ambulance team will take you to the most appropriate A&E – this may not be the closest. Find out more about making 999 emergency calls.

What happens at A&E?

A&E departments offer access 24 hours a day, 365 days a year. A&E staff include paramedics, A&E nurses, diagnostic radiographers, A&E reception staff, porters, healthcare assistants and emergency medicine doctors. Medical staff are highly trained in all aspects of emergency medicine.

1. Register

If you arrive by ambulance, the ambulance crew will report to the hospital on arrival. If you are seriously ill, the staff will already know because the ambulance crew will have alerted them en route. If you're not in a life-threatening or serious condition, you will be prioritised by the A&E hospital team along with other patients waiting to be seen – arriving by ambulance does not necessarily mean you will be seen sooner than if you had walked in to A&E.

If you go to A&E by yourself, you'll need to register first. You'll be asked a few questions such as name and address but also why you are visiting A&E. If you have been at the hospital before the registrar may also check your health records.

Some hospitals have a separate children's A&E department where medical staff are specially trained to deal with children's health issues. You may be asked to go straight to the children's area where you can register and be assessed.

If you need special assistance because of a physical or mental disability then you should let the registrar know right away. The hospital may be able to call a Learning Disabilities Liaison, a member of their liaison psychiatry team, or provide any other assistance you or your carer may need.

Once you've registered, you'll be asked to wait until you are called for your assessment.

2. Assessment – triage

Once you have registered you'll generally be pre-assessed by a nurse or doctor before further actions are taken. This is called triage and will ensure people with the most serious conditions are seen first.

3. Treatment, transfer or discharge

What happens next depends on the results of your assessment. Sometimes further tests need to be arranged before a course of action can be decided.

If the nurse or doctor feels your situation is not a serious accident or emergency, you may be sent to a nearby urgent care centre, minor injuries unit or referred to a GP on site. This will reduce the waiting queue in A&E and at the same time allows you (the patient with the lesser injury) to be treated quickly too.

The waiting time target for patients in A&E is currently set to four hours from arrival to admission, transfer or discharge. However, not all hospitals have urgent care centres associated which means people with minor injuries may have a longer wait until they are seen.

In some cases you may be sent home and asked to arrange for a GP referral or you may be given a prescription and sent home. Either way, the hospital will inform your GP that you have been to A&E.

If your situation is more complicated, you may be seen by an A&E doctor or referred to a specialist unit. For example, this could happen for eye problems, strokes or emergency gynaecology.

Major trauma services

A trauma system is a model of care designed to care for patients with multiple serious injuries that could result in death or serious disability, including head injuries, life-threatening wounds and multiple fractures.

Major trauma centres are set up to provide this specialised care. They are hubs that work closely with a series of local trauma units.

Major trauma centres operate 24 hours a day, seven days a week. They are staffed by consultant-led specialist teams with access to the best diagnostic and treatment facilities, including orthopaedics, neurosurgery and radiology teams.

Pre-hospital care

Ambulance crews will make an assessment at the scene using triage tools to ensure that those with major trauma are taken to a major trauma centre for urgent treatment.

This may involve bypassing their local hospital so they can immediately receive specialist care with access to CT scans and innovative technology. Other patients may have to be taken to their local trauma unit first for stabilisation before they can transfer to the major trauma centre for definitive treatment.

Pre-hospital care is crucial – it means the ambulance service and the helicopter emergency medical service work closely with the major trauma network to ensure the most urgent patients are sent to the most appropriate place.

What happens at the trauma centre?

Once patients arrive at the trauma centre, they will undergo a focused assessment by a specialist trauma team trained to deal with these types of injuries.

Major trauma centres also treat children. The management of specific injuries and drug administration will differ for children, but the focused response from a specially trained trauma team will essentially be the same.

In life-threatening situations, the doctors and nurses from the trauma team will do what is required to save a person's life. If the patient is unable to give consent because they are incapacitated, treatment will still be carried out.

In these cases, the reasons why treatment was necessary will be fully explained once the patient has recovered. For more information, see the section on “When consent isn't needed”.

All relatives will be allowed to visit patients both at their bedside and in the ward. See the section on “Visiting someone in hospital”.

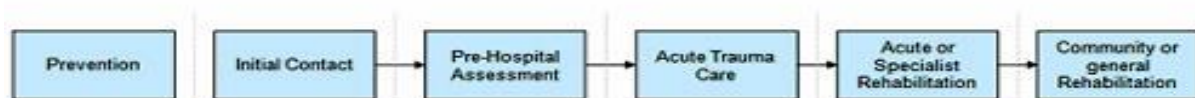
Rehabilitation

Patients who have suffered a severe injury often need complex reconstructive surgery and care from many professionals, such as physiotherapists, occupational therapists and speech and language therapists.

This care is very important and many patients need a personalised rehabilitation programme to help them return to an active life, which can take many months. This care may take place at the major trauma centre or other units in the area.

What does good trauma care look like?

Good trauma care involves getting the patient to the right place at the right time for the right care. This means:



- Having the seriousness of the injury identified as early as possible, ideally at the scene of the incident.
- If this is not possible, investigations such as CT scanning should take place immediately on arrival at the first hospital.
- If the injury requires specialist care, the patient should be moved to a major trauma centre as quickly as possible.
- Patients should have access to an appropriate programme of rehabilitation to assist their recovery.

Your local GP practice

GPs look after the health of people in their local community and deal with a whole range of health problems. They also provide health education, offer advice on smoking and diet, run clinics, give vaccinations and carry out simple surgical operations.

GPs usually work in practices as part of a team, which includes nurses, healthcare assistants, practice managers, receptionists and other staff. Practices also work closely with other healthcare professionals, such as health visitors, midwives, mental health services and social care services. You would normally see GPs or other healthcare professionals at their premises (surgery). Some operate from more than one building. If your GP cannot deal with a problem then you'll usually be referred to a hospital for tests, treatment, or to see a consultant with specialist knowledge.

GP practices should make information about their services easily available to their patients. Most practices have a practice leaflet available, please ask for one. Practices also display information about their services and members of staff on NHS Choices.

Finding the right GP practice

You can register with a GP practice of your choice, as long as you live within its catchment area and it is accepting new patients. Visits to the surgery are free.

Researching your options can help you find the right GP practice. Read the section about choosing a GP practice for tips and advice, or compare local GP practices according to facilities, services, access and performance before you decide. Ask friends, relatives and others you trust for their thoughts and recommendations.

Since January 2015, some GP practices in England are accepting registrations from patients who live outside of their traditional catchment areas. This is referred to as "out of area registration". It means that you are able to register with practices in more convenient locations, such as a practice near your work or closer to your children's schools.

How to register with a GP practice

When you have found a practice you like, you'll have to formally register with it as an NHS patient by submitting a registration form to them. The GMS1 form (PDF, 107kb) is available in the practice, or you can download it from this site. Forms may vary slightly and some practices use their own version.

When you have completed and returned the form, your local NHS England Area Team will transfer your medical records to your new practice and write to you to confirm your registration as a patient with that practice.

A practice cannot refuse you unless it has reasonable grounds for doing so. These must not relate to race, gender, social class, age, religion, sexual orientation, appearance, disability or a medical condition. It must also give you reasons for its decision in writing. However, you may be refused if you are living outside the practice's catchment area or the practice is generally not accepting new patients at the time because its list is closed.

You can register with a GP practice as a temporary resident under certain circumstances – when you are in an area for more than 24 hours but less than three months. See information below "What if I am ill while I'm away from home?"

Booking an appointment

There are no set rules for this. However, your practice should be able to offer you an appointment to see a GP or other healthcare professional quickly if necessary. You can normally see any doctor within your practice. This is quite normal, especially if you need an appointment quickly. However, if it is more convenient, you should also be able to book appointments in advance. It is important to keep your appointment, or notify the practice if you have to cancel or change it. Read the section about GP appointments for more detailed advice. Many GPs now offer online services which allow you to book / cancel your appointment or order a repeat prescription.

You can also visit an NHS walk-in centre (WIC) or minor injuries unit (MIU). These can provide treatment for minor injuries or illnesses such as cuts, bruises and rashes. However, they are not designed for treating long-term conditions or immediately life-threatening problems. You don't need to be registered and you don't need an appointment. Any member of the public can simply walk in to be seen regardless of where they are registered. Some offer pre-booked appointments.

About NHS hospital services

NHS hospital services are run and managed by NHS trusts, which make sure that hospitals provide high-quality healthcare, and that money is spent efficiently. They also decide on strategies for hospital developments.

Apart from emergency care, hospital treatment is arranged through your GP, dentist and optician. Treatment at NHS hospitals is free. However, if you are not a resident in England, please visit the section “Information for visitors to England”.

Choosing a hospital

If you need to go to hospital to see a specialist, in most cases you have the right to choose which hospital your GP refers you to. This right lets you choose from any hospital in England (including some independent hospitals) that offers suitable treatment at NHS standards and costs. You also have the right to information to support your choice.

For information about choice, visit the sections about:

- Hospital choice
- Consultant choice
- Treatment choice

Finding a hospital

NHS Choices will help you to make your choice. You can select from a wide range of different hospitals and compare them according to the criteria that matter most to you. Use the “Services near you” search facility to find your nearest hospital.

When you find the details of hospitals in your area, you can read what other hospital users have said about them. You can use the “Leave review” option provided on each hospital profile to record your experiences about the treatment you received.

Waiting times

As set out in the NHS Constitution nobody should wait more than 18 weeks from the time they are referred by their GP to the start of their treatment unless it is clinically appropriate to do so or they choose to wait longer.

To learn more about waiting times in the NHS, read the guide to waiting times.

Complaining about hospital services

If you're not happy with the care you receive in hospital, you can make a complaint.

Speak to a member of staff in the hospital ward or department. The best people to speak to about your concerns are the ward manager, senior nurse on duty or the hospital receptionist. They may be able to resolve your problem or put you in touch with someone who can. Raising the issue early with someone in the department is usually the easiest and quickest way to resolve a problem.

If you're not offered a choice of hospital

If you're not offered a choice of hospital, first explain the problem to your GP. If you're still not offered a choice, contact your local clinical commissioning group (CCG). CCG's commission secondary care, including hospital services, emergency care and some community services such as district nursing.

<http://www.nhs.uk/NHSEngland/AboutNHSservices/Pages/NHSServices.aspx>

I. Answer the Following Questions.

1. In what case do patients apply to an A&E department?
2. Where do they treat less severe injuries?
3. What staff work in A&E?
4. What patients are prioritized by the A&E hospital team?
5. What is assessment triage?
6. What is the current waiting time target in A&E?
7. What sort of treatment do major trauma centres provide?
8. Why is pre-hospital care believed to be crucial?
9. What are the key elements of good trauma care?
10. How do they provide rehabilitation?
11. What are the responsibilities of a GP?
12. Where do GPs see their patients?
13. What is "out of area" registration?
14. In what case are the patients refused registration with a GP?
15. Speak about regulations concerning booking an appointment with your GP.
16. How is hospital treatment arranged in the UK?
17. What is the average waiting time for the patients to start their hospital treatment?
18. What is the difference between primary and secondary healthcare provision?

II. Say it in Russian.

Loss of consciousness; scalds; severe allergic reaction; GP practice; diagnostic radiographer; registrar; receptionist, consultant; to be assessed; CT scan; to suffer a severe injury; occupational therapist; midwife; surgery; to submit a registration form; to commission secondary care; to discharge; to book an appointment.

III. Say it in English.

Отделение неотложной медицинской помощи, травматология, сильное кровотечение, бригада скорой помощи, история болезни, медицинская карта, дать рецепт, направление к врачу, палата, логопед, проводить несложные хирургические операции, свидетельство о рождении, веские основания для чего-либо, уведомить об отмене чего-либо, дать согласие, заказать повторный рецепт, сыпь, пожаловаться, старшая медсестра. поднять вопрос.

IV. Paraphrase the Following Expressions.

To offer access 24 hours a day –

Drug administration –

To undergo a focused assessment –

The help of paramedics –

To alert smb en route –

To be prioritized –

To have triage –

To refer to a specialist unit –

To be incapacitated –

To run clinics –

Catchment area –

V. Insert Prepositions.

To refer ... a GP ... site; to arrange ... a GP referral; to take place ... arrival ... hospital; to offer advice ... smoking and diet; to register ... GP practice as a temporary resident ... certain circumstances; to offer suitable treatment ... NHS standards and costs.

VI. Explain the Difference that the Following Synonyms Reveal.

Fit – bout – attack – paroxysm

Bleeding– hemorrhage

To send – to refer

To lose consciousness – to black out – to faint

UNIT II

HUMAN ANATOMY

1. The human body is a remarkably complex and efficient machine. It takes in and absorbs oxygen through the **respiratory system**. Then the oxygen-enriched blood is distributed through the **cardiovascular system** to all tissues. The **digestive system** converts digestible food to energy and disposes of the rest.

The **skeletal-muscular** system gives form to the body. And covering almost the entire mass is the skin, the largest organ of the body. The science of the structure of this complicated "machine" is called *anatomy*.

2. One of the major systems is the skeletal-muscular system. The body is supported and given shape by this structure, consisting of more than 200 bones and the **muscles** and **tendons** which are connected to them. They are strong but can bend at their joints. They also serve as a shield, protecting the vital internal organs from injury.

3. Bones are as strong as steel but much lighter and more flexible. They are composed of minerals, organic matter, and water, held together by a cementlike substance called *collagen*, and are filled with red and yellow bone marrow. The red marrow produces the red blood cells used throughout the body to transport oxygen, while the yellow marrow consists primarily of fat cells. A tough membrane called the *periosteum* covers most of the bone surface and allows bones to be nourished by blood.

4. A major bone structure in the body is the vertebral (spinal) column. It runs up and down the back and protects the spinal cord, where many of the major nerves are located. It is composed of bony vertebrae which are held together by ligaments of connective tissue and separated from each other by spinal discs. At the top of the vertebral column is the skull, which surrounds and protects the brain. Attached to the vertebral column below the neck are the 12 pairs of ribs, comprising the rib cage. At the bottom is the sacrum, which connects the vertebral column to the pelvis. Bones are united by joints and held together by ligaments.

5. Muscles are special fibrous tissues found throughout the body. They control movement and many organic functions by contracting in response to nerve signals. Skeletal muscles are called voluntary because they can be consciously controlled. They are attached to bones by tough fibrous tissues called tendons. Other muscles, such as the stomach muscles and the heart, are involuntary and are operated automatically by the central nervous system.

6. Healthy muscles are said to have good muscle tone. Not all muscles are healthy, however, for various ailments may affect them. An inflammation of a tendon (tendonitis), of the protective sac at a joint (bursitis), or of a muscle itself (myositis) may occur. When a muscle becomes fatigued, it sometimes contracts violently and painfully. This condition is known as *cramping*. Too much strenuous activity may produce a *strain*.

7. The most important muscle in the body is the heart. Without the heart and its cardiovascular (circulatory) system, human life would not be possible. The heart is roughly the size of two fists (about 5 inches in length). It contracts at an average rate of 72 times per minute or nearly 38,000,000 times in year. These rhythmic contractions are called the pulse rate and can be felt in the radial artery of the wrist.

8. The human heart consists of four chambers, two atria (or auricles) and

two ventricles. Each is made up of several layers of cardiac muscle arranged in circles and spirals. During the contraction phase, called the systole, oxygenated blood is pumped out of the left ventricle into the aorta and from there through the arteries to all organs of the body. Carbon dioxide, a waste product of this process, is collected in the blood. The blood is passed back to the right atrium through the veins and the vena cava during the diastole (or relaxation) period of the heart. From there, it is pumped into the right ventricle and to the pulmonary artery to be sent to the lungs, where carbon dioxide is removed and oxygen is added.

9. The rest of the system consists of arterioles (small arteries), venules (small veins), and capillaries, the smallest of blood vessels. In total, there are more than 70,000 miles of blood vessels in the human body!

10. The cardiovascular system also carries hormones which are secreted by glands of the endocrine system directly into the bloodstream. These hormones control many functions of the body. The thyroid gland, for example, secretes thyroxine, which controls the rate at which energy is produced (the metabolic rate).

11. The blood is made up of two parts – plasma and blood cells. The plasma is a clear, yellowish liquid which transports the 25,000,000,000,000 (25 trillion) red blood cells (erythrocytes) and the many fewer white cells (leukocytes). The red cells carry the protein hemoglobin, which carries oxygen to the body cells. The white cells are important in fighting disease. Platelets in the blood permit clotting to take place at the site of a wound, thus preventing excessive bleeding.

12. The respiratory system starts at the nasal passages (nose), where air is breathed in during inspiration. There the air is filtered and its temperature regulated. It then passes through the larynx (voice box) and trachea (windpipe) into the bronchi and bronchioles, and ends in little air pockets called *alveoli* within the lungs. The used blood is cleansed of carbon dioxide, which is expelled in the process known as *expiration*. The cleansed blood is then oxygenated and redistributed along the circulatory system. The entire process is called *respiration* and occurs at the rate of about 16 to 20 times per minute.

13. The largest organ in the body is the outer covering called *skin*. (The average man has about 20 square feet of it.) The skin plus its associated structures (hair, nails, sebaceous and sweat glands, and specialized sensory receptors that enable the body to be aware of touch, cold, heat, pain, and pressure) make up the integumentary system. Skin protects the body from microbes and other impurities, prevents the loss of body fluids, and regulates body temperature. Three layers of tissue make up the skin – the epidermis, the dermis, and the subcutis (subcutaneous layer). The epidermis is in constant growth, with its outer layer of dead cells continuously being replaced as new cells are formed in the lower layer. Hair, fingernails, and toenails are specialized forms of epidermis. The coloring pigment called *melanin* is also found in the epidermis. The middle layer (or dermis) is the location for two main types of

glands – sweat glands and oil glands. The innermost subcutis contains fat cells, blood vessels, and nerves.

14. Another major body complex is the digestive system, which processes the food so that it can be used for energy. The process begins in the mouth, where food is chopped and crushed by the teeth. In the mouth, saliva, excreted by the salivary glands, provides enzymes that help to break down the food's carbohydrates. This taking of food into the body for digestion is called ingestion.

15. After food has been chewed, it passes through the esophagus into the stomach. Peristaltic movements in the walls of the esophagus help push the food along the alimentary canal. The muscular walls of the stomach continue the mixing process while secreting hydrochloric acid from the 35,000,000 glands in the stomach lining. After 30 minutes to three hours in the stomach, the food is converted into a semiliquid state and passes into the small intestine, a tube about 20 feet long located in the lower abdomen. Here, enzymes from pancreatic fluid and bile from the liver complete the digestive process. Nutrients are absorbed into the blood through the villi, which line the walls of the digestive organs. These nutrients are either used in maintaining the body or are burned for energy. What cannot be absorbed is passed out through the large intestine as feces. Liquid wastes are eliminated through the urinary system. They are picked up by the blood and removed by the kidneys. From there they pass through the ureter, bladder, and urethra, and are excreted from the body as urine.

16. Closely associated with the urinary system is the reproductive system, by which human life is carried on to future generations. Sperm cells are produced in the testicles of the male and ejaculated through the penis into the female vagina. The fertilization of the female's ovum (egg) by the male's sperm is called conception. It usually occurs in one of the fallopian tubes, which the sperm reaches through active movement from the place of deposition. Normally, the fertilized egg then travels to the uterus where it becomes an embryo, is implanted, and develops for about 280 days (until childbirth).

17. The nervous system controls all other systems and bodily movements. Nerves carry sensory impulses to the central nervous system and motor impulses from the central nervous system. Motor impulses are those that control muscles. Sensory impulses affect the senses that enable human beings to feel, see, taste, and so forth.

18. The nervous system is divided into the central nervous system (the Brain and spinal cord) and the peripheral nervous system, which consists of the nerves that connect muscles and sensory organs with the central nervous system. The central nervous system is responsible for sending impulses to the voluntary muscles. The autonomic system, a part of the peripheral nervous system, regulates the involuntary muscles and organs.

19. The brain is not only the most important component of the nervous system; it is also the controller of all bodily activities, thoughts, and emotions. It is composed of the pons, medulla oblongata, cerebellum, and cerebrum. The

cerebellum is the area of the brain that coordinates the voluntary muscles; the medulla oblongata controls the involuntary muscles; the pons is where many important nerves originate.

20. It is the cerebrum that gives humans their ability to think, remember, and conceptualize. It is divided vertically into two halves known as the left and right hemispheres. The left hemisphere processes verbal functions, while the right hemisphere is involved in nonverbal activities and is the seat of human creativity. Many scientists believe that, in each individual, one of the two hemispheres is dominant, and that the individual has greater intellectual strength in the dominant hemisphere.

21. It is amazing how well each system functions and coordinates with other systems to enable humans to live, reproduce, and create.

Tiersky E., Tiersky M. *The Language of Medicine in English*. Englewood Cliffs, N.J: Prentice Hall Regents, 1992

SPECIAL TERMS

General Vocabulary

Human anatomy – the study of the structure and organs of the human body. It includes *gross anatomy* (structures that can be seen with the naked eye) and *microscopic anatomy* or *histology* (the study of tissues under a microscope).

System – a group of structures or organs related to each other and working together to perform certain functions.

Major Systems of the Body

Cardiovascular (circulatory) system – the system that carries blood to various parts of the body. It consists of the heart, blood vessels, and lymphatic system.

Digestive system – all the organs and glands involved in the ingestion and digestion of food, from the mouth to the anus.

Endocrine system – the ductless glands that produce internal secretions and secrete these directly into the blood or lymph and circulate it to all body parts. These glands include the thyroid, parathyroid, adrenal cortex, adrenal medulla, anterior pituitary, posterior pituitary, testes, and ovaries.

Integumentary system – the skin (the largest organ in the body) and its associated structures, including hair, nails, and sweat and sebaceous glands.

Nervous system – a system of nerve cells including the brain, cranial nerves, spinal cord, spinal nerves, autonomic ganglia, and other nerves that handle the functions of reception of and response to stimuli. The nervous system regulates and coordinates bodily activities and enables the body to adjust to external and internal changes.

Reproductive system – the system that enables human beings to have offspring. The male reproductive (genital) organs are mostly external and include the penis, the scrotum, and two testicles (testes) contained in the scrotum. The female sex organs are internal and include the vagina (with its opening covered by folds of skin called the *vulva*), the uterus, fallopian tubes, and ovaries.

Respiratory system – the system that brings oxygen into the body and removes carbon dioxide. This process, called breathing, involves two acts: inspiration and expiration. The organs of this system are the nose, tonsils, pharynx, bronchi, pleura, and lungs.

Skeletal-muscular system – the system that protects and supports the internal organs and also helps the body move. The skeleton has 206 named bones including the skull, vertebral column, ribs, and the bones of the legs, hips, and shoulders. Surrounding the bones and soft organs of the body are more than 650 muscles.

Urinary system – the system that removes urea and other waste materials from the body in a liquid called *urine*. These waste materials come from the cells, go into the bloodstream, and then travel through the kidneys, ureters, bladder, urethra, and out of the body.

Chambers of the Heart

Atria – the upper chambers of the heart. The left atrium receives oxygenated blood from the lungs; the right atrium receives oxygenated blood from the rest of the body.

Ventricles – the lower chambers of the heart, which, when filled with blood, contract and propel it into the arteries.

Layers of the Skin

Epidermis – the protective outer layer, which contains pigment-forming cells that determine skin color.

Dermis (also called *derma*, *corium*, and *cutis*) — the middle layer, which contains blood vessels, sweat glands, and nerves that convey sensation.

Subcutis (or *subcutaneous layer*) – the layer below the dermis. It contains blood vessels, nerves, and connective tissue for padding, insulation against heat and cold, and storage of food and water.

Other Body Parts

Blood Vessel – a tube that carries blood. A large blood vessel that carries blood away from the heart is called an artery. Smaller vessels with the same function are arterioles. Veins and venules return blood to the heart. The two systems are united by tiny capillaries.

Gland – an organized collection of tissue that can manufacture and release a secretion which is then used in some other part of the body. Exocrine glands have ducts; endocrine glands don't.

Muscle – tissue composed of fibers that shorten by contraction to produce movement.

Tendon – fibrous connective tissue that attaches muscles to bones and to other muscles.

I. Answer the Following Questions.

1. What are some important functions of the skin?
2. Which layer of skin contains the sweat glands, and what do these glands do to help the human body?
3. What tissues enable the body to move?
4. What vessels carry blood to the heart, and which ones carry it away?
5. What functions do erythrocytes, leukocytes and platelets perform?

II. What is the English for:

Насыщать кислородом, обогащенная кислородом кровь, грудная клетка, сустав, связка, сухожилие, судорога, спазм, растяжение, предсердие, желудочек, гемоглобин, бороться с болезнью, щитовидная железа, гортань, вдох / выдох, пищевод, расщеплять углеводы, кишечник, кишечный, спинной мозг, мозжечок, вена, артерия, капилляр, кровеносный сосуд.

III. Use the Following Collocations in the Context.

To fight disease, the site of a wound, left and right hemispheres, to break down carbohydrates, to be nourished by blood, to feel the pulse rate.

IV. Match the Medical Terms with the Common Words with the Similar Meaning.

Clavicle	-----	kneecap
Larynx	-----	spine
Patella	-----	shoulder blade
Phalanges	-----	windpipe
Scapula	-----	collarbone
Sternum	-----	breastbone
Trachea	-----	voice box
Vertebral column	-----	bones of a finger or toe

V. Paraphrase the Following Expressions.

To convert digestible food to energy; to be consciously controlled; to become fatigued; strenuous activity; to cleanse of carbon dioxide; to secrete hormones; to fight disease; to permit clotting to take place at the site of a wound; to process food; peristaltic movements; the seat of human creativity.

VI. Insert Prepositions.

To distribute ... the cardiovascular system ... all tissues; to dispose ... the rest; to bend ... the joints; to contract ... response ... nerve signals; to be made ... several layers of cardiac muscle; to be burned ... energy; to break ... carbohydrates; to convert ... a semi-liquid state.

UNIT III

COMMON DISEASES AND AILMENTS

1. There is no end in sight in the battle between human beings and the diseases that can destroy them. However, in the 20th century, the nature of the enemy has changed dramatically. In countries where modern medical facilities are available, infectious diseases that were once widespread killers can now be prevented or diagnosed early and cured. Thanks to vaccines, **antibiotics**, and improved sanitation, most of the dreaded epidemics of the past are not likely to recur.

2. Today's major killers are noninfectious diseases – especially the various forms of cardiovascular disease and cancer. As life expectancy increases, people are more likely to succumb to degenerative conditions that the aging body is susceptible to. In addition, many factors of modern life – such as environmental pollution, occupational hazards, stress, a sedentary lifestyle, an unhealthy diet, the use of cigarettes, drug and alcohol abuse – contribute to the development of disease.

3. One of the most common serious afflictions in modern society is heart disease. This general label encompasses many different abnormal conditions, including congenital heart defects (many of which can be repaired surgically), diseases of the pericardium (the tissue surrounding the heart muscle), and diseases affecting the heart muscle itself (the myocardium). Physicians can often detect or predict heart problems by measuring the rate of the heartbeat (called the **pulse**) and by taking the patient's blood pressure. Another important diagnostic tool is the electrocardiogram (EKG), a record of the electrical activity of the heart, which can reveal abnormal cardiac rhythm and myocardial damage. When heart disease is suspected and more detailed information is needed, an **angiogram** is ordered. This series of X-ray films (taken after the injection of a radiopaque substance) defines the size and shape of various veins and arteries.

4. The most common cardiovascular disease is **atherosclerosis** (hardening of the arteries). Atherosclerosis of the coronary arteries may cause the development of a coronary thrombus (blood clot), which blocks the flow of blood to the heart muscle. If, as a result, part of the heart muscle dies, the condition is called **myocardial infarction** (a heart attack). Some symptoms and signs of a heart attack are pain in the chest (and sometimes also in the jaws and arms), shortness

of breath, irregular pulse, nausea, and perspiration. Prompt cardiopulmonary resuscitation can save victims from sudden death. Among the emergency procedures used is a technique known as *percutaneous transluminal angioplasty* (PTA). This technique widens coronary arteries that have become dangerously narrow due to deposits (called *plaque*) on their interior walls. The procedure involves manipulating a catheter (flexible tube) into the constricted vessel, then inflating a small balloon at its tip, thereby compressing the plaque and widening the passage.

5. When atherosclerosis affects the carotid and vertebral arteries (which supply blood to the brain), a stroke may result, causing paralysis (paralytic stroke) and sometimes affecting speech and brain function. Atherosclerosis can also weaken the aorta wall, causing it to develop a balloonlike structure called an aneurysm. Large aneurysms can rupture, causing fatal hemorrhage. Patients can decrease the likelihood of developing atherosclerosis by cutting down on their consumption of fats, cutting out cigarettes, and getting adequate exercise.

6. Less serious but still frightening is the condition called angina pectoris, chest pains that occur when the heart muscle does not get enough oxygen (often because of a temporary spasm of a vessel). An attack is usually caused by overexertion and can be relieved by rest and nitroglycerin tablets.

7. Patients with various kinds of heart conditions may be treated medically with many different drugs including anticoagulants to reduce the chance of blood clotting, beta blockers to reduce high blood pressure, or digitalis to increase the force of the heart's contractions. Surgical treatments include repair or replacement of valves or arteries, insertion of a pacemaker to regulate heartbeat, or even the substitution of an artificial or a transplanted human heart for the patient's diseased one.

8. The relationship between cardiovascular disease and hypertension (high blood pressure) is well known, so patients with high blood pressure are generally placed on a regimen including a low-salt diet, regular exercise, and sometimes medication that will bring the blood pressure down to within normal limits.

9. Another major killer is cancer. Cancer is characterized by an unrestrained growth of abnormal cells. There are three main types of cancer: a *carcinoma* originates from the surface cells of the skin or the linings of the internal organs; a *sarcoma* attacks the muscles, bones, tendons, cartilage, fat, blood vessels, lymph system, or connective tissue; *leukemias* afflict the blood-forming cells. Some cancers grow slowly; others spread rapidly, doubling in bulk in days. Cancer can appear anywhere in the body, but some common sites are the lungs, breasts, uterus, skin, colon, prostate, and blood. Symptoms vary greatly depending upon the location, but some of the most common symptoms are unusual bleeding or discharge, a thickening in any area, a sore that doesn't heal, hoarseness or difficulty swallowing, indigestion, a change in bowel or bladder habits, or unexplained weight loss.

10. Today, many types of cancer can be cured, especially if detected early. For this reason, many diagnostic procedures – such as a biopsy, mammogram, or

colonoscopy (examination of the large intestine) or other internal examinations – are employed when cancer is suspected. A localized malignancy is sometimes treated and cured by surgery alone, but sometimes radiation or chemotherapy (drug or chemical treatment) is used in combination with surgery. A malignancy that has metastasized (spread from its place of origin to another organ or site) requires higher doses of chemotherapy and / or radiation and is more difficult to cure.

11. The etiology of many types of cancer remains an enigma to scientists. Some of the causes are known, however, including cigarette smoking, overexposure to X-rays or sunlight, and contact with certain chemicals. Some forms of cancer seem to run in families; others may be caused by a virus.

12. The neuromuscular systems in the body can be affected by a number of diseases. These diseases all cause a loss of muscular control by disturbing the nerves which control the muscles. In muscular dystrophy, a chronic and inherited disease, the muscles gradually atrophy (waste away). A patient with Parkinson's disease often exhibits uncontrollable shaking caused by basal ganglion dysfunctions. Multiple sclerosis victims suffer from a loss of muscular coordination in various parts of their bodies because of damage to nerve fibers. Unfortunately, none of these diseases is curable at present. All that can be done for a victim is to lessen the undesirable symptoms.

13. A disease that attacks the kidneys is nephritis. There are many different types and many causes of nephritis, including bacteria and toxins. The kidneys regulate the elimination of urine from the body. If the disease becomes severe enough to destroy the kidneys, the victim can be saved through the transplantation of a donor's kidney or by regular use of a renal hemodialysis machine. This machine substitutes for the kidneys, cleansing the body of its liquid wastes.

14. Diabetes mellitus is a disease in which the body no longer uses sugar properly. In a healthy body, special cells in the pancreas secrete the hormones insulin and glycogen, which help to store sugar. In the body of a diabetic, these hormones are inadequately produced or utilized. The disease is usually diagnosed by the discovery of sugar in the urine and abnormally high levels of sugar in the blood. If the disease is not controlled, serious complications can develop affecting the eyes, kidneys, and circulatory system. Treatment is usually a combination of a carefully regulated diet, regular exercise, and sometimes insulin injections.

15. Arthritis and rheumatism are general names for approximately 100 diseases that produce inflammation or degeneration of connective tissue. Some of these diseases are infectious and primarily affect younger people. Rheumatic fever, for example, is a bacterial infection that occurs mostly in children or teenagers. Rheumatoid arthritis predominantly strikes women between 20 and 60. However, the most common rheumatic disease is a noninfectious, noninflammatory degenerative joint disease – osteoarthritis. To some degree, it affects nearly all older adults, causing swelling, pain, and stiffness in joints.

Treatment may include heat, exercises, and drugs that reduce pain and inflammation.

16. Besides osteoarthritis, many other noninfectious diseases can limit the activities of the elderly. Osteoporosis (a condition in which bone loss exceeds bone replacement so that the bones become less dense, more porous, and more brittle) often leads to fractures, especially of the hip bone. Many conditions conspire to decrease the sensory perception of the elderly. Cataracts (created when the lens of the eye – or a portion of it – becomes opaque and sometimes swells or shrinks) interfere with vision. Deterioration of nerves in the inner ear causes the characteristic old-age hearing loss, most severe in the high-pitched tones. The senses of taste and smell also deteriorate in old age.

17. But what many elderly people fear most is the loss of mental abilities. Confusion, memory loss, and inability to distinguish between reality and fantasy (dementia) are all symptoms that can be caused by damage to the brain. They may result from external injury, a stroke, or deterioration of brain cells due to inadequate blood and oxygen supply. One common cause of severe mental deterioration is Alzheimer's disease, a neurological brain disorder in which there are a variety of abnormal chemical changes in the brain and characteristic nerve cell "tangles." In the United States, about 2.5 million people are afflicted with this condition, almost 6 percent of the population over age 65 and about 20 percent of those over 85.

18. People of all ages suffer from a variety of allergic conditions. An allergy is an altered reaction of body tissues to a substance which produces no effect upon a nonsensitive person. The substance causing the allergic reaction is called an antigen. The antibody reaction (often the release of histamine) generally makes the person feel sick or uncomfortable. Some people have food allergies (commonly to eggs, strawberries, chocolate, or nuts), and these are likely to cause skin rashes. Others are allergic to airborne particles (inhalants such as dust or pollen). These affect the respiratory tract and cause conditions such as asthma, hay fever, or allergic rhinitis. Another source of allergies is contactants (for example, wool or chemicals that come in contact with the skin). Allergies to specific drugs (penicillin, for example) are also common. Sometimes allergic reactions can be severe and lead to medical emergencies, especially if they interfere with breathing. However, most can be controlled with medication (often antihistamines). Of course, the best way to control an allergic condition is to avoid contact with the antigen, if possible.

19. Among contagious diseases, many of the major killers of the past are no longer widespread problems. Smallpox, for example, has been eradicated in most parts of the world by vigorous immunization campaigns. Poliomyelitis (a disease caused by a virus which attacks the motor neurons of the spinal cord) once left large numbers of its victims temporarily or permanently paralyzed, but today vaccines effectively protect against polio. Tuberculosis, a bacterial infection which commonly affects the lungs, was the number-one killer of

Americans prior to 1909. Today, to test for TB, a simple skin test is widely given periodically as part of a routine medical checkup. If the results are positive, a chest X-ray is taken to determine whether the disease is dormant or active. In either case, the condition can then be controlled or cured by medication. Another infection of the lungs, pneumonia, is also much less dangerous than it once was, thanks to antibiotics. (However, among the elderly and those weakened by other serious diseases, pneumonia is still a common cause of death.)

20. Diseases that are common in childhood include chickenpox, measles, mumps, diphtheria, and whooping cough. In the United States, children are routinely immunized against most of these, as well as against tetanus. This is not true in all parts of the world, however, and many children suffer needlessly as a result. Fortunately, these diseases are not usually fatal.

21. Many diseases are transmitted by sexual contact. Once called venereal diseases, today they are commonly called sexually transmitted diseases (STD)... Some of these can be very destructive to the body if not treated, but all can be either cured or controlled by medication. By far the most frightening of the sexually transmitted diseases is Acquired Immune Deficiency Syndrome (AIDS). This fatal disease is spread by direct sexual contact or exchange of blood (for example, by use of a contaminated hypodermic needle). AIDS destroys its victim's immune system, leaving the patient unprotected against infections that healthy people could fight off. The various "opportunistic infections" common among AIDS patients include a rare type of pneumonia and an unusual form of cancer called Kaposi's sarcoma. "An ounce of prevention is worth a pound of cure" is an expression that especially applies to AIDS, not only because the use of condoms and sterile needles can protect people from the disease, but also because at present there is no cure. Since a person can be a carrier of the HIV (human immunodeficiency virus) long before symptoms appear, people at risk are urged to take a blood test for diagnosis.

22. At the other end of the disease spectrum are the many conditions that may make people feel temporarily "under the weather" but are not serious enough to require a physician's care – especially if they are only occasional and short-lived. Common infectious conditions such as a cold, the flu, or diarrhea (loose bowel movements) are often self-limiting and can be treated symptomatically with over-the-counter drugs. The same is true of occasional tension headaches and the monthly cramps and lower back pain that are now called premenstrual syndrome (PMS). People often endure the acne of adolescence and the hemorrhoids of pregnancy without consulting a physician, especially when the conditions are not severe. Minor traumas are often self-treated with routine first aid. Most people know that superficial lacerations (cuts) should be thoroughly cleaned and bandaged and that immediate immersion in cold water will relieve the pain of a slightly burned finger or a sprained ankle.

23. The study of diseases should not make students feel fragile and vulnerable. It is important to remember that the human body has a remarkable ability to protect itself against disease and to cure itself when illness or injury does occur. Moreover, when serious illness strikes, modern medicine has extremely sophisticated tools for fighting back.

SPECIAL TERMS

Some Abnormal Conditions

Allergy – an abnormal sensitivity to a particular substance so that contact with it produces an antigen-antibody reaction. For example, ragweed makes the person allergic to it sneeze.

Aneurysm (alternate spelling: aneurism) – a localized abnormal dilation of a blood vessel due to a congenital defect or a weakness in the vessel wall.

Angina pectoris – pain in the mid-chest that sometimes radiates to the shoulder, left arm, jaw, or abdomen. Usually brought on by physical exertion, the underlying cause is the narrowing of a blood vessel due to temporary spasm or build-up of plaque. The narrowing causes the heart to receive less blood (and therefore less oxygen) than it needs.

Atherosclerosis – a form of arteriosclerosis in which there are localized accumulations of fatty material on the inside walls of blood vessels. Arteriosclerosis, a more general term, includes this condition and other degenerative blood vessel conditions such as loss of elasticity and hardening. Both conditions are commonly called hardening of the arteries.

Atrophy – a wasting away due to lack of nutrition or use; also, a reduction in size of a structure after it has come to full functional maturity. Atrophy is sometimes due to an abnormal condition. For example, the calf muscles may shrink when a patient is not ambulatory for several months. However, atrophy can also be normal, as in the shrinking of the ovaries during menopause.

Hypertension – abnormally high blood pressure. (Blood pressure is the pressure exerted by the blood on the wall of any vessel. What is considered normal varies somewhat with age and sex, but it is abnormally high when above 140/90.)

Infarction – the death of tissue in an organ following the cessation of blood supply. Myocardial infarction (death of part of the heart muscle) usually results from a thrombus (clot) in the coronary arterial system. Coronary thrombosis may also cause cardiac arrest (a sudden cessation of heartbeat).

Paralysis – temporary or permanent loss of function, especially sensation or voluntary motion.

Paralytic stroke – sudden onset of paralysis caused by an injury to the brain or spinal cord.

Tiersky E., Tiersky M. The Language of Medicine in English. Englewood Cliffs, N.J: Prentice Hall Regents, 1992

I. Answer the Following Questions.

1. What diseases are today's major killers?
2. What factors contribute to the development of the disease?
3. What measures help to detect or predict heart problems?
4. What is an angiogram and when is it ordered?
5. What are the symptoms and signs of a heart attack?
6. What helps to decrease the likelihood of developing atherosclerosis?
7. What sort of treatment is administered to the patients with high blood pressure?
8. What diseases affect the neuromuscular system?
9. In what case do they use a hemodialysis machine?
10. Expand on the diseases that produce inflammation or degeneration of connective tissue.
11. What diseases are characteristic of old age?
12. What are the causes of allergic reactions, their symptoms and types?
13. In what way is it possible to control the allergic condition?
14. What measures help to eradicate contagious diseases which were the major killers of the past?
15. What infections affect the lungs?
16. What diseases are common in childhood? In what way are the children protected against them?
17. In what way is AIDS transmitted, what are its symptoms and prevention?
18. What conditions do not normally require a physician's care?

II. Say it in English.

Вакцина, антибиотик, шприц, эпидемия, продолжительность жизни, сердечно-сосудистое заболевание, быть восприимчивым к болезни, профзаболевание, малоподвижный образ жизни, измерить пульс / давление, переутомление, вшить кардиостимулятор, гипертония, снизить давление, поражать почки, применять различные средства диагностики, химиотерапия, рассеянный склероз, повреждение нервных волокон; использование гемодиализа, который выполняет функцию почек; кости, становятся хрупкими, потеря слуха, сыпь на коже, иметь аллергию на пыль и пыльцу, сенная лихорадка, инфекционное заболевание, медицинский осмотр, наносить ущерб здоровью; пациент становится не защищенным от болезней, с которыми здоровые люди успешно борются; это утверждение верно и в отношении головной боли, юношеские угри, ссадины, поместить в холодную воду, ухудшать зрение.

III. Explain the Meaning of the Following Words and Expressions.

To encompass, digitalis, etiology, overexposure to X-rays, over-the-counter drugs, to feel under the weather, contagious, antigen, to place a patient on a regimen, a localized malignancy, biopsy, to metastasize.

V. Insert Prepositions.

To succumb ... degenerative conditions; to contribute ... the development of a disease; to cut ... fats; to cut ... cigarettes; to substitute ... the kidneys; to place smb ... regimen; to bring the blood pressure ...; overexposure ... sunlight; damage ... nerve fibres; to be allergic ... pollen; to protect ... polio; to test ... TB; to treat ... over-the-counter drugs; to fight ... infections.

VI. Explain the Difference that the Following Synonyms Reveal.

Susceptible – prone – open – predisposed

Cleanse – clean – purge

Afflict – harm – affect

Rupture – break – puncture – burst

Immerse – dip – plunge – submerge

VII. Match the Medical terms with the Common Words with the Similar Meaning.

Anticoagulant	-----	cut
Arrest	-----	tube
Cardiac infarction	-----	clot
Catheter	-----	heart attack
Etiology	-----	blood thinner
Hypertension	-----	stoppage
Laceration	-----	high blood pressure
Thrombus	-----	cause; origin

UNIT IV

FEVER AND HOW TO TREAT IT

Since ancient times fever has been recognized as a sign of illness. In 400 B.C. the Greek physician Hippocrates prescribed the bark and leaves of the willow tree to relieve fever. These are now known to contain aspirin-like chemicals.

In the 17th century Thomas Sydenham (described by some as the “English Hippocrates”) regarded fever as a wholesome reaction of the body to injury. Some people still see it as a sign that the body is fighting illness.

Causes of fever

Fever, or pyrexia to give it its medical name, is caused by the release of certain chemicals by the immune system, usually as a result of infection or inflammation. In the past many infections were rapidly fatal and fever was greatly feared, whether due to measles, flu or after childbirth. These days we have effective treatments for most infections. Even so, fever is an important sign

that someone is ill, and a cause should always be established. Other causes include any condition where there is inflammation, from arthritis to trauma to inflammatory bowel disease. The Nemours Foundation has a guide especially for children who want to know more about fever.

Perhaps most frightening are rare tropical haemorrhagic fevers, mention of which sends whole towns fleeing in Africa. Ebola, for example, is a highly infectious virus and 90 % of those who get it die. It rapidly breaks down the walls of arteries so that the victim haemorrhages to death.

Fortunately these infections are extremely rare, but there is a real risk if you travel abroad of feverish infections such as malaria.

Fever of unknown origin

Sometimes doctors simply can't find the cause of a persistent fever. Then they call it a fever of unknown origin (FUO or PUO for "pyrexia of unknown origin"). Special tests may be needed to pin point the cause and detect hidden abscesses or usual infections. About 25 % are not due to infection, and other explanations must be sought – most importantly cancer. About 1 in 5 people with chronic persistent fever have a tumour. Lymphoma, lung cancer, pancreatic cancer and primary liver cancer patients often have fever caused by dead cancer cells or bleeding.

What is a normal temperature?

As scientists developed the thermometer in the seventeenth century there was no way to measure heat. But it wasn't until the 1870's, when clinical thermometers were introduced that we all started taking our body temperatures.

Normal body temperatures can vary enormously and is influenced by factors such as exercise, eating, sleeping and time of day – being lowest at about 3 a.m. and highest at about 6 p.m.

Average normal body temperature taken in the mouth is 37 °C (or 98,4 °F). But anywhere between 36,5 and 37,2 °C may be normal. Normal armpit temperatures are 0,2 to 0,3 °C lower than this. A temperature of 38 °C or above is usually considered to be a significant fever – you should measure it again after 2 to 3 hours.

Treating fever

Not every fever needs medical attention, but if it is a young child, if the temperature continues to rise, and if there are other worrying symptoms you may want to talk to your doctor about it.

Otherwise there are several things you can do to help bring the temperature down and make the person feel comfortable.

Treating a fever:

- Keep the room at a comfortable temperature, but make sure that fresh air is circulating.

- Drink plenty of water to prevent dehydration.
- Give ice cubes to suck.
- Take off excessive layers of clothing. Small babies or children may be left in a thin vest.
- Sponge skin surfaces with cool water.
- Give medication regularly:
 - Paracetamol as tablets (adults) or syrup (children).
 - Ibuprofen as tablets (adults) or syrup (children).
 - Aspirin: for adults only. Children under 12 may be at risk of a potentially serious condition called Reye's syndrome if treated with aspirin.

When to contact a doctor

Fever itself is rarely harmful to the body but at very high temperatures it can cause problems which need medical attention:

- small children with a high fever may have a fit, known as a febrile convulsion

A high fever may also be a sign of serious illness. If you are at all worried call your doctor, especially if:

- You suspect an infection which might need antibiotic treatment
- It is a very young child
- The child becomes unusually sleepy or doesn't respond.
- Fever is higher than 38.5 °C (102 °F).
- The child won't take fluids.
- A child or adults has a stiff neck, an unusual rash or difficulty breathing.

BBC Health

I. Answer the Following Questions.

1. Describe the way fever was viewed on in ancient times and Middle Ages.
2. What did Hippocrates prescribe to relieve fever?
3. What are the possible causes of fever?
4. Why was fever greatly feared in the past?
5. Why do people suffering from arthritis etc run temperatures?
6. What fevers are most frightening and why?
7. What problems caused by high temperatures need medical attention?
8. What does "fever of unknown origin" mean?

II. Say it in English.

Сбить температуру, бороться с болезнью, воспаление, выявить причину заболевания, подхватить инфекцию, затрудненное дыхание, приступ.

III. Say it in Russian.

To pin point the cause; to detect hidden abscesses; to prevent dehydration; a wholesome reaction of the body to injury.

IV. Paraphrase the Following Expressions.

Wholesome reaction; stiff neck; to release certain chemicals; to establish a cause of the disease; persistent fever; to take smb's temperature, to take fluids.

V. Insert Prepositions.

Treatment ... most infections; to haemorrhage ... death; one ... five people; to keep a room ... comfortable temperature.

VI. Give some recommendations to parents whose child is running a high temperature.

VII. Describe the way you felt and the treatment you were administered while having a fever.

UNIT V

DENTISTRY

Dental Treatments

Bridges

A bridge is a fixed replacement for a missing tooth or teeth. It's made by taking an impression of the surrounding teeth, which will eventually support the bridge. A bridge is usually created from precious metal and porcelain and will be fixed in your mouth (unlike dentures, which can be removed).

Crowns

A crown is a type of cap that completely covers a real tooth. It's made from either metal, or porcelain and metal, and is fixed in your mouth. Crowns can be fitted where a tooth has broken, decayed or been damaged, or just to make a tooth look better.

To fit a crown, the old tooth will need to be drilled down so it's like a small peg onto which the crown will be fixed. It can take some time for the lab to prepare a new crown, so you probably won't have the crown fitted on the same day.

Fillings

Fillings are used to repair a hole in a tooth caused by decay. The most common type of filling is an amalgam, made from a mixture of metals including mercury, silver, tin, copper and zinc. Your dentist will offer the most appropriate type of filling according to your clinical needs. This includes white fillings, if appropriate.

Root canal treatment

Root canal treatment (also called endodontics) tackles infection at the centre of a tooth (the root canal system).

When the blood or nerve supply of the tooth has become infected, if root canal treatment is not carried out, the infection will spread and the tooth may need to be taken out.

During treatment, all the infection is removed from inside the root canal system. The root canal is filled and the tooth is sealed with a filling or crown to stop it from becoming infected again. Root canal treatment usually requires two or three visits to your dentist.

Scale and polish

This is when your teeth are professionally cleaned by the hygienist. It involves carefully removing the deposits that build up on the teeth (tartar).

Braces

Braces (orthodontic treatment) straighten or move teeth to improve the appearance of the teeth and how they work.

Braces can be removable, so you can take them out and clean them, or fixed, so that they're stuck to your teeth and you can't take them out.

They can be made of metal, plastic or ceramic. Invisible braces are made of a clear plastic.

Wisdom tooth removal

The wisdom teeth grow at the back of your gums and are the last teeth to come through, usually in your late teens or early twenties. Most people have four wisdom teeth, one in each corner.

Wisdom teeth can sometimes emerge at an angle or get stuck and only emerge partially. Wisdom teeth that grow through in this way are known as impacted.

Impacted wisdom teeth can be removed on the NHS. Your dentist may perform the procedure or may refer you to a dentist with a special interest (DwSI) or to a hospital's oral and maxillofacial unit.

Dental implants

Implants are a fixed alternative to removable dentures. They may be the only option if the loss of teeth has caused the mouth to shrink so that it can no longer support dentures. You can use implants to replace just a single tooth or several teeth.

To fit an implant, titanium screws are drilled into the jaw bone to support a crown, bridge or denture.

Replacement parts take time to prepare. This is to ensure that they fit your mouth and other teeth properly. Therefore, they may not be available on your first visit to the dentist.

Dentures or false teeth

More commonly known as false teeth, dentures are fitted in place of natural teeth. A full set is used to replace all your teeth. A part set is used to replace one or more missing teeth. Dentures are custom-made using impressions (mouldings) from your gums. They're usually made from metal or plastic.

They're removable so you can clean them, although part dentures can be brushed at the same time as your other teeth. A full set needs to be removed and soaked in a cleaning solution.

Dentures are important if you lose your natural teeth as losing your teeth makes it difficult to chew your food, which will adversely affect your diet and may cause your facial muscles to sag.

Broken or knocked out tooth

It's common to break, chip or knock out a tooth.

If the tooth is just chipped, make a non-emergency dental appointment to have it smoothed down and filled, or to have a crown.

If the tooth has been knocked out or is badly broken, see a dentist immediately. Your dentist may fit a denture or bridge. If you need an implant, you'll be referred to a dental hospital.

Teeth whitening

Teeth whitening involves bleaching your teeth to make them a lighter colour. Teeth whitening can't make your teeth brilliant white, but it can lighten the existing colour by several shades.

Standard teeth whitening involves several visits to the dentist plus sessions at home wearing a mouthguard containing bleaching gel. The whole process takes a couple of months.

A newer procedure called laser whitening or power whitening is done at the dentist's surgery and takes about an hour.

Dental veneers

Veneers are new facings for teeth which disguise a discoloured (rather than a damaged) tooth. To fit a veneer, the front of the tooth is drilled away a little. An impression is taken, and a thin layer of porcelain is fitted over the front of the tooth (similar to how a false fingernail is applied).

<http://www.nhs.uk/pages/home.aspx>

I. Answer the Following Questions.

1. What is the difference between bridges and dentures?
2. When do the dentists place crowns?
3. What does root canal treatment involve?
4. What is removed when the teeth are professionally cleaned?
5. What types of braces are used to improve the appearance of the teeth?
6. Why are wisdom teeth removed?
7. Where are impacted wisdom teeth removed?
8. What is necessary to fit an implant?
9. When is it necessary to see a dentist immediately?
10. How does teeth whitening work?
11. What is the difference between crowns and veneers?

II. Say it in Russian.

Denture; scale; braces; oral and maxillofacial unit; to sag.

III. Say it in English.

Коронка, кариес, десна, сколотый зуб, стачивать переднюю часть зуба.

IV. Paraphrase the Following Expressions.

To take an impression of a tooth –

To tackle infection –

Impacted wisdom teeth –

To adversely affect your diet –

To be custom-made –

To make a non-emergency dental appointment –

V. Insert Prepositions.

To take ... a tooth; replacement ... a missing tooth; the last teeth to come ...; to be referred ... a dental hospital; to lighten the colour ... several shades.

Unholy Dentistry

Now that several of his own teeth have lost their crowns, and the fillings beneath have deteriorated, Kenneth Anusavice wishes his mother had known what today's studies have shown: that not all cavities call for immediate fillings and that it is not always necessary to replace fillings that break down because of wear and tear. Dr Anusavice, a researcher at the University of Florida, Gainesville, is not about to give up the profession of dentistry. He still believes that there are lots of ways dentists can make the world a better place. It is just that he no longer thinks that filling every cavity is one of them.

Dr Anusavice took the opportunity of a recent conference at the national Institute of Dental Research (NIDR) in Bethesda, Maryland, to remind 700 of

his colleagues of something all 190,000 American dentists know, or should know. Every time they intervene in someone's mouth to fill cavities or replace fillings, they do damage as well as good. The same rule holds true when simple fillings no longer suffice and a tooth has to be placed. This collateral damage to otherwise healthy bits of tooth may in the end have to be dealt with itself. In other words, if fewer teeth were filled to begin with, and more worn fillings were repaired, rather less need for crowns, dentures, root-canal therapy and dental implants over the long haul.

The places most at risk for cavities are the biting surfaces of the teeth, especially if they have deep pits and fissures. Thanks to the addition of fluoride to tooth pastes and, in many places, to drinking water, decay on the smooth surfaces of teeth has become relatively rare in America. But fluoride's toughening is not so much help to the uneven biting surfaces; they are at risk even when people practice good oral hygiene and regularly have their teeth professionally cleaned. It is primarily the rough chewing teeth at the back of the mouth that are prone to cavities. They are the teeth that stand to benefit most from the conservative approach advocated by Dr Anusavice and like-minded practitioners.

Just as all teeth are a bit different, so are all cavities. Some deteriorate quickly, some slowly, some hardly at all. In a perfect world, a dentist would be able to predict the rate of decay of a tooth. In the real world, the science is inexact. The trouble is that there are some things even x-rays, penetrating as they are, cannot reveal. They do not always accurately portray the degree of damage, nor do they vouchsafe how long the damage has been there. Thus the dentist cannot see how fast it is spreading, if at all. To be on the safe side, most dentists fill cavities right away. But the decay may not be spreading, in which case the damage done by intervention will not be worth it.

Not drilling, however, does not mean no dentistry. For a wait-and-see approach to work, the patient has to come back regularly for decay or lack of it to be assessed. Regularly does not mean every other week. Even when the decay is spreading, it typically takes six years to travel through the tooth enamel into the softer dentin, where it becomes a threat to the nerves in the root canal. There is plenty of time to intervene if need be. And intervention need not be with the drill. Treatment of the tooth with fluoride, plastic sealants or both might instead be advisable at some stage to slow or halt any progression that does take place. These treatments may be useful on a more widespread basis, too; the NIDR advocates that the chewing surfaces of children's permanent teeth be treated with sealants as soon as they surface from the gum, as a precaution.

At the same time, the patient should bear the cavity in mind when eating. Going easy on sugary snacks and drinks is obviously helpful; so is immediate brushing after any lapses into indulgence. Chewing sugarless gum stimulates the flow of saliva, which can help neutralize the acid which bacteria make from sugar in the mouth.

Just as dentist are taught to plug the cavities on sight, so they are trained to remove badly worn, leaky or broken fillings. That way they can deal with decay underneath or around them. Given the extra work done when fillings are removed, their replacements are larger than originals – and if replacement is not possible, an onlay or a crown involves the destruction of even more tooth. However, thinking on this score is also becoming less doctrinaire. Eva Mertz-Fairhurst, a dentist at the Medical College of Georgia, in Augusta, has shown that old fillings can often safely be replaced, providing that the decay is not extensive.

The Economist
May 1993

I. Answer the Following Questions.

1. In what way do Dr. Anusavice's views on dentistry differ from the generally accepted ones?
2. What happens when dentists intervene in someone's mouth to fill cavities or replace fillings?
3. What sort of damage is done when a tooth is crowned or a bridge is placed?
4. How can patients benefit from the introduction of new methods in dentistry?
5. What places are particularly exposed to tooth decay?
6. What factors help to reduce the risk of decay on the smooth surfaces?
7. What teeth stand to benefit most from the conservative approach advocated by Dr. Anusavice?
8. In what way does the conservative treatment work?
9. What methods can substitute for drilling?
10. What does conservative treatment in children's dentistry mean?
11. When should the fillings be replaced?
12. In what way is the tooth affected when the filling is being replaced?
13. What may entail the destruction of even more teeth?
14. Comment on the title. What play on word does the author employ and why?
15. Which method in dentistry does the author support, from your point of view?
16. What are the advantages and the disadvantages of conservative treatment in dentistry?
17. What sort of treatment would you prefer: conventional or conservative? Give your reasons.
18. What should be done to prevent tooth decay? Comment on some modern means that help to practice good oral hygiene.

II. Say it in English.

Коронка, проводить профессиональную чистку зубов, производить вмешательство, соблюдать гигиену полости рта, единомышленник, лечение корневого канала, поставить мост, коренные зубы, пломбы разрушаются; предугадать, с какой скоростью будет развиваться кариес;

слюна, щипцы, замедлить или остановить развитие кариеса; с помощью рентгена нельзя достоверно установить, насколько зуб поражен кариесом; ставить пломбы без промедления.

III. Paraphrase the Following Expressions.

To vouchsafe how long the damage has been there –

A wait-and-see approach to work –

To go easy on sugary snacks and drinks –

To brush teeth after any lapses into indulgence –

To call for immediate fillings –

This collateral damage may have to be dealt with itself –

Over the long haul –

To be at risk for cavities –

Simple fillings no longer suffice –

IV. Say it in Russian.

To plug cavities on sight, to remove worn, leaky or broken fillings, thinking on this score has become less doctrinaire, fluoride's toughening, biting surfaces, rough chewing teeth, to be prone to cavities, damage done by intervention is not worth it, to assess the decay or lack of it, to travel though the tooth enamel to the softer dentin, to stimulate the flow of saliva, dental implant, the decay is not too extensive.

V. Insert Prepositions.

To call ... immediate fillings; to intervene ... someone's mouth; less need ... crowns; to be prone ... cavities; to travel ... the tooth enamel ... the softer dentin; to think ... this score.

VI. Describe your visit to the dentist, specifying the treatment provided and the equipment used.

How Often Do You Need to See a Dentist?

A lot of us think that we should visit the dentist every six months – even if it's not what we do in practice. Whether those biannual check-ups are really necessary is, however, a matter of debate. In fact, it's not even clear where the six-month figure initially came from. Some believe it dates back to the 18th Century, long before the advent of randomised controlled trials that could test its benefits.

People with a lot of problems with their teeth do, of course, need to visit the dentist often. But what about everyone else? Permanent teeth are more vulnerable to decay soon after they've come through, so when children have just grown their first permanent teeth at the ages of six to eight they need those

regular check-ups. In the teens, teeth are less vulnerable, until wisdom teeth come through in your twenties. So the risk varies at different times of life.

In 2000, three-quarters of dentists surveyed in New York were recommending six monthly check-ups, despite the absence of studies examining whether the frequency of visits made a difference to patients at low-risk of tooth decay or gum disease. Today, many organisations such as the American Academy of Pediatric Dentistry still recommend six monthly check-ups.

But for several decades some have been arguing that the choice of six months as the ideal space between visits is rather arbitrary. Back in 1977 Aubrey Sheiham, a professor of dental public health at University College London, published a paper in *The Lancet* bemoaning the lack of evidence for six monthly check-ups. Almost 40 years on, he's still making the same point.

In 2003 a systematic review examined the research that had then been done. The results were mixed. Some studies found no difference between the number of decayed teeth, fillings or missing teeth in those who attended the dentist frequently and those who didn't, while other studies found fewer fillings in those who went a lot. When it came to gums most research found no difference in the amount of bleeding, plaque or gingivitis in permanent teeth. One study found that going to the dentist more than once a year made no difference to the size of tumours at diagnosis with oral cancer, while another found that if people waited more than a year between visits, tumours could be more advanced when they were found.

Last year the Cochrane Collaboration performed a similar systematic review of the research, and they were disappointed with what they found. The quality and quantity of the research was simply too poor to back up or refute the idea of six-monthly check-ups. They found just one controlled study where patients were randomised to attend the dentist either annually or every two years. Those who went annually did better, but it's possible that the dental staff knew whether patients were in the annual or two-yearly group, which could have influenced the treatment they received and biased the results.

There's something else we have to bear in mind. Even when a study finds, for example, that children who go to the dentist frequently have fewer fillings, there may be other factors at work. Those same children may have other advantages; they may belong to a higher socio-economic group, eat more healthily and have better quality dental equipment.

There is a secondary purpose to dental visits. Even if the dentist doesn't spot any problems, they are likely to remind you to keep on caring for your teeth and cleaning them properly – although there's no consensus about the best way of doing that either.

How often should you visit the dentist, then? Bodies like Nice, which provides guidance for the National Health Service in England and Wales, say that the frequency of dental visits all depends on the individual. They recommend that children go at least once a year because their teeth can decay faster, while adults without problems can wait as long as two years. They even go as far as to say that longer than two years is OK for people who have shown commitment to caring for their teeth and gums. Similar advice is given elsewhere. An expert group reviewing the evidence in Finland back in 2001 recommended that under-18s who are at low risk could visit between every 18 months and two years.

Where does this leave the rest of us the next time we receive a card through the door reminding us our next dental visit is due? We'd all like an excuse to go less often, and the good news is that if you don't have any problems you can probably wait a little longer than six months between visits. But exactly how long you can wait before your appointment with the dentist's chair will depend on the assessment you and your dentist make of your individual risk.

Claudia Hammond, BBC Future
28 September 2014

I. Say it in English.

Спорный вопрос, уязвимый, произвольный, поддержать идею, иметь в виду.

II. Say it in Russian.

Biannual; advent; to refute the idea; permanent teeth; to come through (about teeth); to provide guidance.

III. Paraphrase the Following Expressions.

Randomized controlled trials –

Six monthly check-ups –

To bias the results –

There may be other factors at work –

To spot a problem –

There is no consensus about it –

To make the assessment of individual risks –

IV. Insert Prepositions.

To vary ... different times of life; patients ... low risk of tooth decay; to back ... the idea; to show commitment ... caring ... their teeth and gums.

V. Compress the article to 150 words, get ready to present your compression in class.

Dental Health and Tooth Fillings

To treat a cavity your dentist will remove the decayed portion of the tooth and then "fill" the area on the tooth where the decayed material was removed. Fillings are also used to repair cracked or broken teeth and teeth that have been worn down from misuse (such as from nail-biting or tooth grinding).

What Steps Are Involved in Filling a Tooth?

First, the dentist will use a local anesthetic to numb the area around the tooth to be filled. Next, a drill, air abrasion instrument, or laser will be used to remove the decayed area. The choice of instrument depends on the individual dentist's comfort level, training, and investment in the particular piece of equipment as well as location and extent of the decay.

Next, your dentist will probe or test the area to determine if all the decay has been removed. Once the decay has been removed, the dentist will prepare the space for the filling by cleaning the cavity of bacteria and debris. If the decay is near the root, your dentist may first put in a liner made of glass ionomer, composite resin, or other material to protect the nerve. Generally, after the filling is in, your dentist will finish and polish it.

Several additional steps are required for tooth-colored fillings and they are as follows. After your dentist has removed the decay and cleaned the area, the tooth-colored material is applied in layers. Next, a special light that "cures" or hardens each layer is applied. When the multilayering process is completed, the dentist will shape the composite material to the desired result, trim off any excess material, and polish the final restoration.

<http://www.webmd.com>

Fillings

Fillings are an important part of helping teeth last a lifetime – most people have at least one. The temporary discomfort of getting fillings done will pay back with decades of good use from the “repaired” tooth!

White fillings

White fillings are routinely used on front teeth, and are increasingly being used on back teeth.

There are two main types of white filling materials currently used by dentists: composite fillings and glass ionomer cements.

Composite fillings are made of a plastic with filler particles within its structure to give it some strength. These materials are used routinely to place fillings in front teeth, and they have very good aesthetics. It's very difficult to spot where a composite filling is placed on a tooth.

They tend to be fairly strong, and can resist biting forces to a reasonable degree. However, they tend to wear faster than silver amalgam fillings, and because of this, their use in back teeth may be limited to smaller fillings.

Glass ionomer cements are the only filling materials currently used by dentists that can form a chemical link with tooth structure. They also release fluoride onto the tooth, and can help to prevent further cavities. However they do not look as good as composite fillings, and they're very weak under normal chewing forces.

Their use has been limited to:

- Milk teeth of children, where the teeth are going to be lost after a few years and biting forces are less than in an adult;
- Cavities on non biting, less visible surfaces of teeth; and
- Underneath composite / amalgam fillings, as well as crowns and bridges.

Silver fillings

Silver fillings (amalgam) have been used for the last 150 years as cheap, reliable, strong, and (until recently) undisputedly safe material to fill back teeth.

They consist of a number of metals including silver, tin, copper and mercury. It is this last metal, mercury that has provided the impetus behind the controversy surrounding dental amalgam.

It certainly is in no dispute that mercury in large quantities is a poison. Although the mercury is bound to other metals in silver fillings, it can be freed into mercury vapour during chewing and tooth brushing. Mercury vapour is also around when silver fillings are placed into and removed from teeth. It is though the body is inhaled is small enough to be safe.

New research is looking into the relationship between silver fillings and a number of diseases including multiple sclerosis and Alzheimer's disease. None of these suspicions have yet been proved, and governmental bodies around the world, including the UK Department of Health, and US and Canadian authorities tend to favour the continued use of silver fillings on present scientific advice.

The Department of Health advises the avoidance of placement and removal of silver fillings during pregnancy as a precautionary measure, as mercury has been shown to cross the placenta.

Root fillings

The core of teeth is called "pulp" and mainly consists of blood vessels and nerves.

A number of events can result in infection or the death of pulpal tissue. These include untreated tooth decay, a traumatic knock to the tooth, or large fillings.

The result can be extreme discomfort and pain at one end of the scale, and an apparently normal tooth without symptoms at the other end.

Your dentist will need to clear infection from root canals, clean and disinfect them as much as possible, and block out these root canals with a root filling. A number of x-rays may be taken in order to estimate the shape and length of the tooth roots.

Treatment can be completed in one visit (for example, a front tooth with a single straight root canal that your dentist can easily access) or may need multiple visits in more complicated cases where temporary dressings are placed in between visits.

The parts of the tooth above the root filling can then be restored with a filling (white or silver), or a crown.

Cosmetic dentistry

Ever been worried about a chipped tooth? Does a stain on your tooth bother you? What about that gap between 2 teeth?

Our teeth are one of the first things other people notice when we talk and smile. Some of us therefore find our teeth need to be up to certain aesthetic standard, and for a lot of people their natural teeth do them proud.

However, there are some of us who do not feel comfortable with the appearance of our teeth.

Dentists can help in a variety of ways to improve smiles. A scale and polish carried out by you or hygienist not only helps our gums to heal but also can brighten up a smile. Sometimes a slight addition of a white filling that requires no injection or drills can build up an unsightly space, missing teeth can be replaced by porcelain veneers (facing) and crowns can be used – complete changing one's appearance.

BBC Health

I. Answer the following questions.

1. What do dentists do before filling a tooth?
2. What steps should be taken for tooth-coloured fillings?
3. Where are white fillings routinely used?
4. What main types of fillings are currently used in dentistry?
5. What are the advantages of composite fillings?
6. Why is it not advisable to place composite filling in back teeth?
7. What are the main properties of glass ionomer cements?
8. Where are they routinely used?
9. What does dental amalgam consist of?
10. Comment on the controversy surrounding dental amalgam
11. When should patients avoid the placement and removal of silver fillings?
12. What are the possible causes of pulp tissue infection?
13. What procedures does root canal therapy involve?

14. What is placed on the bad tooth if treatment can not be completed in one visit?
15. What can replace missing teeth?
16. In what way can dentists improve smiles?

II. Paraphrase the Following Expressions.

Multilayering process –

To form a chemical link with tooth structure –

To provide impetus behind controversy surrounding dental amalgam –

New research is looking into the relationship between silver fillings and a number of diseases –

To favour the continued use of silver fillings on present scientific advice –

To be up to certain aesthetic standards –

III. Say it in English.

Поставить пломбу на передний зуб, наносить слоями; заметить, в каком именно месте поставлена пломба; они разрушаются быстрее, чем пломбы из сплава серебра; бесспорно безопасный материал, пульпа, «запущенный» кариес, очистить корневые каналы от инфекции, поставить временную пломбу, сколотый зуб, являться предметом гордости.

IV. Say it in Russian

To use a local anesthetic; tooth grinding; to numb; to probe; to resist biting forces; to release fluoride into the tooth; dental amalgam; pulpal tissue; to block out root canals with a root filling; to carry out a scale or polish; porcelain veneers; composite fillings; glass ionomer cements.

V. Insert prepositions.

To prepare the space ... the filling ... cleaning the cavity ... bacteria and debris; to applied in layers; to shape the composite material ... the desired result; trim ... any excess material; to look ... the relationship ... silver fillings and a number of diseases; the use of silver fillings ... present scientific advice; discomfort and pain ...one end of the scale; to help ... a variety of ways; to be certain aesthetic standard; to place temporary dressings visits.

UNIT VI

EUTHANASIA

The Right to Die

A difficult problem that is facing society today is euthanasia, another word for mercy killing. Thousands of young people are in comas because of

accidents, and old people are terminally ill because of incurable diseases. They are all kept alive in artificial ways. They have no chance to recover completely, but the American legal system does not allow doctors to end their lives. However, terminally ill patients should be allowed to die for several reasons.

The first and most important reason is that the patients have no chance of recovery. They can never lead normal lives and must be kept alive by life-support machines. They may need a machine to breathe and a feeding tube to take in food. They are more dead than alive and will never get better. For example, in 1975, Karen Quinlan became unconscious after she swallowed some drugs and drank alcohol. She was kept alive by machines. Her parents knew that her body and brain would never be normal. Therefore, they asked the court to allow their daughter to die. The judge agreed, and Karen's breathing machine was turned off. She was able to breathe on her own, but she died nine years later in June of 1985.

The second reason is that medical costs are very high. The cost of hospital room can be as much as five hundred dollars per day and even more. The costs of medicines and medical tests are also high. The family of the patient is responsible for these expenses. Consequently, they would be a terrible financial burden for them for a long time.

The third reason is that the family suffers. The nurses can only give the terminally ill patient minimum care. The family must spend time to care for the special needs of their loved one. They should talk, touch, and hold the patient even though he or she may be in coma. For example, Karen Quinlan's parents visited her every day even though she was unable to speak or to see. Also, it is very difficult to watch a loved one in a coma because his or her condition doesn't improve.

In conclusion, because terminally ill patients have no chance to live normal lives, they should be allowed to die with dignity. Therefore, the family should have the right to ask doctors to turn off the life-support machines or to stop further medical treatment.

Prentice Hall Literature: The American Experience,
Penguin Edition, 2007

I. Answer the following questions.

1. What is the meaning of the term "euthanasia"?
2. According to the author, what group of people should be allowed to die?
3. Is it legal to end the lives of terminally ill people?
4. What is the most important reason the author provides to support the idea of legalization of euthanasia?
5. Describe Karen Quinlan's case. Why do you think the judge did not object to the breathing machine being turned off?
6. What is the second argument in favour of euthanasia given in the article?

7. The author thinks that mercy killing is justified because the families of terminally ill patients suffer. Expand on this point of view.
8. What conclusion is drawn at the end of the article? Do you agree with the author's arguments? Why or why not?
9. Does the author aim to inform, to persuade or to explain? What elements of the text can prove your choice?
10. What sort of abuse can mercy killing entail?
11. Under what conditions would you find it acceptable?

Legalising Assisted Dying is Dangerous for Disabled People. Not Compassionate

When someone like Paralympian Marieke Vervoort talks about euthanasia, don't support them out of a sense of misplaced pity. Persuade them life's worthwhile.

If I said I wanted to die, the press, celebrities and the public would support my choice, seeing it as rational and understandable. Hell, they would probably set up a go-fund-me campaign to help me make it happen.

Yet when a healthy, non-disabled person wants to kill themselves it's seen as a tragedy, and support and prevention tools are provided. If nothing else convinces me that to legalise assisted suicide is not a safe option for many of us then this does. Suicide is not seen as socially desirable – so why is assisted suicide seen as compassionate when it's for ill or disabled people?

Marieke Vervoort, the 38-year-old Belgian Paralympian gold medallist, is only the most recent disabled person to announce that she is considering euthanasia, saying her “body is exhausted”. She is not imminently dying. Yet no one seems to be trying to persuade her that life is worthwhile. Would Usain Bolt be met with the same reaction if he announced his decision to end it all after his last Olympics?

Although proponents of assisted suicide legislation say it's only for those with six months or less to live, they propagandise with cases like that of Daniel James, the 23-year-old man paralysed (but not dying) following a rugby accident, who killed himself at the Swiss clinic Dignitas after he said he did not want to live a “second-class” (that is, disabled) life. Jeffrey Spector, a 54-year-old man also not imminently dying, also killed himself at Dignitas.

The Netherlands, which legalised euthanasia to provide relief for the terminally ill, now regularly provides euthanasia for disabled people who can demonstrate “unbearable suffering”. Canada, the most recent nation to legalise euthanasia and assisted suicide, allows it for “serious and incurable illness, disease or disability”.

Usually, the two sides of the argument are characterised as “religious” (opposed to legalisation) or “secular” (in favour). But it’s not that simple.

Frustrated by the lack of opportunity to have the voices of people like me – of disabled people – heard on this issue, I have decided to combine my activism with my career as a performer.

I’ve never seen a piece of art or theatre which expresses opposition to legalising assisted suicide from a disabled person’s perspective – so I decided to try to rectify that. The result is *Assisted Suicide: The Musical* – a show which premieres this weekend at the Royal Festival Hall, London, and marks the first anniversary of the defeat of the assisted dying bill in parliament.

There were of course religious people there with me and many others outside Westminster, on Friday 11 September 2015. But MPs who glanced out the window would have seen more Not Dead Yet (NDY) T-shirts and banners than religious ones. NDY is made up of disabled people opposed to a change in the law. Every major disabled group in the UK, it should be stressed, is opposed to this legislation.

Suicide is, of course, an individual choice. Disabled people who are determined to take their lives may even find it easier to do so than abled people, given the often precarious nature of their existences. But that does not mean that when a fellow human being – disabled or abled – expresses the wish to die because their life is shit, that we should agree with them. The value of a life is not just in its physicality but in our relationships with those around us.

The bill, had it passed, would have licensed doctors to assist in the deaths of terminally-ill people who had less than six months to live, were mentally competent and requested such assistance. But the direction legislation has taken in other countries shows that the sympathy we disabled people evoke can be used to justify support for us to kill ourselves while non-disabled people are told they have “everything to live for”. How many times has someone come up to me and said how much they admired me just for existing because they could not, in my condition?

There is a fine line between those who are terminally ill and those who are disabled in public perception and the emotional power behind the campaign for assisted suicide is based on misplaced pity. Rather than telling us we have everything to live for – and we do – we are helped to the proverbial cliff edge and offered a push.

People – disabled and not, with many years or only a few months ahead of them – become suicidal for many, many reasons. We know from surveys in Oregon, one of just four states in the US where assisted suicide is legal, that the reasons people choose this option have little to do with pain, although this is always the emphasis of supporters of assisted dying.

In fact, loss of dignity, loss of autonomy, loss of ability to do daily activities, and fear of being a burden – reasons which are essentially more about the realities of living with a disability in our society – are all more important than pain.

It is worth keeping in mind, too, that, in the context of economic arguments about a health service overly concerned with “waste” of resources, disabled people may be seen as a drain, just like the elderly. We also know from the US that some people have been denied life-extending treatments because they are too costly while the cheaper assisted suicide option has been offered as an alternative. Think this won’t happen here? Medical rationing is the reality of our overstretched NHS.

No one wants us, those we love or even those we don’t to suffer and die in pain. But shouldn’t we try to get end-of-life care right before we throw physician-assisted killing into the mix? Currently hospices and palliative care are only available to the few, and hospices continue to rely on donations for their survival.

Please, don’t wish death upon us because you feel pity for our condition. It is demoralising when disabled people like Vervoort express – understandably – exhaustion with the everyday struggle of existence and discouragement with life and are met with sad, understanding nods. On Saturday, it is world suicide prevention day. Can we be included in suicide prevention efforts, too, please?

9 September 2016
Liz Carr. The Guardian

I. Say it in Russian.

Socially desirable; compassionate; to be worthwhile; secular; to premiere; physicality; to deny life-extending treatments; overstretched NHS; palliative care.

II. Say it in English.

Сторонник, пропагандировать, неизлечимый, вызывать сочувствие, иметь мало общего с болью, распределение ресурсов, борьба за существование.

III. Paraphrase the Following Expressions.

To set up a go-fund-me campaign –

Imminently dying –

To provide relief for the terminally ill –

From a disabled person’s perspective –

Given the often precarious nature of their existences –

To be overly concerned with “waste” of resources –

IV. Insert Prepositions.

To glance ... the window; the lack of opportunity to have the voices of people like me heard ... this issue; to expresses opposition ... legalising assisted suicide; to be made ... disabled people opposed ... a change ... the law, the emotional power ... the campaign ... assisted suicide; to die ... pain; to rely ... donations ... their survival.

V. Summarize the author's reasons against assisted suicide. Express your own evaluation of the problem in reference to disabled people.

UNIT VII

A SLOW, SAVAGE KILLER

Among dread diseases, from multiple sclerosis and cancer to Alzheimer's and AIDS, diabetes might appear to be the least threatening. If not quite perceived as conquered, it is widely viewed as a manageable, albeit serious, affliction. People with diabetes talk about living with their illness, not dying from it. To prove the point they resolutely lead active and productive lives. Later, however, many will discover that this insidious disease has mocked their effort to control it. Like a dormant volcano, diabetes can feign slumber for many years, only to erupt with sudden savagery.

Consider the case of Arthur Hettler III, a once energetic high school principal from San Antonio, Texas. At first Hettler thought he had just a mild case of diabetes. He required no medication to control the excess blood sugar caused by the disease; instead, he watched his diet as carefully as he could. Then, two summers ago, Hettler strolled barefoot across some sun-scorched pavement and blistered his feet. Ominously, the blisters on his right foot refused to heal. A few months later the foot was so badly infected that it had to be amputated. Shortly before Christmas, Hettler, 47, suffered a paralyzing stroke. The infection and the stroke were complications resulting directly from the slow progression of diabetes. "The disease," says Hettler, "can really creep up on you."

And it has crept up on an estimated 100 million people worldwide, among them actress Mary Tyler Moore, jazz musician Dizzy Gillespie and singer Ella Fitzgerald. Because the initial symptoms (fatigue, frequent urination) are usually mild, half the 12 million Americans with diabetes do not realize they have it. Even after diagnosis, many patients fail to take diabetes as seriously as they should. "At first, everything goes along fine," sighs June Howe, a patient at Boston's Joslin Diabetes Center. "You don't realize that later on problems will set in."

That is an understatement. Diabetes more than doubles the risk of a disabling heart attack or stroke. It is the leading cause of blindness in adults and

accounts for a third of all cases of limb failure. Only traumatic injuries are responsible for more amputations. Altogether, the complications have made diabetes the seventh leading cause of death in the USA.

Fortunately, as awareness grows that diabetes is a major killer, some discoveries in the field are giving new hope to its victims. Scientists are beginning to understand what causes diabetes and how to slow its progress. In fact, the researchers are increasingly optimistic about developing drug treatments that may stop the affliction cold in many cases.

Diabetes results from an inability to produce or respond properly to insulin, the hormone produced in pancreas that enables muscle, fat and liver cells to absorb sugar in the form of glucose, an essential fuel in the body. Inside the cells, glucose that is not immediately burned for energy is normally stored for future use. But when the body fails to produce insulin, excess glucose accumulates in the bloodstream instead of being stored, and is cleared by the kidney for excretion in urine. With the onset of diabetes, the loss of so many calories through the urine typically causes a loss of weight. In extreme cases, sugar-starved cells, deprived of their preferred fuel, switch to burning fatty acids, a process that can poison the bloodstream with toxic byproducts. In Type I diabetes, which chiefly strikes in childhood, the body completely loses its ability to produce insulin. In Type II, common among adults, the body continues to produce insulin, but not in sufficient quantities to prevent the blood sugar level from soaring.

Before insulin injections became available in the 1920s, diabetes in its severest form invariably proved fatal. Now patients can look forward to normal life spans. "The good news," noted diabetes expert Dr. Frank Vinicor of the U.S. Centers for Disease control, "is that people with diabetes are living longer. The bad news is that they are developing chronic complications." In many patients, the complications are so benign as to go unnoticed; in others, they can be devastating.

Diabetes usually damages cells in the retina and lens of the eye. It can also destroy filtration system of the kidney, accelerate the process of atherosclerosis and kill nerves. With deadened nerves, feet lose sensation, making them injury prone. Because blood flow is impeded, wounds heal more slowly, and infection gets out of hand. The combination of nerve and circulatory damage causes many diabetic men to become impotent. In pregnant women diabetes has been linked to multiple problems, from congenital defects to stillbirths.

"People think you just take your insulin and you are fine," says Chicago attorney Marjory Hunter. She knows how wrong that can be. Diagnosed as having diabetes at 14, Hunter has waged a long battle with a series of complications that would have overwhelmed Job. Her ordeal began while she was in the first year of law school. "My feet," she recalls, "turned into a tangle of pain." It was a distress signal relayed by nerves that were inflamed and dying. Eventually her feet became numb. In April 1985, shortly before she turned 29, Hunter was told she had end-stage kidney disease. In August, she recalls, "I

woke up and couldn't see the numbers displayed on my alarm clock." To cap things off, that November she had a heart attack. Today Hunter remains partially blind, wearing telescopic eyeglasses that, she jokes, make her look like a punk rocker. But thanks to kidney and pancreas transplants, the deterioration in her health has halted, and insulin shots are no longer necessary. "I call myself an ex-diabetic," she grins.

How does diabetes create havoc in the body? While people without the disease keep blood sugar within a narrow range, those with diabetes frequently boast levels three times as high. Just how excess sugar causes damage remains a topic of debate. One plausible mechanism has been suggested by Dr. Michael Brownlee, of the Albert Einstein College of Medicine in New York City. Glucose, Brownlee observes, is chemically active, combining with proteins in the blood and blood vessel walls. Over time, these sticky fragments aggregate to form what Brownlee calls "biological superglue". Like a sprinter lodged in a foot, this superglue is a source of constant irritation, which signifies, to the body, damage in need of repair. The disastrous result: a spurt of new growth, that thickens the walls of capillaries and arteries, constricts blood flow and damages critical organs.

Diabetic complications have also been linked to elevated levels of sorbitol, a sugary alcohol. Even in the absence of insulin, certain cells, such as those in the lens of the eye, continue to absorb glucose. But without insulin, glucose cannot be processed in the usual way; the cell instead converts it to sorbitol. The abnormal accumulation of sorbitol causes cell membranes to swell and leak. It also interferes with vital biochemical processes.

TIME, November 26, 1990

I. Say it in Russian.

Линза глаза, сетчатка, поджелудочная железа, хаос, белок, начало диабета, токсичные продукты, доброкачественные осложнения, СПИД, болезнь Альцгеймера, волдырь, инсульт, травма, подверженный травме.

II. Say it in English.

Рассеянный склероз, коварная болезнь, легкая форма диабета, повышенный уровень сахара в крови, соблюдать диету, инсульт, болезнь подкрадывается незаметно, увеличить риск более чем вдвое, почечная недостаточность, приостановить развитие болезни, продолжительность жизни, хронические осложнения, ускорять развитие атеросклероза, утратить чувствительность, затруднять кровообращение, последняя стадия почечной болезни, в довершение ко всему, пересадка почки и поджелудочной железы, инъекции инсулина, стенки кровеносных сосудов утолщаются, со временем, повреждать жизненно важные органы, врожденный дефект, повышенный уровень сорбитола.

III. Paraphrase the Following Expressions.

A manageable, albeit serious, affliction –

Insidious disease –

To account for a third of all cases of kidney failure –

To stop the affliction cold –

With the onset of diabetes –

To look forward to normal life spans –

To be injury prone –

A tangle of pain –

A spurt of new growth –

IV. Insert Prepositions.

To stroll barefoot ... some sun-scorched pavement; to creep ... you; later on problems will set ...; the leading cause ... blindness in adults; to be burned ... energy; to prevent the blood sugar level ... soaring; infection gets ... hand; to be ... the first year ... law school; to keep blood sugar ... a narrow range; damage ... need ... repair.

V. Why is diabetes called an insidious disease? What complications do patients develop?

VI. Compare and contrast Type I and Type II diabetes.

UNIT VIII

FIRST AID IN MEDICAL EMERGENCIES

1. Medical problems do not always develop slowly. Sometimes there are emergencies. An emergency is a situation that requires immediate care to prevent greater harm to the patient. However, it is not always possible to get professional medical help right away, so it is important for everyone to be familiar with first-aid procedures.

2. The main objective of first aid is to save lives. Fortunately, most first-aid procedures are not complicated and can be performed by someone with a minimum of training. In all emergency cases, a doctor should be called as well as an ambulance, if necessary. A written log should be made stating what treatment was administered and when it was started and completed. This information will be important to the medical personnel who treat the patient later.

3. One of the most serious emergencies occurs when an individual has stopped breathing. This may be the result of asphyxiation, electrocution, drowning, a heart attack, or some other cause. After only four minutes without

oxygen, brain damage is likely. To prevent brain damage or death, artificial respiration must be started immediately.

4. Before resuscitation is begun, the victim should be placed face-up on a hard, flat surface. Rough handling should be avoided due to possible fractures which could cause spine injury, paralysis, or other internal injuries. The primary considerations include restoration of breathing and heartbeat. Clothing should be loosened and foreign matter or vomit cleared from the mouth.

5. Cardiopulmonary resuscitation (CPR) of a patient involves two procedures. The first is getting oxygen into the blood by blowing air into the lungs. Mouth-to-mouth breathing is the most effective form of artificial respiration. In this method, the rescuer breathes into the victim's mouth and nose in a regular rhythm, about 12 to 15 times per minute for an adult and 20 times for a child. As the air enters the lungs, the chest will expand. The second procedure is the application of chest pressure to compress the heart and force blood into the circulatory system. Pressure is applied with the heels of the hands on the victim's chest in a rocking motion, about 60 times a minute. This routine should not be stopped for longer than a beat or two. Even if one is fatigued, it is important to continue resuscitation efforts until help arrives. If one is alone with a victim, breathing and massage must be alternated, but CPR is much easier and far more effective if performed by a team of two. Anyone can learn CPR in classes offered by the American Red Cross or by local fire departments. The more people who are trained to administer CPR, the more lives can be saved.

6. After cardiac and / or pulmonary arrest, the most critical emergency is severe bleeding (hemorrhaging), especially from a main artery. Pressure must be placed at the site of the bleeding, or a tourniquet must be applied. Care must be taken, however, to loosen the pressure from time to time to prevent gangrene (death of body cells caused by insufficient blood supply).

7. Another common emergency is choking on food. Since the victim cannot talk because of the blocked trachea, it is important that others recognize the danger of the situation and act promptly. A procedure known as the Heimlich maneuver is commonly used to unblock the trachea. The victim is clutched from behind, and the rescuer sharply presses with his clutched hands on the victim's chest until the foreign object is impelled out of the trachea, and the victim is able to breathe.

8. A condition that accompanies many medical emergencies is shock. When a victim is in shock, the bodily tissues are not receiving an adequate supply of oxygen-containing blood. To identify a state of shock, touch the skin and note its color. Shock victims feel sweaty and look very pale. Test the pulse. Someone in shock has a weak, rapid pulse. Also, shock victims may be nauseous or even vomiting. Shock is always serious and can be fatal. The victim should be made to lie flat with the feet raised. No food or drink should be given. External bleeding should be controlled, and the victim should be kept warm and

comfortable until help arrives. These measures will usually minimize the most severe effects of shock.

9. Severe injuries to the head rank among the most serious emergencies. If the skull is fractured or a victim suffers a concussion, the brain can be irreparably damaged. Warning signs of damage include unconsciousness, excessive sleepiness, vomiting, severe headaches, paralysis, bleeding, irregular breathing, confusion, extremely low pulse rate, dilated eye pupils, and memory loss. No sedatives, alcohol, or pain medications should be given. Food and fluids should be kept to a minimum. The victim should be moved as little as possible until a physician determines that there is no injury to the spine. A physician should be consulted in all cases, even if the victim has apparently recovered.

10. Neck and back injuries are equally serious. A broken back can result in paralysis if the spinal cord is damaged. A victim with a back injury should be moved as little as possible to avoid further injury, although first aid to restore breathing or to stop bleeding should be undertaken.

11. A very common but usually less serious emergency is a broken bone. A bone may be broken (or fractured) in a variety of ways. In a simple or closed fracture, the bone fragments do not pierce the skin. If the bone ends come through the skin, the break is known as a compound or open fracture, and there is a greater risk of infection.

12. If a fracture is suspected, it is best not to have the victim test it by putting pressure on it – by walking, for example. Assume that the bone is fractured, and immobilize it until medical help is available.

13. Fractures must be distinguished from sprains and strains. A sprain is an injury to the ligaments, tendons, and soft tissues in the region of a joint. A strain is a muscle injury from overexertion or stretching. It is often necessary to X-ray the area to determine what kind of injury has occurred because similar symptoms – swelling, pain, and tenderness – are common to all three injuries.

14. Small lacerations (cuts) and simple hematomas (bruises) are not usually serious, but some blood clots (also called hematomas) can be very serious. There are several kinds of cuts and bruises. A contusion is a bruise to the tissue under the skin. An abrasion is a skin wound caused by rubbing or scraping. A puncture is a deep wound made by a piercing object. Whenever the skin is broken, the wound should be cleaned well with soap and water to remove foreign objects and dirt. Then it should be disinfected with an antiseptic. If necessary, a tetanus shot or booster should be given, especially if it is a puncture wound. If a cut is extensive, a doctor will use stitches (sutures) to close it. Even if a wound is treated and heals properly, it may still leave a permanent scar. Increasing pain, tenderness, swelling, pus, or red streaks around a wound are all signs of infection, which should be treated with medication. An infection can also cause fever.

15. Burns can be as trivial as a simple cut or can be cause for real concern. Burns are classified as first, second, or third degree, depending on their severity.

A first-degree burn, such as a mild sunburn, involves just the outer surface of the skin; second- and third-degree burns, indicated by swelling, blistering, and a charred black color, involve the tissue below the skin and occasionally even underlying organs. Third-degree burns destroy the ability of the affected epidermis layer to regenerate, and treatment may require skin grafting. A first-degree burn can be treated with a cooling lotion or cream, but more serious burns require prompt medical attention and possibly hospitalization to avoid shock and dehydration and to relieve severe pain.

16. Many household chemicals such as ammonia, bleach, and dishwasher detergent furnish the potential for serious crises. The ingestion of these and other poisonous substances frequently creates emergencies, especially among young children. The antidote for each substance is different, so instructions on the container should be followed closely. In some cases, the victim should be forced to vomit; a medicine called ipecac should be given to the patient to induce vomiting. However, with some poisonous substances, vomiting is harmful. In any case, a doctor should be contacted. Many communities have poison control centers where information can be obtained by telephone as to the proper treatment for different poisonous substances. Households with children should keep that phone number handy in case of such an emergency

17. Because speed is important in an emergency, it is helpful to have the emergency equipment and medications readily available in a first-aid kit. This kit should contain, at a minimum, a thermometer, antiseptic solution, an Ace bandage, equipment for making a splint, clean rags for a tourniquet, sterile absorbent cotton for cleaning wounds, and gauze pads with adhesive tape for bandaging them. A stethoscope, a sphygmomanometer for measuring blood pressure, a suture kit, and a tracheotomy kit are also useful to someone trained in their use.

18. In any medical emergency, first aid is critical, but it is only the first step. Expert advice should be obtained while these measures are being taken. Many communities have mobile emergency medical vehicles operated by trained paramedics, who can render first aid beyond what the layman can do until the patient can be seen by a physician.

Tiersky E., Tiersky M. *The Language of Medicine in English*. Englewood Cliffs, N.J: Prentice Hall Regents, 1992

SPECIAL TERMS

Words Relating to Emergency Conditions

Arrest – stop. A cardiac or pulmonary arrest refers to the cessation of heartbeat or breathing.

Asphyxiation – loss of consciousness caused by insufficient oxygen in the blood. If the condition continues, permanent damage may result to the brain, heart, and other organs, and death may occur.

Concussion – an injury to the brain, sufficient to cause impairment of brain function, at least temporarily, resulting from a blow to the head

Dehydration – excessive loss of water from the body.

Fracture – a break, especially of a bone.

Words Relating to Treatment

Antidote – a substance that neutralizes poisons or their effects.

Antiseptic – chemical applied topically to the skin to kill harmful bacteria near and in the site of a wound.

Compress – exert physical pressure upon something (to squeeze or press together). In the case of heart compression, the organ is pressed in to force the blood out of it and into the circulatory system.

First aid – treatment given a patient immediately following an emergency to prevent further injury or damage until professional medical care can be obtained.

Graft – transferring tissue from one situs (position) of an organism to another situs in the same (or a different) organism with the expectation that the tissue will attach to it and become permanent, living tissue at the new situs. Skin grafts are common procedures whereby healthy Skin is surgically removed from one part of the body and transferred to another part of the body, where the skin tissue has been damaged by burning or disease.

Immobilize – prevent movement. After a fracture, the affected limb is placed in a cast or splint so that the bone will not move out of place. Immobilization is necessary first to prevent further injury to an unset bone and then to preserve the set fracture until it has healed.

Sedative – a drug used to relax a person or render a person unconscious.

I. Answer the Following Questions.

1. What is necessary to do if a victim has stopped breathing?
2. What should be done to stop hemorrhaging?
3. Describe the way one should act if a victim chokes on food.
4. What first aid is rendered to someone in shock?
5. Describe the actions to take when someone gets severe injuries to the head.
6. What should be done if a victim has neck and back injuries?
7. What first aid is usually rendered in case of fractured bones?
8. Describe the right way to treat lacerations.
9. Speak on various types of burns and the ways to treat them.
10. What should be done if some poisonous substances were ingested?
11. Describe the emergency equipment and medications available in a first-aid kit.

II. Explain the Meaning of the Following Words.

Asphyxiation, fracture, gangrene, overexertion, cardiopulmonary resuscitation, dehydration, ingestion, sphygmomanometer, paramedic, pus, tenderness, blistering, regenerate, antidote, splint, stethoscope, arrest, antiseptic, hematoma.

III. Say it in English.

Формуляр, поражение электрическим током, позвоночник не поврежден, наложить турникет, повреждение внутренних органов, сотрясение мозга, расширенные зрачки, закрытый / открытый перелом, связка, сухожилие, ушиб, ссадина, растяжение связок, повреждение сухожилий, наложить швы, оказывать первую медицинскую помощь, медицинская аптечка.

IV. Say it in Russian.

Restoration of breathing and heart beat, pain medication, immobilize the bone, puncture wound, tetanus shot or booster, to unblock trachea, to test the pulse, first-degree burn, skin grafting, first-aid kit, gauze pad, to alternate breathing and massage, to induce vomiting.

V. Insert Prepositions.

1. To breathe ... the victim's mouth and nose ... regular rhythm.
2. To apply pressure ... heels ... the hands ... victim's chest ... a rocking motion.
3. To learn CPR ... classes offered ... local fire department.
4. To be trained ... administer CPR.
5. to place pressure ... the site ... the bleeding.
6. To choke ... food.
7. To press ... one's clutched hands ... the victim's chest until the foreign object is impelled ... the trachea.
8. An injury ... soft tissues ... the region ... a joint.
9. The symptoms common ... all three injuries.
10. A bruise ... the tissue ... the skin.
12. To furnish the potential ... serious crises.
13. An antidote ... a poisonous substance.
14. The proper treatment ... different poisonous substances.
15. To be trained ... the use ... a tracheotomy kit.

VI. Comment on the Following Issues.

1. Have you ever administered first aid to a person who had had an accident or suddenly become ill? Describe your actions in detail.
2. Have you ever needed first aid? Tell what was done. What kinds of first aid have you administered to yourself?
3. Sometimes those administering first aid can do more harm than good. Provide some examples of the wrong things to do in various emergency situations.

UNIT IX

PHYSICIANS AND MEDICAL SPECIALTIES

1. Modern medical care, especially in a hospital, is administered by a whole team of technically trained personnel. At the head of the team – supervising, making decisions, and writing the orders-is the physician.
2. The professional life of a physician is not a dramatic tale of miraculous success and glory, as movies and TV often suggest. It is a rewarding and interesting life, but it is also physically and mentally exhausting, stressful, and full of great responsibility. In most countries, physicians enjoy at least a comfortable living as well as respect. However, they may also struggle through a 60- to 70-hour workweek and then be awakened at 4 A.M. to deal with a sudden emergency.
3. In addition to medical knowledge and techniques, physicians need social skills in order to be successful with patients. Making an accurate diagnosis and determining appropriate treatment is only part of the job. After that, the physician must explain to the patient (in simple layman's terms) the nature of the condition. Next, the physician must give advice and sometimes offer alternatives. But what if the patient doesn't want to take the doctor's advice? The physician tries to persuade a self-indulgent patient to give up cigarettes or salt, convince a frightened patient that surgery is essential, or encourage a patient with emotional problems to seek psychiatric help. Sometimes it is necessary for the physician to give a patient very bad news, and this difficult task must be carried out with kindness and without destroying the patient's ability to face the future. In short, doctors who work directly with patients (and most do) need "people skills". The physician who can reassure and comfort a sick patient is said to have a good "bedside manner."
4. In the United States, the training of a physician actually begins with what are called "pre-med" courses, the science and math classes required during undergraduate training for all who intend to apply to medical school. The curriculum includes biology and mathematics, biochemistry, organic and inorganic chemistry, and histology. Most students complete four years of undergraduate work before entering medical school, which takes another three or four years. After graduating from medical school, the student has earned the title *M.D.* (doctor of medicine). Those who graduate from a school of osteopathy receive a *D.O.* (doctor of osteopathy) and are also licensed to practice medicine after passing the state exam.
5. An internship, or hands-on hospital training, is an essential part of a physician's training. In the past, a year of internship (rotating, supervised service in various hospital departments) followed medical school. Today, in many hospitals, a physician in training may serve as an **intern** during the final year of medical school or the first year of a residency (specialty training). An internship

in only one specialized service is called a "straight" internship.

6. In order to practice medicine in a particular state, a physician must take that state's examination. Although there is reciprocity between most states, physicians who move to certain states may be required to pass the new state's medical examination in order to get a license to practice there.

7. Most young physicians in the United States today choose to specialize. To become a **specialist**, a doctor must first receive training in an accredited program called a *residency*. This training takes from three to seven years, depending upon the field of specialization. Residency training takes place in a hospital or ambulatory care setting, where the specialist-in-training (called a **resident**) cares for patients under the supervision of experienced teacher-specialists. After completing the training, specialists may then take an examination given by the specialty board they are applying to. Those who pass are called *board-certified specialists*. In the United States, there are 24 specialties recognized by the American Board of Medical Specialties (ABMS) and the American Medical Association (AMA). Some specialty boards require physicians to practice in the specialty for a year or more before they may apply to become board certified.

8. Some specialists later choose to subspecialize, which generally requires an additional two or more years of training. Two fields in which there are a number of **subspecialties** are internal medicine and pediatrics. General **internists** provide nonsurgical care for adolescents and adults. Internists may become subspecialists in thirteen different areas. Among these are cardiovascular medicine, gastroenterology, geriatric medicine (treatment of the elderly), hematology (diseases of the blood, spleen, and lymph glands), infectious diseases, nephrology (diseases of the kidney), pulmonary diseases, rheumatology (diseases of the joints, muscles, bones, and tendons), medical oncology (cancer), and allergy and immunology. **Pediatricians** (who treat children from birth to young adulthood) can subspecialize in seven different areas including cardiology, endocrinology, hematology-oncology, and neonatal-perinatal medicine.

9. When choosing a specialty, physicians must consider many factors. One is, of course, which branch of medicine interests them most. Another practical consideration is need – which types of specialists are in short supply in the area where the physician plans to practice. But there are many other factors to consider. Physicians should choose fields that mesh best with their own abilities and talents. The first decision is whether one wants a surgical or a medical (nonsurgical) specialty. Internists and other medical specialists must be good diagnosticians, which requires the mental skills of a detective. Suppose a patient complains of frequent headaches. The cause might be anxiety or stress, sinus congestion, vision problems, a virus, a circulatory problem, a tumor, hypertension, or some other condition. The physician treating this patient needs to know what questions to ask and what tests to order to find the cause.

10. What characteristics must good surgeons have? Surgeons need good eye-hand coordination, manual dexterity, and (in some surgical specialties) the physical stamina to operate for several hours without rest. In addition to the specialty of **general surgery**, many other specialists do surgery on the part(s) of the body or type(s) of conditions they are trained to treat. Urologists, for instance, operate on the genitourinary system. Orthopedic surgeons (specialists in the skeletal-muscular system) operate on bones, muscles, and tendons. Thoracic surgeons operate on the chest. Included among their patients are people with coronary artery disease, **congenital anomalies**, or cancer of the lung or chest wall. Surgeons not only operate on their patients; they also provide perioperative care.

11. Some physicians prefer to work in an operating room or a laboratory and interact more with medical personnel than with patients. Physicians who spend relatively little of their time talking and explaining to patients are **radiologists**, **anesthesiologists**, **pathologists**, and various types of researchers.

12. A physician choosing a specialty must also consider this question: How willing am I to handle emergencies that interrupt my personal life? Some specialists, such as dermatologists (skin doctors) and **ophthalmologists** (eye doctors), have relatively few emergency calls. At the other end of the scale are allergists, obstetricians, pediatricians, and orthopedic surgeons, who must get used to middle-of-the-night phone calls due to asthma attacks, labor pains, high fevers, or broken bones. Many physicians will put up with the inconvenience of providing emergency care in order to work with basically healthy patients.

13. Even in a medical specialty, the kinds of cases are often quite varied, involving both minor problems and major ones, both routine care and emergency treatment. Ophthalmologists, for example, may spend a lot of time in the office, seeing patients of all ages, doing routine vision and glaucoma tests. But they also deal with many older patients who have degenerative conditions and severe loss of vision. Ophthalmologists perform surgery for a wide variety of reasons, including "crossed" eyes, cataracts, detached retinas, and accidental injuries. An **otolaryngologist** (ear, nose, and throat specialist) might, in a single day, see patients with nasal polyps, sinusitis, hearing loss, and cancer of the larynx. On the other hand, some ENT specialists limit their practices and may do only rhinoplasties (plastic surgery on the nose) or stapedectomies (middle-ear surgery for hearing loss).

14. There is some overlapping of care provided by the various specialties. A **rhinoplasty**, for example, might be done by an otolaryngologist or a plastic surgeon. A **hysterectomy** might be performed by a general surgeon **or** by an **obstetrician-gynecologist**. Nasal allergies might be treated by an allergist or an otolaryngologist.

15. Medical specialization has helped to bring modern medical care to the high level that it is at today. In the world of contemporary medicine, where drugs and technology change rapidly, physicians who specialize bring much more

experience and knowledge to the tasks of diagnosis and treatment. Medical research, too, has progressed with greater speed and success because of specialization.

16. But, for both physicians and patients, specialization has its disadvantages. Before specialization, the same doctor treated all the members of a family for all their problems. GPs (general practitioners) of the past knew their patients' medical histories and their family medical histories. Patients consulted one doctor who knew them well instead of a series of specialists who might not remember them from one visit to the next. Many physicians and patients feel that in this age of specialization, medical care is sometimes sadly impersonal.

17. For patients, another significant disadvantage of specialization is that a specialist providing medication for one condition might not monitor that drug's effect upon the patient in other ways, and adverse side effects may go unnoticed. For example, the ENT doctor who prescribes decongestants for sinus congestion may never notice that this medication has elevated the patient's blood pressure to abnormal limits. In addition, drugs prescribed by different specialists for the same person may turn out to be a poor combination.

18. Clearly, even in this age of specialization, patients need one physician following their general health and keeping track of all medical problems and medications being taken. When there is any question about the cause of a symptom, that primary physician is the one the patient should see first. (If Ellen Johnson wakes up with a pain in her side, she may not know whether the problem is in her muscles, kidneys, or lungs. She should consult her primary physician, who will refer her to a specialist, if necessary.) For children, the primary physician is often the pediatrician. For adults, it might be a **general practitioner** (GP), an internist, or a specialist in family practice.

19. Since contemporary medicine often offers more than one way to treat the same problem, it is quite common for patients to consult specialists for a second opinion. Sometimes the original physician suggests it, sometimes the patient wants it, and sometimes (especially when surgery is being considered) the patient's insurance company requires it before agreeing to pay for an expensive procedure.

20. Traditionally, American physicians have been self-employed solo practitioners. But today, many are salaried employees working for hospitals. Also, increasing numbers of doctors are associated with health maintenance organizations (HMOs), organizations which provide health insurance and comprehensive health care to members. Physicians who are employed by or affiliated with a large group have the advantage of working only when they are on duty; they are less likely to be interrupted during their off-duty hours than physicians working alone or in small groups.

21. In contrast, the life of physicians in solo private practice can be very hectic. Generally, they must go to at least two different locations in the course of a day: to their office to see patients and to the hospital they are affiliated with to make

rounds, checking on their hospitalized patients and writing orders for their nursing care. Physicians in partnership practice may take turns with their colleagues, alternating nights and weekends "on call." Being on call means being totally available, and accepting the possibility of being called away from home to provide emergency care. At the very least, having an evening at home interrupted several times by calls from patients and hospital staff members is not unusual.

22. All physicians, specialists or not, find that there can be no end to their education. They must keep up with new developments by reading journals, attending meetings, and sometimes learning to perform new types of operations or diagnostic procedures. The life of a physician has many rewards, but it is not easy. Anyone who chooses to enter the profession must be prepared to accept the drawbacks and hardships along with the benefits.

Tiersky E., Tiersky M. The Language of Medicine in English. Englewood Cliffs, N.J: Prentice Hall Regents, 1992

SPECIAL TERMS

Physicians by Level of Training

General practitioner – a physician who treats all medical problems rather than specializing. Today, many GPs have completed a residency in family practice.

Intern – member of a hospital staff receiving training in the practice of medicine by assisting attending physicians and physician teachers on a hospital staff. An internship may be completed during the final year of medical school, after graduation from medical school, or in conjunction with the first year of specialty training.

Resident – a physician who continues clinical training after an internship. This is usually done as a member of the house staff of a hospital for the purpose of receiving training in a medical specialty.

Specialist – a physician who, after receiving the M.D. degree, has completed the prescribed number of years of specialty training in an accredited residency program. A specialist who later passes an examination given by this specialty's board becomes a *board-certified specialist*.

Subspecialist – a medical specialist who takes additional training in a branch of his specialty. For example, pediatric surgery is a subspecialty of general surgery; child psychiatry is a subspecialty of psychiatry; forensic (legal) pathology is a subspecialty of pathology; gynecologic oncology is a subspecialty of obstetrics-gynecology; geriatric medicine (treatment of the elderly) is one of several subspecialties of internal medicine. Subspecializing requires a year or more of additional full-time education in a program called a *fellowship*.

I. Answer the Following Questions.

1. Who administers medical care especially in hospital?
2. In what way can the professional life of a physician be characterized?
3. What skills are required in physicians' work alongside medical knowledge?
4. What does a good "bedside manner" mean?
5. In what way are the physicians trained in the USA?
6. What is the difference between internship and residency?
7. What specialists are called board-certified ones?
8. In what fields do they have subspecialization?
9. What are the factors to consider why choosing a specialty?
10. What does it mean to be a good diagnostician?
11. What are the characteristics of a good surgeon?
12. What is included in the surgeon's range of responsibilities?
13. What physicians communicate with patients less than other doctors?
14. Speak about the physicians that provide emergency care and those who have few emergency calls.
15. In what cases do patients consult specialists for a second opinion?
16. Which is better for a physician: to be self-employed solo practitioner or be affiliated with a large group?
17. Characterize the life of physicians in solo private practice

II. Comment on the Following Issues.

1. Speak for and against medical specialization.
2. If you were an undergraduate, what medical specialty would you choose? Give your reasons for this choice.
3. Which medical specialty would you the least likely to go into? Give grounds for it.

III. What do They Call:

1. Specialty training?
2. Rotating, supervised service in various hospital departments?
3. A doctor providing non-surgical care for adolescents and adults?
4. Treatment of the elderly?
5. Doctor who treat children from birth to young adulthood?
6. The branch of medicine concerned with the birth of children?
7. A doctor who can practice medicine but not surgery?
8. A doctor who has made a special study of a particular branch of medicine?
9. Ear, nose and throat specialist?
10. A doctor who is not a specialist in any branch of medicine and treats illnesses, etc. generally?
11. A specific, usually unsatisfactory state of an organ?
12. A doctor, specializing in treatment of skin diseases?
13. The process of joining or connecting to a large group?

IV. Say it in English.

Осуществлять медицинское обслуживание, поставить точный диагноз, назначить соответствующее лечение, быть хорошим диагностом, быть выносливым физически, экстренный вызов, косоглазие, отслоение сетчатки, история болезни, время, когда врач не находится на дежурстве, дежурить ночью и в выходные дни по очереди, делать обход.

V. Say it in Russian.

Minor / major problem, routine care / emergency treatment, a self-indulgent patient, manual dexterity, to provide postoperative care, to consult for a second opinion, to provide comprehensive health care, to mesh with something.

VI. Explain the Difference between the Following terms.

Perinatal – prenatal; an incision – an excision; postoperative – perioperative; internist – surgeon; resident – fellow.

VII. Find medical terms Corresponding to the Following Common names.

Cancer specialist –
Children's doctor –
Ear, nose, and throat doctor –
Eye doctor –
Heart specialist –
Skin doctor –

UNIT X

SURGERY

1. One of the most dramatic medical procedures is surgery. Ever since ancient times, people have tried to cure medical problems by cutting into the body. Surgical operations are depicted on the tombs of the Egyptian Pharaohs, dating from 3000 B.C. These early operations were painful and hazardous. If an amputation was necessary, for example, alcohol was often used to dull the pain somewhat, but the patient did not have the benefit of an effective anesthetic drug. And after the surgery was performed, there was great risk of infection because the use of antiseptics was unknown.
2. Today operations are performed under sterile conditions, and great care is taken during and after each operation to avoid infection. A variety of anesthetic drugs are available to make the patient pain-free during the operation, and highly trained medical specialists (anesthesiologists) can determine the proper drug and dosage to use. Many operations which used to require lengthy hospital stays are now performed under local anesthetic, often on an outpatient basis. Hernia repair, hemorrhoidectomy, and cataract

removal are some of the operations that smaller incisions greatly decrease the risk and pain of surgery as well as the recuperation period and cost.

3. In recent years, major advances have been made. Operations are now performed that were not even imagined 30 years ago. Clogged blood vessels can be cleaned out or replaced. Kidneys, livers, and even hearts and lungs can be transplanted from one person to another. Heart valves are routinely replaced, and severed limbs sewn back into the body.
4. These sophisticated operations require extremely skilled and experienced physicians. Most surgeons concentrate on learning and practicing in one area of surgery. An orthopedic surgeon, for example, repairs or replaces broken or damaged bones while a neurosurgeon handles surgery involving the nervous system. A plastic surgeon repairs or replaces defects of form and function, most commonly on the skin, head, limbs, breasts, and respiratory ailments. General surgeons operate mostly on the abdominal organs, breasts, and endocrine glands.
5. Most patients are referred to a surgeon by their regular internist or family physician who has recognized the possible need for surgical involvement. After examining the patient and the medical records from the patient's physician, the surgeon must determine whether surgery is needed and can improve the patient's condition without undue risk. Sometimes, exploratory surgery must be done to determine whether corrective surgery should be undertaken.
6. Surgery may be classified as emergency, urgent, required, elective, or optional. Emergency surgery is done when there is a life-threatening crisis which demands immediate action (for example, a tracheotomy, which is done to enable a patient to breathe). Urgent surgery requires prompt but not immediate action. Required surgery is that which patient needs to cure a particular health problem but which can be postponed for weeks or months. Elective Surgery can correct a condition but is not necessary to the health of the patient (for example, middle-ear surgery to correct a hearing loss). Optional surgery is done primarily for cosmetic rather than health reasons. Exploratory surgery is performed for diagnostic purposes.
7. A patient about to undergo surgery is instructed not to eat or drink anything for several hours prior to the operation in order to make it easier for the surgeon to operate and to avoid complications from the anesthetic. A patient is often given an enema just before the operation to void the colon of waste material. Sometimes, a urinary catheter is used to drain the bladder. The area to be operated on is shaved and scrubbed with soap, and an antiseptic is applied to avoid infection.
8. The patient is then wheeled into the operating room and placed on the operating table. A blood pressure cuff is attached to one arm just above the

elbow to measure the blood pressure at regular intervals, and an intravenous (IV) line attached to a catheter is inserted into the other arm. This allows intravenous solution to be given to help maintain the body fluids and also to provide a way to administer essential drugs during the operation. The site of the operation is draped (sterile sheets placed around the operation site), leaving an opening at the incision area. A mask may be placed over the patient's mouth and nose, or a tube may be placed in the trachea through which a general anesthetic and oxygen are given. Some types of anesthetic drugs are administered directly with a hypodermic needle. Donated blood of the same type as the patient's may be on hand in case a transfusion becomes necessary.

9. The surgeon is assisted by a large staff. There is usually an assistant surgeon or two, who are probably interns or residents. The patient's physician may also be present. The chief operating-room nurse supervises the operating-room nursing staff, which includes a scrub nurse in charge of surgical supplies and equipment; a circulating nurse, not dressed in a sterile gown, who is in a charge of activities outside the sterile theater; and an orderly to help move the patient.
10. An important member of the surgical team is the anesthesiologist. This specialist is responsible of pain during the operation. Great care must be taken to provide enough anaesthetic to keep the patient unconscious, yet not so much that it will dangerously lower the patient's respiration, pulse, or blood pressure. The patient's history of allergies must also be considered in determining the type of anesthetic that is to be used. Anesthetics probably present the greatest risk to the patient during an operation. Improper use could cause severe allergic reaction resulting in shock or cardiac or respiratory arrest.
11. Surgery requires a large variety of specialized equipment. In addition to the special operating table, there are high-intensity lights and the anesthesia machine. A main instrument table is covered with a large collection of scalpels, forceps, suture needles, retractors, and other instruments. There are vacuum machines too suck out excess blood and other fluids from the part of the body being operated upon. Containers of blood and dextrose are on hand. There are wash basins and refuse bins. A special sponge stand holds the used sponges (cotton pads used for mopping blood).
12. An operation may be completed in less than an hour, or it may last for several hours. Before the patient is sewn up, the used sponges and the instruments are always counted by the circulating nurse and one other person to ensure that none have been left inside the patient's body. Once surgery is completed, careful postoperative care is begun. The wound is carefully bandaged, and the dressings are changed frequently. The patient is wheeled into a recovery room and kept there until awakening from the anesthetic. Often, the patient is then taken to an intensive care unit, where the vital signs are carefully

monitored. Once out of danger, the patient is taken to a hospital room or ward. Early ambulation is prescribed to prevent blood clots and bed sores. When the services of the hospital staff and equipment are no longer needed, the patient is returned home or to an intermediate-care facility, where recuperation is completed.

13. During the first few days after surgery, a routine is followed which helps to prevent many of the problems that have killed surgical patients in the past. The hospital room is kept as sterile as possible through the use of antiseptics. Pneumonia is prevented by antibiotics and respiratory therapy. The development of embolisms (clots which form in a blood vessel and travel to other, critical sites) is reduced by early postoperative ambulation. And shock, which used to be the most common cause of postoperative death, is held to a minimum by the use of blood and plasma transfusion.
14. Another risk associated with surgery is human error. A patient trusts the surgeon to be competent and conscientious and presumes that everything possible will be done to make the operation a success. But mistakes may happen which result in serious injury to the patient. Hospitals and most medical professionals carry medical malpractice (professional liability) insurance to compensate the patient for any injury resulting from negligence.
15. Although modern surgery can produce amazing results with minimal risk, the benefits are likely to carry a huge price tag. Despite a substantial reduction in the number of days one spends in hospital for an operation, even the simplest surgery is likely to cost of the hospital room, the operating room, the anesthesiologist's charge, and the surgeon's fee, with the expenses for drugs and equipment. People not covered by medical insurance can have their savings wiped out by the costs of surgery and related medical care.

Tiersky E., Tiersky M. The Language of Medicine in English. Englewood Cliffs,
N.J: Prentice Hall Regents, 1992

I. Answer the Following Questions.

1. In what way has surgery changed in the course of time?
2. What makes patients pain-free during the operation?
3. What types of operations are performed now?
4. Comment on specialization in the field of surgery.
5. Who normally refers a patient to the surgeon?
6. Expand on different types of surgery.
7. Where do they place the patient after wheeling him into the operating room?
8. What for do they attach the intravenous line and the blood pressure cuff to the patient's arms?
9. Describe the site of the operation.
10. What staffs assist the surgeon?

11. Who is responsible for administering the anaesthetic that renders the patient insensible to pain during the operation?
12. What presents the greatest risk to the patient during the operation and why?
13. What specialized equipment is used in surgery?
14. What do they count before the patient is sewn up and why?
15. What does postoperative care involve?
16. Where do they take the patient if his life is in danger after the operation?
17. What routine is followed during the first few days after the operation?
18. How do they manage to hold shock to a minimum?
19. Why do they prescribe early ambulation?

II. Say it in Russian.

Embolism, bed sores, enema, severed limbs, hazardous, retractor, sponge, to dull the pain, on the outpatient basis, blood pressure cuff, intravenous line.

III. Explain the Difference between:

Inpatient – outpatient; exploratory – corrective surgery; dose – dosage; surgeon – physician; scrub nurse – circulating nurse; local – general anaesthetic.

IV. Say it in English.

Проводить операцию, притуплять боль, сделать разрез, период выздоровления, местный наркоз; сделать так, чтобы пациент не почувствовал боль; хирургическое вмешательство; состояние, представляющее угрозу для жизни; исправить потерю слуха, ввести внутривенный раствор, иметь в наличии, операционная, стерильный медицинский халат, послеоперационный уход, палата интенсивной терапии, глюкоза, ходячий больной, применить антисептик.

V. Say What for the Following Things are Used in Surgery.

Catheter, drape, dressing, forceps, retractor, scalpel, sponge, suture.

VI. Insert Prepositions.

1. To cure medical problems ... cutting ... the body.
2. To perform an operation ... local anaesthetic ... an outpatient basis.
3. To concentrate ... learning and practicing ... area ... surgery.
4. To attach a blood pressure cuff ... one arm to measure the blood pressure ... regular intervals.
5. To place sterile sheets ... the operation site, leaving an opening ... the incision area.
6. To administer some type ... anaesthetic drugs directly ... a hypodermic needle.
7. A substantial reduction ... the number ... days one spends ... a hospital ... an operation.

8. Severed limbs are sewn ... the body.
9. General surgeons operate mostly ... abdominal organs.
10. Donated blood may be ... hand ... case a transfusion becomes necessary.
11. There are vacuum machines to suck ... excess blood ... the part ... the body being operated.
12. The hospital room is kept as sterile as possible ... the use ... antiseptics.
13. Shock is held ... a minimum ... the use ... blood and plasma transfusion.
14. Mistakes may happen, which results ... serious injury ... the patient.
15. Most medical professions carry medical malpractice insurance to compensate the patient ... any injury resulting ... negligence.

UNIT XI

INFECTIOUS DISEASES

TB and Scarlet Fever: Why Victorian Diseases are Making a Comeback?

Despite 100 years of medical advancement, old-fashioned infections are creeping back into Britain. Should we be worried?

The notice pinned to the door of my son's nursery in Bristol made me start: "A child at this nursery has been diagnosed with scarlet fever." Googling the symptoms, I found images of peeling, strawberry-red tongues and blotchy rashes, but it was the name that really gave me the shivers. Charles Darwin lost two of his children to scarlet fever; it just seemed so, well, Victorian.

A few days later, the nursery informed us of a second case. However, this localised outbreak is far from unique: as of 8 April, a total of 10,570 cases of scarlet fever had been reported to Public Health England since the season began in September 2015, up from 9,379 during the same period in 2014-15.

Scarlet fever is not the only Victorian disease making a comeback. Then there are the diseases against which most of us received childhood vaccinations – measles, whooping cough and tuberculosis – that have had outbreaks in recent years. What is going on? Broadly speaking, there are two reasons why such diseases are making a comeback: because the pathogens that cause them are constantly evolving; and because inadequate numbers of people are being vaccinated.

Take the 2013 outbreak of measles in south-west Wales, which killed one man and hospitalised 88 people. "Measles is a very infectious virus, so you're relying on maintaining very high levels of immunisation within the population to stop it circulating," says Dr Matthew Snape, a paediatrician and vaccines expert at Oxford university hospitals NHS trust. In the wake of the MMR vaccine scare,

uptake of the vaccine fell to only 67.5 % in Swansea, compared with about 94 % beforehand.

Although they have become less common, infectious agents such as the virus that causes measles have not gone away. Once immunisation falls below a critical threshold within a population, “herd immunity” is lost and the virus is able to take hold and spread. The point at which this happens is unpredictable, but the more people who are immunised, the smaller the risk.

Fortunately, in this case, a massive vaccination campaign managed to contain the outbreak. But, in the past four years, there has been a resurgence of whooping cough, another illness for which childhood vaccination is routine. According to figures released on 6 May, 4,190 laboratory-confirmed cases of whooping cough were reported to Public Health England last year, 24 % more than in 2014 (although still fewer than the 9,367 cases reported in 2012 that led to the introduction of the whooping cough vaccine for pregnant women).

Here, the increase is likely the result of several factors, says Dr Myron Christodoulides, a reader in molecular bacteriology and microbiology at the University of Southampton. “It could be due to reduced vaccine uptake, but the vaccine itself won’t provide total protection, so new vaccines are probably needed,” he says.

In fact, emerging evidence suggests that the “acellular” whooping cough vaccine being offered in the UK is less effective than the older vaccine, which was phased out because the newer one has a lower rate of side-effects. However, if you’re pregnant, the advice is still to get vaccinated, since whooping cough can be fatal to infants. As of November, just 62 % of pregnant women received it.

What about scarlet fever? It is caused by a bacterium called *Streptococcus pyogenes*, which is also responsible for strep throat and the skin infection impetigo, as well as more serious skin infections – particularly in elderly people – including flesh-eating disease. There has been an increase in streptococcal infections across Europe in the past 20 years, although the precise reason for this is unclear.

“It may be that these bugs are increasing in virulence or returning to virulence that was common to the organisms that were circulating a century ago,” says Christodoulides. Worrying as that may sound, the bacterium does respond to antibiotics and is rarely fatal these days. However, antibiotic-resistant strains are circulating in Hong Kong; it is possible they could make it over here.

All of this is a reminder that our centuries-old battle with these bugs is far from over: they are still out there, and evolving all the time. Take tuberculosis, another major killer in Victorian times. There were 6,520 cases of TB in England during 2014 – a quarter of them in UK-born citizens – and it, too, is developing antibiotic resistance.

“In South Africa, we have people living in the community with TB that we can’t cure, because there are no drugs left. So, it is back to the Victorian age, really,” says Ruth McNerney, a British TB expert at the University of Cape Town. In the UK, better general health and nutrition make it less likely that large numbers of people will succumb, even if multi-drug-resistant TB becomes commonplace. But TB is a silent infection; you can harbour it for many years without knowing it. The more people are exposed, the greater the risk to more vulnerable members of the community.

Of course, all these cases are minor blips when you place them in historical context. In 1901, prior to the introduction of antibiotics and vaccines, 36% of all deaths and 52 % of childhood deaths in England and Wales were the result of infectious diseases. Today, it is closer to 12 %.

“When we think about the return of Victorian illnesses, one thing we need to bear in mind is that it is actually a relatively small number of cases that get media attention, because we’re not used to seeing these diseases any more,” says Snape.

But we shouldn’t become complacent, warns Christodoulides. “It is estimated that, if we don’t tackle the increase in antibiotic and antimicrobial resistance, deaths from these bugs by 2050 might be in the region of 10 million a year worldwide – more than from cancer.”

Linda Geddes
The Guardian
23 May 2016

I. Answer the following questions.

1. Why is scarlet fever scary for parents?
2. Why are diseases of childhood that seemed to be eradicated making a comeback?
3. What can be the possible reasons for the whooping cough outbreak in GB?
4. What causes scarlet fever?
5. Why is it so difficult to eradicate TB nowadays?
6. Compare and contrast the cases of infectious diseases in the Victorian epoch and at present.
7. What may happen if the problem of antibiotic resistance is not solved in the near future?

II. Say it in Russian.

To make smb start; blotchy rashes; to give smb the shivers; uptake of the vaccine; to contain the outbreak; virulence; to develop antibiotic resistance; complacent; tackle the increase in antibiotic and antimicrobial resistance.

III. Say it in English.

Вспышка, эволюционировать, побочное действие, постепенно сокращать, в исторической перспективе.

IV. Paraphrase the Following Expressions.

He lost two of his children to scarlet fever –

To make a comeback –

In the wake of the MMR vaccine scare –

A resurgence of whooping cough –

They could make it over here –

You can harbour it for many years –

Minor blips –

V. Insert Prepositions and Adverbs.

To creep ... Britain; to be diagnosed ... scarlet fever; to be fatal ... infants;
an increase ... streptococcal infections; to respond ... antibiotics, to succumb ...
TB; to be exposed ... a disease.

VI. Explain the Difference that the Following Synonyms Reveal.

Immunization – vaccination – inoculation

Outbreak – epidemic – pandemic

Germ – bug – microbe – bacterium – virus

Why hasn't the US Eradicated the Plague?

It's nearly 50 years since the US landed men on the moon, but Americans are still dying from a disease that ravaged Europe in the Middle Ages. Why hasn't the US eradicated the plague?

The Black Death caused about 50 million deaths across Africa, Asia and Europe in the 14th Century. It wiped out up to half of Europe's population.

Its last terrifying outbreak in London was the Great Plague of 1665, which killed about a fifth of the city's inhabitants. Then there was a 19th Century pandemic in China and India, which killed more than 12 million.

But the disease has not been consigned to the dustbin of history. It is endemic in Madagascar, the Democratic Republic of Congo and Peru. What's perhaps more surprising is that it is still killing people in the US.

There have been 15 cases in the US so far this year – compared to an average of seven, according to the Centers for Disease Control and Prevention (CDC) – and the figure of four deaths is higher than in any year this century.

The bacterium responsible – yersinia pestis – was introduced to the US by rat-infested steamships in 1900, according to Daniel Epstein of the World Health Organization (WHO).

"Plague was pretty prevalent, with epidemics in Western port cities. But the last urban plague was in Los Angeles in 1925. It spread to rural rats and mice, and that's how it became entrenched in parts of the US," he says.

The disease – typically transmitted from animals to humans by fleas – has a 30- to – 60 % fatality rate if left untreated, however, antibiotics are effective if patients are diagnosed early.

By Vanessa Barford
BBC News, Washington DC
15 October 2015

The plague

- More than 80 % of US cases have been bubonic plague, the most common form, which affects the lymph nodes and causes gangrene (see picture at top of page).
- There are two other types, septicaemic, an infection of the blood, and pneumonic, which infects the lungs.
- It can be hard to identify the disease in its early stages because symptoms, which usually develop after three to seven days, are flu-like – a laboratory test can confirm diagnosis.

Most cases occur in summer, when people spend more time outdoors.

"The advice is, take precautions against flea bites and don't handle animal carcasses in plague-endemic areas," says Epstein.

The areas in question are New Mexico, Arizona, California and Colorado, according to the CDC. All of this year's cases originated in those states, or in other states west of the 100th meridian, which Dr Amesh Adalja, an infectious-disease specialist at the University of Pittsburgh's Center for Health Security, refers to as "the plague line".

"Prairie dogs are the main reservoir for plague, and they tend to be west of the 100th meridian," he says. The geography and climate of the Western US suits them, he explains, and the fact that they are "social animals" helps the infected fleas to spread.

Black-footed ferrets and the Canada lynx are other particularly susceptible species, says Dr Danielle Buttke, an epidemiologist at the US National Park Service.

It's the existence of this "animal reservoir" that makes the plague hard, if not impossible, to eradicate, experts say.

The only human disease eradicated so far, smallpox, does not exist in animals. It's the same with polio, which the WHO is keen to eradicate, but which remains endemic in three countries – Nigeria, Afghanistan and Pakistan. (It has also returned to Syria, since the civil war.)

"Unless we exterminate rodents, [the plague] is always going to be around," Epstein argues.

On the other hand, scientists at the National Wildlife Health Center have been working with parks to develop oral vaccines to protect black-footed ferrets and prairie dog – prairie dogs seem to prefer peanut butter-flavoured baits, research shows.

An injectable vaccine for black-footed ferrets has also been created. So maybe it will be possible to rid animals of the disease, at least in the most popular national parks.

Generally, research into the disease is in a "vibrant" state, according to Adalja, with scientists trying to improve ways of diagnosing it, and to develop an effective human vaccine.

The reason? The plague has been classified as a "category A bioweapon", he says. An average of seven cases of plague per year is one thing, but the risk of biological warfare, even if it's a remote one, is quite another.

I. Answer the following questions.

1. Why is the plague called The Black Death?
2. Where is it endemic nowadays?
3. How was the bacterium responsible for the disease introduced to the USA?
4. How is it transmitted?
5. What does bubonic plague affect?
6. What types does the disease have?
7. Why is it difficult to identify it?
8. What precautions should be taken to avoid contracting the plague?
9. Why is it so hard to eradicate the plague?
10. What is done to rid animals of this disease?
11. Why is it important to develop a vaccine against the plague?

II. Say it in Russian.

To ravage; to eradicate; prevalent; fatality rate; to exterminate rodents; a bait.

III. Say it in English.

Быть выброшенным на свалку истории, при ранней диагностике, поражать лимфатические узлы, избавить от болезни, биологическая война.

IV. Paraphrase the Following Expressions.

It is endemic in Madagascar –

To become entrenched –

An injectable vaccine –

V. Insert Prepositions and Adverbs.

To wipe ... half of Europe's population; to be transmitted ... animals ... humans ... fleas; to identify the disease ... its early stages; research ... the disease.

Necessary Shots?

Childhood vaccinations have saved countless lives. But some parents worry about adverse effects. What you should know.

Since the birth of her twin daughters last May, Theresa Sakamoto of Santa Monica, Calif., hasn't been getting much sleep. It's not just the babies who are keeping her up – it's Sakamoto's own internal debate over whether to vaccinate them. "If I knew my kids wouldn't have any [adverse] reaction, I would just do it. But I don't know that," she says. "On the other hand, not vaccinating them scares me... I still don't know what to do."

A generation ago, parents like Sakamoto didn't think much about the adverse effects of vaccines – they worried about the horrors of infectious disease. Today, potential killers like polio, diphtheria and now even measles are virtually unknown in the United States, while children are receiving more inoculations than ever – currently 19 for 10 different diseases. Now some parents are asking which is the greater threat: the viruses or the vaccines?

It's a fair question. Fear of viruses isn't what is used to be. The Centers for Disease Control and Prevention (CDC) in Atlanta recently revised its recommendations on the hepatitis B, polio and rotavirus vaccines because of concerns about adverse effects. Those changes have helped the cause of the National Vaccine Information Center (NVIC), an advocacy group in Vienna, Va. NVIC president Barbara Leo Fisher, who believes her son's learning disabilities stem from a severe vaccine reaction, charges that there is not enough research into possible links between vaccines and developmental disorders and chronic disease. Nor, she says, do parents receive enough information about the potential risks. She worries that bombarding children's immune system with more and more inoculations could be dangerous. "We keep on developing more vaccines ... to rid the world of disease," she says, but "could [vaccines] be doing something else which isn't so good?"

Public-health officials concede that the shots are never 100 percent risk-free. All vaccines go through rigorous safety trials before they're approved – but previously undetected reactions can show up later when larger numbers of children are inoculated. As for vaccine tolerance, infectious-disease specialists say there's no evidence that babies can't handle multiple inoculations: their immune systems are already assaulted with thousands of naturally occurring antigens within the first week of life. The doctors' bottom line is that the benefits far outweigh the risks. They worry that any drop in immunization rates could spawn new outbreaks of dangerous diseases. "A decision to vaccinate is a

decision to protect not only your child,” says Dr. Walter Orenstein, head of the CDC’s National Immunization Program, “but other children in the community.”

Here are some of the vaccinations now under debate:

Hepatitis B: The NVIC questions why all infants need protection against a virus spread largely through sexual intercourse and injection drug use. Health officials say it is possible for children to catch the disease through contaminated washcloths or toothbrushes. And while the risk of illness is much lower in children, the virus / which can cause liver cancer – is more likely to be fatal later if contracted early in life. The CDC recently recommended giving the injection within the first six months of life rather than birth (except in cases where the mother tests positive for the disease). The reason: officials want to limit newborns’ intake of thimerosal, a vaccine preservative containing mercury.

Measles, Mumps & Rubella (MMR): As MMR inoculation rates have increased over the last three decades, so have autism diagnoses. Lisa Mayberry is one of a number of parents who watched her child develop the disorder after an MMR shot. “It’s real hurtful to watch a child who is social and loving slowly slip away,” she says. Doctors say such events can happen together by chance, without one directly causing the other. In June, a study of 498 autistic children published in the medical journal *The Lancet* found no epidemiological evidence linking the MMR vaccination to the disorder. The CDC is continuing to investigate.

September 13, 1999, NEWSWEEK

I. Answer the Following Questions.

1. Why do some parents hesitate whether to vaccinate their children or not?
2. In what way was it different a generation ago?
3. What are the possible reasons for the dip in vaccination rates?
4. How many inoculations are the children receiving in the USA now?
5. What are potential risks that vaccination can present according to some parents’ point of view?
6. Do public health officials concede that inoculation may have adverse effects?
7. Parents think that it is not safe to bombard children’s immune system with more and more inoculations. What counter-arguments do doctors present?
8. What could a drop in immunization rate result in?
9. Why is it vital to vaccinate children against Hepatitis B?
10. Why do they no longer inoculate newborns against it?
11. Have doctors managed to establish a link between MMR vaccination and autism?

II. Say it in Russian.

A shot, an inoculation, rotavirus, autism, adverse effect, to contaminate, immune system, antigen, developmental disorders, learning disability, vaccine tolerance, bottom line.

III. Say it in English.

Краснуха, столбняк, коклюш, проходить строгие клинические испытания, сделать прививку, полиомиелит, дифтерия, гепатит, группа поддержки, быть на сто процентов безопасным, не выявленные ранее реакции на вакцину, вспышка заболевания, снижение уровня вакцинации, нуждаться в защите от вируса, заразиться в раннем возрасте.

IV. Comment on the Following Issues.

1. If you were a parent would you vaccinate your child against common diseases of childhood? Give your reasons.
2. Should vaccination be optional or obligatory, from your point of view?
3. What vaccinations have you received? Have you had booster shots for any of the illnesses that you were vaccinated for?

Measles and MMR

Measles can be a very serious disease – and children who have not been vaccinated are at risk.

What is measles?

Measles is a highly contagious infectious disease characterised by a high fever, a rash and generally feeling unwell. The first symptoms include runny nose, sore eyes, a cough and fever. Around the fourth day of the illness, a rash – flat red or brown blotches – may appear, usually starting on the forehead and spreading downwards. There may also be diarrhoea, vomiting and abdominal pain.

While this may be the full extent of the illness in many, resolving itself within two weeks of the first symptoms, other complications may arise in about one in 15 cases. These include a severe cough and breathing difficulties, ear infections, pneumonia and eye infections. In a very small number of cases, inflammation of the brain (encephalitis) may follow. This is extremely dangerous, as 25 % of those affected are left with brain damage.

The most severe complication of measles – occurring in only one in 100,000 cases – is a slowly-progressive brain disorder which does not normally show until some time after the original infection, causing seizures and even death.

Globally, measles is still one of the biggest childhood killers. The World Health Organization estimates there are 430 deaths from measles every day. It is thought that between one in 1,000 and one in 3,000 of those infected will die.

What is MMR?

MMR is a combined vaccine against measles, mumps and rubella, three common infectious diseases of childhood. It was introduced in the UK in 1988 to replace single vaccines for each disease. It is used in countries throughout the world, with millions of doses delivered each year.

The first MMR vaccine is given on the NHS as a single injection to babies as part of their routine vaccination schedule, usually within a month of their first birthday.

They will then have a second injection of the vaccine, known as the MMR booster, before starting school, usually between the ages of three and five. The first gives about 95 % protection against measles, while two doses give 99–100 % protection.

Why were people worried about it?

In 1998, a study published in the respected journal *The Lancet* raised the possibility that the jab may be linked to autism and bowel disease.

The paper and the media furore that followed prompted many parents to decide against having their children vaccinated with the three-in-one jab. Some opted to have their children vaccinated using single vaccines for each disease. However, others decided against having their children vaccinated against these diseases at all.

Mumps, measles and rubella are all serious diseases, particularly measles. Many doctors were concerned that a drop in vaccination levels could leave many children at risk.

What has been the long-term effect?

To ensure that all children in a community are protected from measles, 95 % of them need to be fully vaccinated – this is known as herd immunity. In the wake of the publicity surrounding the *Lancet* paper vaccination rates fell sharply.

At its lowest, in 2003/4, fewer than eight in ten children were vaccinated – but in some areas less than half of children received the jab. Health experts believe there are more than one million schoolchildren in England alone who are not protected against the disease.

The gloomy predictions of experts have been borne out, with cases of measles increasing. There were 2,016 confirmed cases of measles in England and Wales in 2012, the highest total for 18 years.

Was there any reason to be worried?

No. No authoritative research has been published to back up claims that it may be linked to autism and bowel disease.

The Wakefield claims have been tested in over a dozen statistical studies carried out across large populations in different countries, and none found any evidence at all to suggest there was any link between the MMR jab and autism.

These studies included a 2004 investigation by a team from the UK Medical Research Council which compared the vaccination records of 1,294 children diagnosed with autism or related conditions with those of 4,469 children who had no such diagnosis.

Overall, 78 % of the children with autism had received MMR. But 82 % of the other children had also been given MMR.

A 2005 paper looked at autism rates among 31,426 children born in Japan. It found the incidence of autism actually increased after the MMR jab was withdrawn in the country in 1993.

One of the biggest studies of all – a 2002 paper examining the records of 537,303 children born in Denmark – also showed no link between MMR and autism.

What about the original study?

The Lancet, which published the controversial MMR paper in the first place, has since publicly announced it should never have printed it. Dr Andrew Wakefield, the man behind the work, was subsequently struck off the medical register by the General Medical Council for serious professional misconduct.

A GMC panel found that Dr Wakefield had acted "dishonestly and irresponsibly" while carrying out his research. Among the charges of which he was found guilty was paying children £5 for blood samples at his son's birthday party.

What about adults?

The MMR vaccine was introduced in 1988. Prior to that a licensed vaccine to prevent measles first became available in 1963, an improved measles vaccine in 1968. Most adults born before 1970 in the UK are likely have had measles infection and therefore be immune.

BBC Health
19 April 2013

I. Answer the Following Questions.

1. Why is measles so dangerous?
2. What are its most severe complications?
3. What is MMR?
4. When is it administered?
5. What research caused a drop in immunization rate?
6. What consequences did it have in GB?
7. Is there any scientific proof of the MMR vaccine adverse effects?
8. What was Dr Andrew Wakefield, the man behind the work, accused of?

II. Say it in Russian.

Sore eyes; flat red rash; blotch; abdominal pain; seizure; routine vaccination schedule; the long-term effect; in the wake of the publicity surrounding the Lancet paper; authoritative research.

III. Say it in English.

Насморк, сильный кашель, серьезные осложнения, в течение первого месяца жизни, снижение уровня вакцинации, быть защищенным от кори,

резко снизиться, проводить статистические исследования, отменить прививки, образцы крови, иметь иммунитет.

IV. Paraphrase the Following Expressions.

The full extent of the illness –

25 % of those affected are left with brain damage –

Slowly-progressive brain disorder –

To raise the possibility –

Herd immunity –

The gloomy predictions of experts have been borne out –

A controversial paper –

V. Insert Prepositions and Adverbs.

Starting ... the forehead and spreading ...; to resolve itself ... two weeks ... the first symptoms; other complications may arise ... about one ... 15 cases; to replace single vaccines ... each disease; to be given ... the NHS; to give ... 95 % protection ... measles; may be linked ... autism; to decide ... having their children vaccinated ... the three-in-one jab; to back ... claims; to carry ... one's research.

VI. Explain the Difference that the Following Synonyms Reveal.

Contagious – infectious – catching – communicable

Estimate – evaluate – assess

Disorder – affliction – condition – disease – illness

Jab – shot – injection

Investigation – research – study

'Anti-vax' Mother's Regret over Whooping Cough 'Nightmare'

An Australian mother has said she regrets refusing the whooping cough vaccination during pregnancy after she passed the potentially fatal infection to her newborn baby.

Cormit Avital said she had turned down the vaccination because she was a "healthy, fit, organic woman". She caught the disease shortly before giving birth and passed it to Eva, who has spent a month in intensive care. Ms Avital recorded a video warning about her "nightmare" experience. "If I could turn back time I would protect myself," she said, in the video released by Gold Coast Health, the Queensland state health authority.

'A lot of suffering'

Ms Avital contracted whooping cough, also known as pertussis, around the time she gave birth, and was told she had passed it to Eva. Within two weeks, Eva's cough "became pretty scary, horror movie, coughing to the point of going blue, flopping in my hands, can't breathe," she said.

"For a moment there you think they're dead in your hands. [It's] a lot of suffering for a tiny little cute thing you love so much."

What is whooping cough?

- It is also known as pertussis and is caused by a species of bacteria, *Bordetella pertussis*
- It mostly affects infants, who are at highest risk of complications and even death
- The earliest signs are similar to a common cold, then develop into a cough and can even result in pneumonia
- Babies may turn blue while coughing due to a lack of oxygen
- The cough tends to come in short bursts followed by desperate gasps for air (the whooping noise)
- Adults can be infected – but the infection often goes unrecognised

Gold Coast Health Staff Specialist Dr Paul Van Buynder told the BBC that Eva's condition was improving. She is likely to be released from hospital in coming weeks.

Dr Buynder said more than 20,000 pertussis cases were recorded in Australia last year, and "sadly this is becoming more common".

"There's always a feeling of pregnancy being this special state and you don't want to put anything into your body, but what's really bad for your baby is to get whooping cough or influenza", Dr Buynder added. Newborns are highly susceptible to the infection until they start vaccination at two months old.

BBC News, 6 April 2016

I. Say it in Russian.

To pass the disease to smb; intensive care; to flop; develop into a cough; desperate gasps for air.

II. Say it in English.

Отказаться от прививки против коклюша, заразиться, до посинения, привести к воспалению легких, проходить незаметно, в ближайшие недели.

III. Paraphrase the Following Expressions.

To turn down the vaccination –

To be at highest risk of complications–

To come in short bursts –

To be released from hospital –

IV. Explain the Difference that the Following Synonyms Reveal.

To catch – to contract – to develop (a disease)

Susceptible – prone – vulnerable – predisposed

V. Compress the text to 100 words and get ready to reproduce it in class.

The Battle over Immunization

Parents are unimpressed by the Department of Health's reassurances on MMR vaccinations, says Felicity Lawrence.

There is considerable nostalgia among health officials in the former Soviet bloc for the good old days. The coverage for vaccination always used to appear on the records as 100 %, a boast matched by few other countries. If you failed to have your child inoculated against childhood illnesses, your employer would summon you in to account for yourself. And since there was also full employment, disease control was wonderfully effective. All that collapsed with the fall of the Soviet Union; coverage rates plummeted, although they are now creeping back up again as people begin to choose for themselves the value of protection. In a modern democracy it is much more difficult, as our own department of health is finding. You cannot override people's dissent.

MMR (measles-mumps-rubella) vaccinations have fallen dramatically below the 95 % required to maintain "herd immunity", to only 85 % across Britain. Many parents have been unimpressed by the department's 3m pounds reassurances that MMR is safe following recent scares about a link with autism and bowel disorders. Denied the possibility of having separate jabs on the NHS, a group of them have found a way of bypassing the government blocks and invited a doctor; Peter Mansfield, to give single-dose vaccinations privately:

Clumsy efforts to cut off their choice this week by hauling the former GP before the General Medical Council, which has the power to strike him off, look likely to backfire. If he wins his case, more doctors will probably follow his initiative, and the government policy on vaccination could be left in tatters. Those who are articulate and wealthy enough will be able to choose one form of care; others will be denied the choice and many will continue to refuse what is on offer.

The great public health initiatives of the past depended on general compliance with the politician's or expert's view of what was good for us – and how much should be spent providing it. That compliance can no longer be relied upon. Instead, people are voting with their feet and pursuing their own rights.

A new phenomenon with parallels to the MMR case is currently giving the department of health further headaches. A recent ruling by the European court of justice in a Belgian case said that patients had the right to have their treatment paid for abroad if they faced undue delay in their own countries. In the past, patients might have accepted waiting lists as an inconvenient, but inevitable,

form of rationing of limited resources, but not now. A group of British patients who feel they have been denied their right to treatment are preparing to take the government to the European court. Frank Field, the former social services minister, has been advising them. The first cases will be ready soon. As he points out, the wait for the European court is less than six months, so it should be possible to go through the whole process of getting legal aid, obtaining a ruling and going for treatment abroad in less time than it takes to get to the top of the NHS queue.

As with the MMR problem, the department of health reaction is classic ostrich behaviour. The department says it is still considering the legal implications of the European ruling. But the signs are it will try to fight any attempts to use foreign facilities.

The Crawley primary care group, in West Sussex, has explored using spare capacity in Germany to cut waiting lists. It had got as far as drawing up contracts with GerMedic, an organization which promotes the use of German hospitals abroad, to have up to 50 NHS patients treated. But the West Sussex health authority, which would have to approve the funding, has decided against it, and is, according to a spokesperson, waiting for further guidance from the department.

Unimpressed with the rhetoric on reducing waiting times and unofficial rationing, people are increasingly finding their own ways round them. Several people have exploited what are known as E111 and E112 forms. EU countries have reciprocal arrangements to provide emergency care to travellers taken ill abroad or care that is not available in the home country. English patients are increasingly showing up in foreign hospitals, using an E111 to get emergency treatment for long-standing complaints. Doctors can also refer patients for non-emergency treatment using E112s. In 1995, 500 patients were treated this way; the number is now said to be 900 a year.

It is not just individuals prepared to fight through the legal route. The national institute for clinical excellence – which was supposed to take the politics out of drugs rationing – may have its decision that certain MS drugs should not be available on the NHS tested in the courts by the Multiple Sclerosis Society. The drugs cost between 7,000 pounds and 10,000 pounds a year for each patient, and only 2 to 3 % of MS sufferers receive them in the UK, compared to 12–15 % in other countries.

We are witnessing what appears to be the breakdown of any collective commitment to social action and consensus on the distribution of public resources. We have all become more isolated, asocial and selfish, according to communitarian philosophers. Preoccupied by our own private good, we no longer recognise an obligation to pursue a common good that transcends personal interest. So, if there is any risk that my child might suffer damage from a vaccine, I won't give it to them, even if it means the community loses its

immunity. If I can find a way round the waiting list that has kept me in pain for months and jump the queue by going abroad, I have a right to do it. It is certainly true that there has been a huge shift in attitude towards public services. Encouraged throughout the Thatcherite 1980s to apply the laws of the market to all institutions, we learned to treat services as commodities. Everything, including health, was reduced to an anonymous financial relationship between a buyer and a seller, public services became something to consume, just like other goods – and that has meant demanding your rights.

But this "we're all too neo-liberal" view won't really wash. Vaccine refuseniks often have a highly developed sense of social responsibility. They expect to play their part in working for the common good; they are just not prepared to accept the medical establishment and government's limited prescription of how that should be obtained.

In fact, there have always been problems with calls to the common good. Historically such visions, whether Marx, Calvin or Rousseau-inspired, have often come to be associated in practice with oppression. It was Aristotle who argued that the difference between a master and a slave was that the master had a superior ability to understand the common good to the poor slave who couldn't be trusted to recognise it. The modern-day metaphorical slaves are rebelling.

At the heart of the rebellion is a refusal to accept the expert's superior ability to judge on their behalf. People are not prepared to accept that exhaustive reviews of the evidence show no link between MMR and autism. They mentally substitute beef and VCJD, or food additives and allergies. They know that epidemiological studies which fail to find correlations are not the same as empirical evidence. Governments have too often given assurances, only to admit a problem later. And even if the risks are small, they know there are alternatives.

What rankles about so much of government policy is its obsession with command and control – on vaccination, that it is driven top-down by the economics of mass disease control, rather than bottom-up by what serves the health of each child; on waiting lists, that the government appears to be in denial about the scale of the bed crisis.

So the social scaffolding has gone. With good reason. It was often remote, unaccountable and paternalist.

But how do we move on? In a society of sophisticated consumers of information, the arguments have to be won by persuasion; and that needs much greater honesty about the limits of knowledge and resources – and the difficult choices that distributing them entail.

Felicity Lawrence
Friday August 10, 2001
The Guardian

I. Answer the Following Questions.

1. Why was disease control in the USSR so rigid?
2. How does the author of the article account for 100 % coverage for vaccination?
3. What are the reasons for the drop in MMR vaccinations?
4. How did some parents bypass the government block?
5. What does the author think of the efforts to haul the doctor before the General Medical Council?
6. How did the situation in the British public health care sector change within the last decade?
7. Why are some patients planning to take the government to the European court of justice?
8. What is reaction of the department of health to such actions?
9. What does the author mean by “the breakdown of any collective commitment to social action and consensus on the distribution of public resources”?
10. In what way did the attitude to public services change in the 80s?
11. Comment on the evolution of views on the common good.
12. Why do you think people refuse to accept the expert’s superior ability to judge on their behalf?
13. What should substitute for the government policy of command and control, from the author’s point of view?
14. What is the possible solution to the problem of distribution of resources?
15. What do you think the controlling idea of the article is?

II. Say it in English.

Ностальгия по старым добрым временам, охват вакцинацией, резко упасть; не считаться с тем, что люди не согласны; обойти препятствие, привести к обратным результатам, разнести в пух и прах, заботиться о правах, озабоченные собственным благом, заботиться об общественном благе, пройти без очереди, настаивать на соблюдении собственных прав, решать за кого-то, болеть, жечь; отрицать истинный масштаб нехватки мест в больницах.

III. Say it in Russian.

Coverage rates plummeted, to entail a difficult choice, this view won’t wash, empirical evidence, to be driven top-down, the social scaffolding, to vote with one’s feet.

IV. Insert Prepositions.

1. The coverage ... vaccination always used to appear ... the records ... 100 %.
2. If you failed to have your child inoculated ... childhood illnesses, your employer would summon you ... to account ... yourself.
3. They are now creeping back ... as people begin to choose ... themselves the value ... protection.
4. The government policy ... vaccination could be left ... tatters.

5. The great public health initiatives of the past depended ... general compliance ... the politician's or expert's view ... what was good ... us. 6. As he points out, the wait ... the European court is less than six months, so it should be possible to go ... the whole process ... getting legal aid, obtaining a ruling and going ... treatment abroad ... less time than it takes to get ... the top ... the NHS queue. 7. Unimpressed ... the rhetoric ... reducing waiting times and unofficial rationing, people are increasingly finding their own ways ... them. 8. Only 2 ... 3 % ... MS sufferers receive them ... the UK, compared ... 12–15 % ... other countries. 9. We are witnessing what appears to be the breakdown ... any collective commitment ... social action and consensus ... the distribution ... public resources. 10. If I can find a way ... the waiting list that has kept me ... pain ... months and jump the queue ... going abroad, I have a right to do it. 11. Everything, including health, was reduced ... an anonymous financial relationship ... a buyer and a seller. 12. The government appears to be in denial ... the scale ... the bed crisis.

UNIT XII

ETHICAL PROBLEMS IN MEDICINE

How a Doctor's Words Can Make You Ill

A good bedside manner can help heal the body, but if doctors don't choose their words carefully, they can also make you unwell.

There are wide variations in Caesarean section rates across Europe, indicating a lack of consensus about the best way of delivering babies.

Have you ever visited a doctor, and come away feeling they weren't much help? Listen to the following audio clip, and you might start to understand why.

During a role-play for BBC World Service's Discovery programme, presenter Geoff Watts talks to Dr Mark Porter about problems with his knees. Throughout the interview, Porter's words subtly create a negative impression for the patient. He says he has some "bad news" and the knees are "worn out" due to osteoarthritis; the drugs "help a bit" – but they may damage the lining of the stomach, he says.

As Watts goes on to discover, those subtle cues might actually exacerbate the physical symptoms. "The problem with the way I sold it, was that it validated your concerns that your knee's falling apart, it's crumbling, you're doomed," says Porter. "And the side effects I mentioned – I put them out of all proportion."

Experiments have shown that simply warning people about certain side-effects can actually make them more likely to experience the nausea, fatigue, headaches or diarrhoea – even when they have been assigned innocuous pills rather than an active drug.

Healing words

Medicine has long known about the placebo effect – the healing power of good expectations. But the nocebo effect, as its evil twin is known, may be more powerful. “It’s easier to do harm than good,” explains Watts. “And this is worrisome, because nocebo’s negative influence can be found lurking in almost every aspect of medical life and beyond.”

In extreme circumstances it could even be deadly, as we recently explored in our article “The contagious thought that could kill you”.

The good news is that, through the same power of the mind-body connection, a good bedside manner may do wonders for treatment. One study found that depressed patients given placebo pills by an empathetic doctor ended up with better results than those taking an active drug from a psychiatrist who seemed less concerned about their welfare. Some scientists have even hypothesised that doctors could try to make use of the placebo effect to reduce the dose given to patients – by using the power of their mind to make up the difference. “Healing is a real phenomenon. We all have the ability to self-heal in many conditions and that can be activated by our interactions with other people,” says Paul Dieppe at Exeter Medical School.

Simple measures might include taking an empathetic and caring attitude during diagnosis, that considers the patient’s concerns and fears, however unlikely, says Porter. And when prescribing treatments, the doctor should emphasise the positive effects of the medicine, while framing the negative side-effects so they seem less frightening, and being careful not to over-emphasise their risks.

“Every word counts, every glance counts,” says Ted Kaptchuk of Harvard University. And it’s an opportunity that shouldn’t be missed. “I don’t think that’s going to be a burden for physicians or nurses. I think it’s going to be a way of making them feel a part of the treatment – that’s an awareness that’s just beginning in healthcare.”

David Robson
BBC Future
9 March 2015

I. Answer the following questions.

1. What was the way the doctor informed the patient about his condition in the role play?
2. How can such subtle cues affect the patient?
3. What can simple warning the patients about possible side effects entail?
4. What is a placebo effect?
5. Why is nocebo so harmful, in your view?

6. How does a good bedside manner affect the treatment?
7. What results did depressed patients given placebo pills by an empathetic doctor reveal?
8. What can activate our ability to self-heal?
9. What should doctors emphasise while prescribing treatment?
10. What awareness is just beginning in healthcare?
11. What is your idea of a good bedside manner? Has it ever had any healing effect when you were ill?

II. Say it in Russian.

A good bedside manner; the lining of the stomach; subtle cues; exacerbate; crumbling; worrisome; not to over-emphasise the risks.

III. Say it in English.

Быть обреченным, лечебное свойство, навредить, высказывать гипотезу, излечить себя, иметь значение, быть важным.

IV. Paraphrase the Following Expressions.

To validated smb's concerns –

To put them out of all proportion –

Placebo effect –

Nocebo effect –

To be found lurking in almost every aspect of medical life and beyond –

A contagious thought –

To frame the negative side-effects so they seem less frightening –

To take an empathetic and caring attitude –

V. Insert Prepositions and Adverbs.

To do wonders ... treatment; ... the same power ... the mind-body connection; to be concerned ... their welfare; to by use the power of their mind to make ... the difference; to have the ability to self-heal in many conditions.

VI. Explain the Difference that the Following Synonyms Reveal.

To assign – to prescribe – to recommend

Opportunity – chance – possibility – probability

Stimulate – trigger – activate

France Clinical Trial: 90 Given Drug, One Man Brain-Dead

One man is brain-dead and another five people are in hospital after an experimental drug was administered to 90 people in a French clinical trial.

There is no known antidote to the drug, the chief neuroscientist at the hospital in Rennes said. Of the six men in hospital, three could have permanent brain damage, Gilles Edan added.

Reports that the drug is a cannabis-based painkiller have been denied by the health ministry.

A fifth man is suffering from neurological problems and a sixth man is being monitored but is not in a critical condition, Mr Edan said.

The trial, which involved taking the drug orally and has now been suspended, was conducted by a private laboratory in Rennes.

The experimental drug was manufactured by the Portuguese company Bial. All those who volunteered for the trial have been recalled and the Paris prosecutor's office has opened an investigation.

Health Minister Marisol Touraine pledged to "get to the bottom... of this tragic accident". "I was overwhelmed by their distress" she told reporters. "Their lives have been brutally turned upside down".

Analysis

By James Gallagher, health editor, BBC News website

This is the bitter price of the new medicines we take for granted. Testing such experimental drugs, at the cutting edge of science, can never be completely risk-free.

The safety and effectiveness of these drugs are rigorously tested in animals. The risks are low but there must still be a leap of faith when they are tried in people for the first time.

This trial has been taking place since July without such major events being reported. Generally in Phase I trials the dose is increased slowly over time, which could be why the side-effects are appearing now.

The hospitalised men started taking the drug regularly on 7 January and began showing severe side-effects three days later.

Three of the volunteers are now facing a lifetime of disability in this "accident of exceptional gravity".

It is a high price to pay, but thousands of people do safely take part in similar trials each year.

The trial was conducted by Biotrial, a French-based company with an international reputation which has carried out thousands of trials since it was set up in 1989.

In a message on its website, the company said that "serious adverse events related to the test drug" had occurred.

The company insisted that "international regulations and Biotrial's procedures were followed at every stage".

According to the health ministry, the adverse effects occurred on Thursday.

Clinical trials

Trials typically have three phases to assess a new medicine for safety and effectiveness.

- Phase I tests for safety. A small number of people, sometimes healthy, and sometimes with a medical condition, are given a tiny dose of the drug under

careful supervision, not to test if the drug works, but in order to check for any side effects.

- Phase II sees the drug given to people who have a medical condition to see if it does indeed help them.

- Phase III trials are only for medicines or devices that have already passed the first two stages, and involve them being compared to existing treatments or a placebo. The trials often last a year or more, involving several thousand patients.

The study was a Phase I clinical trial, in which healthy volunteers take the medication to evaluate the safety of its use, the ministry said.

Before any new medicine can be given to patients, detailed information about how it works and how safe it is must be collected.

Clinical trials are the key to getting that data – and without volunteers to take part in the trials, there would be no new treatments for serious diseases such as cancer, multiple sclerosis and arthritis.

Every year around the world thousands of people take part in clinical trials but incidents like this are very rare, the BBC's Hugh Schofield reports from Paris.

New EU regulations to speed up clinical drug trials and streamline testing procedures across the 28-nation bloc are due to take effect in 2018.

I. Answer the following questions.

1. What happened during a clinical trial in France?
2. What is known about the safety of clinical trials?
3. What is done before the drug is tried in people for the first time?
4. What do Phase I trials involve?
5. When did the volunteers start to show severe side effects?
6. Did they follow the international regulations during the trial?
7. What are the stages of clinical trials?
8. Why are clinical trials important for medical science?
9. Speak for and against participating in clinical trials.

II. Say it in Russian.

To administer an experimental drug; permanent brain damage; to taking the drug orally; to suspend a drug; prosecutor's office; accident of exceptional gravity; to set up a company; adverse effects; to follow international regulations and Biotrial's procedures; to evaluate the safety of its use.

III. Say it in English.

Быть под наблюдением, несчастье, принимать что-то как должное, полностью безопасный, проходить тщательную проверку, ярко выраженный побочный эффект, проводить клинические испытания.

IV. Paraphrase the Following Expressions.

A cannabis-based painkiller –
To get to the bottom of smth –
At the cutting edge of science –
A leap of faith –
To face a lifetime of disability –
To streamline testing procedures –
To be due to take effect –

V. Insert Prepositions and Adverbs.

To administer a drug ... 90 people; antidote ... the drug; to volunteer ... the trial; to be tested ... animals; when they are tried ... people ... the first time; to increase the dose slowly ... time; to assess a new medicine ... safety and effectiveness; to check ... any side effects; involve them being compared ... existing treatments; the key ... getting that data; new treatments ... serious diseases.

VI. Explain the Difference that the Following Synonyms Reveal.

Painkiller – analgesic – anaesthetic – anodyne
Test – trial – experiment

Gene Editing: Is Era of Designer Humans Getting Closer?

An international meeting of leading scientists has said it would be "irresponsible" to allow the creation of genetically altered humans.

But they said basic research involving embryo gene editing should continue in order to improve understanding of human biology.

As scientific knowledge advances and societal views evolve, they added, the clinical use of genetically modified embryos should be revisited on a "regular basis". The gene editing summit in Washington was organised to discuss new techniques which enable researchers to alter human DNA.

Genetic enhancement has been a favourite theme for science fiction writers. The film *Gattaca* imagined a world where children were conceived through gene manipulation. *Brave New World* of designer humans – although still a long way off – has moved a step closer as a result new gene editing techniques. Three years ago scientists invented a new simple cut-and-paste system, called CRISPR-Cas9, for editing DNA.

Scientists across the world immediately adopted this rapid, cheap and accessible tool in order to speed up their research. For patients with blood, immune, muscle or skin disorders it offers the hope that their faulty cells could be removed, tweaked in the lab and then re-implanted.

'Blood disorder'

But even if patients carrying a genetic disease were successfully treated, they would still be at risk of passing on that faulty DNA to their children. That's where gene editing in embryos comes in. Fix the error in a newly fertilised embryo and – in theory – it would provide a permanent genetic fix that would pass down the generations.

Earlier this year, in a world-first, scientists in China announced that they had carried out gene editing in human embryos. They were attempting to correct a gene that causes an inherited blood disorder, beta thalassemia. The laboratory experiments had very mixed results, showing this technology is still in its infancy. It was a key reason why leading science bodies decided to organise the first global summit on gene editing.

'Glimmer of light'

Not for the first time, ethics is playing catch-up with science. For some patients, gene editing is a technology which should be embraced. Charles Sabine carries the gene for Huntington's disease, an incurable brain disorder. The devastating condition affects cognition, movement and personality.

His father died of the condition, while his brother John now needs round-the-clock care. Those affected have a 50:50 chance of passing it on to their children. Charles and his wife used embryo screening to ensure that neither of their two children was affected.

But gene editing would offer the chance of correcting the fault in affected embryos. He told me: "It's too late for me but this technology offers a glimmer of light for families suffering from genetic diseases. For generations to come this could be priceless."

At the gene editing summit in Washington, there has been heated discussion about whether this embryo editing should ever go from the lab to the clinic. Marcy Darnovsky, executive director, Center for Genetics and Society in California, is not opposed to basic research using gene-edited embryos although she stresses there would still need to be strict controls.

But she would like to see international agreements banning the technology from ever being used for reproduction. "It's too risky and we don't need it. We already have embryo screening, which in the vast majority of cases allows affected parents to have a healthy child," she said. "This opens the door to a world of genetic haves and have-nots. We don't need more discrimination."

But Prof George Church, a geneticist at Harvard Medical School, believes it can and should be allowed. "People instinctively had fears about IVF technology at the beginning. This is the same. We need to do the research and once we get through safety and efficacy testing then it can progress to clinical trials," he said.

But talk of designer humans and genetically engineered children is all premature. None of the scientists at the Washington summit is remotely ready to take embryo gene editing into the clinic. It also risks overshadowing what might be a key benefit of embryo gene editing research, namely the increased understanding of human biology.

A team at the Francis Crick Institute in London has already applied to the Human Fertilisation and Embryology Authority, for a licence to do embryo gene editing. Sir Paul Nurse, director of the Crick, says the research may ultimately lead to improved efficiency of IVF and new treatments to reduce the rate of miscarriages.

He said: "This will really advance our ability to do research in human cells to understand how they work in health and disease – so it will be hugely significant." He also wants a public debate about the potential for gene editing to cure genetic conditions, which he believes might come in the next decade. "If it's the case, we need to be well prepared for it and that means a proper engagement between the public, scientists and Parliament. "The good news is that we are the best nation for discussing these issues that I've come across – but the debate must start now."

Fergus Walsh
3 December 2015
BBC

I. Say it in Russian.

Genetic enhancement; accessible tool; faulty; to carry out gene editing in human embryos; the first global summit on gene editing; devastating condition, to offer a glimmer of light for smb; get through safety and efficacy testing; to be remotely ready.

II. Say it in English.

Генетически измененный, наследственное заболевание крови, приветствовать использование новых технологий, неизлечимое заболевание мозга, круглосуточный уход, для будущих поколений, оживленная дискуссия, проводить исследования, преждевременный, обратиться за лицензией.

III. Paraphrase the Following Expressions.

Societal views evolve –
To be revisited on a regular basis –
To tweak the cells in the lab –
Ethics is playing catch-up with science –
Genetic haves and have-nots –
IVF technology –

IV. Insert Prepositions and Adverbs.

Children were conceived ... gene manipulation; be ... risk ... passing ... that faulty DNA ... their children; pass ... the generations; this technology is still ... its infancy; to ban the technology ... ever being used ... reproduction.

V. Summarize the article. Provide arguments for and against gene editing. Do you embrace the idea of genetically engineered children?

UNIT XIII

MEDICAL RESEARCH

Five Research Papers that Revolutionised Health

You are unlikely to find The Lancet, Thorax or the Journal of the American Medical Association in your doctor's waiting room, but their contents have more impact on your health than the usual lifestyle magazines.

Such journals, where papers are reviewed by other scientists in the same field – are where researchers set out their findings about how diseases occur, which drugs save lives or what surgical procedure is best.

The first scientific journal – Philosophical Transactions – was published 350 years ago this month. It is still produced now – along with thousands of others.

Here are five of the many papers that have transformed medical practice – and people's lives – over the centuries.

JAMES JURIN AND INOCULATION – PREVENTING SMALLPOX

In the 18th Century smallpox was a major killer. The idea of inoculating people to protect them from developing the disease was brought to Britain in 1721 by Lady Mary Wortley Montagu, the wife of the British ambassador to Constantinople in Turkey.

When a smallpox epidemic threatened Britain she asked her doctor to inoculate her daughter. Royal physicians took up the idea, and doctors around the country followed suit.

But the treatment was controversial – people thought it was going to give them the disease. Sir James Jurin, editor of Philosophical Transactions, collected reports from around the UK. His research, published in the journal in 1723, found people were much more likely to die from smallpox than from inoculation. The findings were also published in pamphlets, and were important in persuading the public of the value of inoculation.

JOSEPH LISTER AND ANTISEPSIS – SURVIVING SURGERY

Patients who went into hospital up until the late 19th Century only had a 50/50 chance of coming out alive. Surgeons didn't wash their hands between patients and believed illnesses were passed on through the air.

Joseph Lister knew carbolic acid was used to disinfect sewage. In 1867, he published a paper in the British Medical Journal in which he explained how he had used carbolic acid to treat patients with serious bone fractures.

The acid, he wrote, "appears to exercise a peculiarly destructive influence upon low forms of life". Lister described washing wounds with the acid to destroy "septic germs". He then wrapped the wound in an antiseptic paste, made of carbonate of lime, carbolic acid and linseed oil, and the bone healed without infection.

But his research was not immediately accepted in his home country. Colleagues did not believe that bacteria existed because they could not see them, and his theory was first accepted in Europe and the US.

RICHARD DOLL – SMOKING AND LUNG CANCER

Smoking was once seen as both fashionable and good for health. In the late 1940s doctors noted a big rise in the number of deaths from lung cancer in the UK, Australia, Canada, US, Turkey and Japan since the end of World War One.

There were two potential culprits that had changed over the 20th Century – industrial pollution and smoking. Richard Doll was the British statistician working for the Medical Research Council who published a ground-breaking paper in the British Medical Journal in 1950 that concluded there was "a real association between carcinoma of the lung and smoking".

He looked at the incidence of smoking and lung cancer in a large number of patients and compared their experience with people who had different cancers – what scientists call a control group. His findings led him to give up smoking.

But despite many subsequent studies that have supported the connection, the tobacco industry has not accepted the research.

BARRY MARSHALL – ULCERS AND BACTERIA

Ulcers had been thought to be down to stress, personality, smoking, or genetics, and the only treatment was drugs to neutralise the acid. But during the 1980s, two Australian researchers, Robin Warren and Barry Marshall, started to investigate another cause.

By the middle of 1982 they identified a bacterium called *Helicobacter pylori* (H.pylori) as the culprit, but peers thought living things could not survive the acidic conditions of the stomach.

Later – when they won a Nobel prize – Barry Marshall said: "No amount of logical reasoning could budge what people knew in their hearts to be true. Ulcers were caused by stress, bad diet, smoking, alcohol and susceptible genes. A bacterial cause was preposterous."

In frustration he decided to experiment on himself. He drank a broth containing H.pylori, and as he had expected, became ill. After 10 days of vomiting and bad

breath, he asked a colleague to look inside his stomach with an endoscope where he found the bacteria, as well as other symptoms which would lead to ulcers.

H.pylori had been proved to be the cause of ulcers. The researchers' paper was published in the Lancet in June 1984. Warren and Marshall were awarded the Nobel Prize for Medicine in 2005.

Ulcers are now cured with a short course of antibiotics.

FREDERICK BANTING - DIABETES AND INSULIN

In January 1922, 14-year-old Leonard Thompson was in hospital in Toronto seriously ill with Type 1 diabetes.

The only treatment available was starving the body of sugar, so he was very thin and expected to die. But he was lucky enough to be in the first recipient of insulin extracted from cows, given by Frederick Banting.

He had an allergic reaction to the first injection but the second, of a purer extract, had dramatic positive effects and he lived for another 13 years.

Doctors had known there was something wrong with the way the pancreas worked in type 1 diabetes that led to a build up of sugar in the blood. But until the work of Banting and others, they could not find a way of extracting the substance that we now know as insulin.

An account of the work was published in the Canadian Medical Journal just two months after Leonard's first treatment. Banting, and a colleague John McLeod, were awarded the Nobel Prize for Medicine or Physiology in 1923. Millions of lives have since been saved by the discovery of insulin.

By Deborah Cohen
BBC Health Check
15 March 2015

I. Answer the following questions.

1. Who introduced the idea to inoculate against small pox?
2. What helped to persuade the public of the value of inoculation.
3. Why were operations hazardous in the past?
4. Why wasn't the idea of using antiseptics accepted in England at once?
5. When was the link between smoking and lung cancer established?
6. Why did Barry Marshall decide to experiment on himself?
7. What effect did the first injection of insulin have?

II. Say it in Russian.

Carbolic acid; sewage; potential culprits; subsequent studies; ulcer; peers; to budge; in frustration; the first recipient of insulin; a build up of sugar in the blood.

III. Say it in English.

Последовать примеру, сложный перелом, промышленное загрязнение, смехотворный, открытие инсулина.

IV. Paraphrase the Following Expressions.

The treatment was controversial –

A ground-breaking paper –

Ulcers had been thought to be down to stress –

To have susceptible genes –

To starve the body of sugar –

V. Insert Prepositions and Adverbs.

To persuading the public ... the value ... inoculation; illnesses were passed ... the air; a big rise ... the number of deaths ... lung cancer; to experiment ... himself; to be cured ... a short course ... antibiotics; to have an allergic reaction ... the first injection.

VI. Summarize the information about the research that had a great impact on medical science. Speak about one of the issues in detail, providing some extra information.

VII. Speak about the challenges that medicine faces today.

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СВЕТЛАНА ЮРЬЕВНА ПАВЛИНА

Medical Issues

Проблемы медицины

*Учебное пособие для студентов
IV курса отделения английского языка
переводческого факультета*

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