Electroradiology

Teacher's Guide

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Contents

The aim of this Teacher's Guide is to provide a guide to teachers using the related e-resources for vocational education classes.

The first section of the guide contains introductory notes on methodology and the role of different aspects of language within the course, plus some comments as to the teacher's different roles during the lesson and the implications of these.

Later sections deal with individual lessons and include full scripts of all listening and reading texts, keys for each task and suggestions for further work with the learners. The final section of the guide contains revision materials and mid- and end-of-course tests.

Introductory notes

Course goals

The material provided has specific and limited goals. The main focus is lexis related to specific technical areas and fields of professional competence. The lexis is presented in a range of communicative contexts. These are mainly transactional dialogues to provide listening practice of real-world language use, but also include reading texts from technical manuals and the like. These texts - both aural and written - contain many highly valuable examples of functional language. For anyone undertaking a career in these fields familiarity with a range of technical lexis is necessary but not by itself sufficient: as well as understanding the technical terms a worker must interact and cooperate with other workers, managers and clients. Therefore the notes provided for each lesson will include ideas on how to exploit the texts and examples for communicative as well as linguistic purposes.

Dealing with receptive skills

Pre-text work: activating schemata

Outside the classroom it is very rare for us to listen to or read a text without any kind of preparation. Generally, we know quite a lot about what we are going to hear or read: we know where it comes from, why it was written, what style to expect and how much information will be included, for example. We also have a purpose for our listening or reading. Perhaps we are looking for some particular information or perhaps we want to check if something we believe is actually correct. All of this helps us to read efficiently. Therefore it is important to set texts up in a similar way in class, using visual or other stimuli and allowing students time to build expectations and reflect on what answers they expect. The better we can generate interest in the topic and encourage the students to form expectations with regard to the text, the more effective our receptive skills work is likely to be.

Work on the text: task-types and sequencing

Tasks move from the very global or very specific to the more detailed. Initial comprehension tasks do not require the students to understand everything in the text, but rather serve to introduce the students to it. They do, however, still represent real-world practice, as the tasks reflect the way that we approach texts outside the classroom: getting a general impression, for example, or searching for a particular piece of information.

Post-text work: follow-ups and extensions

This can be linguistic (grammar or vocabulary) or skills (especially productive skills - speaking or writing). Not all texts offer potential for fluency, of course, but those that do can be usefully exploited through performance (acting out dialogues with a partner, for example).

The role of lexis

Lexis forms the main focus of the material. Each lesson introduces a range of technical terms, from individual items of vocabulary to fixed phrases of varying length and complexity. It is important to consider how these items will be used by the learners. Some items may be intended only for **passive knowledge**, which is to say the learners will need only to recognise and understand them when encountered in technical instruction manuals or parts catalogues, or when given instructions referencing them. Other items may be worth teaching for **active use** - i.e. the learners will need not only to recognise and understand them, but also to use them in communicative interactions and, therefore, to some degree manipulate them. Our awareness of this will determine how we teach the items and how much detail the learners should include in their notes.

Items of vocabulary and lexical phrases do not exist in isolation. Where there are common **collocational patterns** these should be highlighted to the learners, especially in the case of items for active use. In the learner's material these patterns are not explicitly identified but they will be listed in this guide. Very often this will not require the learning of any additional language items by the learner, as many collocating verbs and adjective are very simple ('do', 'make', 'have', 'big', 'major' etc). Highlighting the existence of these patterns, including them in the practice activities in the lessons and encouraging learners to **record them in their notes** are very valuable habits and this guide will include reminders and suggestions as to when and how to incorporate such work.

When teaching lexis it is also important to distinguish between **specific and general terms**. Learners need to be aware of how widely a given term is used. A term may have a limited technical meaning and be used only in a narrow range of contexts, such as in conversations between specialists, or it may be a term which can be used in communication with non-specialists in more everyday situations. Some terms, of course, may have multiple meanings so that they have one meaning in a technical conversation and another meaning outside of this. An example would be the term 'aggregate' which to a specialist may have one meaning (*a tractor connected to another piece of agricultural equipment*) but which to a layman may mean something entirely different (*the total score of a player or team in a fixture comprising more than one game or round*). Ensuring that learners are aware of these differences in usage is important to avoid potential problems outside the classroom later on.

One way to highlight collocations in a student-centred and engaging way, while still maintaining a clear focus on the items you wish to deal with, is to write up part of the collocation on the board and ask the students to find the collocating parts. For example, if the phrase is 'it was pouring with rain' then you might write up 'rain' on the board and ask the students to find the phrase with 'rain' in the text. Once they have done this you can establish if the phrase is a fixed expression or allows for some manipulation.

Teaching functional language

Functional language by its nature derives much of its meaning from the context in which it is used and therefore it is crucial to exploit the context when introducing such language, and to ensure that the intentions of the speakers are clearly identified. While some functional

expressions can usefully be analysed in terms of generative grammatical structures, most are best considered fixed or semi-fixed expressions and dealt with and recorded accordingly. This guide will list the most useful functional exponents occurring in each lesson, allowing the teacher to select according to the particular needs of the particular group.

When dealing with functional language the bare meaning is important but not always sufficient. Appropriacy is also an important aspect. Remember to establish whether a particular exponent is formal, informal or neutral, and in what contexts it may be used. As with collocations, make sure the students recognise which parts of the item are fixed or semi-fixed and which can be manipulated or changed. For example:

'*How do you do?*' is a fixed expression which is rarely changed.

'*How are you doing?*' is an expression which can be manipulated to a degree. For example, we can say '*How are we/they doing?*', '*How is he/she doing?*', '*How are you coping?*' and '*How are you managing?*' and so on.

Dealing with pronunciation

Broadly speaking, we can identify three aspects of pronunciation teaching:

- during language introduction and clarification
- prior to speaking tasks to facilitate production
- during feedback for remedial or corrective purposes

These will, obviously, affect the way we go about pronunciation work. During language introduction we may highlight aspects of the target language which we predict will be challenging, but we provide a model of the **whole item or structure**, with an emphasis on **accuracy**.

Fluency is much more the focus when dealing with pronunciation before speaking tasks. For this reason it is important to model and drill the language **in context** - putting the phrase in a short sentence, for example, rather than dealing with it in isolation.

With remedial pronunciation work the aim is to **raise awareness** of the error and demonstrate the correct form so it is helpful to **isolate and highlight the specific problem**, exaggerating it for clarity's sake.

Drilling is quite a mechanical activity, having its roots in behaviourist habit formation. To avoid losing the students' focus it is important to keep the energy level and the pace high, and having a clear drilling routine at your fingertips, so to speak, is the simplest way to achieve this. Here is one such pattern:

1. THE TEACHER MODELS THE TARGET LANGUAGE THREE TIMES
2. THE STUDENTS REPEAT CHORALLY
3. THE STUDENTS REPEAT CHORALLY AGAIN
4. THE TEACHER HIGHLIGHTS KEY ASPECTS OF THE TARGET LANGUAGE
5. THE STUDENTS REPEAT CHORALLY
6. THE TEACHER NOMINATES INDIVIDUAL STUDENTS TO REPEAT INDIVIDUALLY WITH CORRECTION AS APPROPRIATE

7. THE STUDENTS REPEAT CHORALLY TO FINISH

The entire drill should be conducted at pace without allowing the energy levels to fall, which means that we move from stage to stage without hesitation. Effectively it can become something akin to a rap with the only pauses when correction is required. The students may repeat the target language five or six times in total in the space of less that two minutes, giving them intense practice without boredom and loss of motivation. Within the drill the teacher may use various techniques - highlighting with gestures, showing contractions with fingers, asking students to identify particular words in the phrase and so on - and after the drill the teacher may choose to follow up with some repetition in pairs to allow monitoring. It is important to remember that no drill can guarantee perfect pronunciation; it is a process which takes time and which tends towards gradual incremental improvement rather than leaps forward.

The role of grammar

Grammatical structures are not the main focus of the material. That is not to say that they have no place, but rather that they should be introduced where a focus on the structure is likely to be of communicative value to the learner. Though, as said above, functional exponents are generally most usefully taught as expressions, it can sometimes be beneficial to highlight generative grammar patterns and this guide will highlight where this is the case.

Recycling and revision

The material includes recycling and revision tasks at the end of each module and this guide contains quizzes after each second module and an end-of-course test. Of course, more recycling can be incorporated, particularly of vocabulary, collocations and functional language. One way to do this is with a revision activity at the start of each lesson. Some possibilities requiring little preparation:

Back to the board - The students work in pairs or groups. One person sits so that they cannot see the board. The teacher writes a word or phrase on the board and each group tries to make their colleague say the word by defining it or providing examples. This can be done as a competitive game.

Pairs word race - Put the students into two groups. Each group chooses five words from the last lesson(s). The students pair up with a partner from the other group and take turns trying to make their partner say each word on their list using definitions or examples. Again, this can be a competitive task.

Hangman - This can be played with the group as a whole. If the students guess the word then they win; if they do not then the teacher wins.

Wordsearch - A wordsearch is easy to make and can be a useful way to revise items taught previously.

Spoken gapped texts - You can use a text from the previous lesson or use one from the beginning of the lesson at the end of it. Simply read the text out replacing certain words with 'something' and ask the students to provide the missing word each time you do.

Anagram - Write items of vocabulary from the previous lesson on the board with the letters jumbled up and ask the students to write them out correctly.

Lesson notes

Module 1: Performing X-ray diagnostic examinations and procedures

Warmer: **topics for discussion**

Initially, the students answer the questions in pairs and then the teacher asks each of them or one student per pair (depending on how large a group of students is and the time available) for some feedback - a brief speech on what they've learned from the other student.

The teacher can either print the questions prior to the class or read them out loud - in which case, there should be no more than 2-3 questions so that the students can remember them clearly and provide logical, valid and conclusive arguments and reasoned thoughts.

Sample topic questions:

1. Do you know anyone who works as an electroradiology technician? If yes, who is it?
2. Have you ever talked to them about the advantages and disadvantages of the job? Could you list some such pros and cons?
3. What specific knowledge is required to become a professional electroradiology technician? What kind of examinations are they qualified to conduct?
4. What is the difference between X-ray and MRI? Can you explain the two terms?
5. Is the job of an electroradiology technician safe or does it pose certain risks, which, if handled with reason and applicable precaution measures, can be reduced or even entirely eliminated?

You can start with a short quiz to check if the students are familiar with the basic terms. Ask them to draw a two-column table on a sheet of paper. One of the columns is to be labeled 'X-ray' and the other 'MRI.' As you read a number of expressions related to one of the categories, the students' task is to put them in the right column. This can be done by each student individually, in pairs or in groups of four/five students. In the case of the latter, the teacher can award students with points for each correct answer. This way it is easier to engage those students who only willingly participate when there is some competitiveness allowed or even encouraged.

X-ray	MRI
ionising radiation	soft tissue - tendons and ligaments
bone fractures	contrast dye
possible birth defects	no biological hazards
relatively cheap	expensive
takes a few secondo	takes up to two hours
2D imaging	3D imaging

photographic film/digital image	digital image

Read the expressions in random order. It is a good idea to check the answers right after completing the quiz. This way the teacher makes sure that the correct answers are discussed and the wrong ones proved to be so.

Screen 1

Ask the students a couple of questions about the poster.

Sample questions:

- How old is the patient/the electroradiology technician?
- What are they wearing? (glasses, a lab coat, a lead apron)
- What kind of examination if conducted in the picture?
- What is the patient's facial expression? (anxious, nervous)

Instruct the students to click on the job description button located below.
Another page with an audio slideshow about the job of an electroradiology technician will appear on the screen.
Ask the students to describe the poster of the slideshow.

Sample questions:

- What is the doctor wearing? (a smart light blue shirt, a black tie, a stethoscope)

- What is he doing?
- Which parts of the skeletal system are presented on the model? (vertebral column, pelvis)
- What is in the background?

Instruct the students to watch the job description presentation and listen to the narration.
Ask the students what are the qualities desired in an electroradiology technician.

- perceptiveness, attention span, spatial imagination, good eye-hand coordination, patience, assertiveness)

Ask one or two of them if they think they have these qualities.
Ask the students why is it, in their opinion, that these particular qualities are so important in the job.
Then display the slideshow on a screen projector. (You should prepare it before the class starts)
Stop the slideshow at each new photograph and ask different students to describe the illustrations. Tell them to focus on: who is there in the picture, what are they wearing, colours, where it the picture taken and what is happening.

Screen 2

Dialogue Video
The students watch a short video with actors. It presents a short scene between a patient and an electroradiology technician.

Title: "X-ray imaging"
Audio transcript:

P: Hello. I had an accident in Physical Education and I think I might have broken my big toe. It hurts so much, it's blue and swollen like a balloon.
E: You must have been to an orthopaedist, then. Hand me the referral, please. I have to know how to position you and which body area to X-ray.
E: Follow me to the X-ray lab. Are you able to get on the table? That's the only way to do the X-ray.
P: Of course. Just a sec.
E: Your doctor recommended the side-view imaging, so I'd like you to lie down on your healthy side. Bend the injured leg at the knee and hip. The medial edge of your foot and big toe must come into contact with the table.
P: Sounds complicated. Tell me what to do step by step.
E: OK. One more thing - the injured toe must be straight, as it is, but the other toes should be bent planetary. We can help them do so by having you hold a long band. I'll put a sandbag on your shin to immobilise it.
P: There's a lot to do to X-ray a toe.
E: Right. Ok, so the position is correct. Now I'll put a lead apron on you that will protect you against unnecessary radiation and I'll reduce the beam so that it's only as wide as required. Also, I'll feed the X-ray equipment with a proper cassette and mark it appropriately.
P: Thanks. I didn't understand much of what you just said, still, your confidence makes me

feel safe.
E: Well, then. I'll leave you here for just a moment and go to perform the X-ray. Please don't move.
E: All done. Please wait outside, the radiograph will be ready soon.
P: Great, thank you.

Ask the students if they have ever had a broken bone and when was the last time they had an X-ray done. Ask them if they are familiar with the single most relevant contraindication against undergoing an X-ray examination (pregnancy).
Ask the students who an orthopaedist is.
Ask them to describe the electroradiology technician's attitude toward the patient.
Is the patient in pain?

Useful expressions

Describing pain:

- to be in pain/to be racked with pain
- feel/experience/suffer (from) pain
- kill the pain/make the pain go away
- acute/extreme/severe/great/unbearable/chronic/dull pain
- a cry of pain
- a threshold of/for pain
- pain grows stronger/intensifies/disappears
- painkillers
- painful/pain-free/painless

Pronunciation practice:
Ask the students to repeat the words from the video out loud after you:
/knee/
/shin/
/will/
/beam/
/feed/
/still/
/feel/

Ask the students if they hear the difference in pronunciation between the words:
/been/ and /bin/
/wheel/ and /will/
/steel/ and /still/
/sheep/ and /ship/
/sleep/ and /slip/
/teen/ and /tin/
/green/ and /grin/

Practice the correct pronunciation together.

Roleplay

Ask the students to practice the dialogue in pairs. Assign each pair a body part that needs to be x-rayed during the examination (ankle, foot, knee, arm, back). When they finish, ask two pais to act in front of the whole class. Tell the students how much you appreciate active participation. If there are no volunteers, choose a pair of students on your own.

Exercise 1.
Instruction: Mark the sentences true or false.

Students watch the video one more time.
They complete the exercise on their own.
Tell the students not to click on the 'Check answers' button when they are ready. When everyone's finished, pick a student per each question to read it out loud and answer. Ask them to elaborate on the matter instead of simply saying "true" or "false". Ask them to cite or paraphrase the part of the conversation where the answer to the question is stated or an issue discussed.

Answer key:

1. T
2. T
3. F
4. F
5. T
6. F
7. T
8. F

Extra questions:

1. What happened to the patient? What was the patient doing when the accident happened?
2. Does the patient have a referral with him? What kind of a doctor gave it to him?
3. Does the electroradiology technician help the patient get on the table?
4. Are there any protections that are required during the examination? How can the patients be protected from too much harmful radiation since they cannot go to another room, like the technician does?
5. Does the electroradiology technician leave the room where the patient is to go make the X-ray? Would it be safe for the technician to be present at the room where the images are taken since they do it many times a day?
6. Does the electroradiology technician ask the patient to wait for the results or advises them to go home and collect the results another time?
7. The electroradiology technician learns that from the referral. What kind of imaging technique was recommended by the orthopaedist the patient went to see earlier?
8. The electroradiology technician gave the patient instructions on how to position the leg that was to be examined. Did it require them sitting, standing or lying?

Exercise 2.
Instruction: Complete the sentences.

The students complete the exercise on their own.
Upon selecting a wrong answer they will receive feedback which will allow them to correct the answers by themselves. The feedback does not give a straight answer but rather functions as a hint.

Answer key:

1. big toe
2. side-view
3. on his healthy side
4. bent plantarly
5. shin
6. an apron
7. safe
8. in a few moments

Ask the students to name several body parts and bones. You can point to them or say their names in Polish.

ankle, knee, shin, thigh, elbow, neck, forearm, finger, tailbone, collarbone, shoulder blade, pelvis, breastbone, jaw, nails, chin, cheeks

Screen 3

Instructional Video
The students watch a short narrated video.
Title: "HSG test procedure"

Before watching the video, ask the students if they know what the HSG procedure is and if they are able to tell what the acronym stands for. *[hysterosalpingogram]*
Ask if they know what part of human body is examined by this imaging technique.
After a brief discussion, the students watch the video.

Audio transcript:

A 34 year-old female was referred by her gynecologist for HSG examination. The indication for testing is her problem with getting pregnant. HSG test will provide an image of the uterine cavity and the fallopian tubes. She's allowed to eat a light supper in the evening preceding the examination and it's advisable that the patient has an enema in the morning. Half an hour prior to the test a muscle relaxant suppository should be administered in the X-ray lab.

A nurse brings the patient to the X-ray lab. The electroradiology technician helps the patient relax and leads the conversation, collecting the medical information. The electroradiology technician confirms that the woman is in the first phase of her cycle, but isn't on her period. The examination cannot take place during menstruation or later than on the 10 th day of the cycle, counting from the day the menstruation has begun.

The electroradiology technician answers the questions of the patient and explains what the contrast examination is. Introducing a contrast medium allows to enhance the image of the oviduct and the uterine cavity. The problem with getting pregnant might result from fallopian tube obstruction.

A doctor enters the lab. The electroradiology technician helps the patient to lie down on the table in the supine position with her legs in stirrups. The doctor puts on a lead rubber apron to protect himself or herself against the harmful effects of X-rays. After preparing the patient, the electroradiology technician goes to another room, from where they operate the X-ray apparatus. While the doctor injects the contrast agent, the technician takes three anteroposterior radiographs.

After the examination the electroradiology technician helps the patient get up from the table. They call a nurse who will take the patient to the gynaecology ward where she'll be under observation for at least two hours. The observation is necessary as the contrast media injection may trigger an allergic reaction and cause some complications.

Questions/Topics for discussion:

1. Who is a gynecologist?
2. Every fifth couple has a problem with conceiving. Why is that?
    a. cigarettes, alcohol, drugs
    b. stress, fast pace of living
    c. hormones, genetically-modified food
3. Are there any recommendations as to what they patient should or shouldn't eat prior to the examination?
    a. a light supper
4. What substance should be administered around 30 minutes before the examination takes place?
    a. muscle relaxant suppository
5. Can the examination be conducted on a day when the patient is menstruating?
    a. No.
6. Is the patient allowed to leave the hospital as soon as the examination is over? Why? Why not?
    a. No. She needs to stay under observation for at least two hours due to possible allergic reaction to the injected contrast medium.

You can display the video on the screen projector and stop it on each next photograph. (00:00, 00:38, 00:54, 01:30, 01:48, 02:00, 02:26)

Ask about the people in the pictures - What do they look like? What are they wearing? What is visible in the background?
Collect the vocabulary used by the students on the board.

<u>Exercise 3.</u>
<u>Instruction: Complete the sentences with the phrases from the source list.</u>

The students complete the exercise on their own. They complete the sentences with the expression given. There is feedback that appears upon putting an incorrect word in a particular gap.

Answer key:

1. uterine
2. single
3. contrast medium
4. diagnosing
5. stirrups
6. lead apron
7. room
8. observation

The students check their answers with the 'Check answer" button.
You can ask them how many answers out of eight they had right.

Extra question: What is a single day admission procedure? Does is involve a patient staying the night in the hospital or are they free to go home?

Exercise 4.
Instruction: Choose the correct answer.

Language skills

This exercise aims at practicing language-related skills. All the answers provided either mean the same or are phonetically similar. Ask the students to complete the exercise on their own.

Answer key:

1. viewing
2. gives
3. answer
4. operates
5. takes
6. feels
7. help
8. watched

Notes:

1. Practicing the structure "to allow doing sth."
    a. Also correct: "to allow sb to do sth."
    b. INCORRECT: "to allow to do sth."
    c. verb patterns:
    d. view + object → to look at or watch sth
    e. search (for) + object → to try to find sth or sb
    f. look + AT + object → requires the preposition, can be immediately followed by a pronoun, e.g. look me up - denotes different meaning
    g. look at/look over/look through/look after/look around/look into
    h. Ask the students to practice sentences using one of these phrasal verbs.

2. The nurse performs the enema, which means that liquid is forced through their intestines for the purpose of emptying the bowels.
    a. to give sb sth
    b. to get sb sth → to bring sth for sb
    c. to take sb e.g. a long time
3. The verb 'to ask' has a whole other meaning. This means to formulate a question, as opposed to give an answer to it. The verbs 'to answer' and 'to respond' carry the same meaning, however they collocate in different manner. While the verb 'to answer' can be followed by 'a question,' as in 'Mary answered my question," the verb 'to respond' needs the preposition 'to,' as in "Mary responded to my question."
4. An electroradiology technician handles the operation of the equipment. They are qualified to use it in accordance with its intended purpose. One cannot perform the equipment, nor can they serve it. Both these options are incorrect in any context and illogica.
5. The natural collocation is to 'take a photograph.' There are countless fixed collocations such as this one, for instance:
    a. make noise, make progress, make a difference, make a choice, make a mistake, make an impression, make an appointment,
    b. do the dishes, do martial arts, do business, do research, do well,
    c. take a photograph, take a break, take an exam, take notes, take a phone call, take a trip, take turns.
6. The three verbs here are selected solely based on the phonetic similarity. The only correct answer is 'to feel uncomfortable.'
   You can spend some time practicing the Past Simple and Past Participle forms of these verbs, as they are often confusing.
    a. feel - felt - felt (irregular)
    b. fall - fell - fallen (irregular)
    c. fail - failed - failed (regular)

   Ask the students to write sentences with each of these verbs. Affirmative statements, negations and interrogatives are all worth practicing.
   Sample questions:
   Have you ever fallen asleep during a class?
   Did you fail the course?
   Have you ever felt like you don't fit in?
7. The structure goes: 'to help sb to to sth,' where 'to' can be omitted, as in "She helped me get back on my feet.'
   Both the remaining options here need a preposition to go with:
    a. to support sb in doing sth
    b. to assist sb in doing sth
8. This is about sb staying under medical observation in case some unexpected allergic or other reaction occurs. This doesn't mean that a doctor has to stare at the patient the whole time. 'To see' expresses the ability or physical possibility to look at something.

Screen 4

Listening Comprehension

Start with a question. Ask the students if they know any types of examinations that should be performed regularly once a person has reached a certain age.
As we keep getting old, so does our body.

The students listen to the recording. This is a conversation between a female patient of over 50 years old and an electroradiology technician.

(P): Hello. I'd like to have a mammography performed. I've just turned fifty and supposedly it's recommended to have a screening done at my age.
(E): Of course. But you could have had it done before, too.
(P): I know but it's my first time.
(E): Well, in that case, please have a seat and fill in a standard form. There is a couple of questions concerning your state of health, and your breasts in particular.
(P): I suppose my answers are confidential, though?
(E): Naturally. You don't need to worry about that.
(P): Ok. I'm finished and ready for the examination. Despite it's being such a hot day, I followed the instructions and used neither deodorant nor powder today.
(E): Excellent. However little, these substances can affect the results of mammography and therefore the necessity to perform it one more time.
(E): Please remove your clothes waste up, and any jewellery from around your neck or ears. Try to relax so I can position your breasts properly in the apparatus.
(P): It's easy for you to say. I'm tense at the very thought of it. I've heard it's very painful.
(E): Each patient has a different pain threshold. Some women say it's painful, some say it's not. Many patients of mine are surprised to see for themselves how little pain they experience contrary to what they've been told.

Follow-up questions:
Ask the students what are the cosmetics that should not be used before a mammography test. (deodorant, make-up powder)
Is a patient allowed to wear jewellery during the examination? (No)
Is it necessary for the patient to take off all their clothes or just some of them? (just those worn from the waist up)
How does the patient in the recording feel about the mammography? (nervous, anxious, afraid)

Exercise 5.
Instruction: Order the stages of taking an X-ray as they appeared in the dialogue.
Advise you students to carefully listen to the recording again before the start this exercise. Details are important here. Tell them to focus who say what and at which point during the conversation.

Answer key:

1. using neither deodorant nor powder

2. entering an X-ray room
3. stating a patient's age
4. filling in a form
5. removing clothes and jewelry
6. trying to relax
7. fitting breasts in an apparatus
8. performing an examination

Screen 5

Exercise 6.
Instruction: Solve the crossword.

Each student does the exercise individually.

Answer key:

Down:
1. threshold
3. apparatus
4. mammography
5. form
6. painful

Across:
2. breast
7. deodorant
jewellery

Screen 6

Game
The students take the quiz individually.

Answer key:

1. a mammography
2. uterine cavity
3. the type of viewing
4. lead rubber
5. rubber
6. electromyography
7. mammography
8. a screening test

You can award the students who have scored best results with extra points for active participation.
The content of this exercise extends beyond required knowledge.

Screen 7

Exercise 7.
Instruction: Choose the correct option which means the same as the underlined part of the sentence.

Answer key:

1. Tell me what to do step by step.
    - how I should proceed from one stage to the next
2. I think I might have broken my big toe.
    - I'm not sure but it's possible that I've broken
3. Your doctor recommended the side-view imaging, so I'd like you to lay down on your healthy side
    - advised
4. I'll put a lead apron on you that will protect you against unnecessary radiation.
    - prevent excessive
5. The photograph will be ready shortly.
    - very soon
6. I've just turned fifty and supposedly it's recommended to have a screening done at my age.
    - I'm 50 years old this year.
7. You don't need to worry about that.
    - You shouldn't be concerned
8. It's easy for you to say.
    - You're not the one in this situation.

Grammar practice:
modal verbs in the past
pronoun + might/could/would/should + have + ⋯

I never should have trusted him.
You should have told him the truth.
I might have said a little bit too much.
You could have prevented all of it.
useful expressions:
shortly
in no time
in the blink of an eye
any minute now
promptly
instantly
chop-chop
in a flash
lickety-split
instantly
swiftly
speedily
before long

adjectives of the opposite meaning formed with the '*un*' prefix:

necessary - unnecessary
able - unable
usual - unusual
comfortable - uncomfortable
prepared - unprepared
available - unavailable

Write the above pairs of the adjectives of opposite meaning on the board and ask your students to add some other to that list.

Then create similar lists for the prefixes: *in, il, im, ir, dis* and *mis*

sample adjectives:

il: illogical, illegal, illiterate, illogical, illegible

in: inaccurate, inappropriate, incapable, incoherent, inorganic, insane

im: impossible, immature, imperfect, improbable, impatient, imprecise

ir: irrational, irregular, irrelevant, irresponsible,

dis: disagreeable, displeasing, dishonest, disqualified, disinfected

mis: misdiagnosed, misinterpreted, mishandled, misleading, misbehaving

EXTRA
This exercise aims at stimulating creativity and brainstorming.

Ask the students to come up with examples of adjectives that start with in, *il, im, ir, dis, mis* or *un*, but are whole words and would mean nothing if these syllables were removed.
e.g. insist, discuss, universe, important, involve, immerse, missile

You can divide the class into groups of four - five students. Make this exercise a competition. Whichever team wins, they all get points for active classroom participation.

Screen 8

Exercise 8.
Instruction: Label the pictures.

Each student completes this exercise individually.
Follow-up questions:
What do L and R in the picture nr 4 stand for?
What are the parts of female reproductive system presented in the last picture?
ovaries, fallopian tubes, uterus, cervix, vagina
What is the protective cover typically made of?

Answer key:

1. X-ray apparatus equipped with a table
2. cassettes with X-ray film
3. protective cover
4. X-ray markers
5. mammography
6. contrast agent

Bonus questions:

1. Ask the students if they remember if there are any restrictions as to what a patient can and cannot eat an evening before the HSG procedure.
2. Ask the students if they remember if the electroradiology technician stays in the X-ray room with the patient while they conduct the examination.
3. Ask if they remember if the patient in the Dialogue Video they watched at the beginning of the lesson has to wait for the results until the next day.

Screen 9

Reading

Ask three to four students to read the text out loud, one by one. Focus on pronunciation. There is an audio provided for a couple of words. Ask the students to listen and repeat the words out loud. Correct them, if necessary.

Follow-up questions:

1. How old is Ms Franklin?
2. Does Ms Franklin belong to the high-risk group in regard to breast cancer?
3. What were Ms Franklin's results?
4. The doctors found a tumor in her breast. Which one?
5. Has the initial diagnosis proven to be right?

Screen 10

Exercise 9.
Instruction: Select the sentences that are true.

Each student completes the exercise individually.

Answer key:

1. T
2. T
3. F
4. F
5. F
6. T
7. T
8. T

Discussion topic:
Why is it important for women to have their breasts regularly examined?

Does diagnosing breast cancer at an early stage increase the chances for the patient's full recovery?
What is mastectomy? When is the treatment advisable?
Talk about the importance of pop culture icons setting an example for other women. (Angelina Jolie removing her breasts to minimise the risk of cancer)

Exercise 10.
Instruction: Complete the sentences.

Each student completes the exercise individually.
There is feedback provided so that the students can correct their mistakes.

Answer key:

1. mammographic
2. a mobile unit
3. had to be confirmed
4. by a different viewing method
5. applying pressure on certain points on the surface of a nipple
6. stronger
7. confirmed the initial diagnosis
8. a puncture

Useful structures:
/used to have/
/would/ with past reference
Explain the difference between the two structures.
Use these examples.

I would go to church every Sunday morning with my parents.
I used to go to church every Sunday morning with my parents.
I used to be overdramatic when I was a child.

/would/ - events and actions repeated in the past
/used to/ - regular past events and actions + states

Screen 11

Exercise 11.
Instruction: Complete the sentences with the phrases from the source list.

Grammar practice - Reporting verbs

Answer key:

1. Max **warned** her not to walk around the city at night alone.
2. Minnie **ordered** him to complete the report promptly.
3. Lucy **requested** his help with some urgent matter.

4. Lucas **suggested** they go to the cinema.
5. Hugh **asked** his father to lend him some money.
6. Henry **invited** his friends to celebrate his birthday with him at the weekend.
7. Hannah **admitted** that she was, in fact, unsatisfied with her job.
8. Fiona **encouraged** me to take my chances and go for it.

Verb patterns:

1. warn
    a. warn sb (not) to do sth
    b. warn sb about sth
2. order
    a. order sb to do sth
3. request
    a. request sb to do sth
    b. request sb
4. suggest
    a. suggest doing sth
    b. suggest (that) sb do - subjunctive
5. ask
    a. ask sb to do sth
    b. ask sb if/what/where/how/when/whether/whom/whose/who/etc. ...
6. invite
    a. invite sb
    b. invite sb to do sth
7. admit
    a. admit to sth
    b. admit to doing sth
    c. admit sth
    d. to admit that...
8. encourage
    a. encourage sb to do sth

Extra questions:

What would your parents warn you about back when you were a child?

- My parents warned me not to…

What has your father's boss ordered him to do that he was not happy about?

- My dad's boss ordered him to…

When was the last time you admitted that you were wrong?

- I admitted that I was wrong…

Who encouraged you to try and be the best version of yourself?

- …

EXTRA ACTIVITY
Reported Speech - Practice

Say a simple sentence, for example "I went to sleep at 11 p.m. yesterday."
Point to one of the students. Their task is to say what you have just said, only using the reporting verbs.
They say: "She said she had gone to sleep at 11 p.m. the day before."
Then ask the same student to come up with a sentence of their own, say it out loud and then point to another student whose task it is to report on it. Continue with the next student. Try and involve all the students in this exercise. Correct the mistakes. If needed, revise briefly the rules of reporting on what someone has said before starting this exercise.

OR:

You can prepare the sentences earlier and give each student a scrap of paper with the sentence written on it. This way you are in control of the grammar difficulties that are to be dealt with, but on the other hand, the students won't have to think creatively.

Sample sentences:

1. I went out with my friends last night.
2. My mum thinks she can save the world.
3. I'm going to Thailand next week.
4. I hate it when you do that!
5. I was at work when the accident happened.
6. I have never been to Italy.
7. She was doing just fine.
8. Tommy knew all about it and said nothing.
9. I had an X-ray taken yesterday.
10. My doctor's appointment is due tomorrow.
11. Angie took my car to work last Wednesday.
12. Tony makes me nervous.
13. Lily seems a bit odd today.
14. Elle is going it Italy in two weeks.
15. Melanie yelled at him.
16. Don't you dare go in there!
17. Are you proud of yourself?
18. You've just made my day.
19. I can't stand her.
20. I will do it later.

Exercise 12.
Instruction: Put the expressions in the correct groups.

Answer key:
X-ray diagnostics:
- basic mammography,
- HSG,

- X-ray photograph,
- targeted mammography.

Covers and protections:
- lead aprons,
- gonad lead shieldings,
- screens,
- walls.

Screen 13 Report - the students can check their results.

Exercises to be used as tests, homework assignments or during the class.

1. Report on the sentences given.

1. Maureen: "I had a great time last night."
……....

2. Elisabeth: "I'm having a doctor's appointment tomorrow at noon."
……

3. Noah: "Yesterday in the evening I was doing the laundry."
……....

4. Crystal: "Have you ever been to Beijing?"
……....

5. Cole: "Lucy is very nice."
……

6. Helen: "I am taking Veto to the vet."
……....

7. Alex: "Could you pass me the salt, please."
……....

8. Joan: "My mother drives me crazy."
……....

9. Owen: "I will go to the shop and buy some milk."
……....

10. Emily: "You should see a doctor, dad!"
……....

2. Complete the sentences with the reporting verbs given. Use the Past Simple form.

offer, warn, ask, accuse, admit, confess, apologise, invite, promise, refuse

1. She ……. me of stealing her earings.
2. Andy …….. all his sins to the priest.
3. Wendy …….. to help, but I thought I could handle it all by myself at the time.
4. Ashley …….. me and my husband to her birthday party.
5. My boyfriend …… to take me to Paris for our second anniversary.
6. My sister ……. to me for being mean.
7. Rupert ……. that he, in fact, had a drinking problem.
8. Miles …….. if he could be excused.
9. Evelyn …… me not to go to the park alone.
10. Tony …….. to do what she asked of him.

3. Choose the correct options to complete the sentences.

- I have to [saw // sew // sow] the missing button on.
- I will be [watching // viewing // looking at] the TV in the evening.
- My sister [failed // felt // fell] the exam even though she studied very hard.
- The photographer [took // talked // done] our family photo.
- Lisa [wanted // went // walked] to become an actress.
- Eric [is doing // is making // is taking] his homework.
- Laurie [thought // fought // taught] a kindergarden class.
- I [thought // fought // taught] it was my uncle.
- The warrior [thought // fought // taught] bravely till the very end.
- He [lied // lay // laid] to me one too many times for me to ever believe him again.

4. Transform the first sentence using the word in brackets so that it means the same as the second sentence. Use two to five words.

- Alison ……..…(go) to cinema each Saturday evening when she was a child.
- Minnie …….…… (be) moody when she was a teenager.
- You ……...…… (handle) this differently. Now she's crying her eyes out.
- - I saw a woman looking just like Lizzie in the park earlier today. But it …….…… (be) her. She's in Paris.
  - No, she's not. She came back yesterday.
  It ……..……..…. (be) her.
- You never ……. (believe) her in the first place.
- She ……. (drive) to New Jersey and back in half an hour! That's simply impossible.
- Arthur ……...…….. (be) the best swimmer in his school. It's a shame he stopped training.
- You ……...…… (listen) to me. No it's too late.
- My parents ……...…… (take) me to Disneyland each year on my birthday.
- I …….. (choose) a whole other future, but instead I've become a dog walker.

5. Provide the adjectives of the opposite meaning using the following prefixes: il, in, im, ir, mis, dis, or un.

mature	
logi cal	
patient	
honest	
precise	
leading	
qualified	
literate	
possibile	
necessary	
available	
interpreter	
handled	
responsible	
coherent	

Module 2: Performing MRI (Magnetic Resonance Imaging) examinations

Screen 1:

Warmer: **topics for discussion**

Are there any dietary restrictions prior to an MRI examinations?

What are the advantages of this particular imaging technique? (It's safe, painless and non-invasive, it provides detailed image of internal organs and tissue. It doesn't use ionising radiation, unlike the X-ray and CT scanning machines.)

What about the disadvantages? (The machines are extremely expensive, they can cost up to several million dollars.)

Since the technique employs magnets, no metal parts of clothing or jewellery are allowed in the tube, as they might falsify the results. This is why not everybody can have an MRI done. Some people have metal medical devices placed in their bodies, such as cochlear implants, clips or pacemakers.

How do patients who suffer from claustrophobia react when they are slid inside the MRI scanning tube? What could be done by the doctor or the electroradiology technician to make such patients feel more comfortable and prevent them from panic attacks caused by anxiety? Is the attitude of the electroradiology technician important when it comes to their communication with patients? What qualities should a person who handles MRI scanning possess?

Apart from that, it is also really loud in the MRI apparatus when it's running. In what way are patients protected against the unpleasant noise? (They get earplugs or headphones.)

How do patients and the electroradiology technicians communicate during the examination? (Via an intercom placed inside the tube and in the room where the specialist stays in the meantime.)

Are there any side effects that patients complain from after the MRI examination?

They are extremely rare, but can include:

- nausea,
- headaches,
- burning in the place where the contrast dye was injected,
- allergic reactions such as hives or itchy eyes.

Ask the students if they know and can explain in their own words how does the MRI technique really work? If they can't answer this question, you can give them some hints, like "M stands for magnetic," or "the human body is largely made of water molecules, where each such molecule is composed of atoms." Ask them what are the parts of an atom. (protons, neutrons, electrons) and ask which of them react to the magnetic field present in the MRI apparatus.

Ask the students if they are familiar with the related examination called the functional magnetic resonance imaging (fMRI). What is its purpose? (To measure brain cognitive activity.) How is is achieved? (By monitoring blood flow to particular brain areas.)

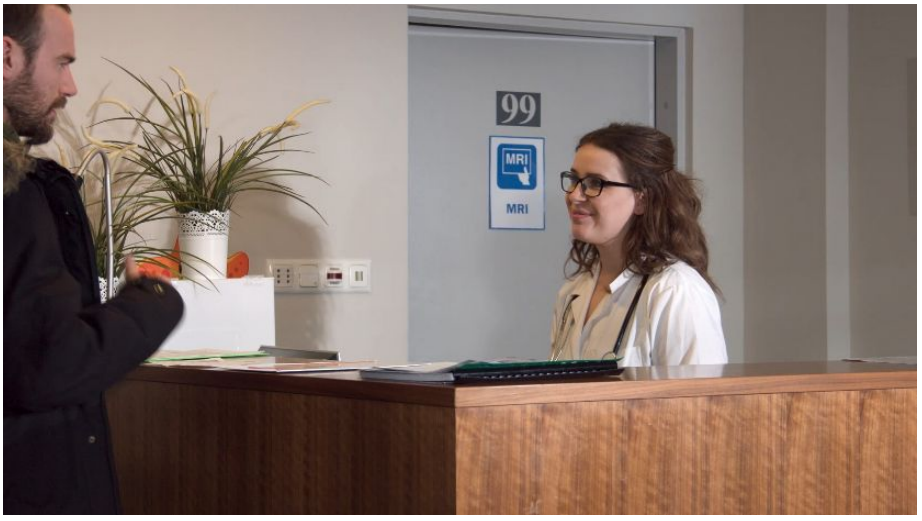
Ask the students if they know how long does an MRI examination take. (20 to 60 minutes, depending on which part of the body is examined.)

Can the patient move inside the MRI machine? (No, they should stay as still as possible.) Why? (Because their movement can distort the results.)

Can pregnant women undergo the procedure? (There isn't sufficient research on the matter, but doctors generally agree not to inject pregnant women with contrast dye, unless necessary.)

Screen 1

Ask your students to describe the poster on the cover page.



There is a symbol MRI on the door. What does it stand for?
Where is this photo likely to have been taken in? (reception desk in a clinic/hospital)
What season of the year could it possibly be? (The man is wearing a winter jacket.)
Who is the woman?

Screen 2

Dialogue Video

Title of the video: "Magnetic resonance imaging of the head"

The students watch the video. It presents a short conversation between a patient and an MRI technician that takes place at a reception desk in an MRI laboratory.

Audio transcript:

P: Hello.
T: Hello. What can I do for you?
P: I've a referral to get an MRI of my head done.
T: Have you been to the registration yet?
P: No, not yet.
T: Follow me then. You need to make an appointment and receive instructions on how to best prepare yourself for the MRI examination. Have you got any questions?
P: Is it safe?
T: Absolutely. It's perfectly safe and painless. The intensity and energy of the magnetic field is within normal levels.
P: I'm a bit worried about the results.
T: Let's not get ahead of ourselves, shall we?
P: And what about the results? Are they accurate?
T: Your referral says it's a diffusion-weighted MRI. That's even more precise than the usual one.
P: What does it mean that it's diffusion-weighted?
T: Well, it shows not only the cross-section of your organs and tissue, but also their microstructure. It allows immediate diagnosis, and as a result, highly effective treatment.
P: Do I have to prepare myself for the test in any particular way?
T: You'll be given an information brochure. Everything's in there. Remember not to wear any metal on you. Take off your belt and remove any jewellery.
P: I'm a tv presenter so what about make-up? Is it true that it can affect the results?
T: It's best not to wear it. Also, it's advisable not to use any hair products before the test. They often contain metals and can distort the results.

P: Thanks. Bye.
T: Oh, one more thing. Do you have a pacemaker, metal osteo synthesis, or a cochlear implant?
P: No, why?
T: These devices can distort the image. OK. Please pick a convenient date and make an appointment at the reception desk.
P: Thanks again. Goodbye.

Follow-up questions:

1. Initially, the patient has certain concerns. What are they?
2. Is there a difference in the results accuracy between the usual MRI and the diffusion-weighted MRI that the patient was referred to?
3. How soon can the diagnosis be made by the doctor after the diffusion-weighted MRI?
4. What instructions has the patient received? (Not to wear any metal pieces or jewellery.)
5. Is it allowed to wear make-up during the MRI examination?
6. Is it true that some cosmetics can distort the MRI procedure results? If yes, what kind of such cosmetics are mentioned in the video?
7. Did the electroradiology technician make the patient less anxious about the examination?

Useful expressions:

- admit/discharge a patient
- terminally/gravely/seriously/severely/chronically/fatally/incurably ill
- experience/deal with/bring/provoke/alleviate anxiety
- anxiety attack
- a feeling of claustrophobia
- give sb/suffer from claustrophobia

Useful structures:

- It's best (not) to…
- It is advisable (not) to…
- It is (not) allowed to…
- One mustn't...

Exercise 1.
Instruction: Complete the sentences with the correct word from the source list.
Each student completes the exercise individually. They are provided with feedback that is displayed upon selecting a wrong answer.
Answer key:

1. magnetic field
2. examination
3. diffusion
4. metal
5. cochlear implant
6. MRI
7. cardiac pacemaker
8. microstructure

Screen 3
Exercise 2.
Instruction: Complete the crossword.
Each student completes the exercise individually.

Answer key:
Down:
1. metals
2. pacemaker
6. image
7. field

Across:
3. diagnosis
4. referral
5. MRI
8. jewellery

Ask the students what a pacemaker is and who needs it.

Screen 4

Instructional Video
TItle of the video: "Diagnosis of multiple sclerosis (MS)"
The students watch the video.
Audio transcript:

Magnetic resonance imaging or MRI is a technologically advanced diagnostic test that allows accurate detection of even the smallest changes in the body. Thanks to this technology it is possible to diagnose many diseases at an early stage of their development, one of which is multiple sclerosis, an autoimmune demyelinating disease.
The diagnosis of multiple sclerosis is possible thanks to a modification of the T2 weighted sequence, called the FLAIR sequence. Areas with a small amount of water appear dark, and those with high content, that is lesions or other pathological processes, appear bright on image.
A patient interview is necessary before starting the MRI examination. Once any contraindications have been excluded, the electroradiology technician can proceed with the examination. Should the patient suffer from claustrophobia, the doctor may decide to administer sedatives and sleeping pills. All procedures related to administering medications are completed by a qualified nurse, which facilitates a problem-free performance of the examination.
The magnetic resonance apparatus consists of a tunnel open on both sides, into which the patient is slid in while lying on a mobile table. The tunnel is equipped with light and ventilation as well as a loudspeaker and a microphone facilitating communication with the technician. During the examination the patient should lie still, so it is important that they are comfortably positioned. Each MRI sequence lasts from 3 to 10 minutes, during which the patient hears sounds of varying volume. A head examination focused on the diagnosis of MS takes about 30 minutes.

Follow-up questions:
1. How long does an MRI sequence take? (3 to 10 mins)
2. How long does a head examination focused on the diagnosis of MS take?

Introduce the structure “should there be any ⋯, you ....”
e.g. Should you have any questions, don’t hesitate to ask.

Pronunciation practice:
/table/
/able/
/unable/
/comfortable/
/fashionable/
/applicable/
What is the difference in pronunciation of the first three and the remaining words?

Spelling exercise:
Spell the following words out loud and ask your students to write them down on a piece of paper. Change the pace. Start slowly. Then, spell each next word a little bit faster until it’s really fast.

1. necessary
2. legendary
3. performance
4. examination
5. communication
6. claustrophobia
7. sedatives
8. administer
9. contraindications
10. electroradiology
11. sclerosis
12. sequence
13. autoimmune
14. development
15. demyelinating

Exercise 3.
Instruction: Mark the true sentences.
Each student completes the exercise individually. Ask them not to click on the “show answers” button once they have finished. Ask one student per sentence to read it out loud and decide whether it is true or false. Ask them to relate to the video so that they don’t just guess and actually know where to look for the information.
Answer key:

1. T
2. T
3. F
4. F
5. F
6. T
7. F
8. T

Exercise 4.

Instruction: Assign the elements to the appropriate group to form meaningful expressions with make or do.

Answer key:
make: an appointment, something possible, something difficult, a diagnosis, sure
do: an MRI, well, as advised
Idiomatic expressions:
Do I make myself clear?
early to bed and early to rise (makes a man healthy, wealthy and wise)
make history/ a difference/ a mess/ a move/ an entrance/ an appearance
it takes money to make money
you made your bed and have to lie in it
I made my peace with it
make yourself at home
I'll make it worth your while
you made a fool of me

you do the math
nothing to do with someone
have better things to do
do business
do a hatchet job on
do a service/disservice
do time
do well by someone
do without

Ask the students work in pairs and prepare short two-line dialogues using the above expressions. You can write them on the board beforehand.

example:
A: Are you still mad that you didn't get the job?
B: No, it's fine. I made my peace with it.

C: Sorry, I don't have time for this.
D: But I promise I'll make it worth your while.

E: I haven't seen Mark around latel
F: That's because he's doing time.

G: How about we take care of this investment together?
H: Sorry, I don't do business with strangers.

Screen 5

Listening Comprehension
The students listen to a recording. It presents a student who takes an exam.

Audio transcript:

K: Hello, Good morning.
M: Good morning, how can I help you?
K: I've got a few questions concerning the magnetic resonance imaging.
M: Ask away!
K: Please, tell me what determines the relaxation time.
M: Relaxation time, which is going back from spins to the agitation state, depends on the tissue and the sequence type. MRI can be performed in different sequences.
K: So how many and what kind of sequences do we distinguish? Go ahead and discuss one of them.
M: Due to basic parameters we can distinguish four sequences: sagittal and axial T1 and T2 weighted images, diffusion and FLAIR imaging. T1 weighted images represent best the anatomical structure of the brain, showing the grey matter in dark colours and white matter in light ones. Cerebrospinal fluid is also shown in dark colours.
K: What is FLAIR that you mentioned before?
M: It's a modification of the T2 weighted image sequence. Images with a big amount of water are shown in brighter colours and those with smaller amount in darker. FLAIR is used mainly in the diagnosis of demyelinating diseases.
K: What are the contraindications for performing MRI?
M: There are few. Those would be claustrophobia, electronic implants like a cardiac pacemaker or a cochlear implant. It's also inadvisable to have it done in the first trimester of pregnancy.
K: Thank you for dispelling my doubts, goodbye!

<u>Language practice:</u>

- depend on

She depends on you.
What does the time needed to perform this examination depend on?

- CAUSATIVE: to have sth done

1. My car needs repairing → I need to have my car repaired.
2. Their house was repainted. → They had their house repainted.

Write two sentences on the board:

1. I went to the car workshop to repair my car.
2. I went to the car workshop to have my car repaired.

Ask your students if they can explain the difference.
In the first sentence (which is rather unlikely) the person speaking is to repair the car themselves. The speaker in the second sentence will have the car repaired by a mechanic.

few/a few

Explain the difference on the basis of these two sentences.

1. I have a few friends.
2. I have few friends.

fewer/less

Explain the difference on the basis of these two sentences.

1. Mary has fewer friends than Audrey.
2. Mary has less courage than Audrey.

QUIZ

Give each student a sheet of paper. While you read the following nouns, their task is to write "fewer" or "less." Award the student who gets the most points with extra points for classroom participation.

1. machine [FEWER]
2. patience [LESS]
3. time [LESS]
4. water [LESS]
5. chair [FEWER]
6. car [FEWER]
7. friend [FEWER]
8. tree [FEWER]
9. money [LESS]
10. oil [LESS]
11. book [FEWER]
12. king [FEWER]
13. humour [LESS]
14. client [FEWER]
15. radiation [LESS]
16. energy [LESS]
17. knowledge [LESS]
18. atom [FEWER]
19. molecule [FEWER]
20. patient [FEWER]

Exercise 5.

Instruction: Complete the sentences with the correct form of the verb provided.

Answer key:

1. recommended
2. depending
3. shown
4. relaxation
5. imaging
6. diagnose
7. contraindication
8. stressful

Passive voice - Revision

Ask the students to transform a couple of sentences into Passive Voice.

Sample sentences:

1. I find electroradiolgy interesting. (I am interested in...)
2. People often tell me I seem nervous. (I am often told⋯)

3. Gary has little time due to his research project. (Gary is occupied with…)
4. Linda puts her heart into teaching. (Linda is devoted to…)
5. Mary's parents don't let her date yet. (Linda is not allowed to…)

Then ask them these questions:

1. What are you interested in?
2. Is there anything you are not allowed to do?
3. What are you really devoted to?

<u>Adjectives ending in 'ful' or 'less'</u>

Divide the board into two columns. One titled 'ful' and the other one 'less.' Point out that the 'ful' suffix is always spelled with single 'l, even though the word 'full' is spelled with double 'l', for non-native speakers of English language sometimes get confused. Note that some adjectives can form both adjectives ending in 'less' and 'ful,' while other can only form one of them. Ask each student one by one to come to the front of the classroom and write the following adjectives in the correct column, depending on the spelling:

- LESS	+ FUL
helpless	helpful
useless	useful
	beautiful
careless	careful
harmless	harmful
helpless	helpful
hopeless	hopeful
endless	
painless	painful
tasteless	tasteful
	peaceful
homeless	
priceless	
	playful
	successful
worthless	
childless	

Homework assignment:
The students are supposed to come up with a sentence per each of the adjectives listed above. Make sure that they understand all of them. Advise them to work with a dictionary.

EXTRA:

a spoonful
Tell the students how to use this phrase. Explain that if they want to express that the spoon is full of some substance, they need to say 'a spoonful of' rather than 'a spoon of.' The second option is also understandable, but since we're aiming at linguistic correctness, the first is advisable, as it refers to the amount of a substance that can be held.
e.g. a spoonful of: coffee, sugar, mustard, yogurt, lemon juice

Exercise 6.
Instruction: Divide the words into three groups specified below.
Each students completes the exercise individually.

Answer key:

Contraindications	Types of sequences	Characteristics of MRI
● cardiac pacemaker ● metal-on-metal joint implants ● metal elements in clothing ● jewellery	● T1 weighted images ● T2 weighted images ● Diffusion-weighted imaging ● FLAIR	● painlessness ● safety ● high accuracy ● the use of magnetic field

Follow-up - Word formation - 'ness' suffix
Ask each student to come up with two nouns ending in the 'ness' suffix and write them on the board. If they cannot think of any example, give them a hint at the words:
forgiveness, loneliness, happiness, carelessness, emptiness, business

Screen 6

Game

Stage I
correct: relaxation, sequence, parameters
incorrect: tripod, report, brake
Stage II
correct: FLAIR, cochlear implant, diagnostics
incorrect: filling, gap tool, oil
Stage III
correct: electroradiologist, MRI, magnetic field
incorrect: element, cardiologist, pressure gauge

Each student plays the game and checks their results.

Screen 7

Exercise 7.

Instruction: Guess the words.

Answer key:

1. MRI LABORATORY
2. MAGNETIC FIELD
3. TISSUE MICROSTRUCTURE
4. CLAUSTROPHOBIA
5. FLAIR
6. METAL
7. COCHLEAR IMPLANT
8. STILL

After the students have completed the exercise, you can ask one of them to come to the front and write another word for the others to guess.

a. X-ray machine
b. lead apron
c. pacemaker
d. radiation
e. imaging technique

Screen 8

Exercise 8.
Instruction: Match the expression with the description.
This exercise is supposed to be completed by each student individually.

Screen 9

Reading

Ask a couple of students to read the text out loud, minding the correct pronunciation.

Follow-up questions:
Why is MRI imaging widely used in diagnosing neurological diseases?
What do you know about Alzheimer's disease? Do you know anyone who has it? Have you seen any movies where this particular disease is presented? E.g. 'Still Alice' - a film from the year 2014 starring Julianne Moore as Alice, a university professor in her early fifties, who discovers early symptoms of Alzheimer's. Ask the students who is it that they think suffers most from the Alzheimer's disease: the person who actually has it or those around them? Why is it so difficult for the closest relatives to take care of such a person?
In what way can the patient inform the electroradiology technician that they need to stop the examination?

Screen 10

Exercise 9.

Instruction: Choose the correct option.

Answer key:

1. Alzheimer's disease
2. functional MRI
3. magnetic and radio frequency field
4. metal objects
5. a cardiac pacemaker
6. claustrophobia
7. silence the sounds heard inside the scanner
8. mobile

Follow-up questions:
What is the Hashimoto's disease? Which internal organ does it affect? (thyroid) Is it typical of men or women? (mostly middle-aged women) What are the symptoms? (fatigue, unexplained weight gain, muscle weakness)
What is arachnophobia? (fear of spiders)
What is rubella? Why is it especially dangerous for pregnant women in the third trimester?

Exercise 10.

Instruction: Complete the sentences with the correct word.
Instruct the students to always ask themselves what part of speech they are looking for while completing this type of an exercise.
If there is an adjective before the gap (e.g. gap no. 3), they can be sure that it is a noun they are looking for.
They should ask the questions which the missing part of speech answers to.
(e.g. gap no. 1 helpful in WHAT? // DOING WHAT?)

Answer key:

1. diagnosing
2. doctor
3. current
4. still
5. patient
6. button
7. silence
8. disease

Ask your students to provide you with two different meanings of the words:

- current (as in electrical or as an adjective meaning present),
- still (as in not moving or meaning that something has not yet finished or ceased to be true)
- patient (as in having a lot of patience or as a person who is ill)

Pronunciation practice:
Explain to the students the difference in saying the words that are spelled in the exact same way, but are differently pronounced, depending on which part of speech they are.

example:

- permit (noun) and permit (verb)
- record (noun) and record (verb)
- import (noun) and import (verb)
- refund (noun) and refund (verb)

- insult (noun) and insult (verb)

These words are differently accentuated, the stress in the verbs is on the second syllable, whereas in nouns it is on the first syllable.
Some verbs and nouns are pronounced in the exact same way, however their spelling is not entirely the same.

example:
- advice (noun) and advise (verb)
- practice (noun) and practise (verb)
- defence (noun) and defense (verb)

Screen 11

Exercise 11.

Instruction: Label the pictures.
After the students have completed the exercise, ask them to describe the illustrations.
Useful structures: The picture presents…, In the top left corner there is…
Instruct the students to pay attention to colours, shapes and sizes.
What in the picture is big? What is it bigger in comparison with?

Answer key:

1. MRI apparatus
2. MRI image
3. cardiac pacemaker
4. cochlear implant
5. silencing headphones
6. alarm button

Screen 12

Exercise 12.
Instruction: Choose the correct answer.
Each student completes the exercise individually.

Follow-up questions:
- Does the MRI fall into the category of invasive imaging techniques?
- Is it advisable for pregnant women to have MRI test done?
- Leave no man behind. What does it mean in military context?

EXTRA ACTIVITY
Prepare small scraps of paper with numbers on it. You need to prepare as many as there are students in the class. Write each number twice. Put them all on one desk and ask the students to take one scrap each. This way you'll divide them into pairs. Each pair of students is supposed to decide who will be the student and who the teacher. Then, each pair will act out a test examination (similar to that which they listened to in the section "Listening Comprehension." They are supposed to ask questions related to MRI procedure. You can provide the students with sample questions that the teacher will ask the student. Give them 4-5 minutes to prepare.
Sample questions:
1. What objects are not allowed in the MRI apparatus?
2. Is the MRI examination safe for the patient? If yes, why? If not, why?

3. How does the diffusion-weighted MRI differ from the ordinary MRI?
4. Can pregnant women undergo the examination?
5. What does the acronym MRI stand for?
6. How does MRI differ from X-ray?
7. What is FLAIR?

Screen 13 - Report - The students can check their results.

<u>The following exercises can be used as tests, homework assignments or during the class.</u>

1. Transform the sentences below into the causative structures.

example: My hair looks bad. It needs colouring!
→ I need to have my hair coloured.

1. My children are not allowed to watch violent cartoons.
……....

2. The doctor recommended an MRI examination.
……....

3. Lucy's bike was stolen.
……

4. My assistant will call you to set up a meeting.
……

5. The electrical installation in my house needs fixing.
……

6. My car is dirty.
……

7. My watch is broken.
……

8. My hair is too long.
……....

9. My mum's house needs renovating.
……

10. Elle doesn't have time to take care of her garden.
……....

2. Complete the text with: *a, an, a few, few, a couple of many, much, any, some, fewer, enough* or *less.*

Last Wednesday was my birthday so I met with (1) …….. of my friends at (2)…….. restaurant. We all ordered (3) …… food and cocktails. It was a rather chilly evening, so there weren't (4) ……. people there. After (5) …….. time I realised there were even (6) …… of them. There isn't really (7) …….. to do in the town we live in. The waitress brought us (8) …….. bottle of wine and (9) …….. appetisers first. Then, after (10) ……..... quarter or so, she brought the main dishes. She asked if there were any dishes missing. There were, in fact. She forgot about (11) …….. oyster salad my friend Carl ordered. She apologised and went back to the kitchen. The salad came in shortly. We had (12) ……... great time. I can't remember the last time we spent this (13) …….. time just talking and laughing. At some point, Lisa asked Carl how (14) …….. dogs he had at the moment, because he is (15) …….. dog person and always babysits his friends' pets. He said five. That's quite (16) ……..! I have no idea how he does that. Sometimes I can't seem to find (17) …….. time to care of just one dog. He said it's simple, really, - the more dogs you have, the (18) …….. you think about how little time you have. I suppose he's right.

3. Complete the sentences with the correct form of the words in brackets.

1. Michelle finds this application of an MRI apparatus very ……. (use).
2. …… (happy) means different things to all of us.
3. The time of the examination is selected …… (depend) on the kind of tissue to be tested.
4. It is not …… (advise) to use scented cosmetics before the MRI examination.
5. There are no …… (indicate) for Melissa undergoing the examination.
6. I need to have my lungs ……. (test).
7. There are …….. (vary) imaging techniques.
8. Don't worry - the procedure is ……... (pain).
9. You're not ……. (allow) to wear jewellery inside an MRI scanner.
10. Shannon followed the doctor's ……..…… (instruct).
11. Mia is having a doctor's ……..…… (appoint) tomorrow.
12. This examination is characterised by high ……...…… (accurate) of results.
13. Mindy is ……...…….. (interest) in human sciences.
14. I'm sorry to tell you this but your case is ……...……. (hope).
15. Be ……...…… (care)! This is really dangerous.
16. Bad eating habits affect your ……...……. (appear).
17. People who often smile come across as more …...…….. (attract).
18. It is important to check the blood ……...…….…. (circulate).

19. The patients must be aware of the potential ……..…… (complicate).
20. What ……..…..……. (nation) is Juan?

Module 3: Performing nuclear medicine tests and treatments

Warmer:
Ask the students how they understand the term "nuclear medicine."
Ask them if they are familiar with the term 'scintigraphy.'
What is it? Why is it performed?
What is the difference between the X-ray and the nuclear medicine tests? Where does the source of radiation come from?
Are nuclear medicine examinations invasive?

Screen 2

Dialogue Video
Title of the video: "Preparation for a scintigraphy test"

P: Hello. I need to make an appointment. I have a referral from my physician. There.
E: Hello. Yes. I can see that you are to have a heart scintigraphy done.
P: That's right. I've had a heart attack so I'd like to have the examination done as soon as possible.
E: That's understandable. Ok, then. I'll sign you up for Monday and Tuesday at noon. Is that alright?
P: What do you mean? Two days in a row?
E: I'm afraid so. The test is performed over two subsequent days. On Monday we'll do the exercise ECG. You'll be riding a stationary bike or running on a treadmill. I'll be monitoring your heart and blood pressure. Once you are unable to continue the physical exercises, a nurse will administer the radioactive marker intravenously. Half an hour later I will record the image of your heart with a gamma camera.
P: Radioactive marker? Sounds terrifying.
E: Provided that you are not pregnant or breastfeeding, there's nothing to worry about, it's perfectly safe. After approximately 24 hours there will be no trace in your body that the isotope had ever been injected in the first place.
P: OK. That's comforting. But why do I have to come back here the next day?
E: The isotope will be administered once again. This time however, we'll be monitoring your resting heart rate. The two results will then be compared and analysed in terms of differences regarding the vascularisation of the heart muscle.
E: You mustn't have any breakfast and don't take any medication in the morning. No tea or coffee. And bring a bar of chocolate and a carton of milk or 18% cream to eat and drink after the isotope is administered. Please don't forget to take the referral. When it comes to my approval, I'll sign it during the examination.
P: Thanks. See you Monday.

Follow-up questions:
Why was it essential for the patient to get the test done ASAP?

What time was the test scheduled for?
Was the patient surprised when he learned that he would have to come twice?
What is going to happen on the first day of the examination?
What does it mean 'intravenously'?
What type of camera will be used to monitor the image of the heart after the intense physical effort?
What are the two conditions in which it wouldn't be safe to have a heart scintigraphy performed?
What will happen on the second day of the examination?
What will be paid special attention to while comparing the results from both days?
Does the patient have to come on an empty stomach?
Is the patient allowed to drink tea or coffee in the morning before the test takes place?
What document does the patient have to bring with him on the day of the examination?

Exercise 1.
Instruction: Choose the correct answer.

Answer key:

1. a heart scintigraphy done
2. two subsequent days
3. intravenously
4. They should neither eat nor drink anything.
5. a gamma camera
6. a radioactive marker
7. half an hour after the exercise test
8. after 24 hours of resting

Follow-up questions:
What is a CT?
Are Tuesday and Thursday two subsequent days?
What types of medicine is usually administered orally? (syrup, pills, antibiotics, painkillers)
What form of medication is usually administered intramuscularly? (injections)
What are isotopes?

Screen 3

Exercise 2.
Instruction: Complete the sentences with the words from the source list.

Answer key:

1. imaging technique
2. isotope
3. radioactive marker
4. scintigraphy
5. pregnancy
6. referral

7. vascularisation
8. painless

Follow-up questions:
How many times is the radioactive marker administered during the scintigraphy test? (twice)
Apart from pregnancy, what is the other contraindication for undergoing the procedure? (breastfeeding)
Is the procedure an invasive or a non-invasive one?

Screen 4

Instructional Video
Title of the video: "A control PET scan"

Ask your students if they know what the acronym PET stands for.
Ask them how many times a year do they have their blood tested.
Is PET safe for pregnant women?
What does 3D stand for? (three-dimensional)

The students watch the video and repeat after the narrator with the option "Repeat the last line" on.

A nuclear medicine examination allows a quick detection of many diseases, including cancers.
One such examination is the PET scanning, that is positron-emission tomography.
This test allows assessing cell metabolism, which indicates a disease when different to the metabolism of healthy cells.
Although the test is painless, it can cause the patient considerable stress. This is why the technician performing the examination should be an experienced professional who takes care of the patient's psychological comfort.
Moreover, before conducting the test, the technician must ensure that the patient is not pregnant or isn't a diabetic. They should also check if the patient has an empty stomach and whether they've performed any strenuous physical activity prior to the examination.
Additionally, the patient is required to give written consent before the test begins.
The first stage of the test consists in intravenous administration of the tracer. The tracer comes in the form of glucose labelled with radioactive atoms that will be metabolised by the patient's cells. After having administered the tracer, it's necessary to wait one hour before conducting the examination with a PET scanner.
The examination itself takes about 10 to 20 minutes. The patient is placed in a PET scanner with their hands over the head. The patient mustn't move, but is able to swallow and breathe freely.
First, there's a short scan performed to check the correct positioning of the patient.
After that, it's possible to conduct the full examination that will allow the technician to see the presence of any pathological changes at the cellular level. Unhealthy cells process glucose in a different manner to the healthy ones.
Finally, the scan is sent to a computer that creates a three-dimensional image of the examined area.

Follow-up questions:
Does the patient have to be on an empty stomach while performing the PET examination?
Is it required to fill in any documentation before the test?
In what way is the tracer administered?
How much time is required between administering the tracer and conducting the examination.
How much time does the test take?
How should the patient position their hands while in the PET scanner?
Is the patient allowed to move, breathe or swallow inside the PET scanner?

Exercise 3.
Instruction: Mark the sentences true or false.

Answer key:

1. T
2. F
3. F
4. T
5. T
6. F
7. F
8. T

Exercise 4.
Instruction: Order the sentences.

Answer key:

1. Taking the patient's medical history and ensuring that there aren't any contraindications for them undergoing the examination.
2. Giving the written consent by the patient.
3. Intravenous administration of the glucose labelled with radioactive atoms.
4. Waiting for the tracer to work.
5. Positioning the patient in the PET scanner.
6. Performing the short scan.
7. Performing the proper test with the PET scanner.
8. Creating a digital three-dimensional image of the examined area.

Extra activity:
Write the following time expressions on the board (in random order) and ask the students to arrange them in a chronological order. (as listed below)

1. three years ago
2. one thousand fifty days ago
3. a year and a half ago

4. seventeen months ago
5. five weeks ago
6. a month ago
7. the day before yesterday
8. yesterday
9. today
10. tomorrow
11. the day after tomorrow
12. next week
13. in two weeks time
14. in two months
15. in ten weeks
16. next summer

Alternatively, you can write the above time expressions on seperate pieces of paper and mix them. Give each student one piece and instruct them to form a line, following the chronological order.

Screen 5

Listening Comprehension

P: Good morning, I've got a referral for the thyroid scintigraphy test. I'd like to make an appointment.
E: Come in, please. It says here in the schedule that we can arrange it for tomorrow.
You've got the iodine 131 radioisotope purchased.
P: I didn't think it would be possible to do it so quickly. Tomorrow's great.
E: All right, but I'll sign you up for 12PM. The iodine capsule needs to be administered 24 hours before the test. The technician is going to give you the I-131 capsule and the scintigraphy test is going to take place 24 hours later, that is the next day. This is important, as the scanner needs to detect radiation emitted by radioactive iodine stored inside the thyroid.
P: The radioactive iodine? It this examination 100% safe?
E: Absolutely, no need to be afraid. The total amount of radiation you get during the thyroid scintigraphy is lower than the dose of radiation during a chest X-ray.
P: I see. So how long do I have to wait for the results?
E: You get the results practically right away. Their interpretation is fairly simple. The more diverse the tissue, the better iodine isotopes accumulate in the thyroid and the nodules on it. Warm and hot nodules attract iodine more effectively than the surrounding tissue. Cold nodules don't capture it at all, and neutral nodules capture iodine just like the surrounding tissue. That is all I can say today, tomorrow we'll perform the test and the doctor will decide about the potential treatment based on the results.

Extra activity:
Play the recording out loud for the whole class to hear. Ask your students to note down the adjectives and adverbs they hear.
possible, quickly, great, essential, radioactive, safe, afraid, lower, total, practically, fairly, simple, diverse, better, warm, hot, effectively, surrounding, neutral, cold, potential, based on

Divide the class into groups of four/five.
Each group is supposed to write a paragraph using at least seven words from the listening. The more words they use the better. Their sentences must be grammatically correct, but they can be funny and not necessarily logical.
Give them 10 minutes.
When all the stories are ready, ask the members of each group to read their story out loud to the rest of the students, sentence by sentence.
Award all the students with extra points for classroom participation.

Exercise 5.
Instruction: Solve the crossword.
Answer key:

Across:
2. iodine
5. prescription
8. referral

Down:
1. radiation
3. result
4. nodule
6. isotope
7.capsule

Screen 6

Exercise 6.
Instruction: Complete the sentences.

Answer key:

1. thyroid
2. 131 iodine
3. 24
4. X-rays
5. very small
6. inside the thyroid
7. diverse
8. more effectively than

Grammar revision
Gradation of adjectives
Revise the rules of creating the comparative and superlative forms of adjectives.
Write the exceptions (good, bad, far) on the board and ask the students to write them in their notebooks as well.

Ask each student to say the comparative and superlative form of the adjective you say to them:

adjectives: *pretty, nice, small, big, kind, beautiful, modern, safe, dangerous, useful, bright, comfortable, wild, delicate, sensitive, young, old, tall, high, dar, light, effective, efficient, critical, intelligent, handsome, thick, thin, annoying, interesting, fragile, contagious, invasive, infectious*

Screen 7

GAME
Each student plays individually.

Screen 8

Exercise 7.
Instruction: Group the elements.

Answer key:
I - nuclear medicine tests: heart scintigraphy, positron-emission tomography, thyroid scintigraphy
II - reasons for undergoing nuclear medicine tests: suspicion of metastases, coronary artery disease, thyroid nodules
III - contraindications for undergoing nuclear medicine tests: pregnancy, diabetes, breastfeeding

Follow-up questions:
What is it that women can't do while pregnant?
Is it safe form them to do sports/drink alcohol/carry heavy stuff/work overtime/stress out/go out e.g. to the cinema or theatre/xercise/do yoga?

Exercise 8.
Instruction: Label the pictures.

Answer key:
1. gamma camera
2. PET
3. exercise test
4. radioactive iodine
5. contraindication for a nuclear medicine test
6. glucose labelled with radioactive atoms

Questions:
How far into her pregnancy is the lady in the second picture? Which trimester do you think it is?
Why is the person in the third picture wearing disposable gloves?

Screen 9

Reading

Ask a number of students to read the text out loud. Don't correct their pronunciation mistakes while they read - note them down and explain when all of them are finished.

What are the occupational diseases in these jobs?

- a miner
- a teacher
- a soldier

Screen 10

Exercise 9.

Instruction: Complete the sentences with the words from the source list.

Answer key:

1. biological
2. exposure
3. dosimeters
4. ionisation
5. protection measures
6. acceptance
7. radiation reducing

Tell the students about the differences in spelling British and American varieties of English language. Stress the word endings such as -ise/-ize as in recognise/recognize, -isation/-ization as in ionisation/ionization, -our/-or as in humour/humor, -re/-er as in centre/center.

Ask the students if they know any differences in vocabulary.

- film/movie
- flat/apartment
- autumn/fall
- petrol/gas
- pavement/sidewalk
- underground/subway
- lorry/truck
- holidays/vacation
- trousers/pants
- sweets/candy
- elevator/lift
- car park/parking lot

Ask them if they can come up with similar spelling or vocabulary differences within the varieties of Polish language or any other British/American words.

Exercise 10.
Instruction: Match the phrasal verbs to their meanings.
Answer key:

carry out - to conduct
come across - to meet by chance
carry on - to continue
check in - to register in a hotel or airport
carry over - to postpone
call off - to cancel
come in - to enter
cheer on - to support someone

EXTRA ACTIVITY
DOMINOES

support someone	conduct
carry out	come across
meet by chance	carry on
continue	check in
register in a hotel or an airport	carry over

postpone	call off

cancel	come in

enter	cheer on

Screen 11

Exercise 11.
Instruction: Find the hidden words.
Answer key:

1. scintigraphy
2. dosimeters
3. PET
4. iodine
5. radiation
6. agent
7. radioactivity
8. scan

Exercise 12.
Instruction: Complete the table with the missing forms.
Answer key:

enjoyment - enjoy
smuggler - smuggle
cancellation - cancel
completion/completeness - complete
information - inform
settlement/settler - settle
disappearance - disappear
application - apply

You can draw a table on the board and add up a couple of extra examples.

information - inform
illustration - illustrate
beginning - begin
performance - perform
renovation - renovate
declaration - declare
recommendation - recommend
adjustment - adjust
application - apply
confession - confess
invitation - invite
proposal - propose
warning - warn
apology - apologise
admission - admit

Screen 13 Report

The following exercises can be used as tests, homework assignments or during the class.

1. Provide the missing forms of the adjectives given.

example: nice - nicer - the nicest

PRETTY		
	HEALTHIER	
		THE MOST SIGNIFICANT
	SMARTER	
SAFE		
GOOD		
		THE WORST
	MORE COMFORTABLE	
MODERN		
		THE CRAZIEST

2. Provide the missing forms.

NOUN	VERB
	surprise
forgiveness	
	testify
	declare
	cancel
misbehaviour	
respect	
	engage
proposal	
offer	

Module 4: Performing radiation therapy

Warmer:

Ask your students what methods of treating cancer are they familiar with.
There's radiation, chemotherapy, surgical removal, hormonal therapy.
Ask them which types of cancer are typically hereditary.
What is leukemia? Is the number of blood cells in the human body increased or decreased in patients who have it?
What are the most common organs diagnosed with cancer worldwide?

- breasts, lungs, prostate, thyroid, kidneys, leukemia, pancreas

Screen 1:

Ask the students to describe the video poster.

Screen 2

Dialogue Video

Title of the video: "Brachytherapy"

E: The patient has been diagnosed with the stage 3 prostate cancer.
The doctor has ordered brachytherapy.
S: An interstitial one?
E: Yes, interstitial, temporary.
S: Is there a treatment plan drawn up for the patient?
E: Yes, there is an initial one, but the doctor will be here to approve or modify the initial plan after consultation with the medical physicist and after applying the applicators and determining the exact location of the tumour. Please review

the documentation that must be completed.
S: There's a radiation treatment form and a clinical audit report.
E: The entire team is responsible for planning, carrying out and effects of brachytherapy: a radiologist, a medical physicist and us, radiation therapists.
E: Oh, the patient's already here, so we can take him to the operating room.
The anaesthesiologist's already there.
S: The anaesthesiologist?
E: Yes, he needs to to give the patient spinal anaesthesia. The patient will be conscious but won't feel any pain or discomfort. It's important that he doesn't
move during the radiation.
S: Are there any side effects of this treatment?
E: The radiation source will be placed inside the affected tissue and the dose exactly calculated. So, I don't think so.
S: Who puts on the applicators and visualises the changes?
E: The radiologist puts on the applicators, and we run the equipment to make
an X-ray and send everything to the medical physicist. She makes accurate calculations of doses and selects the distribution of therapeutic sources in
the applicator.
E: We stand behind the control console. We set the therapeutic apparatus accordingly so that it introduces the radiation source to the applied applicators
in the right sequence and at the right time. It'll take a few minutes or longer.
S: Is the patient alone in the room then?
E: Yes, but he is being observed on the monitor in the control room,
from where there is also voice contact with the patient.

Follow-up questions:
What kind of doctor is qualified to anaesthetise patients?
What disease has the patient been diagnosed with?
What kind of anaesthesia will the patient be administered with?
Will the patient be asleep during the examination?
How long will the test take?

Discussion topics:

- Patient-informed consent. Why is it important?
- Who can obtain information about the patient's state of health? (A spouse, a child, a sister/brother, the closest relatives)
  Since many couples nowadays don't want to or are not allowed to get married in a legal sense, where does that leave them? Should they be able to obtain information about their loved ones'?
- Minors are generally under the legal custody of their parents/ legal guardians. However, due to various religious/personal beliefs, they sometimes unknowingly do not act in the child's best interest (for example Jehovah's Witnesses do not agree to blood transfusion). In such a case, a doctor can ask the permission of a state court to proceed with blood transfusion, if absolutely necessary. What do you think of that? Is it OK?
- Similarly, many parents nowadays refuse to vaccinate their children, because there are theories where it is thought to be resulting in multiple harmful medical problems (e.g. autism). In Poland vaccination is a parent's legal responsibility. What do you think about it?

Exercise 1.
Instruction: Put the dialogue in the correct order.

Answer key:
A: Hello. How are things?
B: Hi. I couldn't find a parking space. What's new?
A: There's a patient diagnosed with prostate tumour.
B: Is there a treatment plan drawn up yet?
A: Yes, there is, but just an initial one. The anaesthesiologist's already here.
B: What type of anaesthesia will he give?
A: A spinal one.
B: OK. See you there.

Screen 3

Exercise 2.
Instruction: Complete the sentences.

Answer key:
1. brachytherapy
2. spinal
3. radiotherapy
4. radiation source
5. treatment team
6. clinical oncologist
7. medical physicist
8. applicators

Ask the students if they have ever been diagnosed with any serious medical condition. If not, perhaps there was such a person amongst their friends or family.

Explain the difference between the expressions 'to consist of' and 'to consist in'.

Screen 4

Instructional Video
Title of the video: "Working in the mould room"

Ask one of the students to describe the picture. Based on this poster and the title of the video, what do they think happens in the room? Why are they wearing protective masks? Who is the person lying on the table?

The students watch the video.

A radiation therapist works in the mould room. Their task, among others, making a mask for the head and neck area. The mask helps immobilise the patient during the radiation. Its aim is to provide the right radiation dose mainly to the tumour area and as little as possible to the neighbouring, healthy organs.

While waiting for the patient, the radiation therapist turns on a water bath, alignment lasers, prepares hygiene measures - a white coat, protective gloves, a set of disposable equipment and disinfectants. They also prepare a basic board, immobilisers, pads and thermoplastic material.

Patients who are directed to the mould room will have been assigned a four point immobilising mask for the head and neck area. The radiation therapist tells the patient about the nature of the test. They explain that the mask is a therapy element protecting against post-radiation complications.

The radiation therapist wears a mask, protective gloves and puts the patient on the table in a horizontal position. To fit the mask precisely, the radiation therapist asks a colleague for help and they choose immobilisers, pads and use an alignment laser.

Once they've found the ideal settings, they immerse the thermoplastic material in the water bath, take it out, dry it with a towel, put it on the patient, fasten it and model to the patient's face. After the time specified by the manufacturer, they remove the almost-ready mask.

After removing the mask from the patient's face, the radiation therapist smoothes it, re-measures and cuts if necessary. Properly prepared masks must conform with the doctor's instructions and be comfortable for the patient, as the radiation treatment can take several minutes and the patient can't move during this time.

Having finally formed the mask, the radiation therapist cleans the workplace, turns off the alignment lasers, the water bath and disinfects the equipment.

Exercise 3.
Instruction: Mark the sentences true or false.
Answer key:

1. T
2. T
3. F
4. F
5. T
6. T
7. F
8. F

What are the typical departments to be found in a hospital?
What kind of diseases are treated in them?

- A&E (accident and emergency)
- cardiology (heart)
- intensive care
- ENT (ear, nose and throat)
- general surgery
- gynecology
- haematology (blood)
- nephrology (kidneys)
- oncology (cancer)
- ophthalmology (eyes)
- orthopaedics
- physical therapy
- radiotherapy
- urology

Screen 5

Exercise 4.
Instruction: Complete the crossword.
Answer key:

Down:
1. immobilisers
4. water
7. pads

Across:
2. mould
3. thermoplastic
5. alignment
7. mask
8. referral

Screen 6
Listening Comprehension

E: Good morning. My name is Joanna, I'll be working here as an electroradiology technician as of today.
K: Good morning, excellent. I'll show you round. Have you ever worked in this profession?
E: Yes, I am an electroradiology technician by education. I've worked in the X-ray lab in a district hospital, but I'd like to prove myself in radiotherapy.
K: All right. In the radiotherapy department we work in a treatment team consisting of electroradiology technicians, radiologists and medical physicists.
E: This suits me just fine. I'd like to work in a group because this way I would have an opportunity to learn a lot, and I could count on the support of others at the beginning. What exactly do they deal with?
K: The duties of an electroradiology technician include carrying out the computed tomography and magnetic resonance imaging for the purposes of treatment planning, preparing the patient-specific shields and other modifiers of radiation beams.
E: Does this person participate in the examinations?
K: Of course. Their task is to position the patient during the treatment session to be immobilised adequately to the treatment method.
E. It's all new for me. Do you have the mould room? I'd love to work there.
K: We do. And a very well-equipped one. We perform a lot of treatments and make sure that the radiation dose is administered to the area of the tumour and as little as possible to the neighbouring organs. We actually need new employees in the mould room. I'll take you there so you can get acquainted with the equipment, all right?
E: Yes, of course.

Follow-up questions:
Did Joanna come to the hospital for a job interview?
Does she have any professional experience as an electroradiology technician?
Why does she think it best to work in a team?
What will Joanna's professional duties include?
Where would she really like to work in?
Is the mould room well- or ill-equipped?

Exercise 5.
Instruction: Mark the correct expressions to complete the sentences.

Answer key:

1. radiotherapy department
2. has previously worked in the profession
3. in a mould room
4. treatment team
5. treatment planning purposes
6. a very well-equipped mould room
7. precise delivery of radiation dose to the tumour area
8. patient-specific shields

Grammar practice: Past Perfect tense
Revise with the students the rules of forming sentences in the Past Perfect tense.
Practice on several examples.
Explain it to them by drawing a timeline on the board. Mark three dots:

- today
- the year 2010
- the year 2000

I had worked as an electroradiology technician and the I was moved to the mould room.
Ask your students in what year had this person worked as an electroradiology technician.
examples:
Before we got to the theatre, the play had already started.
I had bought the dress and only then did I realise it had an awful stain on a sleeve.
I had never thought about this. But then it actually happened.
By the time the police arrives on the crime scene, the murderer had already escaped.

Screen 7
Exercise 6.
Instruction: Select the duties of an employee of a radiotherapy department.

Answer key:
correct: 1,3,6,7,8

Screen 8
Game
Each student plays individually.

Screen 9
Exercise 7.
Instruction: Match the expression to the description.

Each student completes the exercise individually.
Then you check the answers together before checking them with the 'check answers' button.

Screen 10
Exercise 8.
Instruction: Match the phrases which mean the same.

Answer key:
You may count on → You can rely on
You will apply → You will use
You will conduct → You will carry out
You will examine → You will test
You've worked → You've got some professional experience
You may be conscious → You might be aware
You could feel → You may experience
You've controlled → You've supervised

Extra activity: Memory

You may count on
You can rely on
You will apply
You will use
You will conduct
You will carry out
You will examine

You will test

You've worked

You've got some professional experience

You may be conscious

You might be aware

You could feel

You may experience

You've controlled

You've supervised

Screen 11

Reading
Ask a number of students to read the text out loud.

Follow-up questions:
- Is it important to double-check the results of brachytherapy?
- What does it mean 'in vivo'?
- What does it mean 'interstitial'?

Useful structures:
- in compliance with/ in accordance with/ in line with

Adverbs used to stress the gradation/quality of an adjective
- absolutely necessary/ heavily polluted/ deeply religious/ bitterly disappointed/ highly recommended

Suffix -hood:
- likelihood, neighbourhood, childhood, adulthood
  Ask your students if they can come up with any other examples.

Screen 12
Exercise 9.
Instruction: Complete the sentences with the correct form of the verb.

Answer key:
1. specialises
2. begins
3. prepared
4. have come
5. has just arrived
6. help (to) immobilise
7. to obtain
8. was performed

When to use Present Simple Tense?
Yours students surely are already familiar with the basic use of the Present Simple Tense for the repeated actions with present reference.
Explain to them that this tense is also used to talk about timetables.
e.g. My plane leaves at 3:45. / The bus to Monterrey leaves at 6 a.m.
Also, the Present Simple Tense is used to talk about general truth.
e.g. Water boils at 100 degrees Celsius. // Two plus two equals four.

Screen 13
Exercise 10.
Instruction: Label the photos.
Answer key:
1. immobilising mask

2. dosimeter
3. alignment laser
4. treatment room
5. mould room
6. tumour

There are different areas in human brain responsible for different cognitive and senso-motoric functions. Can all tumours be surgically-removed? Why is that it is so dangerous to operate tumours located in the brain?

Screen 14

Exercise 11.
Instruction: Put the tasks carried out by an electroradiology technician at work in the correct order.

Each student completes this exercise individually.

Answer key:

1. Checking the patient's identity and verifying the referral.
2. Informing the patient about the examination course.
3. Cooperation with a treatment team.
4. Participation in creating the treatment plan.
5. Preparing the patient for the treatment.
6. Performing the irradiation in accordance with the referral and treatment plan.
7. Observation of the patient during and after the treatment.
8. Keeping the record of the radiotherapy treatment.

Screen 15

Exercise 12.
Instruction: Guess the hidden words.

Answer key:

1. radiotherapy
2. brachytherapy
3. applicator
4. shield
5. mould room
6. medical physicist
7. console
8. cancer

More words to be played with on the classroom board:

- tumour

- brain
- cooperation
- therapy
- ionising radiation

Screen 16 Report

The following exercises can be used as tests, homework assignments or during the class.

1. Number the sentences to create a logical dialogue between a doctor and a patient.

(…) So, tell me, what seems to be the problem?

(…) Good morning, have a seat, please.

(…) Hello. Thanks.

(...) Let's hope so.

(…) Any other symptoms?

(…) I see. Well, I recommend physical activity and regular sleeping hours.

(…) I've been feeling a little under the weather recently.

(...) Thanks, I'll start going to the gym, then.

(...) Good luck with that.

(…) Mostly headaches, sleepiness, apathy.

(…) And that's it?

2. Complete the sentences with the correct forms of the verbs in brackets.

1. When Judy ……...…….. (arrive) at the crime scene, her colleagues form DEA …….. (already be) there.

2. When Mia finally …….. (get) to the cinema, the film ……...…... (already start).

3. George …… (live) in Japan before he …… (move) to China.

4. I …….. (get) into the examination room, because I …… (be) late and the door ……. (close).

5. Mark …….. (have) anything to eat, so they …….. (go) to a restaurant.

6. When he ……. (come) back from work, his children …… (already be) asleep.

7. Mark …… (fail) the test, because he …… (learn) enough.
8. Gina ……. (go) to see her grandmother in a hospital, but when she …….. (arrive), the doctor …… (tell) her that her nanna ……. (be) released.

FINAL TEST

Exercise 1: Choose the correct answer.

1. A scintigraphy test is conducted
   a) on two consecutive days.
   b) to diagnose bone fractures.
   c) using an X-ray machine.

2. An MRI test is
   a) a highly invasive procedure.
   b) a non-invasive procedure.
   c) a relatively cheap procedure.

3. The HSG test is done in order to diagnose
   a) eating disorders.
   b) problems with getting pregnant.
   c) brain tumour.

4. After the HSG procedure, the patient
   a) is allowed to go home.
   b) has to stay in the hospital for the next three days.
   c) has to stay in the hospital for a couple of hours.

5. The MRI procedure can be hard on patients with
   a) arachnophobia.
   b) apathy.
   c) claustrophobia.

6. The diffusion-weighted MRI is
   a) not as precise as the usual one.
   b) even more precise than the usual one.
   c) a special kind of radiotherapy treatment.

7. Before the scintigraphy test, the patient should
   a) not have breakfast.
   b) have a light breakfast.
   c) drink lots of water.

8. The ECG test is conducted to diagnose
   a) arrhythmia.
   b) prostate cancer.
   c) sclerosis.

9. The shortness of breath is an indication for having
    a) a spirometry test done.
    b) a scintigraphy test done.
    c) brachytherapy done.

10. The EEG test is done to diagnose
    a) heart diseases.
    b) epilepsy.
    c) diabetes.

11. EMG is done to check the electrical activity of
    a) the bones and ligaments.
    b) the nervous system.
    c) the skeletal muscles.

12. A heatoma can appear after the
    a) X-ray procedure.
    b) functional MRI procedure.
    c) electromyography test.

13. PET stands for
    a) proton-emission tomography.
    b) positron-emission tomography.
    c) positron-energy tomography.

14. The contraindication for a PET test is
    a) diabetes.
    b) heart arrhythmia.
    c) a pacemaker.

15. During the brachytherapy, the patient is
    a) conscious.
    b) asleep.
    c) unconscious.

16. A cochlear implant is supposed to improve
    a) vision.
    b) hearing.
    c) physical fitness.

17. Imaging techniques can be used to diagnose
    a) nodules.
    b) modules.
    c) nodes.

18. The contrast agent is administered
    a) intravenously.
    b) intervenously.
    c) unvenously.

19. Emptying one's bowels is called
    a) an enema.
    b) an enemy.
    c) an emission.

20. The Alzheimer's disease is related to
    a) the memory.
    b) the spatial imagination.
    c) the sense of aesthetics.

21. The Hashimoto's disease is related to the
    a) pancreas.
    b) thyroid.
    c) kidneys.

22. Women have two Fallopian
    a) tubes.
    b) pipes.
    c) lines.

23. Over the first couple of months after a baby's been born, the mother should
    a) breastgive it.
    b) feedbreast it.
    c) breastfeed it.

24. An atom is composed of
    a) neutrals, protons and electrolytes.
    b) electrons, protons and neutrons.
    c) electrodes, protons and neutrons.

25. Middle-aged women are a risk group when it comes the the breast cancer and so they should regularly have they breasts tested during
    a) electromyography.
    b) electroencephalography.
    c) mammography.

Exercise 2: Transform the first sentence into the second sentences using the word given in brackets. Use two to five words.

1. Anthony was late and he missed the beginning of the film. [START]

→ When Anthony arrived at the cinema,

……....……

…… .

2. Janet used to go to church every Sunday when she was a child. [WOULD]

→ Janet ……. every Sunday when she was a child.

3. A mechanic repaired Cece's car. [HAD]

→ Cece ……..… .

4. Mike: "I will never believe you again." [SAID]

→ Mark ……. believe her again.

5. Olaf: "You shouldn't be walking the city alone at night." [WARNED]

Olaf ……. the city alone at night.

6. Joe: "How about we go play some tennis?" [SUGGESTED]

Joe ……..……..……. go play some tennis.

7. I am one hundred percent sure it was her. [MUST]

It ……...…….. her.

8. Doctor: "I'm sorry but I have to cancel your appointment." [CALL]

The doctor said he was sorry to …… my appointment.

9. The results will be ready shortly. [BLINK]

The result will be ready …… an eye.

10. I wish I had been honest with you. [REGRET]

I regret being …… you.

Exercise 3. Choose the correct expressions to complete the dialogue.

Patient (P): Hello. I had an [appointment // admission // alignment].
Electroradiology technician (E): Hi. What's your name?
(P): Max Aldrin.
(E): All right. [Have // Make // Get] a seat, please. You'll have to wait [a few // few // some] minutes.
(P): Sure.
10 minutes later…
(E): OK. [Follow // Go after // Lead] me to the X-ray room, please. I need to you to remove your clothes from the waist [up // front // north]. Please, put this lead [apron // coat // bathrobe] on.
(P): OK. I'm ready.
(E): Good. Now we have to [position // place // process] you correctly. Lie on the table on you back, please.
(P): Done.
(E): OK. I'll go to the other room to take the X-ray.
(E): OK. It's done. You can wait [outside // outdoors // outpatient] for the results. They should be ready [soon // sooner // the soonest].
(P): Ok. Thanks.

Answer key

Module 1

1. Report on the sentences given.

1. Maureen said she had had a great time the night before.
2. Elisabeth said she was going to have a doctor's appointment the next day at noon.
3. Mark said he had been doing laundry the evening before.
4. Crystal asked if I had ever been to Beijing.
5. Cole said that Lucy was very nice.
6. Helen said she was taking Veto to the vet.
7. Alex asked me to pass him the salt.
8. Joan said her mother drove her crazy.
9. Owen said that he would go to the shop and buy some milk.
10. Emily insisted on her father going to a doctor.

There are other correct answers as well, so the teacher must consider each answer individually.

2. Complete the sentences with the reporting verbs given. Use the Past Simple form.

1. accused
2. confessed
3. offered
4. invited
5. promised
6. apologised
7. admitted
8. asked
9. warned
10. refused

3. Choose the correct options to complete the sentences.

1. sew
2. watching
3. failed
4. took
5. wanted
6. is doing
7. taught
8. thought
9. fought
10. lied

4. Transform the first sentence using the word in brackets so that it means the same as the second sentence. Use two to five words.

1. would go/used to go
2. used to be
3. could have handled/should have handled
4. couldn't have been/wasn't; must have been
5. should have believed
6. couldn't have driven
7. used to be
8. should have listened
9. would take/used to take
10. could have chosen

5. Provide the adjectives of the opposite meaning using the following prefixes: il, in, im, ir, mis, dis, or un.

1. immature
2. illogical
3. impatient
4. dishonest
5. imprecise
6. misleading
7. unqualified/disqualified
8. illiterate
9. impossible
10. unnecessary
11. unavailable
12. misinterpreted
13. mishandled
14. irresponsible
15. incoherent

Module 2

1. Transform the sentences below into the causative structures.

1. I don't let my children watch violent cartoons.
2. The doctor recommended that I had an MRI examination performed.
3. Lucy had her bike stolen.
4. I will have my assistant call you and set up a meeting.
5. I need to have the electrical installation in my house fixed.
6. I need to have my car washed.
7. I need to have my watch repaired/fixed.
8. I need to have my hair cut.
9. My mum needs to have her house renovated.

10. Elle needs to have her garden taken care of.

There are other correct answers as well, so the teacher must consider each answer individually.

2. Complete the text with: a, an, a few, few, many, much, any, some, fewer, enough or less.

1. a couple of
2. a
3. some
4. many
5. some
6. fewer
7. much
8. a
9. some
10. a
11. an
12. a
13. much
14. many
15. a
16. a few
17. enough
18. less

3. Complete the sentences with the correct form of the words in brackets.

1. useful
2. Happiness
3. depending
4. advisable
5. contraindications
6. tested
7. various
8. painless
9. allowed
10. instructions
11. appointment
12. accuracy
13. interested
14. hopeless
15. careful
16. appearance
17. attractive
18. circulation

19. complications
20. nationality

Module 3

1. Provide the missing forms of the adjectives given.

1. pretty - prettier - the prettiest
2. healthy - healthier - the healthiest
3. significant - more significant - the most significant
4. smart - smarter - the smartest
5. safe - safer - the safest
6. good - better - the best
7. bad - worse - the worst
8. comfortable - more comfortable - the most comfortable
9. modern - more modern - the most modern
10. crazy - crazier - the craziest

2. Provide the missing forms.

1. surprise
2. forgive
3. testimony
4. declaration
5. cancellation
6. misbehave
7. respect
8. engagement
9. propose
10. offer

Module 4

1. Number the sentences to create a logical dialogue between a doctor and a patient.

(3) So, tell me, what seems to be the problem?
(1) Good morning, have a seat, please.
(2) Hello. Thanks.
(8) Let's hope so.
(5) Any other symptoms?
(9) I see. Well, I recommend physical activity and regular sleeping hours.
(4) I've been feeling a little under the weather recently.
(10) Thanks, I'll start going to the gym, then.
(11) Good luck with that.

(6) Mostly headaches, sleepiness, apathy.
(7) And that's it?

2. Complete the sentences with the correct forms of the verbs in brackets.

1. arrived, had already been
2. got, had already started
3. had lived, moved
4. didn't get, was late, had been closed
5. hadn't had, went
6. came, had already been
7. failed, hadn't learned
8. went, arrived, told, had been released

Final Test

1. Choose the correct answers.

1. a
2. b
3. b
4. c
5. c
6. b
7. b
8. a
9. a
10. b
11. c
12. c
13. b
14. a
15. a
16. b
17. a
18. a
19. a
20. a
21. b
22. a
23. c
24. b
25. c

Exercise 2: Transform the first sentence into the second sentences using the word given in brackets. Use two to five words.

1. the film had already started.
2. would go
3. had her car repaired.
4. said he would never
5. warned me not to walk
6. suggested (that) (should) go
7. must have been
8. call off
9. in the blink of an eye
10. dishonest with

Exercise 3. Choose the correct expressions to complete the dialogue.

appointment
Have
a few
Follow
apron
position
outside
soon

Module 5: Performing electromedical tests

Dialogue Video

Transcript:

P: Good morning, I've been referred to have an ECG test done. Is today possible?
E: Of course. Can I see your referral?
P: Here it is.
E: I see you've been referred for an exercise stress test.
P: Yes. I've been feeling unwell for some time now. I've already had one ECG test done and the doctor suspects that it might be an onset of ischemic heart disease. He referred me for yet another examination to confirm this.
E: Before we begin I need to ask you a few questions. You will only be qualified for the test if you answer these questions as required. So, have you eaten a substantial meal in the last three hours?
P: No. I had a light breakfast 4 hours ago.
E: Have you smoked cigarettes, drunk coffee or energy drinks today?
P: I don't smoke or drink energy drinks. And since I've been feeling unwell I gave up coffee entirely.
E: Have you engaged in any vigorous physical activity within the past 12 hours?
P: No, I don't think so.
E: Are you on any medication?
P: No.
E: Have you already had an ECG at rest done?
P: Yes, I have.
E: You've passed onto the next stage so I can examine you now. Please undress from the waist up and uncover your ankles.
E: It looks like everything is tight. We also have a good quality gel now. The electrodes used to peel off when on just any gel.
P: Okay. I'm ready for the test now.
E: Sit down and rest for a moment, please.
E: Wait a moment, please. I'll get the doctor and then we can start. He'll be observing your heart function during the examination. We need to keep an eye on it and look out for any arrhythmia or a drop in heart rate. That would be very dangerous for you.
P: I see. I'm ready.
E: The doctor will decide when to finish the test by observing your heart, but if you feel any chest pain, shortness of breath or exhaustion, please just tell us immediately.
P: OK, it's all right so far.

Instructional Video

Transcript:

In order to have a spirometry test carried out, one needs a referral, the basis for which can be dyspnoea and breathing difficulty when climbing the stairs. Before the test, the electroradiology technician should check the referral and give the patient a moment to rest. A spirometry test cannot take place if the patient is breathing more than 25 times per minute and is unable to produce a complete sentence one breath at a time. Sometimes it's not even

necessary to check the parameters because one can see the patient needs to relax.
The test can only be started once the patient is well-rested and their breath and pulse have steadied. It's safe and painless however, during the procedure some discomfort like dizziness or faintness might appear. During the test a soft nose clip is used; it prevents the air from coming out through the nostrils. The mouthpiece is put in the patient's mouth and it has to be at least 2 cm deep inside. The patient should clench their teeth on the mouthpiece so that the air doesn't come out sideways. Then the patient takes a few breaths in and out to check if all's set.
Only after taking these trial breaths can the electroradiology technician choose the FVC test on the computer and ask the patient to inhale as slowly as they can. Next, the patient should exhale as deeply as possible and very quickly inhale again and then slowly exhale. This activity should be repeated ten times without taking the mouthpiece out. The technician has to observe the patient carefully during all this time.
After the finished test the mouthpiece should be discarded in the waste bin marked red. The technician has to save the results of the test on the computer, print them out, sign them with the patient's full name and hand the printout in to the patient.

Listening

Transcript:

M: Good morning, I brought my son for the test.
E: Can I see your referral, please?
M: Here it is. I'm really worried about the results. He was referred by his treating physician after just one episode of a loss of consciousness with a seizure. The doctor suspects it might be epilepsy. I don't know why this happened, there's no history of epilepsy in our family.
E: There's no need to worry, Mrs Philips. I'll perform the test without delay. Please have your son get into the cabin and relax. If he's too nervous it can distort the result. I'll put an EEG test cap on his head now, calculate the necessary distance between the electrodes, connect the electrodes to the EEG recording machine and place the electrodes on his scalp. Please have your son lay down with his eyes closed.
M: Is there anything he'll need to do during the examination or just lay still?
E: At one point I'll ask him to keep opening and closing his eyes and breathe deeply and steadily. There'll also be a moment when I'll be flashing a light - that is a so called intermittent photic stimulation or IPS test. And the purpose of all this is to observe how the brain reacts to certain actions. I'll be informing you about everything as we go. This test is neither painful nor dangerous.
M: How long will the examination last?
E: The entire EEG test takes about 20 minutes. And the results will be available tomorrow with the graph attached.