Anglický jazyk

Anotace předmětu:
Předmět je koncipován jako praktický a poskytuje znalosti z gramatiky a terminologie, klade důraz na získání jasného odborného zdravotnického jazykového projevu. Zvládnutí základní slovní zásoby je předpokladem pro komunikaci v zahraničí. Poskytuje komunikativní dovednosti v obecných a odborných tématech.

Garant předmětu:
Bc. Barbora Drbohlavová

1 Parts of the human body

1.1 Grammar: the basics and revision

1.1.1 Articles – členy

V angličtině existují dva typy členů: neurčitý **a/an** a určitý **the**. Neurčitý člen použijeme tam, kde v promluvě zmiňujeme předmět poprvé, u profesí, případně ve významu „nějaký“.
*I had **a** sandwich and **an** apple for lunch.*
*I want to be **a** doctor.*
*Sit down on **a** chair.*

Jednotná počitatelná podstatná jména vždy vyžadují člen nebo zájmeno, nemohou stát samostatně.
*She never wears **a** hat. (~~She never wears hat.~~)* X *Sugar is sweet.*

Člen **an** se používá v případě, že výslovnost slova začíná samohláskou.
*He takes pills once **an** hour.*
*This is **an** optimistic result.*
X
*The Czech Republic is **a** European country.*
*He is **a** young doctor.*

Určitý člen se používá tam, kde je předmět již zmíněn, nebo účastníci konverzace vědí, o jaký předmět se jedná, když mluvíme o věci, která je jedinečná, s národnostmi a před **same** (stejný). Také se říká jít k doktorovi/do kina/na poštu, atd.
***The** sandwich was not very good but **the** apple was nice.*
*What is **the** longest river in **the** world?*
*I have to go to **the** bank.*
*I don't like going to **the** dentist.*
***The** Spanish are famous for 'fiestas'.*
*My sweater is **the** same colour as yours.*

Členy se nepoužívají před jídly (snídaně, oběd, večeře), před místy a předměty, o kterých mluvíme obecně, před podstatnými jmény, za kterými následuje číslovka, před zeměmi, městy, ostrovy, kontinenty, horami, vlastními jmény.
What time is dinner? I collect stamps. He is afraid of dogs.
The train leaves from platform 3. We are on page 29.

I go to school every day. John is in prison. We took her to hospital. I want to go home. Mom is at work. My father's name is Charles.
I went to France. X ***the*** *United States of America,* ***the*** *United Kingdom,* ***the*** *Czech Republic*

Všimněte si použití členů v následujících příkladech:
When we were on holidays, we stayed in a hotel. Sometimes we ate at the hotel and sometimes we went to a restaurant.
Have you got a car?
I cleaned the car yesterday.
I am looking for a job.
She didn't get the job.
He took a taxi to the trainstation.
Can I speak to the manager?
Is there a bank near here?
My brother is a doctor.

1.1.2 Pronouns – zájmena

	Personal			Independent	Reflexive
1st sg.	I	my	me	mine	myself
2nd sg.	you	your	you	yours	yourself
3rd sg.	he, she, it	his, her, its	him, her, it	his, hers, its	himself, herself, itself
1st pl.	we	our	us	ours	ourselves
2nd pl.	you	your	you	yours	yourselves
3rd pl.	they	their	them	theirs	themselves

Look at me! Can you see us?
This is my book. Their mum is a very kind person.
This book is mine. Is this yours?
I drove home by myself = on my own. You have to do the homework by yourself = on your own.

1.1.3 Determiners

Ukazovací zájmena	**Sg.**	**Pl.**
here	this	these
there	that	those

1.1.4 Conjunctions – spojky

and	a
but	ale
because	protože

if	pokud, když
whether	jestli
when	až, jakmile
that	že, který

1.1.5 Plural nouns – množná podstatná jména

Podstatná jména jsou v angličtině pravidelná a nepravidelná. Množné číslo pravidelných podstatných jmen se tvoří přidáním -s nebo -es.
dog – dogs
chair – chairs
bush – bushes
exercise – exercises
dress – dresses
tomato – tomatoes
hero – heroes
bra – bras
knee – knees
monkey – monkeys

Některé koncovky se ovšem mění. Jsou to slova končící na -f, -fe, -y [-aɪ].
leaf – leaves
shelf – shelves
life – lives
knife – knives
fry – fries
cry – cries
X
play – plays
way – ways
boy – boys

Nepravidelná podstatná jména pak mají své vlastní množné tvary.
man – men
woman – women
child – children
mouse – mice
calf – calves
person – people
foot – feet
tooth – teeth

Některá slova nemají množné číslo – jsou to nepočitatelná podstatná jména (uncountable nouns) a pojí se s jednotným číslem sloves.
information, money, advice, sugar, blood ***is*** *…*

Existují i podstatná jména, která naopak nemají jednotné číslo a u kterých se množství

vyjadřuje přidáním výrazu **a pair of**...
*glasses, trousers, scissors **are**...*

Pokud vyžaduje množné podstatné jméno člen, tak pouze určitý člen **the**.

1.1.6 Place prepositions – místní předložky

in	v, v autobusu, ve vlaku
at	u, na (poště, zastávce, …)
at the top, at the bottom	navrchu, vespod
at the front, at the back	vepředu, vzadu
on	na (povrchu), v autě, v taxi
on the left, on the right	vlevo, vpravo
to	k, směrem k
from	od, z
next to	vedle
under	pod
above	nahoře, nad
over	přes
opposite	naproti
in front of	před
behind	za
near	blízko
far from	daleko od

1.1.7 Present simple tense, Negatives, Questions – Přítomný čas prostý, tvoření záporu a otázky

Anglický slovosled obvykle dodržuje sled:
podmět + přísudek + předmět + příslovečné určení
Slovesa se dělí na pravidelná a nepravidelná. Pravidelná slovesa přibírají v přítomném čase ve třetí osobě jednotného čísla koncovku **-s**. Většina základních sloves je nepravidelná.

BE	Sg.	Pl.
1st	am	are
2nd	are	are
3rd	is	are

I am a girl. He is a doctor. We are students.

DO	Sg.	Pl.
1st	do	do
2nd	do	do
3rd	does	do

She does her homework every day. They do sports. I do the washing at home.

HAVE	Sg.	Pl.
1st	have	have
2nd	have	have
3rd	has	have

I have a cat. You have a problem. We have a lot of money.

Sloveso mít lze vyjádřit i formou **have got** ve významu něco vlastnit, získat. V tomto případě je **have** pomocným slovesem a **got** plnovýznamovým.
I have got a dog. Have you got a car? No, I haven't.

GO	Sg.	Pl.
1st	go	go
2nd	go	go
3rd	goes	go

We go to school three times a week. I go to school by bus. We usually go skiing in Italy on holidays.

Zápor se u slovesa **be** tvoří přidáním záporky **not**.
I am not a doctor.
He is not a dentist.
We are not tired.
They are not here.

U ostatních sloves se zápor tvoří přidáním pomocného slovesa **do** a záporky **not** před plnovýznamové sloveso.
I do not have a car.
He does not live in Brno.
It does not matter.
They do not know about us.
We do not like running.

V neformální komunikaci lze použít zkrácené tvary záporu.
I'm not a doctor.
He's not a dentist.

We're not tired.
They're not here.
I don't have a car.
He doesn't live in Brno
It doesn't matter.
They don't know about us.
We don't like running.

Otázky se tvoří změnou slovosledu. Na prvním místě je případně tázací zájmeno – kdo, kde, kdy, co, jak, proč, čí, dále pomocné sloveso, následuje zájmeno a zbytek věty zůstává stejný jako v oznamovací větě. Odpověď obsahuje zopakování zájmena a pomocného slovesa.
POZOR! V otázkách a záporech nese rod pomocné sloveso: *He live**s** in Prague* ale *He **does** not live in Brno. ~~He do not lives in Brno~~. **Does** he live in Brno? ~~Do he lives in Brno~~?*
Sloveso **do** může být jak pomocné, tak plnovýznamové: *What do you do? – I am a doctor.*

Am I a doctor?	Yes, I am. No, I am not. No, I'm not.
Is he a dentist?	Yes, he is. No, he is not. No, he isn't.
Are we tired?	Yes, we are. No, we are not. No, we aren't.
Are they here?	Yes, they are. No, they are not. No, they aren't.
Do I have a car?	Yes, I do. No, I do not. No, I don't.
Does he live in Brno?	Yes, he does. No, he does not. No, he doesn't.
Does it matter?	Yes, it does. No, it does not. No, it doesn't.
Do they know about us?	Yes, they do. No, they do not. No, they don't.
Do we like running?	Yes, we do. No, we do not. No, we don't.

Přítomný čas prostý se používá při popisu obecných faktů, pravidelností a pocitů.

1.2 Vocabulary

1.2.1 Introducing yourself, your family, your hobbies

Hello, how are you? I'm fine, thanks/thank you. And you?
What is your name? My name is …
How old are you? I am twenty-one (years old).
Where do you live? I live in …
Where do you come from? Where are you from? I am from the Czech Republic/I am Czech.
Describe your family. Do you have any brothers or sisters? Yes, I have a … I live with my parents in a block of flats in Prague. I study medicine. I am a nurse.
What do you do in your free time? I go swimming. I go out with my friends. I like to read books. I like listening to music. I love gardening. I enjoy going to restaurants.

1.2.2 Numbers, colours, shapes, days, months

0	zero	20	twenty

1	one	30	thirty
2	two	40	forty
3	three	50	fifty
4	four	60	sixty
5	five	70	seventy
6	six	80	eighty
7	seven	90	ninety
8	eight	100, 200, …	one hundred, two hundred, …
9	nine	1 000, 2 000, …	one thousand, two thousand, …
10	ten	1 000 000, 2 000 000, …	one million, two million, …

1/2 litre	half a litre
1/4 kilo	a quarter of a kilo
0,29	zero point twenty-nine
5 m^2	five square metres
30 m^3	thirty cubic metres

1st	first	7th	seventh
2nd	second	8th	eighth
3rd	third	9th	ninth
4th	fourth	10th	tenth
5th	fifth	21st	twenty-first
6th	sixth	32nd	thirty-second

yellow	žlutá	circle	kruh, kruhový, kružnice
red	červená	square	čtverec, čtvereční
blue	modrá	rectangle	obdélník(ový)
green	zelená	triangle	trojúhelník(ový)
brown	hnědá	oval	ovál(ný)
black	černá	cube	krychle
white	bílá	cubic	krychlový

on Monday	**v** pondělí	**in** January	**v** lednu
Tuesday	úterý	February	únor
Wednesday	středa	March	březen
Thursday	čtvrtek	April	duben

Friday	pátek	May	květen
Saturday	sobota	June	červen
Sunday	neděle	July	červenec
in 2012	**v** roce 2012	August	srpen
in spring	**na** jaře	September	září
summer	léto	October	říjen
autumn/fall	podzim	November	listopad
winter	zima	December	prosinec

1.2.3 Adjectives, describing appearance

tall	vysoký
short	malý, krátký
thin	hubený
slim	štíhlý
fat	tlustý
blond	blonďatý
light/dark brown hair	světle/tmavě hnědé vlasy
pale blue eyes	bleděmodré oči
full lips	plné rty
long arms	dlouhé paže

1.3 Medical English

We can divide the human body in several parts:
- ➔ the head,
- ➔ the neck,
- ➔ the trunk,
- ➔ the limbs = extremities.

The head consists of the skull = cranium which protects the brain, and the face. In the face we can distinguish the forehead, two eyebrows, two eyes with eyelids and eyelashes, the nose with two nostrils, the mouth with two lips, the tongue and teeth, the cheeks, and the chin which is formed by the mandible = jaw. Ears and earlobes are on the sides of the head. The upper and back sides of the head are covered by the scalp with hair. The parts of the head behind the forehead are called temples. The top of the head is the crown, and the part under it is the back of the head.
The head is connected with the trunk by the neck. The inside of the neck is called the throat. Men sometimes have a protruding Adam's apple at the front.
The trunk is divided in the chest = thorax or thoracic cavity in the upper part and the abdomen (tummy, belly) in the lower. The back is on the other side. The chest is formed by ribs which are connected by the sternum = breastbone. This creates the ribcage which

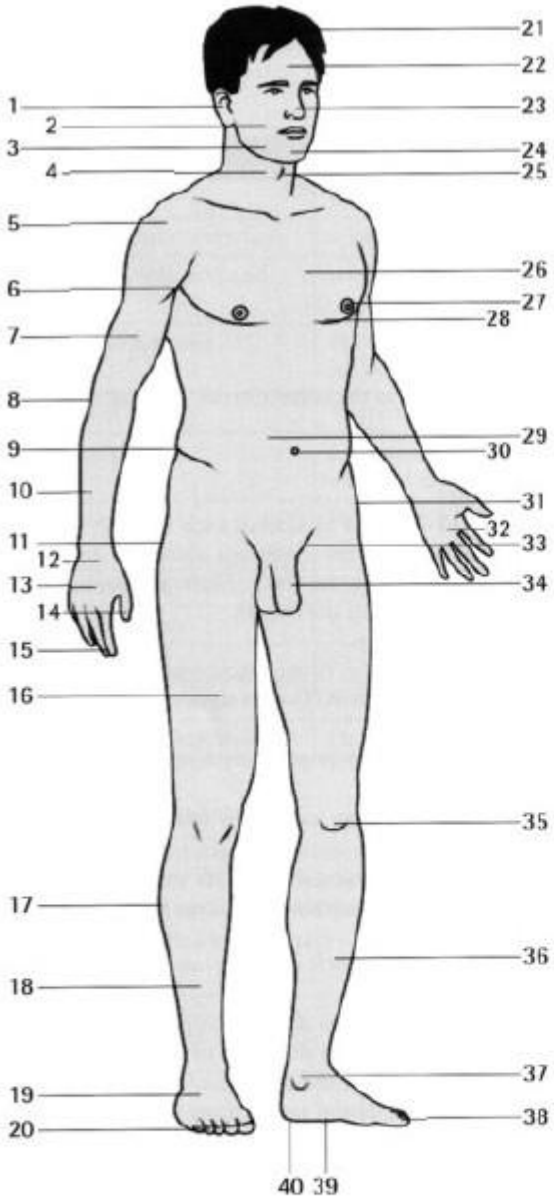
protects the lungs and the heart, and other tissues. On the chest there are breasts and nipples.
Under the chest and on the side part of the trunk there is the waist and the hip under it.
The abdomen contains other organs such as the stomach, the duodenum, the liver, the gallbladder, the pancreas, the spleen, the kidneys, the bladder, the small and large intestines = bowels, and the inner reproductive organs. On the abdomen there is the navel = bellybutton and the external reproductive organs = genitals in the groins. On the bottom part of the back there are the loins and the buttocks under them.
The upper limbs or extremities are arms and they are formed by the shoulder, the upper arm, the elbow which is an articulation = joint, the forearm, the wrist and the hand, which consists of the palm and the back of the hand, and five fingers = digits. The finger opposite the others is called the thumb. The first finger is called index finger = first finger, then the middle finger, the ring finger, and finally the small finger = pinkie, pinky. The joints in the fingers are called knuckles. At the tip of the fingers are nails. Under the shoulder on the inner part of the chest there is the armpit = axilla.
The lower limbs are legs joined with the pelvis and constituted by the hip, the thigh, the knee with the kneecap = patella, the lower leg with the shin in front and the calf in the back, the ankle and the foot. The foot consists of the dorsum = instep, the sole, the arch, the heel with the Achilles tendon, and five toes.
The osseous = bony framework that enables people to stand upright is the backbone = spine = vertebral column which contains the spinal cord. The whole body is covered with skin which protects the soft tissues under it. There might be freckles on the skin and scars from injuries or operations.

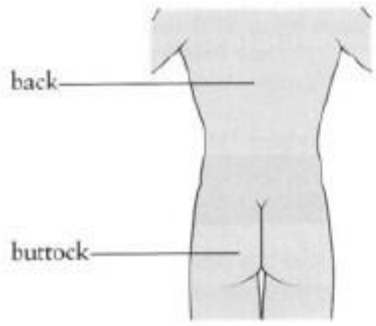
skull [skal]	lebka
forehead	čelo
eyebrow	obočí
eyelid	oční víčko
nostril	nosní dírka
cheek	tvář
chin	brada
earlobe	ušní boltec
temple	spánek
crown	temeno
rib	žebro
cavity	dutina
tissue	tkáň
nipple	bradavka
waist	pas
hip	bok
gallbladder	žlučník
spleen	slezina

bladder	měchýř
loins	bedra
groins	slabiny, třísla
forearm	předloktí
armpit	podpaždí
pelvis	pánev
instep	nárt
sole	chodidlo
arch [arč]	klenba
freckle	piha
scar	jizva

Some adjectives derived from Latin	
abdominal	břišní
cervical	krční
dental	zubní
frontal	čelní
gastric	žaludeční
hepatic	jaterní
inguinal	tříselný
intestinal	střevní
lingual	jazykový
mandibular	čelistní
oral	ústní
osseous	kostěný, kostní
pelvic	pánevní
renal	ledvinový
spinal [spainl]	míšní
umbilical	pupeční
urinary	močový
vascular	cévní
vertebral	páteřní

Be careful about irregular nouns:
1 tooth – 2 teeth, 1 foot – 2 feet!





1 ear
2 cheek
3 jaw (mandible)
4 neck
5 shoulder
6 armpit (axilla)
7 upper arm
8 elbow
9 loin
10 forearm
11 buttock
12 wrist
13 hand
14 thumb
15 finger
16 thigh
17 calf
18 leg
19 foot
20 toe
21 hair
22 forehead
23 nose
24 chin
25 Adam's apple (laryngeal prominence)
26 chest (thorax)
27 nipple
28 breast
29 stomach, tummy, belly (abdomen)
30 navel, belly button (umbilicus)
31 hip
32 palm
33 groin (inguinal region)
34 genitals (penis and testicles)
35 knee (patella = kneecap)
36 shin
37 ankle
38 big toe
39 sole
40 heel

Parts of the human body

Source: Glendinning a Howard, 2007, s. 130

Homework
1) Writing
Write an article of around 150 words about yourself. Describe yourself, your life, your family, your hobbies etc.

2) Grammar
Do exercises in Murphy: Unit 2, Units 72 – 79.

Extra
Practice grammar in jokes and hangman:
http://englishcocktail.blogspot.cz/2012/11/fun-in-hospital.html

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2 Cell and tissues

2.1 Grammar

2.1.1 Present continuous tense

Přítomný průběhový čas se tvoří pomocí tvaru pomocného slovesa **be** a **gerundia**. **Gerundium** je tvar plnovýznamového slovesa s příponou **-ing**.
*I **am** wash**ing** the dishes.*
*You **are** listen**ing** to music.*
*He i**s** do**ing** homework.*
*We **are** walk**ing** to school.*
*They **are** going home.*

Zápor se tvoří přidáním záporky **not**, lze použít i zkrácené tvary:
I am not washing the dishes. I'm not washing the dishes. POZOR! Neexistuje tvar *I ~~amn't~~ washing the dishes.*
You are not listening to music. You're not listening to music. You aren't listening to music.
He is not doing homework. He's not doing homework. He isn't doing homework.
We are not walking to school. We're not walking to school. We aren't walking to school.
They are not going home. They're not going home. They aren't going home.

Otázky se tvoří změnou pořadí zájmena a tvaru pomocného slovesa **be**:
Am I washing the dishes?
Are you listening to music?
Is he doing homework?
Are we walking to school?
Are they going home?

Tvoření **gerundia** má svá pravidla. Slovesa končící souhláskou, dlouhou samohláskou anebo -y obvykle přibírají pouze koncovku **-ing**:
washing, listening, walking, raining, enjoying, trying, learning, building, playing, being, doing, going, working, falling, growing, starting, speaking, watching, thinking; agreeing, fleeing; carrying, worrying, etc.
Ovšem u krátkých sloves (obvykle končících na -t, -p, -n, -m, -r, -g) se poslední souhláska zdvojuje:
getting, putting, running, tanning, sitting, nodding, rotting, betting, letting, stopping, hopping, humming, blurring, occurring, begging, etc.
POZOR! Všimněte si, že u sloves, která mají uprostřed dlouhou samohlásku nebo dvojhlásku, toto pravidlo neplatí:
blooming, roaming, meeting, raining, etc.
Stejně tak u sloves, která končí zdvojenou souhláskou, se třetí souhláska nepřidává:
messing, guessing, etc.
Slovesa končící -e přibírají -ing a koncovka -e zaniká:
writing, having, hoping, gaming, leasing, breathing, bathing, examining, etc.
POZOR! Dávejte pozor na správný pravopis a výslovnost – někdy jedno slovo může změnit význam celé věty: *I was hoping you could help me* X *I was hopping along the road.*

Přítomný čas průběhový se používá pro
1) vyjádření činnosti, která se děje právě teď;
2) popis činnosti, kterou dělám v této době, v těchto dnech, ne nutně v tomto okamžiku;
3) dočasné skutečnosti;
4) popis zlozvyků nebo událostí, které se dějí velmi často nebo dokonce častěji než by měly;
5) popis budoucí činnosti, která je naplánovaná.

1) I am doing my homework right now.
2) Are you reading the book that I gave you?
3) He is living with some schoolmates at the moment.
4) You're always biting your nails! I'm losing my keys all the time.
5) I'm going to the dentist tomorrow at 8 a.m.

Některá slovesa v průběhovém čase většinou nepoužíváme. Jsou to hlavně slovesa pocitů, myšlenkových pochodů, smyslová a další:

like love hate want need prefer
know realise suppose mean understand believe remember
belong fit contain consist seem
see hear smell taste – tato slovesa se často používají se slovesem **can**

I love him. ~~I'm loving him~~. X *I'm loving it* = Tohle prostě miluji (i ironicky).
I prefer tea to coffee.
I remember what he said a year ago.
It fits you well!
Can you smell the curry?

Sloveso **think** lze použít v přítomném čase prostém i průběhovém, ale s rozdílnými významy:
- ve významu „myslet si“, „mít názor“ použijeme přítomný čas prostý: *I think she is a nurse, but I'm not sure. What do you think about my idea?*
- ve významu „přemýšlet“, „posuzovat“ můžeme použít přítomný čas průběhový: *I'm thinking about what happened. I often think about it. The employees are thinking of giving up their jobs.*

Podobně tak sloveso **do**:
What are you doing? = your activity now X *What do you do? = What is your job?*

V obou časech lze použít i slovesa **look** a **feel** bez rozdílu významu:
You look great today! = You're looking great today!
Do you feel better? = Are you feeling better?

Tvar **(be) being**:
Tento tvar se používá při popisu, jak se někdo chová, jak jedná v daný moment:
He is being so selfish today! = He is behaving selfishly today.

2.1.2 Wh- words and relative clauses

Wh- words mají v angličtině funkcí tázacích a vztažných zájmen a příslovcí.

what	co	What is your name? What do you do? What happened is bad.
who	kdo, komu	Who is that woman? Who are you? Who did it? Who will you help?
whom*	koho	Whom do you see?
which	jaký, který	Which colour do you prefer? Which one is better?
whose	čí	Whose dog is it? Whose idea do you support?
where	kde, kam	Where do you live? Where are my keys? Where are we going?
when	kdy, když, až	When will we have lunch? – When we get home.
what time	v kolik	What time did you get up today? What time do we start?
why	proč	Why did you do that? Why are you writing that email?
how	jak	How do you say “pes” in English? How are you?

* whom se používá stále méně, objevuje se už téměř jen ve formálních psaných textech.

Při skloňování a tvorbě dalších tvarů se wh- words často pojí s předložkami, které patří na konec věty:
Who are you going out with? S kým chodíš?
Who are you taking the cake to? Komu neseš ten dort?
Who did you do it for? Pro koho jsi to udělal?
Where are you from? Odkud jsi?
Which classroom are we in? Ve které jsme třídě?

Všimněte si slovosledu ve vedlejší větě. Je to slovosled jako v oznamovací větě.

*Do you know who **it is**? **It is** our new teacher.*
*Do you remember which key **it is**? **It is** the green one.*

V kombinaci s předložkou na konci věty:
*I don't know which classroom **we are in**.*
*Should I ask which classroom **we are in**?* X *Which classroom are we in?*

Relative clauses

Vztažné vedlejší věty jsou důležitým nástrojem, jak spojovat jednoduché věty do komplexnějších souvětí.
Životná podstatná jména se pojí se spojkou **who**, neživotná s **which**. Oba typy podstatných jmen lze pojit s univerzální spojkou **that**.

The woman lives next door. She is a doctor:
*The woman **who** lives next door is a doctor. = The woman **that** lives next door is a doctor.*

*I know a lot of people **who** are unemployed. = I know a lot of people **that** are unemployed.*
*I work for a company **which** sells furniture. = I work for a company **that** sells furniture.*
*The blender **which** was broken is working again. = The blender **that** was broken is working again.*

POZOR! Ve vedlejší větě už se neobjevuje znovu zájmeno jako podmět. ~~The woman who she lives next door is a doctor~~.

Všechny tyto vedlejší věty jsou věty podmětné.
Naproti tomu existují věty předmětné, ve kterých lze wh- slova vypustit beze změny významu.
*The woman **who** I wanted to see was on holiday.* (*I wanted to see the woman.* = předmět)
= The woman I wanted to see was on holiday.
*Did you find the keys **which/that** you lost? = Did you find the keys you lost?* (*You lost the keys.*)

V podstatě lze říci, že předmětné věty jsou takové, kde za spojkou následuje zájmeno, vlastní jméno nebo podstatné jméno.
*I gave her all the money (which/that) **I** had.*
*She told me everything (that) **she** knew.*
*I found the ball (which/that) **the dog** lost.*
*I saw the girl (who) **Tom** was talking to.*

Všimněte si umístění předložek na konci vedlejších vět:
*Tom was talking to a girl. I saw her. – I saw the girl (who) Tom was talking **to**.*
*The boy (who) you are going out **with** is very handsome.*

V angličtině nejsou pevně daná pravidla pro interpunkci a její používání se od češtiny výrazně liší. V krátkých větách se obvykle čárka před spojovacími výrazy nepíše. Naproti tomu se čárka obvykle píše např. před slovem **too** na konci věty:
I'm reading this book, too.

2.2 Vocabulary

2.2.1 Verbs

V následující tabulce jsou nejzákladnější slovesa A – D vybraná ze seznamu 3000 nejčastěji se vyskytujících slov v psané a mluvené angličtině.
Jsou to tedy slova, se kterými se (s přihlédnutí ke zdravotnickému oboru) nejčastěji setkáte a pomocí kterých lze opsat výraz, který neznáte. Pokračování tabulky je v dalších kapitolách. Tabulka neobsahuje úplně všechna slovesa, jen ta, která na mírně a středně pokročilé úrovni využijete.

absorb	absorbovat	**appear**	objevit se	**begin**	začít
abuse	zneužívat	**apply**	aplikovat, přihlásit se	**behave**	chovat se
accept	přijmout	**arrive at, in**	přijet kam	**believe**	věřit
adapt	přizpůsobit se	**ask**	zeptat se	**belong to**	patřit komu
admit	přiznat, uznat, přijmout	**assist**	asistovat	**bend**	ohnout (se)
advise	poradit	**assure**	ujistit	**bite**	kousat
agree	souhlasit	**attach**	přiložit	**block**	zamezit
allow	dovolit	**attend**	docházet někam	**blow**	foukat, smrkat
analyse	analyzovat	**avoid**	vyhnout se	**boil**	vařit
apologise	omluvit se	**become**	stát se	**book**	zarezervovat
break	rozbít, zlomit	**cancel**	zrušit	**clean**	čistit
breathe	dýchat	**care**	pečovat	**close**	zavřít
bring	přinést	**carry**	nosit	**collect**	sbírat
brush	kartáčovat	**catch**	chytit	**compare**	porovnat
build	stavět	**cause**	způsobit	**complain**	stěžovat si
burn	pálit	**cease**	zastavit	**deal with**	zvládat co
burst	propuknout	**cool**	chladit	**decide**	rozhodnout
buy	koupit	**correct**	opravit	**decline**	odmítnout
call	volat	**cost**	stát (cena)	**delay**	zpozdit
connect	spojit	**count**	počítat	**deny**	popřít
consider	posoudit	**create**	vytvořit	**depend**	záviset
consist	sestávat	**cross**	překřížit, přejít	**describe**	popsat
consult	konzultovat	**cry**	plakat	**develop**	rozvinout
contain	obsahovat	**cut**	řezat, stříhat	**die of**	zemřít na
continue	pokračovat	**change**	změnit	**divide**	rozdělit

control	ovládat	**check**	zkontrolovat	**discharge**	propustit
cook	vařit	**choose**	vybrat	**drink**	pít
cope with	zvládat co	**damage**	poničit	**dry**	sušit

Tyto seznamy byly sestaveny experty ze společností Longman a Oxford, které se zabývají anglickým jazykem a vydávají učebnice, slovníky a další příručky pro studenty angličtiny. Dostupné jsou ve formátech PDF z http://www.lextutor.ca/freq/lists_download/longman_3000_list.pdf a http://www.spellingbeemorocco.org/uploads/9/8/3/6/9836076/the_oxford_3000.pdf a bývají také v tištěných slovnících.

Jak budou vypadat gerundia těchto sloves?
Choose, decline, decide, describe, continue, care, breathe, abuse, bite, advise, …
– koncovka **-e** odpadne a připojí se koncovka **-ing**.

Dry, delay, cry, apply, carry, …
– **y** je v angličtině souhláska, proto pouze přidáme **-ing**.

Některá slovesa mají své vlastní výjimky:
– die – dying; lie – lying; control – controlling; travel – travelling; occur – occurring; refer – referring

2.2.2 Jobs

Who works in a hospital?

Nurses and doctors, and other medical workers.
There are many types of medical doctor specialties: general practitioners (GPs), surgeons, physicians. Surgeons perform surgeries, operations. Physicians work in the branch of internal medicine.

A cardiologist specializes in diseases of the heart and circulation, or cardiology.
A paediatrician is a specialist in diseases of children, or paediatrics.
An anaesthetist specializes in anaesthetics.

The name of the specialty usually ends in **-ology**, then the name of the specialist ends in **-ologist**. If the name of the specialty ends in **-ics**, the name of the specialist ends in **-ician**. However, there are exceptions, such as anaesthet**ist** and anaesthet**ics**, psychiatr**y** and psychiatr**ist**.

Try to make up correct names of the specialists in:
oncology: an oncologist specializes in/is a specialist in the diagnosis and treatment of cancer.
pathology
dermatology
obstetrics
traumatology
haematology

geriatrics
rheumatology
physiotherapy

There is also more than one type of nurses.
A young nurse who is still in training is a called student nurse, or health care assistant. A nurse who has completed the training and is allowed to work independently is called staff nurse. A more experienced nurse who is in charge of/is responsible for the whole ward is called charge nurse. And the nurse at the highest position is called nurse manager, nursing officer or head nurse who is in charge of several wards or departments.
Unqualified staff or people with only basic qualification are called clinical support workers or nursing auxiliaries. They assist nursing staff and are usually not allowed to work on their own and to do important things such as giving injections.
Like doctors, nurses can also specialize. There are midwives and birth attendants who manage pregnancy and childbirth, nutrition therapists/dietician who advise people on healthy lifestyle and eating, optometrists/opticians who take care of patients' eyes and sight, paramedics who help people in all kinds of accidents, dialysis nurses etc.

Nurses perform a lot of different procedures, such as general patient care, checking temperatures, pulse rates and blood pressures, giving injections, removing sutures (stitches), changing dressings etc. What are other nurses' responsibilities?

There are other types of workers such as X-ray technicians, and prosthetists and orthotists. These provide artificial limbs and advise patients on rehabilitation.

general practitioner	praktický lékař
surgeon	chirurg
physician	interní lékař
be in charge of, be responsible for	být zodpovědný za
midwife, birth attendant	porodní asistentka
paramedic	záchranář
perform, carry out	provádět
pulse rate	pulz
blood pressure	tlak krve
remove sutures/stitches	odstranit stehy
change dressing	vyměnit obvazy
X-ray technician, radiologic technologist	radiologický asistent
prosthetist, orthotist	protetik, ortotik

2.2.3 What is the weather like?

Když mluvíme o počasí, často říkáme “It is ...” + přídavné jméno.
Přídavná jména se odvozují od konkrétního meteorologického jevu.

sun → sunny
cloud → cloudy
rain → rainy
wind → windy
snow → snowy
storm → stormy

Dále můžeme použít průběhového času.
It is raining. Prší.
It is showering. Je přeháňka.
It is pouring. Leje.
It is raining cats and dogs. Leje jako z konve.
It is snowing. Sněží.
It is hailing. Padají kroupy.
It is drizzling. Mrholí.
It is thundering. Hřmí.
The sun is shining. Slunce svítí.
The wind is blowing. Vítr fouká.

Temperature:
It is cold/warm/hot/freezing/boiling. Je chladno/teplo/horko/mrazivo/vedro.

Ostatní slova popisují další jevy:

blesk: lightning/a flash of lightning: *The building was struck by lightning.*
bouře: thunderstorm: *A storm with thunder and lightning and usually very strong rain.*
hurikán: *A hurricane has very strong winds and is usually at sea.*
tornádo: *A tornado has very strong winds which move in a circle, often with a long narrow cloud.*
vánice: *A blizzard is a snow strom with very strong winds.*
vánek: *A breeze is a very light wind.*
zatmění: *Eclipse means that you cannot see the sun or the moon.*

2.2.4 Clothes

There are many types of clothes: ladies' and gentlemen's clothes, formal and informal or casual clothes, sports and business clothes, winter and summer clothes, …
Then there are many types of shoes and accessories such as ties, bow ties, jewellery, hats, belts, gloves, braces …
The clothes that you wear straight on your skin are called underwear. Female underwear is called panties and bra. Then you might wear a shirt, a T-shirt, a jacket, a sweater and a coat. Some jackets have hoods, some have zippers or buttons. A T-shirt usually has short sleeves.
For sports you wear a sweatshirt and sweatpants or leggings and a top. There are also a few types of coats: raincoat, trench coat, anorak, overcoat, …. On legs you can wear either tights and a skirt or trousers (pants) and jeans over stockings or socks. Jeans usually have pockets. If it is cold outside, you might want to wear a scarf and a hat.
If it is raining, it is good to wear wellies which are shoes made of plastic. In summer people wear sandals or flip-flops, or tennis shoes. For formal occasions, ladies wear high-heeled

shoes, in winter they wear boots. Gentlemen wear waistcoats under suits and tuxedos which are often pinstriped.
To bed people wear pyjamas and nightdresses after changing from the bathrobe and slippers.
Most clothes are probably made of cotton. Sweaters are made of wool. Scarves are made of silk or wool. Some clothes are made of linen or hemp. Bathrobes are made of towelling. Jeans are made of denim. Sometimes fabrics are made of artificial materials.

accessories	doplňky
casual	pro volný čas
tie	kravata
bowtie	motýlek
jewellery	šperky
belt	pásek
gloves	rukavice
braces	šle
underwear	spodní prádlo
sweater, jumper	svetr
bra	podprsenka
hood	kapuce
button	knoflík
sleeve	rukáv
tights	punčocháče
stockings	podkolenky
pocket	kapsa
scarf	šátek, šála
tracksuit=sweatshirt and sweatpants	sportovní souprava, tepláky a mikina
flip-flops	žabky
high-heeled shoes, high-heels	boty na vysokém podpatku
boots	kozačky, jiné vysoké boty
waistcoat, vest	vesta
suit	oblek
bathrobe, dressing gown	župan
slippers	pantofle
cotton	bavlna
wool	vlna
silk	hedvábí

linen	len
hemp	konopí
towelling	froté
aritificial	umělý
(pin)striped	(vlasový) proužek
dotted	tečkovaný
checked	kostičkovaný
plain	jednobarevný
tight	těsný
loose	volný

2.3 Medical English: Cell and tissues

The cell

The cell is the fundamental unit of every living thing (animals, plants). Every tissue and every organ is made up of these units.

All cells are in a way similar. All contain a gelatinous substance composed of water, proteins, sugars, acids, fats, and various minerals. This substance is called protoplasm. There are bone, muscle, nerve, blood, skin cells which have specific structures in common. Each cell is divided into several compartments.

The structure that surrounds and protects the internal environment of the cell is called cell membrane. It determines what passes in and out of the cell. It has 3 layers: two made of proteins and a lipid layer in between.

The nucleus is the controlling unit of the cell. It controls the way the cell reproduces, and contains the genetic material which determines the functioning and structure of the cell. All the material in the nucleus is called nucleoplasm or karyoplasm.

The genetic material is composed of the chromosomes. These are 23 pairs of thin strands of DNA in the nucleus. The chromosomes contain genes which determine our hereditary make-up. The DNA in the chromosomes regulates the activities of each cell by guiding the formation of another substance called RNA. RNA is able to leave the nucleus, enter the cytoplasm and direct the activities of the cell.

Chromosomes differ in size, arrangement and number. This classification is called a karyotype. Karyotyping of chromosomes is useful in determining whether they are normal in number and structure.

Outside the nucleus there is cytoplasm. It carries out the work of the cell, e.g. in a muscle cell, it does the contracting, in a nerve cell, it transmits impulses.

The cytoplasm contains organelles such as mitochondria which are small bodies that product energy in the cell by burning food in the presence of oxygen. This process is called catabolism. During catabolism complex structures are broken down into simpler substances and energy is released. Then there is the endoplasmic reticulum which is a series of canals in the cell. Some canals contain small bodies called ribosomes which help make proteins for the cell. This synthesizing process is called anabolism. The processes of anabolism and catabolism together constitute the total metabolism of the cell. There are more types of small bodies in the cell, see the picture.

Cells are different = specialized throughout the body to carry out their individual functions.

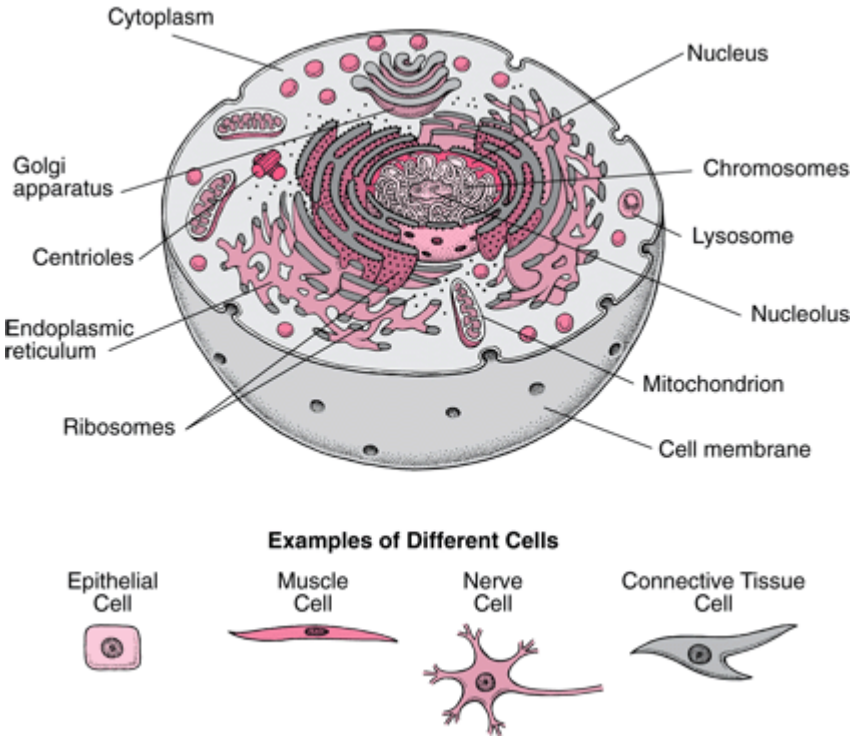
For example, a muscle cell is long and slender and contains fibres which help the muscle contract and relax. A skin = epithelial cell can be square and flat to provide protection. A nerve cell can be very long and have fibrous extensions which help transmit impulses. A fat cell contains large empty spaces for fat storage. There are many more types of cells in the human body.

fundamental	základní
unit	jednotka
tissue	tkáň
acid	kyselina
fat, lipid	tuk, tukový
substance, matter	látka, hmota
compartments	oddělení
surround	obklopovat
layer	vrstva
determine	určit
strand	pramen
hereditary	dědičný
makeup	výbava
guide	řídit, vést
arrangement	uspořádání
carry out	vykonávat
contract	stahovat
transmit	přenášet
burning, combustion	spalování
break down	rozkládat
release	uvolnit
fibre	vlákno
fibrous	vláknitý
slender	štíhlý
square	čtverec, čtvercový
flat	plochý
extension	výběžek
space	prostor
storage	zásoba, úložiště

Source: http://www.merckmanuals.com/media/home/figures/FUN_inside_a_cell.gif

The tissues

Epithelial tissue lines the body internally and covers it externally. It is generally attached to a



basement membrane of fibrous tissue. Internally it lines both mucous and serous membrane. Externally it overlies the dermis to form the outer layer of the skin = epidermis.

The cells of epithelial tissue are situated continuously. There is virtually no intercellular matrix. The cells can form one or more layers. Single layers are called simple, when there are more than one layers the epithelium is called stratified.

There are various types of simple epithelium, classified mainly according to cell shape. Simple epithelium with flattened cells lying edge to edge is called pavement epithelium. It makes the smooth surface lining the serous membranes of the pleura, pericardium and peritoneum. It is also found wherever a very thin membrane is required, e.g. in the terminal vesicles of the renal tubules.

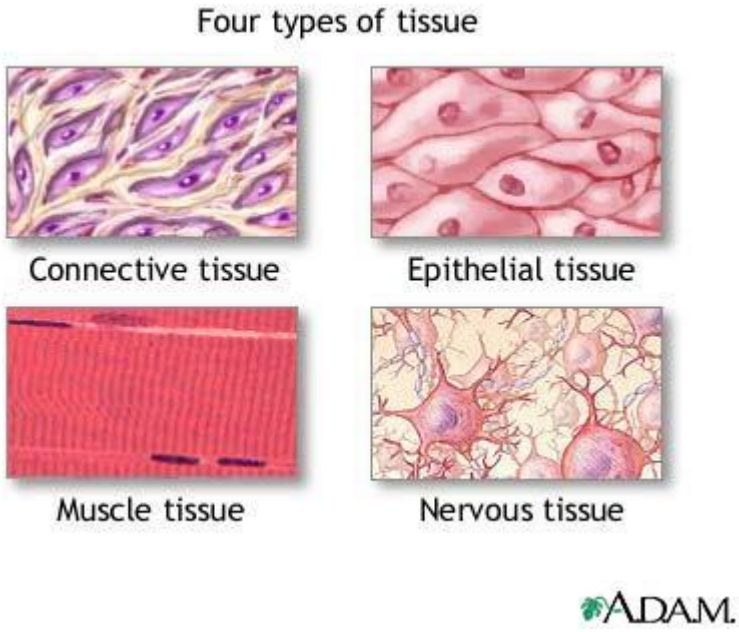
Columnar epithelium contains column-shaped cells. These lie edge to edge, too. Columnar epithelium lines the mucous membrane of the stomach and the intestines. It also lines the gallbladder and bile ducts, and the ducts of several glands. The height of the columnar cells varies from region to region. In some parts of the body such as inside the convoluted portions of the renal tubules, the cells are so low that their height equals their width. The epithelium is then called cubical epithelium. In other regions a protoplasmic hair might be attached to each columnar cell. These hairs are known as cilia and the epithelium is referred to as columnar ciliated epithelium. It is found in many parts of the body, but most notably in the nasal cavities.

The most important stratified epithelium is stratified squamous epithelium which forms the epidermis. As its cells approach the surface they gradually lose their protoplasmic contents and become flatter and more scale-like = squamous. At the same time the cells in the superficial layers are gradually converted into keratin, especially in the palmar and plantar regions. Stratified squamous epithelium also lined the oral cavity, the lower part of larynx,

the oesophagus, the anal canal and vagina. In these areas there is little keratin and the epithelium is not so thick.
Other types of stratified epithelium are found. For example, there is a deep layer of conical and oval cells under the epithelium that lines the mucous membrane of the trachea and the bronchi.

line, cover	pokrývat
attach	přiložit, připevnit
basement	základ
overlie	překrývat
outer X inner	vnější X vnitřní
virtually	v podstatě
intercellular matrix	mezibuněčná hmota
main	hlavní
according to	podle čeho
pavement epithelium	dlaždicovitý epitel
flatten	zploštit
edge	okraj
smooth	hladký
surface	povrch
wherever	kdekoli
require	požadovat, vyžadovat
terminal	konečný
renal tubules	renální tubuly
column	sloup, sloupec
column-shaped	sloupcovitý
bile duct	žlučovod
gland	uzlina, žláza
convoluted	zatočený, zahnutý, pokroucený
height	výška
width	šířka
nasal cavity	nosní dutina
gradual	postupný
scale-like	šupinovitý, vypadající jako šupina
superficial	povrchový
convert in/into	přeměnit na

palmar region	oblast dlaně
plantar region	oblast chodidla
connective tissue (obr.)	vazivo



Source: http://nursingcrib.com/wp-content/uploads/tissue-types-picture.jpg

Homework
1) Listening
Watch and listen to this video about the present continuous tense.
Pay special attention to the part about common mistakes.
http://www.youtube.com/watch?v=AEBRIBtq7q0
Write 5 sentences about what is happening around you.

2) Grammar
Do exercises in Murphy: Units 1, 3, 91—94.

Literatura:
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3 Blood and blood flow

3.1 Grammar

3.1.1 Past simple tense: regular and irregular verbs

Minulý prostý čas je základním časem pro vyjádření minulosti. Slovesa jsou buď pravidelná

nebo nepravidelná. Pro pravidelná slovesa platí jednotný způsob tvoření tvaru minulého času. Nepravidelná slovesa mají každá svůj vlastní tvar, přestože se u nich objevují podobnosti.
Věta v minulém čase prostém vypadá podobně jako věta v čase přítomném prostém, jen tvar slovesa je minulý a u všech osob stejný. Nepřidává se tedy koncovka **-s** k třetí osobě jednotného čísla jako u přítomného času.
Věta je tedy tvořena zájmenem a minulým tvarem slovesa, případně předmětem a dalšími určeními.
U pravidelných sloves se minulé příčestí tvoří přidáním koncovky **-ed** za sloveso.

talk → talked
walk → walked
wash → washed
call → called
mess → messed
watch → watched
open → opened
cook → cooked
boil → boiled
play → played
annoy → annoyed
follow → followed

U sloves končících na **-e** se přidává jen **-d**.

agree → agreed
breathe → breathed
close → closed
bake → baked
rape → raped

Pravidelná slovesa, jejichž výslovnost končí na [-t] nebo [-d], přibírají také **-ed**, ale koncovka se vyslovuje [-id].

print → printed
delete → deleted
hunt → hunted
rent → rented
complete → completed
mend → mended
start → started

U sloves, jejichž výslovnost končí na [-i], se mění pravopis na **-ied**.

carry → carried
marry → married
tidy → tidied
hurry → hurried
bury → buried

worry → worried

U některých pravidelných sloves se zdvojuje koncová souhláska. Jsou to ta, u kterých se zdvojuje i v gerundiu.

stop → stopped
ban → banned
hop → hopped
scan → scanned

Nepravidelných sloves je asi 250 – 300, každým rokem se jejich seznam mění, protože některá ubývají (místo **dreamt** se už více používá **dreamed**) a některá přibývají, hlavně díky předponám a spojování s jinými slovy (**babysit**). Seznam nepravidelných sloves by měl být v každém slovníku.

Pro tvorbu minulého tvaru nepravidelných sloves neexistuje žádné pravidlo, cvikem lze ale tvar u neznámého slovesa odhadnout, protože se opakují podobné vzorce tvarů.
Každé sloveso má tři tvary: infinitiv, minulé příčestí a třetí tvar (third form), který se používá pro tvorbu dalších minulých časů a trpného rodu. Často se každý tvar jinak vyslovuje, proto je potřeba dávat pozor jak na pravopis, tak na výslovnost.

Mohli bychom nepravidelná slovesa rozdělit na:
1) slovesa, která mají všechny tvary stejné: cut (cut – cut – cut), bet, let, hurt, put, hit, quit, set, shut, spread atd.
2) slovesa, která končí na **-ow** – **-ew** – **-own**: know – knew – known, blow – blew – blown, throw – threw – thrown, grow – grew – grown atd.
3) slovesa, která končí na **-ught**: buy – bought – bought, catch – caught – caught, bring – brought – brought, think – thought – thought (všimněte si, že všechna mají stejný druhý a třetí tvar) atd.
4) slovesa, ve kterých se **-d** mění na **-t** : bend – bent – bent, send – sent – sent, spend – spent – spent, build – built – built (i zde mají všechna stejný druhý i třetí tvar) atd.
5) slovesa, ve kterých se dlouhá samohláska zkracuje: bite – bit, fall – fell, feed – fed, meet – met, shoot – shot, hide – hid, sleep – slept atd.
6) slovesa, ve kterých se dlouhá samohláska mění na jinou dlouhou: break – broke – broken, speak – spoke – spoken, choose – chose – chosen, steal – stole – stolen (všimněte si, že všechna tato slovesa končí na **-en**) atd.
7) slovesa, která dodržují vzor **i—a—u**: swim – swam – swum, sing – sang – sung, ring – rang – rung atd.

Nejzákladnější slovesa **be**, **do**, **have**, a **go** jsou také nepravidelná.
be – was/were – been
do – did – done [dan]
have – had – had
go – went – gone [gon]

Zápor se u všech tvoří použitím pomocného slovesa **do** v minulostém tvaru a záporky **not** k infinitivu kromě u slovesa **be**. Lze používat zkrácené formy.
did + not + infinitiv

I did not go out yesterday. I didn't go out yesterday. Včera jsem nešla ven.
He did not like his teacher. He didn't like his teacher. Neměl rád svého učitele.
They did not do it. They didn't do it. Oni to neudělali.

Sloveso be přibírá záporku **not** nikoli k infinitivu, ale přímo ke tvaru odpovídající osoby.
was/were + not

I was not happy with him. I wasn't happy with him. Nebyla jsem s ním šťastná.
She was not at home. She wasn't at home. Nebyla doma.
We were not at school. We weren't at school. Nebyli jsme ve škole.
You were not very nice to your mum. You weren't very nice to your mum. Nebyl jsi moc milý na svou maminku.

Otázky se tvoří použitím pomocného slovesa **do** v minulém tvaru, infinitivu a změnou slovosledu.
did + zájmeno + infinitiv

Did you go out yesterday? Šel jsi včera ven?
Did he do the homework? Udělal úkol?
Did we send the letter? Poslali jsme ten dopis?

Minulý čas prostý se používá pro vyjádření jednorázových minulých událostí nebo událostí, které se staly v časovém období, které už skončilo.
I had chicken for lunch. K obědu jsem měla kuře. (Už neobědvám.)
He studied law in France. Studoval právo ve Francii. (Už ho nestuduje.)
Yesterday we went out. Včera jsme šli ven. (Včerejšek už skončil.)

3.1.2 Past continuous tense

V minulé kapitole jsme probírali přítomný průběhový čas a jeho použití. Minulý průběhový čas je mu velmi podobný jen s tím rozdílem, že se používá pro vyjádření minulých událostí, které 1) probíhaly po delší dobu, nebo které 2) popisujeme jako okolnosti nějakých dějů.
Tvoří se opět gerundiem slovesa a tvarem slovesa **be**, tentokrát v minulém čase.
was/were + gerundium

1) *We were protesting against the government all day.* Protestovali jsme proti vládě celý den.
The protesters were shouting in the street under our windows for at least three hours. Protestující v ulici pod našimi okny křičeli alespoň tři hodiny.
2) *I was walking home yesterday when I met my friend*. Šla jsem včera domů, když tu jsem potkala mého kamaráda.
Yesterday I came home and my brother was cooking spaghetti. Včera jsem přišla domů a můj bratr právě vařil špagety.

Přehled přítomného a minulého času prostého a průběhového

Čas	Použití	Příklad
Přítomný prostý	přítomné děje opakované, obecná fakta, rozvrhy a řády	Water boils at 100 °C. I am a student. My train leaves at 9.

Přítomný průběhový	přítomné děje v současnosti, v této době	I am living in the dorms this year. He is writing a book of his memories.
Minulý prostý	minulé děje jednorázové nebo ve skončené době	I passed my Maths exam. I was at home at the weekend.
Minulý průběhový	minulé děje v delším časovém období, okolnosti děje	I was doing my homework for 2 hours! He was watching TV when the phone rang.

Příslovce času a časové sekvence

dnes	today
včera	yesterday
zítra	tomorrow
předevčírem	the day before yesterday
pozítří	the day after tomorrow
minulý rok, měsíc, týden	last year, month, week
příští rok, měsíc, týden	next year, month, week
v pondělí, úterý, …	**on** Monday, Tuesday, ...
nejprve	first
na začátku	at the beginning
potom	then, after that
později	later
dále	next
konečně	finally, in the end
na konci	at the end
předtím, dříve	before (jen na začátku nebo konci věty!)
after	po + časový údaj (pouze minulost)
in	za + časový údaj (pouze budoucnost)

3.2 Vocabulary

3.2.1 Verbs

earn	vydělat	gain	získat	increase	zvýšit
ease	ulehčit (od bolesti)	grow	růst	influence	ovlivnit
enter	vstoupit	guarantee	zaručit	injure	zranit
examine	vyšetřit	guess	hádat	justify	ospravedlnit

excuse	omluvit	guide	vést	keep	nechat si
exercise	cvičit	hand	podat	kill	zabít
expect	očekávat	handle	nakládat s	knock	ťukat
experience	zažít	hang	pověsit	lack	postrádat
explain	vysvětlit	happen	stát se	last	vydržet
fail	zkazit, zklamat, nepovést se	heat	hřát, topit	lay	položit
fear	obávat se	hide	skrýt, schovat	lead	vést
feed	krmit	hold	držet	lie	ležet
feel	cítit	hook	zahákovat	lift	zvednout
fill	plnit	hope	doufat	limit	omezit
fix	spravit	hurry	pospíchat	lock	zamknout
fold	přeložit	hurt	zranit	maintain	udržet
force	nutit	identify	identifikovat	mark	označit
forget	zapomenout	implement	zavést	measure	měřit
freeze	mrznout, mrazit	improve	zlepšit	mention	zmínit
fulfil	splnit	include	zahrnout	mess	špinit

3.2.2 Animals

How many animals do you know? There are millions of animal species in the world. We can divide them in several types. Man is a mammal, just like dogs and cats and monkeys and cows and so on.
Flies, mosquitoes, butterflies and bees are insects. Crocodiles, turtles, lizards and snakes are reptiles. Owls and eagles and parrots are birds. Chickens and ducks and turkeys are poultry. A shark is a fish but a whale is a mammal. Then there are spiders and frogs and huge numbers of other types of animals.
The animals that we keep at home are pets. Do you have a pet? The most often kept pet animals in the Czech Republic are dogs and cats.
If we eat animal meat we sometimes call it different names. For example cow meat is beef, pig meat is pork.
Dogs and cats are soft to touch, because they are covered with fur. They are furry. People sometimes use animal fur to make clothes. They also use animal skin such as cow or pig skin to make leather clothes and accessories.

species [spíšíz; spísíz]	druh
mammal	savec
insect	hmyz
reptile	plaz

poultry	drůbež
furry	chlupatý, huňatý
leather	kůže (zpracovaná)

Source: http://i.chzbgr.com/completestore/2010/8/25/b178ab4b-3b7a-4e55-abf0-37976293b187.jpg

3.2.3 Nature

Nature is the environment we live in. It is the rural nature or countryside, or the urban nature such as cities, towns and villages. It is the mountains, deserts and jungles. The sciences that study the nature are called biology and ecology, and others. When we do something ecological we protect nature from bad impacts of our lives.
The planet Earth is covered mostly by water, be it oceans, rivers or icebergs. There are continents that we live on: Europe, Asia, Australia, the Americas (North and South America), Africa, and Antarctica. The imaginary line that divides the Earth into northern and southern hemispheres is called the equator. The weather is very hot and wet around it while it is very cold at the poles. The Czech Republic has moderate weather which means there are cold winters and warm summers. But global warming is changing the weather so sometimes there are floods in winter and snow in May.

environment	(životní) prostředí
rural	venkovský
urban	městský
impact	dopad

be it	ať už to je
iceberg	ledovec
imaginary	imaginární
equator	rovník
moderate	mírný
pole	pól
floods [flads]	záplavy

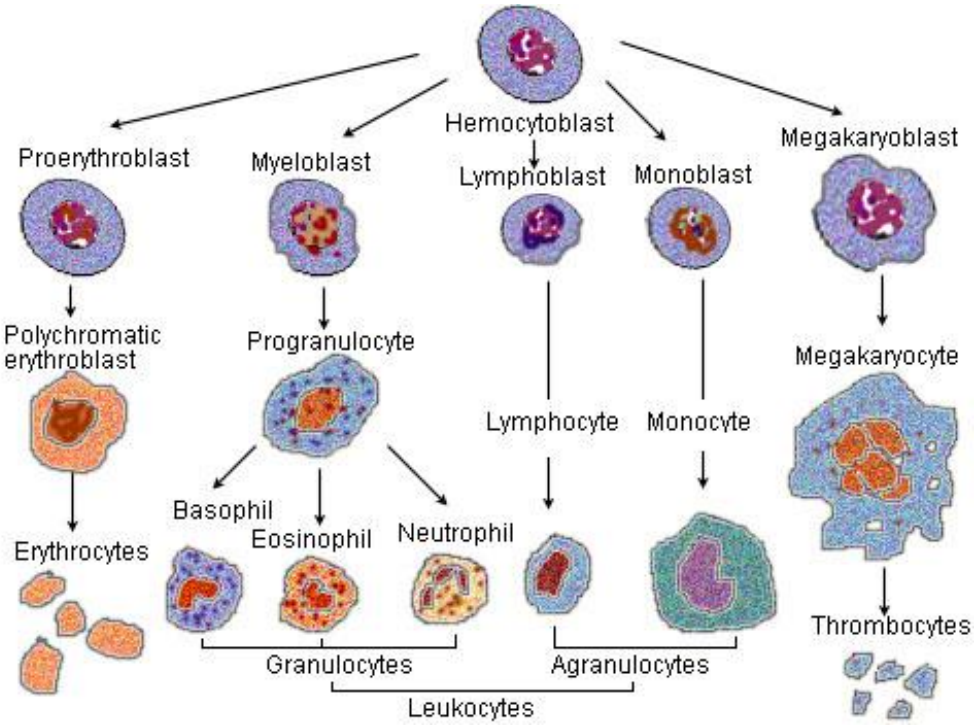
3.2.4 Cities

Most of European and North American populations lives in urban environment which is cities and towns. Cities are very big towns with high population density. Houses are very close to each other, often with many flats in one building, so called blocks of flats. There live several families in one building, but often the neighbours do not know each other very well. This is why cities are sometimes criticised for their anonymity. On the other hand, cities provide a huge number of possibilities and opportunities such as jobs, services, culture, health facilities, educational facilities and other institutes. Services are shops and offices that provide goods and other help, e.g. supermarkets, haidressers, car shops, post offices, newsagent's, banks and other financial services, clothes shops, book shops, pharmacies, electronics and myriads of others.
If you are shopping for food, you can go a supermarket or to smaller shops. Supermarkets have everything at one place, but the quality may not be the best. If you want local products, it is a good idea to try smaller shops. You might want to go to the butcher's, the baker's, the greengrocer's and the dairy shop. You might also stop by in a sweet shop for a cake or pie. After the shopping you can sit down in a coffee shop or café, a restaurant, a bar or a pub. If you are looking for some entertainment try cinemas and theatres, amusement parks, zoos and so on.

density	hustota
provide	poskytovat
possibility	možnost
opportunity	příležitost
service	služba
facility	zařízení
newsagent's	trafika
butcher's	řeznictví
baker's	pekárna
greengrocer's	ovoce zelenina
dairy	mléčné výrobky
amusement park	zábavní park

3.3 Medical English: Blood and blood flow

Blood is the red liquid that flows through the vessels. It contains formed elements = blood cells and a fluid portion called plasma. The formed elements are the erythrocytes = red blood cells, leukocytes = white blood cells, and thrombocytes = platelets = clotting cells. All blood cells originate from immature cells called stem cells = haemocytoblasts. These stem cells mature in the red bone marrow tissue of adults and in the liver and spleen of the growing fetus. As the cells mature, they differentiate and specialise. Red blood cells lack a nucleus and carry haemoglobin which is oxygen carrying pigment. When the blood cells wear out, they are destroyed by special liver and spleen cells. Bile pigments including bilirubin are formed as waste products from the breakdown of haemoglobin and are excreted out of the body.
Leukocytes are called white blood cells because they do not carry pigmentation and contain a large nucleus. There are two major types: granulocytes which contain large granules in their cytoplasm, and agranulocytes which do not have any. Granulocytes are then divided into eosinophils, basophils and neutrophils. Neutrophils fight diseases by swallowing up germs. This process is called phagocytosis.
Agranulocytes are monocytes and lymphocytes. Monocytes are also phagocytic. Lymphocytes are made in lymphatic tissues such as lymph nodes, the spleen and the thymus gland, and the bone marrow. They are a source of antibodies which can neutralise and destroy antigens that might enter the body (bacteria, viruses).
Thrombocytes are the smallest cells. Their primary function is haemostasis = blood clotting.
Plasma contains 91% of water and proteins, salts and sugars, hormones, waste and food substances. Four major plasma proteins are albumin, globulin, fibrinogen and prothrombin.
The blood and lymphatic systems have many functions. Blood carries vital materials such as oxygen, nutrients and hormones to tissue cells and transports waste materials such as carbon dioxide and urea away. Lymph transports needed proteins which leaked out of blood capillaries back to the bloodstream through the veins. Molecules can leak because capillary walls are permeable. Blood and lymph protect the human body by carrying disease-fighting cells and antibodies which combat infection.
But sometimes even blood can become ill. In the investigation of blood diseases, the simplest test is a full blood count (FBC). In a sample of blood, it measures the amount of haemoglobin, the number of the three kinds of cells, the volume of the cells, and the erythrocyte sedimentation rate (ESR) which measures how quickly erythrocytes fall down to the bottom of the sample.
One of the commonest blood diseases of blood is anaemia. It may be due to blood loss for example from a chronic bleeding ulcer, excessive destruction of red cells, or low production for example because the diet lacks iron.



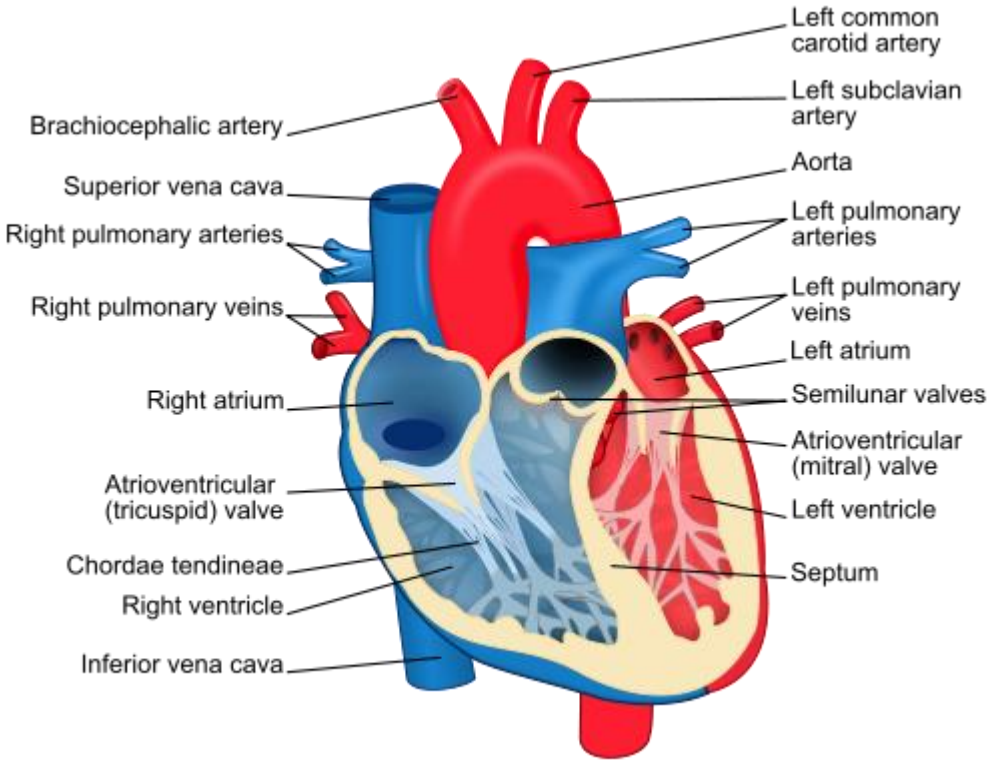
Source: http://upload.wikimedia.org/wikipedia/commons/2/20/Illu_blood_cell_lineage.jpg

vessel	céva
formed element	pevná částice
fluid, liquid	tekutý
clot	srážet se
(im)mature	(ne)zralý
stem cell	kmenová buňka
bone marrow	kostní dřeň
wear out	opotřebovat
waste products	odpadní látky
breakdown	rozklad, rozkládat
excrete	vylučovat
germs	choroboplodné zárodky
nutrient	živina
carbon dioxide	CO2
urea	močovina
bloodstream	krevní řečiště
fight, combat	bojovat
blood loss	ztráta krve
ulcer	vřed

excessive	nadměrný

The heart ensures the blood can circulate. Without circulation, blood would not be able to carry oxygen to the tissue cells. The normal resting heart rate is about 65 – 75 beats per minute. In athletes it may be as low as 40 bpm. In extreme athletic activity, the heart rate can go up as high as 200/min.
The heart rhythm can be regular or irregular = arrhythmia. There may be early beats which interrupt the regular rhythm = premature beats, or the rhythm may vary with respiration, or it may be completely irregular as in fibrillation. When patients are aware of the irregularity, they describe it as palpitations.
Heart failure occurs when the heart is unable to maintain sufficient cardiac output = the amount of blood pumped by the heart each minute. It may involve the left side of the heart, the right side, or both. In the left heart failure the main symptom is breathlessness. In the right heart failure it is peripheral oedema = swelling which starts in the feet and ankles. Breathlessness is shortness of breath, or dyspnoea. At first this is caused by exertion = exercise, effort, but in severe cases it may be present even at rest. A patient who is breathless when lying flat in bed (orthopnoea) will tend to sleep on two or more pillows. The abbreviation SOBOE is used (short of breath on exertion/on exercise/on effort).
The commonest heart disorders are a heart attack and ischaemic heart disease (IHD). Ischaemia means lack of blood supply in a particular region. It happens when a vessel is blocked by pieces of fat.

There are two types of circulation in the human body: the systemic circulation and the pulmonary circulation. There are similarities and differences between then. The systemic circulation begins at the aorta, leads oxygenated blood into the body tissues and comes back into the right atrium through the superior and inferior vena cava. The blood then continues to the right ventricle through the tricuspid valve. Then it heads for the main pulmonary artery through the pulmonary valve. This is where the pulmonary circulation starts. The artery receives the mixed venous blood and branches along the system of airways. The pulmonary capillaries form a dense network in the alveolar wall which makes a very efficient arrangement for gas exchange. The oxygenated blood is then collected by the small pulmonary veins that in the end unite to form four large veins which drain in the left atrium. Through the mitral valve the blood continues into the left ventricle and to the aorta through the aortic valve.
At first sight, the pulmonary circulation appears to be simply a smaller version of the systemic circulation. But there are some differences. The pressures in the pulmonary circulation are very low. The mean pressure in the main pulmonary artery is only about 15 mm Hg, and the systolic and diastolic pressures are about 25 and 8 mm Hg respectively. By contrast, the mean pressure in the aorta is about 100 mm Hg while the pressures in the atria are about 2–5 mm Hg. The pulmonary arteries are thus very thin and contain quite little smooth muscle. On the other hand, the systemic arteries and the left heart have thick walls and a lot of smooth muscle. That is because the systemic circulation needs to supply blood to various organs which may be far above the level of the heart. The thickness of the left ventricle wall can be up to 1,5 cm!



Source: http://upload.wikimedia.org/wikipedia/commons/thumb/e/e0/Heart_diagram-en.svg/500px-Heart_diagram-en.svg.png

ensure	zajišťovat
rate	míra
beats per minute (bpm)	údery za minutu
vary	měnit se, kolísat
respiration	dýchání
be aware of	uvědomovat si
cardiac output	srdeční výdej
swelling	otok
exertion, effort	námaha
heart attack	infarkt myokardu
tend to	mít tendenci
systemic	tělní
pulmonary	plicní
atrium	síň
vena cava	dutá žíla
ventricle	komora
tricuspid valve	trikuspidální chlopeň

mixed venous blood	smíšená venózní krev
semilunar valve	poloměsíčitá chlopeň
branch	větvit se
arrangement	uspořádání
gas exchange	výměna plynů
oxygenated	okysličená
mean pressure	střední tlak
smooth muscle	hladká svalovina
supply	dodávat

Homework

1) Reading.

Read this article and look any unknown words up in the dictionary. What other advice can you give to a patient with this medical problem?

"VARICOSE VEINS

A Word with the DOCTOR
by Dr John Winsor
The Sunday Times of Malta

VARICOSE VEINS affect millions of people, mostly women. Although, to non-sufferers, they may seem a trivial problem, they can cause a tremendous amount of pain and embarrassment.
Consisting simply of swollen veins in the legs, it is commonly thought that the only answer for varicose veins is an operation. That's not true. There are many things that a varicose vein sufferer can do to ease the problem.
Anyone who has varicose veins and wants to know how to deal with the discomfort should read through this check list - and follow the instructions I've provided.
Anyone who wants to avoid developing varicose veins would be well advised to read this advice, too.

1. Avoid getting constipated. Eat plenty of fibre-rich foods such as fresh vegetables and wholemeal bread.
2. If you're overweight, then go on a slimming diet straight away. Carrying around extra weight makes it more likely that you'll develop varicose veins - or that if you have varicose veins they'll become a problem.
3. Don't wear tight garters, belts, corsets or girdles. Any of these items may constrict your circulation and contribute to the development of varicose, veins.
4. Try to ensure that you always wear comfortable shoes. High-heeled shoes put an extra strain on your leg muscles.
5. When you sit down, try to get into a position where you can keep your feet flat on the floor. Don't cross your legs (because that constricts the veins and makes it difficult for blood to get back through the constricted vessels), and avoid sitting with your legs hanging freely

over the edge of a chair. (Don't sit on the edge of the table, for example. It compresses the underside of your thighs and stops the circulation).
6. Do regular but gentle exercises. The best types of exercise are walking, swimming and cycling. Don't exercise until you are exhausted or in pain.
But do try to make sure that you take some exercise every day."

Source: http://www.englishmed.com/html/reading/varicose_veins/varicoseveins.html (4.1.2013)

2) Do exercises in Murphy: 4, 5, 6, 121, 122

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4 The skeleton

4.1 Grammar

4.1.1 Modal verbs

Modální slovesa stejně jako v češtině umožňují přiřadit k plnovýznamovému slovesu modalitu neboli způsob činnosti – možnost, povinnost atd.

Česky	Přítomný tvar	Minulý tvar	Zápor	Krátký zápor
moci (schopnost)	can	could	cannot	can't
moci (možnost)	may	might	may not	–
měl by (doporučení)	shall	should	shall not	–
by (podmínka)	(will)	would	will not	won't
muset (povinnost)	must	–	must not (nesmět)	mustn't

Mají několik vlastností, která je odlišují od plnovýznamových sloves:
- nečasují se. V třetí osobě jednotného čísla nepřibírají koncovku **-s**,
- nelze je použít jako infinitiv ani rozkaz,
- plní funkci pomocných sloves, tzn. následuje za nimi záporka **not** a v otázkách stojí na prvním místě,
- následuje za nimi plnovýznamové sloveso v infinitivu bez **to**.

Oznamovací věta tedy vypadá takto:

zájmeno + modální sloveso + infinitiv

Srovnejte:
*I **can speak** English.* Mluvím anglicky. (Umím to.) *My grandfather **could speak** five languages.* Můj dědeček uměl pět jazyků.
*She **can swim** but she **cannot ride** a horse.* Umí plavat, ale neumí jezdit na koni.
*I **can carry** the bag for you.* Můžu ti nést tašku.
*I **can help** you.* Můžu ti pomoct. *I **could help** you.* Mohl bych ti pomoct.
*We **could finish** the task by Sunday.* Do neděle bychom ten úkol mohli dokončit.
***Can you turn** the lights on?* Můžeš rozsvítit? ***Could you turn** the lights on?* Mohla bys rozsvítit?

Can a **could** se často používají se slovesy vnímání:
see hear smell taste feel remember understand

I can see the lake from my window.
Can you hear the radio?
I can't smell anything.
Can I taste the cake?
Can you feel this?
I can't remember!
I couldn't understand what the teacher said so I asked again.

Pokud mluvíme o konkrétní situaci, ne o obecné schopnosti, je vhodnější použít tvar **be able to + infinitiv**.
*The fire was everywhere in the building but fortunately everyone **was able to escape**.*

***May I open** the window? = **Can I open** the window?* Můžu/smím otevřít okno?
*She **may/might/can be** there now.* Už tam může být/už tam možná je.
*You **may not smoke** inside.* Vevnitř není dovoleno kouřit.

*I **shall go** now.* Už bych měla odejít.
*You **should go** to the doctor, you look ill!* Měl bys jít k doktorovi, vypadáš nemocně!
*People **shouldn't smoke**, it's unhealthy.* Lidé by neměli kouřit, je to nezdravé.
***Shall I leave** him a message?* Mám mu nechat zprávu?

*I **must send** this email before the PC crashes again.* Musím odeslat tenhle email, než zase zamrzne počítač.
*You **mustn't break** the law!* Nesmíš porušovat zákony!

*I **would like** steak with mashed potatoes, please.* Dal bych si steak se šťouchanými bramborami, prosím.
*I **will have** pea soup and bread, please.* Dám si hrachovku a chléb, prosím.
*I **would love** to go with you, but I'm really busy.* Velmi rád bych s vámi jel, ale jsem opravdu zaneprázdněný.

Will se především používá pro vyjádření budoucího času.

Minulý tvar modálního slovesa neznamená nutně minulý čas, spíše vyjadřuje větší váhání nebo formalitu.
Minulý čas se tvoří přidáním minulého infinitivu k minulému tvaru modálního slovesa.

Minulý infinitiv se tvoří pomocí slovesa have + třetí tvar plnovýznamového slovesa:

modální sloveso + have + třetí tvar

*I **could have been** here earlier, but the traffic was jammed.* Mohla jsem tu být dřív, ale byly zácpy na silnicích.
*He **might have done** it, I'm not sure.* Možná to udělal, nejsem si jistá.
*We **should have bought** that new x-ray.* Měli jsme koupit ten nový rentgen.
*The patient **would have died** if the doctor hadn't operated him.* Pacient by byl zemřel, kdyby ho doktor neoperoval.
*She **must have left** before we arrived.* Musela odejít, než jsme přijeli (= určitě odešla, než jsme přijeli).

4.1.2 Simple future tense: will

Pro jednoduché vyjádření budoucího času se používá modální sloveso **will**.
Podobně jako ostatní modální slovesa **will** nelze časovat a plní funkci pomocného slovesa. Za ním následuje plnovýznamové sloveso v infinitivu:

zájmeno + will + infinitiv

Budoucí prostý čas se používá pro vyjádření budoucnosti, o které se rozhoduje v okamžiku promluvy, tzn. která není naplánovaná.

***Will you go** out tonight? – I don't know yet. I **will** probably **stay** at home. I **won't go** out.* Půjdeš večer ven? – Ještě nevím. Asi zůstanu doma. Nepůjdu ven.
*Mary is in hospital. – Really? I **will visit** her tomorrow then.* Mary je v nemocnici. – Opravdu? Tak to ji zítra navštívím.
*What would you like to eat? – I**'ll have** pork ribs please.* Co si dáte k jídlu? – Dám si vepřová žebírka, prosím.

Další situace, kdy využijeme **will**, jsou např. nabídka pomoci, slib, žádost:

*Are you too busy? I**'ll help** you with the housework.* Máš moc práce? Pomůžu ti s domácími pracemi.
*I **won't tell** anyone what happened.* Nikomu neřeknu, co se stalo.
***Will you** please **open** the window?* Otevřeš prosím okno?

Často se will vyskytuje ve větách s následujícími výrazy:
- probably: *I **will** probably **stay** at home tonight.* Dnes asi zůstanu doma.
- I'm sure: *I'm sure you **will pass** the exam.* Určitě tu zkoušku uděláš.
- I (don't) think: *Do you think she **will arrive** on time?* Myslíš, že přijde včas?
- I wonder: *I wonder what **will happen**.* Jsem zvědavá, co se stane.

POZOR! Po výrazu **I hope** se obvykle používá přítomný čas prostý, i když **will** je přípustné.
I hope she passes the test. Doufám, že udělá ten test.
I hope it doesn't rain tomorrow. Doufám, že zítra nebude pršet.

4.2 Vocabulary

4.2.1 Verbs

miss	postrádat	pack	balit	press	stlačit
monitor	sledovat	park	parkovat	presume	předpokládat
move	hýbat, stěhovat	pass	projít, minout	pretend	předstírat
name	pojmenovat	pause	přerušit, udělat pauzu	prevent	předcházet něčemu
need	potřebovat	perceive	vnímat	print	tisknout
negotiate	vyjednávat, obchodovat	perform	předvádět	proceed	postupovat
note	poznamenat	permit	dovolit	protect	chránit
notice	všimnout si	persuade	přesvědčit	prove	dokázat
object	namítat	phone	telefonovat	provide	poskytovat
observe	pozorovat	pick (up)	zvednout	punch	praštit pěstí
obtain	získat	place	umístit	push	tlačit
occur	vyskytnout se	plan	plánovat	put	dát, položit
offer	nabízet	point	ukázat (na něco)	question	dotazovat, zpochybňovat
open	otevřít	possess	vlastnit	quit	přestat, odejít
operate	operovat	pour	nalít	range	být v rozsahu
order	objednat, nařídit	practise	cvičit, trénovat	reach	dosáhnout
organize	organizovat	predict	předpovídat	react	reagovat
overcome	překonat	prefer	preferovat	realize	uvědomit si
owe	dlužit	prepare	připravovat	receive	přijmout, dostat
own	vlastnit	present	představit	recognize	poznat někoho

4.2.2 Holidays and travelling

Where do you like to go for holidays? Why? And what is your favourite means of transport?

There are various reasons to travel. To relax from work, people usually prefer to travel further away from their homes for a longer time. They often go abroad. Some people prefer to stay at a hotel, lie on the beach and go swimming in the sea. Others like to go hiking in the mountains, or go sightseeing for some historical monuments.
But work holidays are not the only reason to travel. Most people have to travel to work or school every weekday. This is called commuting. It is a regular journey to and from the same places.
Employees at high positions often have to go on business trips. These usually involve travelling to a certain place, staying at a hotel and having business lunch with the client, and coming back home the next day.

Recently, shopping trips became popular. Travel agencies offer cheap one-day trips to famous shopping cities such as London, Paris, Milano or New York.
You can travel by many different means of transport. You can go by car, by bus, by train or by plane. Sometimes you need to take a boat or ship. A trip by boat where you stop at a few places to hop on and off the boat is called a cruise trip.
Public transport is meant for short journeys around the town or between towns. Many capitals and huge cities have some kind of an underground train. In London, the underground is often referred to as „the Tube“. In New York, it is called the Metro.
Sometimes your bus or train does not go by the schedule. It is delayed. On other ocassions, you miss the bus because you were delayed.

means of transport	dopravní prostředek
various	různý
hiking	túra
go sightseeing	chodit po památkách
commute	dojíždět
regular	pravidelný
journey	cesta
recently	nedávno, v poslední době
travel agency	cestovní kancelář
hop on and off	naskočit a vyskočit
cruise	okružní jízda
public transport	veřejná doprava
schedule [šedjul, skedjul]= timetable	rozvrh, jízdní řád
delayed	zpožděný
ocassion	příležitost
miss the bus	nestihnout autobus

4.2.3 Sports

Do you like sports? Do you do any sports? What is your favourite sport?

A sport is commonly defined as a sort of game that requires physical activity and involves a degree of competition. There are many types of sports so we need some classification. We can divide sports in winter or summer sports and individual or team sports, indoor and outdoor sports. Athletics involves a lot of different types of events such as running, jumping and throwing, e.g. long jump, high jump, sprint, hurdle race, discus throw and javelin throw. They are divided in field events and track events.
Team sports are usually very popular with fans. Football is probably the most popular sport in the whole world, followed by ice hockey, baseball, rugby, tennis, basketball, volleyball and so on.
Every country has their own favourite sport which they are best at. Cold northern countries

are usually very good at winter sports such as skiing and ice hockey, while warmer countries like football and athletics.
If you want to be a professional sportsman, you need a coach to train you or your team how to do better. You might need to find sponsors to provide you with money and/or some other material help. If you are talented and train hard, you might be invited to compete at the winter or summer Olympic games. They are held every four years in a different city. It is always a huge event which attracts thousands of fans and journalists. The winners receive the gold, silver and bronze medals.
Sport is also a suitable activity to keep fit. Doctors say that you should spend at least an hour three times a week moving. It can be either running, playing football with your children, dancing, gardening or any other physically demanding activity. This is vital to protect your body form gaining weight and all the other negative consequences of the sedentary lifestyle. If you feel down, stressed or numb, jump up and set off!

commonly	běžně
sort	druh
require	vyžadovat
degree	stupeň
competition	soutěž, konkurence
hurdle race	překážkový běh
javelin throw	hod oštěpem
field	hřiště, pole
track	bežecká trať
coach	trenér
compete	soutěžit
suitable	vhodný
vital	významný, životně důležitý
gain weight	přibrat
consequence	důsledek
feel down	cítit se depresivně
numb	otupělý
set off	vyrazit (ven, na výlet)

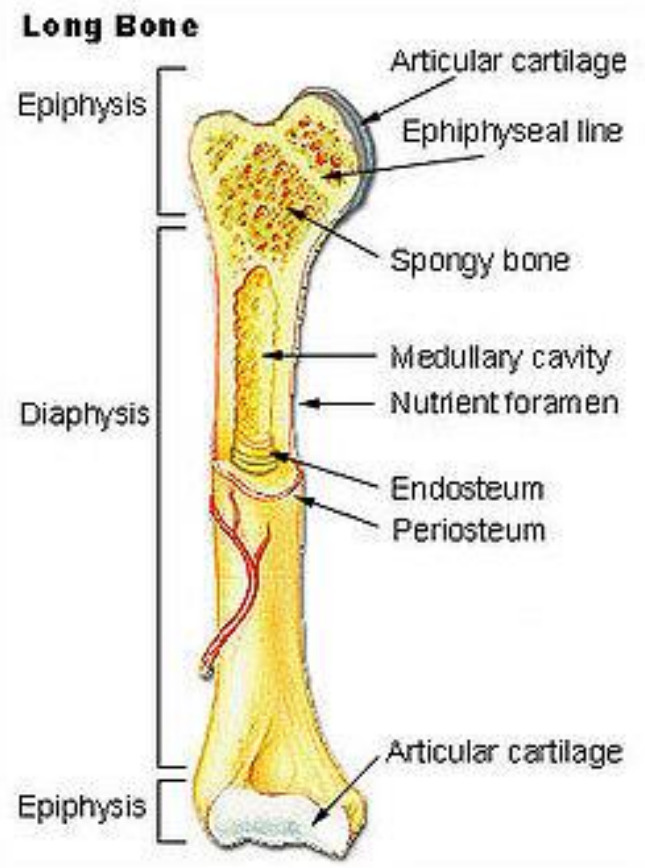
4.3 Medical English: The skeleton

The skeleton is the bony framework that ensures the firmness of a human body. The skeleton of an adult consists of more than 200 bones. A typical long bone such as the humerus or thigh bone has two ends which are wider than the middle part and are covered by articular cartilage. The middle part is called the shaft or diaphysis and it is covered by a membrane called periosteum. Inside the bone, there is a cavity filled with bone marrow. The point where two bones meet is a joint or articulation. Striated = voluntary muscles contract and relax to ensure movement.

The joint cavity is enclosed by the capsule which consists of strong fibrous tissue. The inside of the cavity is lined by synovial membrane, which secretes a viscous fluid. This and the articular cartileges are necessary for the joint to move with ease.
Names of bones come from Latin but many have English names, too. Look at the table to learn more.

Latin name	**English name**	**český název**
cranium	skull	lebka
mandible	jaw bone	čelist
vertebral column	spine, backbone	páteř
sternum	breastbone	hrudní kost
costa	rib	žebro
clavicle	collarbone	kost klíčková
scapula	shoulder blade	lopatka
femur	thigh bone	kost stehenní
patella	kneecap	čéška
tibia	shinbone	kost holenní

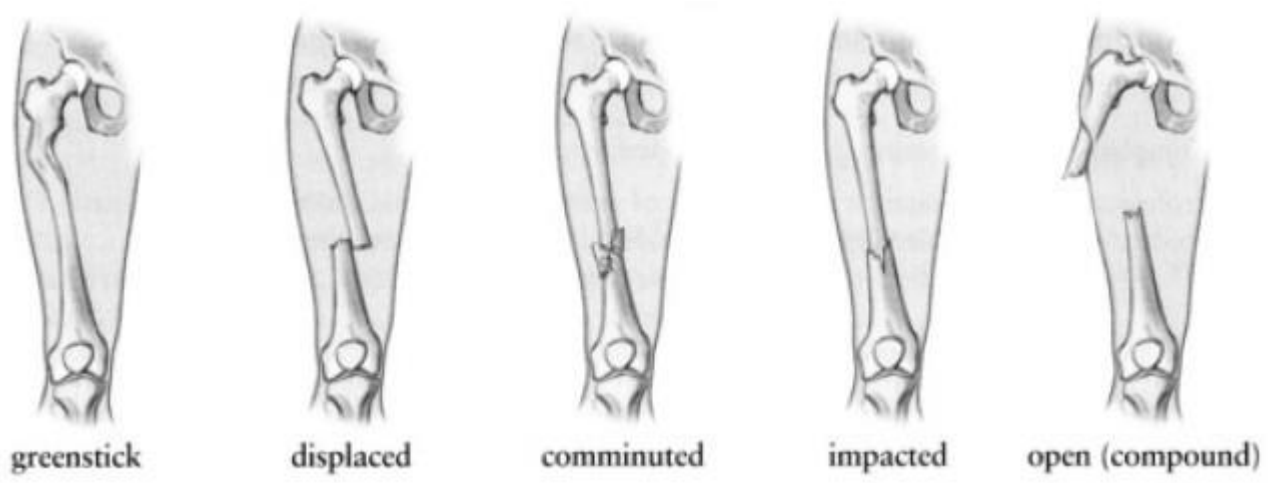
The skeleton can be divided in four main parts: the skull, the vertebral column, the ribcage, and the limbs skeleton.
The skull contains 22 bones and can be divided in the bones of the cranium and the bones of the face. The spine is composed of 33 vertebrae which are divided into 5 regions: cervical, thoracic, lumbar, sacral, and coccygeal parts. The ribcage contains 12 pairs of ribs which are of three types: true, false, and floating ribs. The skeleton of the limbs contains the shoulder and pelvis girdles that attach the limbs to the trunk, and the bones of the upper and lower limbs.



Source:
http://upload.wikimedia.org/wikipedia/commons/thumb/9/94/Illu_long_bone.jpg/250px-Illu_long_bone.jpg

cervical	krční
thoracic	hrudní
lumbar	bederní
sacral	křížový
coccygeal	kostrční

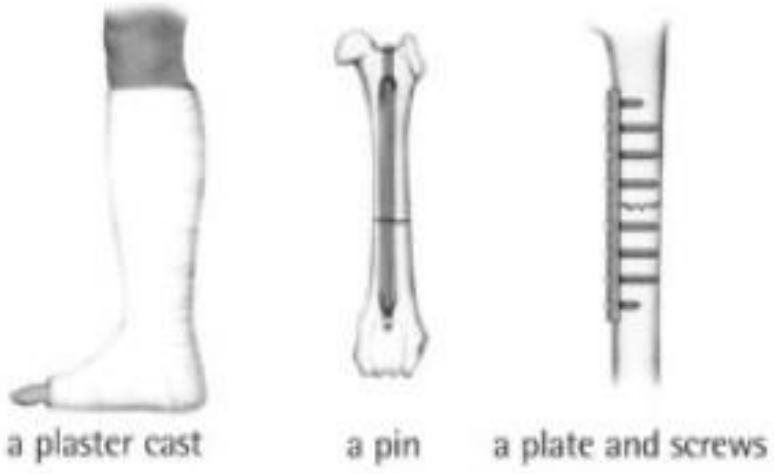
Sometimes bones might break. It can happen in sport, in an injury or accident such as a car crash, or due to a disease such as osteoporosis. This is a disease of older age when the level of calcium in blood starts to fall which results in bone loss.
A break in a bone is called a fracture. There are a couple of types of fractures.



Types of fractures
Source: Glendinning a Howard, 2007, s. 40

A greenstick fracture means that the bone is bent but not broken. It occurs mainly in children.
A displaced fracture means that the broken pieces are separated.
A comminuted fracture means that the bone is broken into several pieces.
An impacted fracture means that the broken pieces are pushed together.
An open fracture means that the skin is open and the bone might stick out.
A pathological fracture might appear in a diseased bone. A stress or fatigue fracture is due to repeated minor trauma such as long-distance running.

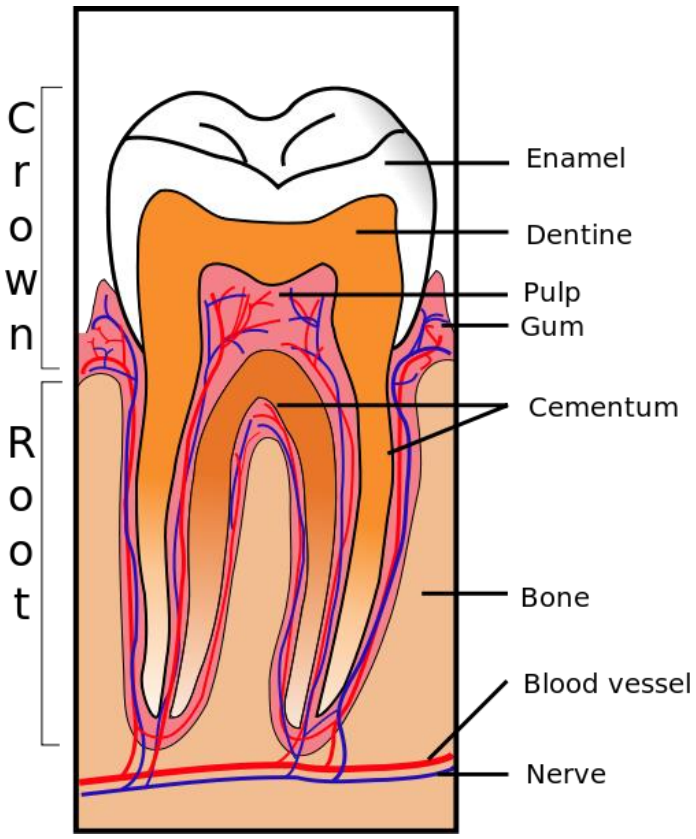
When the fragments of a broken bone join together and heal, they unite. First, the fracture needs to be replaced – put in the anatomical position, and then fixed. Fixation can be external, for example by a plaster cast, or internal, for example by a pin or plate and screws. If a fracture heals displaced it might result in malunion which is an incomplete and incorrect union.



Fracture treatment
Source: Glendinning, Howard, 2007, s. 40

ensure	zajistit
firmness	pevnost
articular cartilage	kloubní chrupavka
shaft, diaphysis	diafýza kosti
bone marrow	kostní dřeň
enclose	uzavírat, obalovat
viscous fluid	viskózní tekutina
with ease	jednoduše, pohodlně
due to	kvůli, na základě
fracture	zlomenina
greenstick fracture	subperiostální zlomenina
comminuted fracture	tříštivá zlomenina
impacted fracture	impresivní zlomenina
fatigue fracture	únavová zlomenina
heal	hojit
unite	spojit
plaster	sádra
plate	dlaha
pin, screw	hřeb, šroub
displaced	dislokovaný
result in	vyústit v
malunion	špatné spojení

Teeth are also bones. A baby grows milk teeth until about 6 years of age, after that they are replaced by permanent teeth. A complete set of teeth in one jaw includes 4 incisors, 2 canines, 4 premolars and 6 molars including 2 wisdom teeth.
The tooth has various parts. The crown of a tooth is the part above the gum, the root is the part embedded in a socket of the jaw bone. There is a neck between these two parts which is slightly constricted. Raised parts on the crown are called cusps.
Enamel is the material that covers the crown. It is the hardest substance in the human body. Dentine forms most of the tooth and is covered by cementum on the root. These materials resemble bone in structure but are harder.
The soft parts of a tooth are pulp and periodontal membrane. The pulp consists of connective tissue of a dense network of capillaries, lymph vessels and nerve fibres. The periodontal membrane covers the root and lines the alveolus where it serves as the periosteum.
If dental and oral hygiene is neglected, dental caries might appear. It happens when the enamel is damaged by plaque which is a sticky film of bacteria. Sugars and acids attack the enamel which eventually weakens until a cavity appears. It might lead to a complete decay of the tooth. Everyday brushing and flossing is recommended by dentists.



Source: http://upload.wikimedia.org/wikipedia/commons/thumb/2/2e/Tooth_Section.svg/500px-Tooth_Section.svg.png

incisor	řezák
canine	špičák
premolar	třenový zub
molar	stolička
wisdom teeth	zuby moudrosti
crown	korunka
root	kořen
socket, alveolus	zubní lůžko
neck	krček
constricted	zúžený
cusp	hrbolek
enamel	sklovina
dentine	zubovina

cementum	zubní cement
resemble	podobat se
connective tissue	pojivová tkáň
pulp	dřeň
dense	hustý
neglect	zanedbávat
dental caries, tooth decay	zubní kaz
plaque	plak
sticky	lepkavý
weaken	oslabit
floss	zubní nit

Revision
Do exercises in Murphy: Units 21, 22, 26—34, 37.
Write a short presentation on where you would like to work in the future and why.

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5 Medical English: Sense organs

5.1 Grammar

5.1.1 Zero and first conditional

Kondicionály neboli věty podmínkové jsou souvětí tvořená dvěma částmi. Obecně dodržují strukturu „pokud – tak“, „když – tak“, „kdyby – tak by“, „až – tak“, atd.
V angličtině se podmínkové věty dělí na **zero**, **first**, **second**, **third** a **mixed conditional**.

V této kapitole probereme nulový a první kondicionál. Podmínkových spojek je vícero, nejčastější jsou spojky **if** (když, jestli, pokud) a **when** (když, až).
Podmínkové souvětí obsahuje jednu větu hlavní a jednu větu vedlejší, která se nazývá **if-clause**. V **if-clause** nelze nikdy použít budoucí tvar **will** (kromě výjimečných případů jako je vysoce formální písemná komunikace).

Zero conditional se tvoří následovně:

If + podmět + sloveso v přítomném čase, podmět + sloveso v přítomném čase

Nulový kondicionál se používá pro vyjádření obecně platného faktu nebo pravidelného jevu anebo pro rozkazy.

*If water **reaches** 100 °C it **boils**.* Když voda dosáhne 100 °C, vaří se.
*When you **are** in love your brain **is** overwhelmed by hormones.* Když jste zamilovaní, váš mozek je zahlcen hormony.
*Every time you **smoke** a cigarette you **damage** your lungs.* Pokaždé, když vykouříte cigaretu, ničíte si plíce.
***Give** me a call if you **pass** the test.* Zavolej mi, pokud uděláš ten test.
*When she **gets** money she **goes** on a shopping spree.* Když dostane peníze, utratí je za nákupy.
*If you **don't understand**, **ask** your teacher again.* Jestli nerozumíš, zeptej se znovu svého učitele.
***Do you tell** your parents if you **have** troubles?* Říkáte rodičům, když máte starosti?

POZOR na rozdíl mezi spojkami **if** a **when**! Někdy může záměna změnit celý význam věty.

*Call me **if** you are free tonight.* Zavolej mi, **jestli** budeš mít dnes večer čas.
*Call me **when** you are free tonight.* Zavolej mi, **až** budeš mít dnes večer čas.

Všimněte si, že v angličtině se často nepoužívá čárka mezi větami. Používá se hlavně v dlouhých souvětích pro zlepšení srozumitelnosti.

First conditional je velmi podobný nulovému, ale nyní se v hlavní větě objevuje **will** pro vyjádření budoucnosti.

If + podmět + sloveso v přítomném čase, podmět + will + infinitiv

*If I **pass** the test I **will be** really happy.* Jestli udělám ten test, tak budu opravdu šťastná.
*If we **stay** in a hotel it **will cost** too much*. Když budeme bydlet v hotelu, tak to bude příliš drahé.
*They **will be** very upset if we **don't invite** them to the birthday party.* Budou hodně naštvaní, jestli je nepozveme na tu narozeninovou oslavu.
*The doctors **will go** on strike if the government **doesn't increase** the salaries.* Doktoři budou stávkovat, jestli jim vláda nezvedne platy.
*When you go out, **will you buy** me some cheese if I **give** you money?* Až půjdeš ven, koupíš mi nějaký sýr, když ti dám peníze?

5.1.2 The passive

Passive neboli trpný rod se používá v případě, kdy je významnější předmět než podmět. Všichni známe větu *Made in China* – vyrobeno v Číně. Není důležité, kdo to vyrobil, ale kde. Celá věta by zněla např. *This shirt was made in China*. Tato košile byla vyrobena v Číně.
V podstatě anglický **passive** odpovídá svým tvořením češtině a je proto velmi snadné ho pochopit.

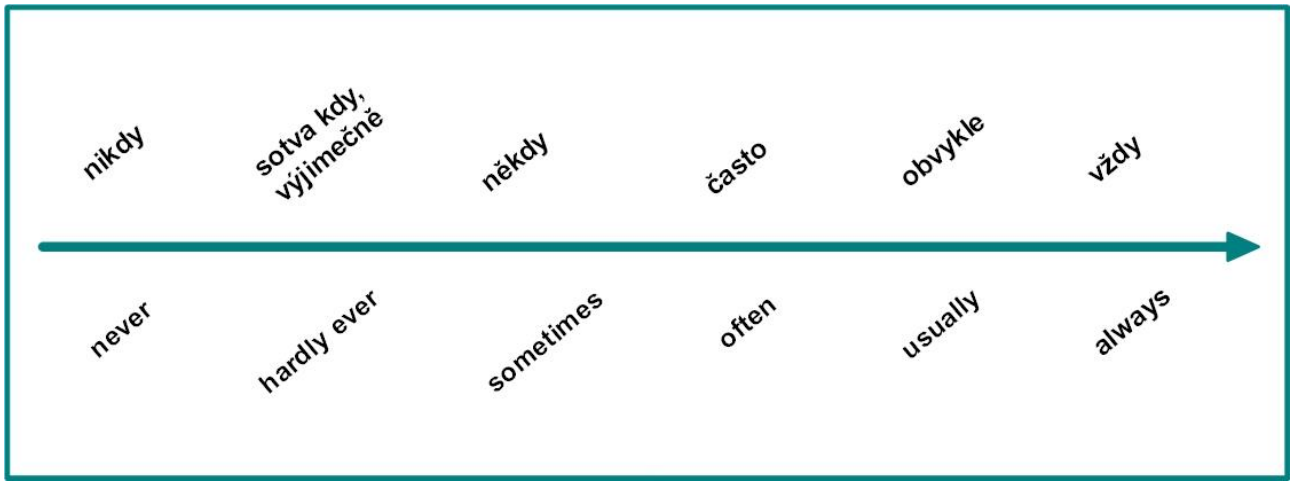
Základem je sloveso **be** v určitém čase a třetí tvar plnovýznamového slovesa. Pokud chceme přidat původce děje, použijeme předložku **by**.

podmět + be v čase + third form (+ předmět 1 + by + předmět 2)

Our house ***was built*** *in 1921* (by some builders). Náš dům byl postaven v roce 1921 (nějakými dělníky – tato informace není podstatná a vlastně ji ani neznáme).
School ***is finished****, you can go home!* Škola skončila, můžete jít domů!
I ***am*** *constantly* ***haunted*** *by nightmares*. Neustále mě straší noční můry.
The car ***was repaired*** *last month and it****'s broken*** *again!* To auto bylo opravované minulý měsíc a už je zase rozbité!
The flat ***was redecorated*** *before we moved in.* Byt byl rekonstruován, než jsme se sem přistěhovali.
We don't want to ***be disturbed***. Nechceme být rušeni.
Two million pounds ***were stolen*** *from the National Bank yesterday.* Dva miliony liber byly včera ukradeny z Národní banky.
Lung cancer ***is caused*** *by smoking.* Rakovina plic je způsobena kouřením.
When ***were*** *computers* ***invented****?* Kdy byly vynalezeny počítače?
Danny ***wasn't invited*** *but he came anyway.* Danny nebyl pozván, ale stejně přišel.
We ***wouldn't be frightened*** *by scary stories.* Nebáli bychom se děsivých příběhů.
You ***should be ashamed*** *of yourself.* Měl by ses za sebe stydět. Mělo by ti být stydno.

5.1.3 Adverbs of frequency

Adverbs of frequency jsou příslovce času, konkrétně častosti. Díky nim můžeme vyjádřit, jak často se něco děje.



Zdroj: Bc. Barbora Drbohlavová

Jejich použití v slovosledu má dvě základní pravidla:
- před plnovýznamové sloveso: *I* ***always go*** *to school by bus.* Vždy jezdím do školy autobusem. (Z čehož vyplývá, že se staví za pomocné sloveso: *I* ***don't always go*** *to school by bus.* Nejezdím do školy vždy autobusem.)
- za sloveso **be**: *I* ***am usually*** *happy with my family*. Obvykle jsem se svou rodinou šťastná.

5.2 Vocabulary

5.2.1 Verbs

recommend	doporučit	rescue	zachránit	select	vybrat
record	nahrát, zapsat	resist	odolávat	separate	oddělit
recover	uzdravit se	respond	odpovídat, reagovat	serve	sloužit, servírovat
reduce	redukovat	rest	odpočívat	set	nastavit
refer	odkázat	result	vyústit	shake	třást
refuse	odmítnout	retire	jít do důchodu	share	sdílet
register	registrovat	return	vrátit	shave	holit
relax	odpočívat	review	revidovat	shoot	střílet
release	uvolnit, propustit	ring	zavolat, zazvonit	sign	podepsat
relieve	ulevit	rise	povstat, vstát	sleep	spát
rely on	spoléhat na	rub	drhnout	slip	klouzat
remain	zůstat	run	běžet, spustit (test)	solve	vyřešit
remember	pamatovat	satisfy	uspokojit	sort	třídit
remind	připomenout	save	zachránit, uložit	specify	specifikovat
remove	odstranit	scratch	škrábat	spill	rozlít
repeat	opakovat	scream	křičet	split	rozdělit
replace	nahradit	search	hledat	spoil	zkazit
reply	odpovědět	secure	zabezpečit	spread	rozšířit
report	nahlásit	seem	zdát se, vypadat	starve	hladovět
require	požadovat	seize	zachvátit	stay	zůstat, bydlet

5.2.2 Films, music, culture

What is your favourite film? Do you often go to the cinema? What music do you usually listen to? Do you sometimes go to concerts? And what other kinds of cultural events do you like going to?

What is a film, anyway? In the past, it was a series of pictures on a strip of plastic which runs through a projector, projects on a screen and creates the illusion of moving images. Today, films are becoming more and more digital with many special effects and computer animation. We even have 3D movies which need to be watched with special glasses that give you the illusion of 3-dimensional reality around you. But at the beginning, films were silent because there were no microphones to capture the sound. We all know Charlie Chaplin! Now we don't only have sound, but we also have complete soundtracks that sell independently, posters, and other artifacts that fans collect. Film is not only art anymore, it

is also business and industry that sells and earns huge amounts of money, and sometimes hundreds of workers are employed to work on one film! Apart from the director, actors and actresses, the cameramen and soundmen, there are many others that help with the shooting. Sometimes stunts are needed.

What kinds of films do you know? There are many genres. Apart from the mainstream Hollywood romantic movies, action films and comedies there are horrors and thrillers, westerns and alternative cinema, psychological film etc.

How about music? Do you like listening to music? What is your favourite genre?

Music is one of the oldest arts known to man. It has changed through the centuries. We distinguish classical and modern or popular music. Today, it is quite popular to mix various genres of music together to create new sounds and experiences.
Do you play any musical instrument? If you play a classical instrument such as a violin, clarinet, harp or a trumpet you might play in an orchestra. Modern instruments are electronic guitars, basses and drums. But people often like to combine what seems too different, such as a philharmonic orchestra and a rock band.

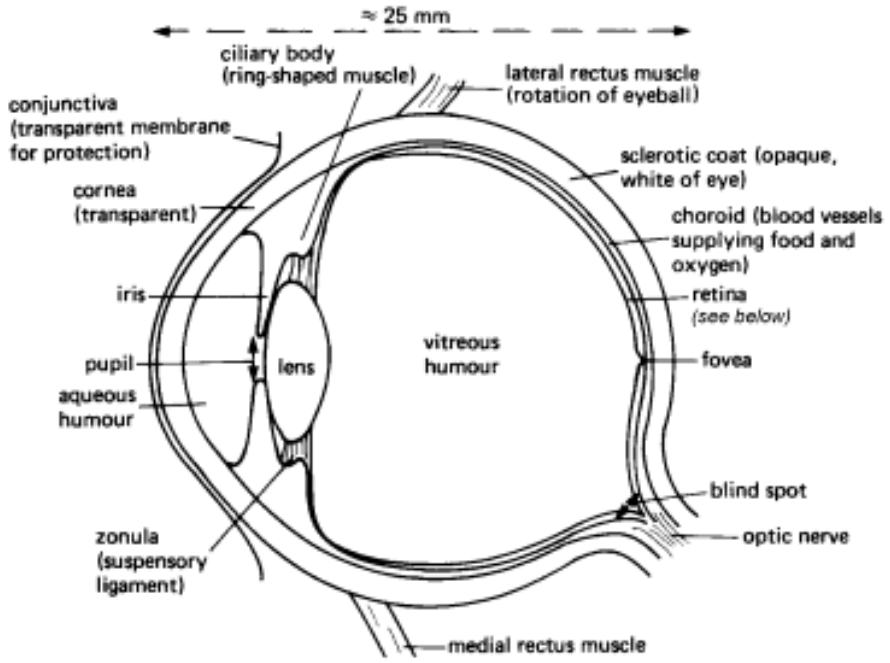
How often do you go to theatres, museums and galleries? These venues are not dusty places where you have to be quiet anymore. They often have programmes for children and students to attract them to new cultural experiences. Try to find out more about your local museum or gallery.

event	událost
series	série
strip	pruh
silent	tichý
capture	zachytit
artifact	artefakt
collect	sbírat
actor	herec
actress	herečka
soundman	zvukař
shooting	natáčení
stunt	kaskadér
genre	žánr
mainstream	střední proud
cinema	kino, kinematografie
century	století
distinguish	rozlišit
violin	housle

harp	harfa
drum	buben
dusty	zaprášený
venue	místo konání událostí
find out	zjistit

5.3 Medical English: Sense organs

Humans just as any other animals have 5 senses: sight (vision), hearing (audition), taste, touch (sensation or feeling), and smell (olfaction). The functions of these senses are provided by sense organs. For vision it is the eyes, for audition it is the ears, for taste it is the taste buds, for touch it is the skin, and for smell it is the olfactory regions in the nose.
There are receptors in the sense organs whose sensitive cells are activated by a particular form of energy or stimulus in the external or internal environment. The sensitive cells respond to the stimulus by initiating a series of nerve impulses towards afferent sensory neurons which lead to the according region in the brain.
Sight is probably the most important sense for humans. We receive up to 80% of information from the outer world by eyes. People who have impaired sight might be blind. Other symptoms might be double vision (diplopia) or blurring (loss of clarity) often connected with a glaucoma or cataract.
The black center of the eyes is called the pupil. It can dilate or constrict. Light rays pass a mucous membrane called the conjunctiva and a transparent fibrous membrane called the cornea and enter the eye. The cornea bends or refracts the rays of light so that they are focused properly on the sensitive receptor cells.
The white part of the eye is called the sclera. It is continuous with the cornea on the anterior surface of the eyeball. The choroid is a membrane that lines the insides of the sclera and contains many blood vessels which supply nutrients to the eye.
Around the pupil there is a colourful circle called the iris. Circular and radial iris muscles contract when they react to the amount of passing light. The ciliary body on each side of the lens contains ciliary muscles which can adjust the shape and thickness of the lens. This mechanism is called accommodation and it helps refract the light. The ciliary body also produces a fluid called aqueous humour which fills the anterior chamber of the eyeball. The fluid in the vitreous chamber is called vitreous humour.
The retina is the sensitive nerve layer of the eye. It is made up of sensitive receptor cells: rods and cones. Light energy causes a chemical change in the rods and cones and starts nerve impulses which then travel to the brain through the optic nerve. The place in the eye where the optic nerve meets the retina is called the optic disc. A yellow spot in the center of the retina is called macula lutea. In the middle of it, there is a pit called fovea centralis which is the place of the sharpest vision. Reversely, the blind spot is the place of no vision. The optic nerve fibres cross. This is called the optic chiasma. The nerves then form optic tracts that synapse in the thalamus and end in the right and left visual regions of the cerebral cortex.



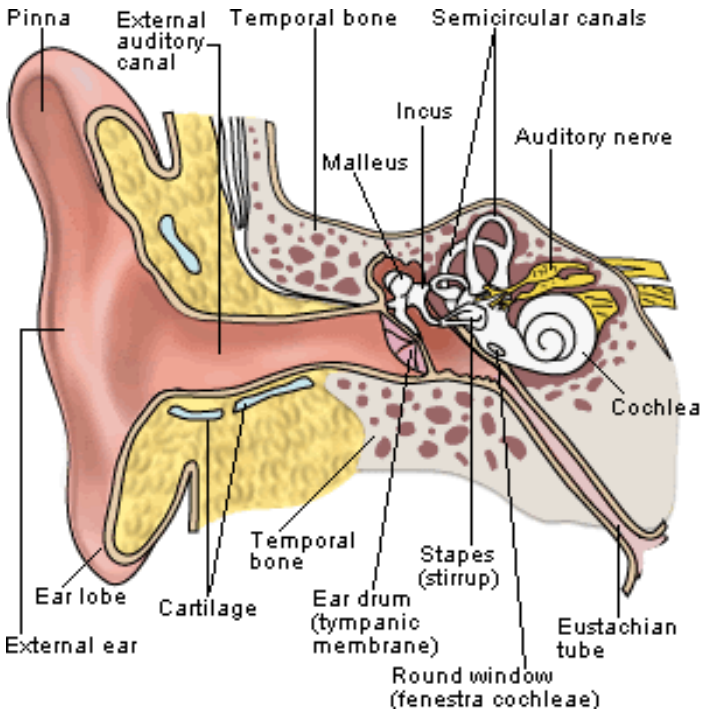
Source: http://academia.hixie.ch/bath/eye/HorzontalSectionOfRightEye.gif

sight	zrak
taste buds	chuťové pohárky
impaired	poškozený
blind	slepý
blur	zamlžit
loss	ztráta
clarity	ostrost
cataract	šedý zákal
pupil	zornice
conjunctiva	spojivka
cornea	rohovka
bend, refract	ohýbat
focus	zaostřit
sclera	skléra
continuous	spojitý
iris	duhovka
shape	tvar
thickness	tloušťka
lens	čočka (POZOR! Jednotné číslo!)
accommodation	zaostřování, akomodace

chamber	komora
retina	sítnice
rods and cones	tyčinky a čípky
pit	jamka

Hearing does not happen in the earlobe itself. The ear can be divided in three parts: outer ear, middle ear, and inner ear. The sound waves are received by the outer ear and transmitted by receptor cells to nerve fibres which lead to the auditory region of the brain in the cerebral cortex. In the outer ear there is the auricle or pinna, and the external auditory canal lined with glands that secrete yellowish substance called cerumen.
Sound waves then strike the tympanic membrane or eardrum between the outer and middle ear. That is formed by three ossicles: the malleus, the incus and the stapes. The canal which leads from the middle ear to the pharynx is called the eustachian tube. It prevents damage to the eardrum and shock to the middle and inner ears. It opens when you swallow thus balancing the atmospheric and middle ear pressures. Sound vibrations reach the inner ear called the labyrinth. Its bony part, the cochlea, contains the organ of Corti. Cilia in this organ receive vibrations and relay the waves to auditory nerve fibres which end in the auditory center of the cerebral cortex.
People who lose hearing are deaf, other problems might be ringing or buzzing (tinnitus).

Talking about touch, loss of sensation is called numbness (anaesthesia), other problems are tingling or pins and needles (paraesthesia).



Solurce: http://2.bp.blogspot.com/-9rP5zQi8JjQ/Tgq5PyBRJMI/AAAAAAAAACA/pL2klFpficw/s1600/Ear+Anatomy8.gif

earlobe	boltec ucha
auditory	sluchový
yellowish	nažloutlý
strike	udeřit
eardrum	bubínek
ossicle	kůstka
malleus	kladívko
incus	kovadlinka
stapes	třmínek
swallow	polykat
cochlea	hlemýžď
relay	předat informaci
deaf	hluchý
numbness	necitlivost
tingling	brnění
pins and needles	jehličky

Revision
Do exercises in Murphy: Units 25 and 42.
Watch and listen to one episode of your favourite TV series in English without subtitles. Then watch it again with English subtitles. Look up words and phrases that you do not understand and try to remember a few of them.

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6 Medical English: The nervous systém

6.1 Grammar

6.1.1 Future tense: going to

V jedné z předchozích kapitol byl vysvětlen základní anglický budoucí čas. V angličtině se ale pro vyjádření různých typů budoucích událostí používají různé formy budoucího času. Tvar **will** se používá pro vyjádření budoucnosti, o které se rozhoduje v čase promluvy, pro

žádosti a nabídky a pro spekulace. Pro vyjádření budoucnosti, která je do určité míry plánovaná nebo předpokládaná a mluvčí už o tématu přemýšlel, se použije následující konstrukce:

be + going to + infinitiv plnovýznamového slovesa

Sloveso **be** je zde pomocným slovesem, takže otázky se tvoří změnou slovosledu podmětu a zápory přidáním **not**.

I **am going to see** my friends tomorrow. *Zítra uvidím své přátele. Plánuji vidět své přátele.*
He **is going to apply** for the job. *Plánuje se ucházet o to zaměstnání.*
Are you going to study tonight? *Budeš se dneska večer učit? Plánuješ se učit?*
I**'m not going to tell** him. *Nebudu mu to říkat.*
The director **is going to raise** the salaries. *Ředitel bude zvedat platy. Plánuje je zvedat.*
Is she going to have a big birthday party? *Bude mít velkou oslavu narozenin?*

6.1.2 Future tense: present continuous for future arrangements

Třetím a posledním typem budoucnosti jsou stoprocentně naplánované, očekávané děje. Typicky jsou to domluvené schůzky, lékařské prohlídky, odjezdy na dovolenou apod.
Pro tyto příležitosti se používá přítomný čas průběhový. Možná se to zdá nelogické, ale uvědomme si, že podobně se přítomný čas pro vyjádření budoucnosti používá i v češtině:
We are leaving tomorrow at 6 p.m. *Zítra odlétáme v 6 večer.*
I'm seeing my dentist next Wednesday. *K zubaři jdu příští středu.*
Are you having dinner with your father tonight? *Jdeš dnes na tu večeři se svým otcem?*
He is taking the exam on Pathology next week. *Jde na zkoušku z patologie příští týden.*
What **are you doing** on Saturday night? *Co děláš v sobotu večer?*

POZOR! Nejsou to ovšem opakované děje jako např. jízdní řády, programy. Pro tyto situace se používá přítomný čas prostý.

The train **leaves** at 8 a.m. *Vlak odjíždí v 8 ráno.*
Our bus **arrives** at the station half an hour before leaving. *Náš autobus přijíždí do stanice půl hodiny před odjezdem.*
What time **does** the film **start** tonight? *V kolik dnes večer začíná ten film?*

6.1.3 Future tenses revision

	usage	**examples**
will	unpredicted events, offers and demands, speculation	I think it will rain today. I will help you with that bag. Will you come with me?
going to	predicted events, plans	I'm going to stay in tonight. Are you going to invite a lot of people? Is this going to take long?
present continuous	arrangements, planned events	What do you need? I am

		leaving in five minutes. She is graduating this summer.

6.2 Vocabulary

6.2.1 Verbs

steal	ukrást	sweep	zametat
step in, on	vejít, šlápnout na	switch	přepnout
stick to, on	nalepit, vyvěsit	talk	povídat
store	skladovat	taste	ochutnat
stress	zdůraznit	tear	trhat
stretch	natáhnout	tell	sdělit
struggle	bojovat	tend to	mít tendenci
submit	podřídit se, postoupit	thank	děkovat
succeed	uspět	think	myslet, přemýšlet
suck	sát	threaten	hrozit, ohrožovat
suffer	trpět	throw up	zvracet
suggest	navrhnout	tie	zavázat
suit	hodit se	touch	dotknout se
supply	zásobovat	train	trénovat
support	podporovat	transfer	přeložit (jinam), poslat
survive	přežít	translate	přeložit (jazykově)
suspect	podezřívat	treat	léčit, pečovat
sustain	udržet	trust	důvěřovat
swap	vyměnit, prohodit	try	zkusit, vyzkoušet
swear	nadávat, přísahat	turn	otočit

6.2.2 Describing personality

How do you describe someone's personality? What would you say is your best friend, family member or boss like?
Let's divide the characteristics in two groups: positive and negative personality traits.
If someone makes friends easily we say they are friendly. Such people might be kind, talkative, open-minded, easy-going and optimistic. They can be helpful, tolerant and witty. Intelligent people are usually thoughtful and reasonable, but sometimes absent-minded.
We all have some negative qualities. Some people are lazy, some are intolerant of other social groups. Sometimes we get jealous or envious. Employers might be arrogant or bossy. Some people might be very active and chaotic, some might be rather calm and

quiet.
Are you an extrovert or introvert? What are you? Extroverts are people who are very sociable, friendly, easy-going and they are not afraid of communicating with other people. They usually like to spend their free time with their friends chatting and meeting new people. Sometimes they tend to show off or boast. Sometimes they might be a little eccentric and enjoy attention. Introverts on the other hand are usually very quiet and sensitive. They do not prefer to be in a loud, crowded environment. Sometimes they appear dreamy or shy. They might feel awkward or clumsy when they have to speak in public. But they might be very talented and make good friends once you get to know them.

personality trait, quality	vlastnost
kind	laskavý
talkative	ukecaný
open-minded	otevřený novým idejím
easy-going	pohodový
witty	chytrý a vtipný
thoughtful	přemýšlivý
reasonable	rozumný
absent-minded	roztržitý
lazy	líný
jealous	žárlivý
envious	závistivý
bossy	pánovitý
calm	klidný
sociable	společenský
show off, boast	vychloubat se
sensitive	citlivý
dreamy	zasněný
shy	stydlivý
awkward	podivný, divný
clumsy	nešikovný

6.2.3 Adjectives ending -ed and -ing

Some adjectives have both endings, **-ed** and **-ing**. But be careful! Each word has a different meaning! Not all adjectives that end in **-ed** have their **-ing** equivalent and vice versa.
Generally speaking, **-ed** adjectives say how you feel, while **-ing** adjectives describe the quality of a thing or another person.
For example, you wouldn't like to say you are **boring**. But you can use it when you speak about somebody else:

This class is so **boring**! I hate Biology.
Her boyfriend is a really **boring** guy. He only talks about computers.
X
I'm so **bored** today! Is there nothing to do?
She is never **bored**. She's always doing something.

Other examples:

That film was **exciting**.
X
I'm **excited** about the concert i'm going to next week.

Oh really? That's **interesting**!
X
Are you **interested** in history of art?

The way how he explains things is **confusing**.
X
I'm **confused** by his explanation.

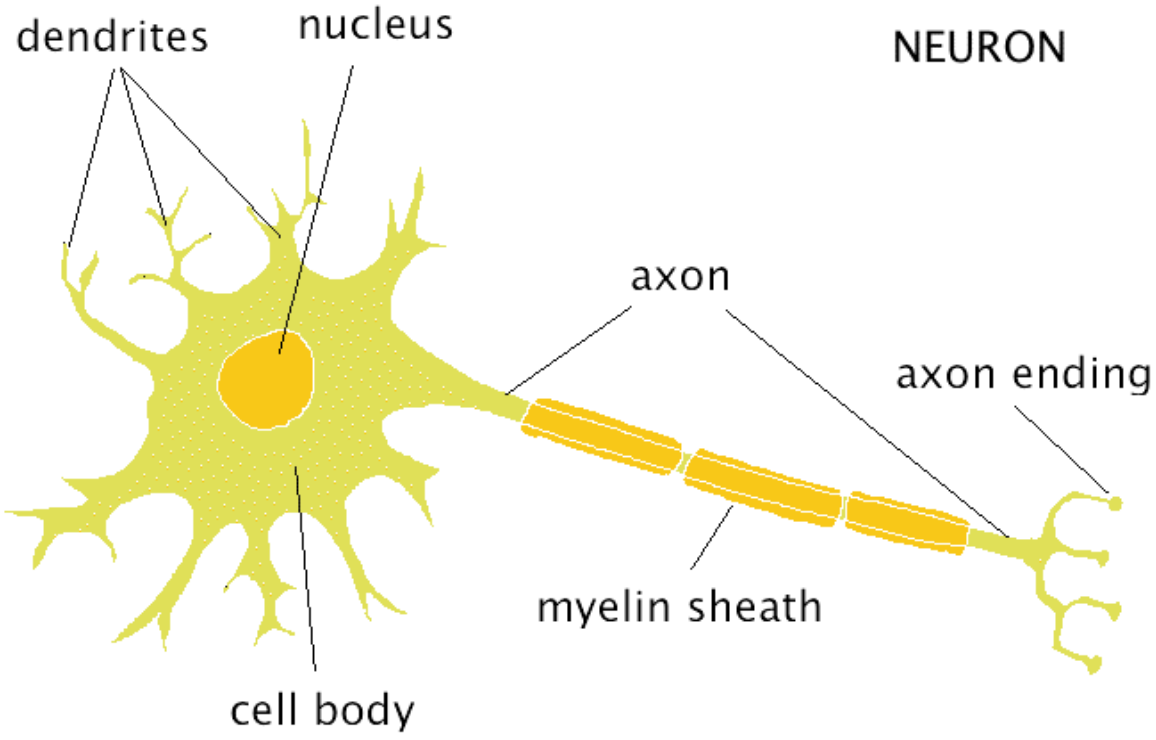
Yesterday I heard some **disturbing** news about the corruption in the government.
X
The killer had a **disturbed** family background.

boring	nudný
bored	znuděný
exciting	vzrušující
excited	vzrušený, nadšený
interesting	zajímavý
interested	zaujatý, zajímat se o
confusing	matoucí
confused	zmatený
disturbing	šokující, velmi smutný
disturbed	narušený

6.3 Medical English: The nervous system

The basic unit of the nervous system is the neuron. It consists of the cell body and its processes. Each neuron has two types of processes: several short fibres called dendrites and a single process called the axon which can grow branches along its course. The axon is the main conducting fibre. Neurons which provide links between other axons are called internuncial neurons. The dendrites relay impulses to the cell body while the axon relays impulses away from the cell body. The axon varies in length in different kinds of neurons. In a motor neuron it can be very long, for example from the cell body in the spinal cord to a

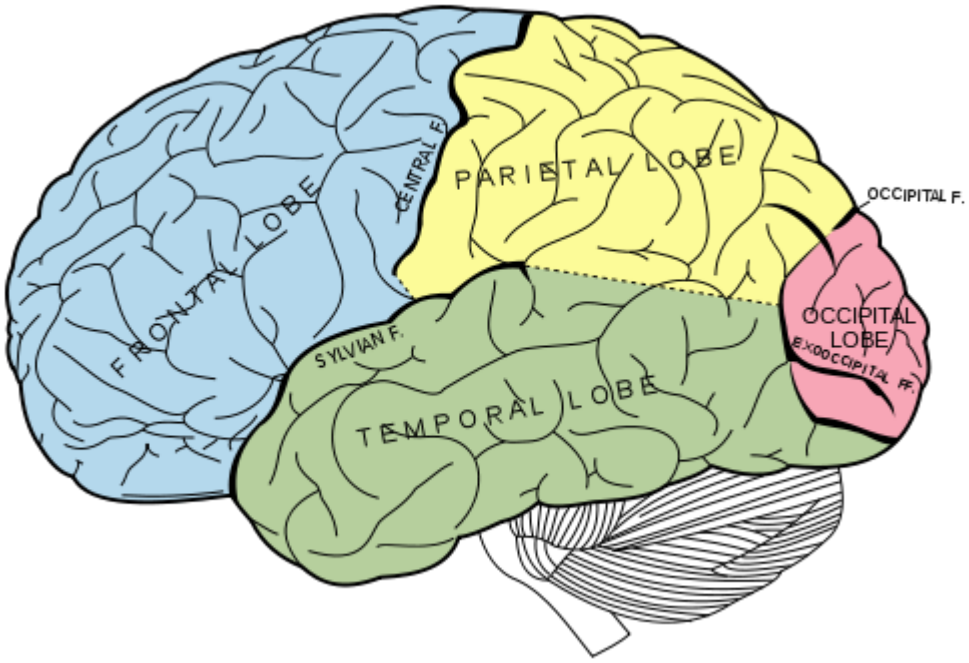
muscle in the foot. Axons in the internuncial neurons are usually short and difficult to distinguish from the dendrites.
An unactivated nerve fibre maintains a state of chemical stability with a certain concentration of potassium inside and outside the lining membrane of a neuron. Its ratio inside:outside is 30:1. Thus the nerve fibre at rest is electrically charged. A nerve impulse is a wave of depolarization created by a chemical imbalance. Sodium passes through the cell membrane and releases potassium. The depolarization of a part of the nerve cell causes the next segment to be depolarized too. This process goes on until the end of the fibre. The end is not firmly connected to the next cell but there is a small gap that the chemicals skip. This functional junction is called a synapse. The most important transmitters are acetylcholin and noradrenalin, and there are many others, some of them unknown. Once the synapse was made these chemicals are quickly destroyed by enzymes. The nerve fibre recharges within milliseconds.



Source: http://webspace.ship.edu/cgboer/neuron.gif

The central nervous system (CNS) consists of the brain and the spinal cord. The peripheral nerves are those that arise from the CNS and supply all parts of the body. These nerves are conducting fibres which can be sensory or motor. Sensory nerves innervate our senses such as the touch, the sight, the taste etc. Motor nerves innervate the muscles, so they are important for movement.
There are 12 pairs of nerves that arise from the brain. These are called cranial nerves. Five of them are both sensory and motor nerves. Of these, the most important is the vagus which supplies the heart, most of the digestive tract, the pharynx and the larynx. Then there are four pairs of motor nerves and three pairs of sensory nerves.

In contrast, all spinal nerves contain both sensory and motor nerves. There are 8 pairs of cervical nerves, twelve thoracic, five lumbar, five sacral and one coccygeal. The spinal nerves divide in two branches. The posterior branch serves the muscles and the skin on the back parts. The anterior branches of the thoracic nerves circle the thorax and supply the intercostal muscles and skin. All the other anterior branches form plexuses or networks of nerve fibres. These plexuses supply the cervical and pelvic regions and the upper and lower limbs. Thus each limb nerve contains fibres from several spinal nerves. The sciatic nerve, which emerges from the sacral plexus to serve the back of the thigh and the leg, contains fibres from the fourth and fifth lumbar nerves and the first, second and third sacral nerves.
The brain is a human computer. It contains inner white matter and outer grey matter which is called the cerebral cortex. The brain can be divided in the left and right hemispheres and four lobes: the frontal lobe, the parietal lobe, the occipital lobe, and the temporal lobe. Another diferentiation divides the brain in the forebrain, midbrain and hindbrain, and some older structures such as the cerebellum, medulla oblongata, hypothalamus etc.



Source: http://upload.wikimedia.org/wikipedia/commons/thumb/1/1a/Gray728.svg/500px-Gray728.svg.png

Lobes have various functions. For example, the frontal lobe governs memory and intellect, controls the movement of muscles, determines attitudes and vocal cords. The parietal lobe analyses pain. The occipital lobe receives visual images. And finally the temporal lobe receives hearing sensations and controls balance.

process	výběžek
branch	větev, větvit se
internuncial	interneuron
imbalance, inequilibrity	nerovnováha

release	uvolnit
gap	mezera
functional junction	funkční spojení
recharge	znovu nabít
innervate	inervovat
intercostal	mezižeberní
plexus	pleteň
sciatic nerve	ischiatický nerv
matter	hmota
lobe	lalok
forebrain	přední mozek
midbrain	mezimozek
hindbrain	střední mozek
cerebellum	mozeček
medulla oblongata	prodloužená mícha

Homework

1) Reading. Read this article about migraines. Underline words that are new to you and translate them. Check the pronounciation in a dictionary.

Migraines

MILLIONS of working days are lost each year through migraines and it has been estimated that just about all of the population have had attacks from time to time. Persistent sufferers are said to have included Lewis Carroll, Charles Darwin, Sigmund Freud, Joan of Arc, Rudyard Kipling and Thomas Jefferson.

The symptoms vary a great deal from patient to patient but usually, in addition to a searing headache, many patients vomit. Before this headache there may also be a warning 'aura'. It is also common for some sufferers to see flashing lights and visual disturbances. Migraines usually begin in the sufferer's teens and may persist throughout the unfortunate victim's life. But the precise cause of migraine, is something of a mystery.

Attacks are triggered off by many different things. Sometimes a specific factor can be the cause, such as chocolate, cheese, oranges, lemons, shellfish, alcohol, tobacco, bananas or fried foods.

To find out whether or not any one of these triggers are responsible, a migraine sufferer must keep a close record of everything that he or she consumes for a month or two. Only then will a pattern emerge, showing some relationship between migraine attacks and a particular food.

A more general cause of migraine is stress. When this is the cause, the attack usually occurs when the individual is relaxing -- often at the weekend, for example.

When an attack occurs, the pain and extreme discomfort can often be relieved to a degree by the use of ordinary painkillers such as aspirin or paracetamol. If these don't work, then it's probably best to get a doctor's prescription for one of the more powerful products available.

It isn't always easy to deal with the pain and discomfort efficiently and I strongly recommend that any sufferer try to identify a cause. If the cause is a particular food, then the obvious answer is to cut it out of the diet -- for a year or two at least.
If stress is the cause, then the answer is either to cut back on stress-producing activities, or to learn how to relax more efficiently. Preventing migraines takes some effort, but the effort is usually worthwhile.
Source: http://www.englishmed.com/html/reading/migraines/migraines.html

2) Do units in Murphy: Units 19, 20 and 23.

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KUŽELOVÁ, Barbara., KYBICOVÁ, Hana., WEBEROVÁ, Blažena. *English for Medical Students*. Praha: Státní pedagogické nakladatelství, 1989.
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7 Medical English: The digestive and urinary systems

7.1 Grammar

7.1.1 Present perfect tense

Předpřítomný čas je druh minulého času, který ale v češtině nemá analogii, takže někdy bývá obtížné jej správně vysvětlit. Jeho logika je ale velmi jasná. Základním použitím předpřítomného času je jev, který začal v minulosti a trvá doteď. Proto je to čas minulý, ale jmenuje se předpřítomný – protože má vztah k přítomnosti. Jedná se o nedávný nebo neukončený děj, životní zkušenost, anebo je důležitý výsledek děje.
Tvoří se pomocným slovesem **have/has** a třetím tvarem plnovýznamového slovesa. Jeho tvar tedy vypadá následovně:

podmět + have/has + třetí tvar slovesa

Otázka se tvoří jako jindy změnou slovosledu a zápor přidáním záporky **not**.

Předpřítomný čas se typicky pojí se slovy jako **never**, **ever**, **already**, **yet**, **just**, **this week**, **this month**, **this year**, **today**, **this morning**, **since**, **for** atd.

POZOR! Při použití slovesa **be** jako popisu místa se namísto obvyklé předložky **in** používá předložka **to**.

Příklady životní zkušenosti:
I have never been to India. *Nikdy jsem nebyla v Indii.*
Have you ever eaten sushi? *Jedl jsi někdy sushi?*
He has never been married. *Nikdy nebyl ženatý (a stále je svobodný).*
Have you ever seen a film by Hitchcock? *Viděl jsi někdy nějaký film od Hitchcocka?*

Nedávný nebo neukončený děj:
They have been married **for** ten years now. *Už jsou deset let manželé.*
I have just bought a new carpet **this week**. *Zrovna jsem si tenhle týden koupila nový*

koberec.
Have you done your homework? *Máš hotové úkoly?*
He hasn't finished yet. *Ještě neskončil.*

Výsledek:
I haven't passed the exam. *Tu zkoušku jsem neudělala.*
I have sent the application **today**. *Dnes jsem poslala tu přihlášku.*
Have you already washed the dishes? *Už jsi umyl nádobí?*
He has studied Portuguese **since** he was ten years old. *Učil se portugalsky od deseti let.*

Předpřítomný čas má podobně jako přítomný a minulý čas i svou průběhovou formu. Použití je v podstatě totožné s důrazem na druh situací, ve kterých se předpřítomné časy používají. Především se klade důraz na výsledek děje a jeho delší průběh.

Tvoří se pomocí třetího tvaru slovesa be a plnovýznamovým slovesem v gerundiu:

podmět + have/has + been + -ing

Examples:
The ground is wet. **It has been raining**. *Země je mokrá. Zrovna pršelo.*
Where are you? **I've been waiting** here for half an hour! *Kde jsi? Čekám na tebe už půl hodiny!*
Have you been drinking? Your breath smells. *Ty jsi pil? Je ti cítit z úst.*
I haven't been working hard today so I need to hurry up to finish my tasks. *Moc jsem dnes nepracoval, tak si musím pospíšit, abych dokončil své úkoly.*

7.1.2 Countable and uncountable nouns

Podstatná jména mohou být v angličtině počitatelná a nepočitatelná. Počitatelná podstatná jména mají jednoduché a množné číslo, např. **apple—apples**. Lze s nimi použít určitý a neurčitý člen: **an apple—the apples**. Pojí se s číslovkami neurčitými **many** (mnoho) a **few/a few** (několik).
Neproti tomu nepočitatelná podstatná jména mají jen jeden tvar, např. **sugar** a nepoužíváme člen. Jejich slovesa jsou v jednotném čísle. Pojí se s číslovkami **much** (moc) a **a little** (málo).

POZOR! Některá podstatná jména mohou být v různých kontextech počitatelná nebo nepočitatelná.

Např.:
There is not enough **room** in my flat. X There is a free **room** in my flat.
*Nemám v bytě dost **místa**.* X *V bytě mám volný **pokoj**.*
There is **a hair** in my soup. X You have beautiful **hair**!
Mám v polévce vlas. X *Máš krásné vlasy!*

Nepočitatelná podstatná jména jsou typicky materiály jako **sugar**, **flour**, **coal**, **water**, **beer**, **bread**, **blood** a abstraktní pojmy jako **music**, **love**, **money**, **violence** atd.

7.1.3 Quantifiers

Slova jako some, much, many, a lot of, enough se nazývají kvantifikátory, většinou jsou to číslovky neurčité. Používáme je ve chvíli, kdy chceme vyjádřit množství. Některé se pojí jen s počitatelnými (C) nebo nepočitatelnými (UC) podstatnými jmény, jiné jsou univerzální.

Následující tabulka shrnuje jejich význam a použití.

		C	UC	example
a lot of	mnoho	X	X	There are a lot of cars on roads today. There is a lot of salt in the meal.
lots of	mnoho	X	X	There are lots of cars on roads. There is lots of salt.
many	mnoho	X		There are many cars on roads. Are there many cars?
much	hodně		X	There is much salt in the meal. Is there much salt?
a few	několik	X		There are a few cars in the parking lot.
few	málo	X		There are few chairs. Bring some more!
a little	trochu		X	There is a little salt. Can you buy some?
a (big, small) number	počet	X		There was a huge number of cars in the parking lot.
a (big, small) amount	množství		X	There was a tiny amount of morphium in his dosage.
some	nějaký, nějací	X	X	There are some people in the lobby. There is some dust on the shelves.
any	jakýkoli, žádný	X	X	There are not any people in the lobby. There is not any dust on the shelves. Are there any people? Is there any dust?
no	žádný, jakýkoli	X	X	There are no people in the lobby. There is no dust on the shelves.

K číslovkám **many** a **much** lze přidat slovo **too** pro zesílení:
There are **too many** cars on roads today. *Na silních je dnes příliš mnoho aut.*
There is **too much** salt in the meal. *V tom jídle je příliš mnoho soli.*

Jak je vidět, **some** lze obvykle použít pouze v oznamovacích větách, pro otázky a zápory se používá **any** ve významu žádný nebo jakýkoli. Some v otázkách lze použít ve významu nějaký nebo trochu, např.:

Can you buy **some sugar**? Can you buy **some apples**?
Můžeš koupit (trochu) cukru? Můžeš koupit (nějaká) jablka?

Slovo **enough** (dost, dostatečně) je trochu zvláštní případ. Ve spojení s podstatnými jmény stojí před nimi, ve spojení s přídavnými jmény stojí za nimi.

Example:
There is **enough room** in my flat. *V bytě mám dost místa.*

Do you have **enough money**? *Máš dost peněz?*
Are there **enough chairs**? *Je tam dost židlí?*
X
I am not **strong enough** to lift this bag. *Nemám dost síly zvednout tu tašku.*
He is **tall enough** to reach the upper shelf. *Je dost vysoký, aby dosáhl na horní poličku.*
Are **ready enough** for the conference? *Jsme dostatečně připravení na tu konferenci?*

POZOR! Ve větách, kde se vyskytují podstatná jména se svými přídavnými jmény, je potřeba dávat pozor na správné umístění slova **enough** tak, aby nedošlo ke změně významu.

Example:
There are **enough** tall **boys**. *Je tam dostatek (vysokých) kluků*.
X
There are **tall enough** boys. *Jsou tam dostatečně vysocí kluci.*

7.2 Vocabulary

7.2.1 Verbs

twist	otočit, zkroutit	wash	mýt	wish	přát
understand	chápat, rozumět	waste	plýtvat	withdraw	přestat, vybrat peníze
vary	různit se, kolísat	watch	sledovat	wonder	divit se
visit	navštívit	wave	mávat	worry	trápit se
wait	čekat	wear	nosit (oblečení)	worsen	zhoršit
wake	vzbudit	weigh	vážit	wound	zranit
walk	jít pěšky, procházet se	welcome	vítat	wrap	zabalit, obalit
want	chtít	whisper	šeptat	write	psát
warn	varovat	wipe	vytřít, setřít		

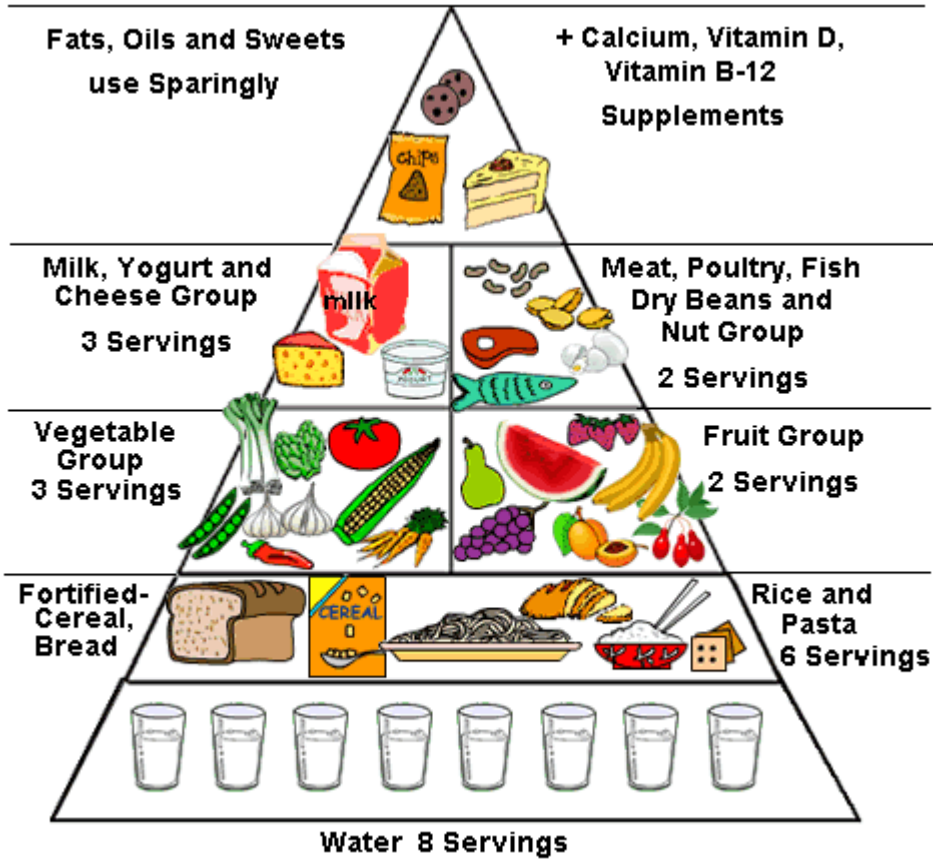
7.2.2 Going shopping and a healthy lifestyle

What is your shopping style? Do you make a shopping list before going out or do you choose the goods when you see them in the shop?
What you buy of course depends on how you cook and eat. What and how you eat is called a diet. Some people have a special dietary regime, for instance if they are ill with diabetes they cannot eat whatever they want, but have to cut down on sugary food. Others limit their diet voluntarily, for example vegetarians do not eat any meat or meat products. A more extreme version are vegans who do not eat anything that comes from animals, not even eggs or milk. There are usually ideologic reasons for this, such as care for nature and the conditions in which farm animals live and are killed.
Some people suffer from congenital disorders like gluten or lactose intolerance. For them going shopping is complicated because gluten or milk is in so many products that they have

to choose carefully. Gluten is in wheat products such as bread and pastry, milk is in dairy products such as yogurts, cheese, creams etc. These disorders are basically allergies, but there are many more types of allergies. Typical allergens are red fruits such as strawberries and tomatoes, soya and nuts – mostly peanuts. If you know you are allergic to some foods you need to be very careful about the ingredients of a product.

Your health depends on what you eat but also on what your general lifestyle is. The basic rule of a healthy body is a balanced diet that ensure a balanced caloric intake. You can see in the picture that the bottom line shows eight glasses of water. Liquids are extremely important for the human body as it is 70% water. Enough volume is important for all organs, but mainly for the kidneys. The biggest part of a day's intake should be rice and pasta, and cereals. They contain carbohydrates, proteins and minerals. The next stage is represented by fruits and vegetables, both containing vitamins and other essential substances such as selen and iron. A lesser part is dedicated to dairy products like milk and cheese that contain calcium which is necessary for strong bones, and meat and nuts which again bring proteins and minerals. Only the smallest part of your diet should be fatty and sweet foods as they make you gain weight.

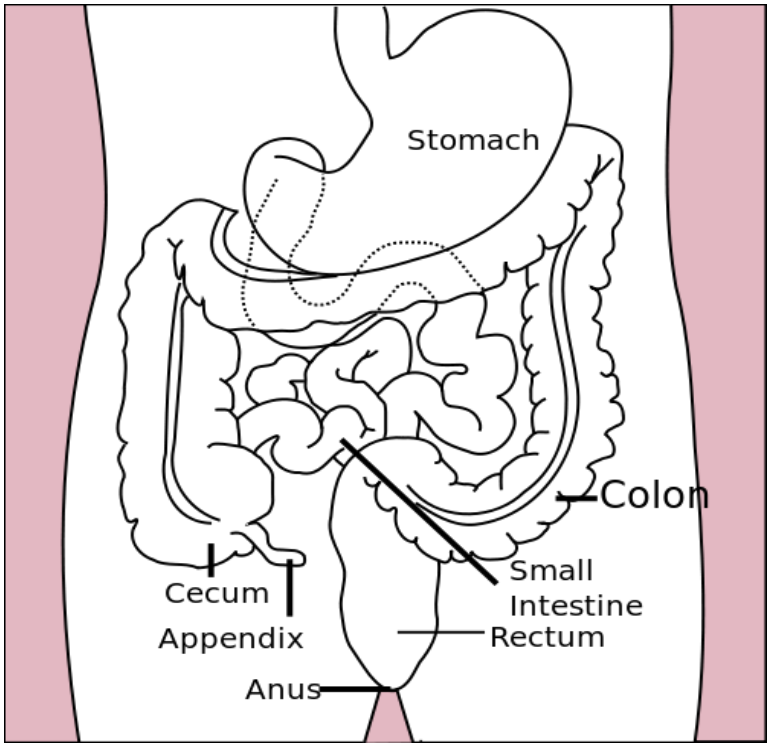
Generally speaking, your caloric intake should be in balance with your energy output. If you want to lose some weight, you should think about what you eat and in what amounts. A sedentary job is not very helpful either. Remember that it is good for your health to do some kind of an intensive movement three times a week, be it a long walk, a run with your dog, exercising in a fitness centre or cycling. This is not only vital to lose some weight but also to make your heart stronger and protected against a heart attack.



Source: http://www.whale.to/a/food_pyramid.gif

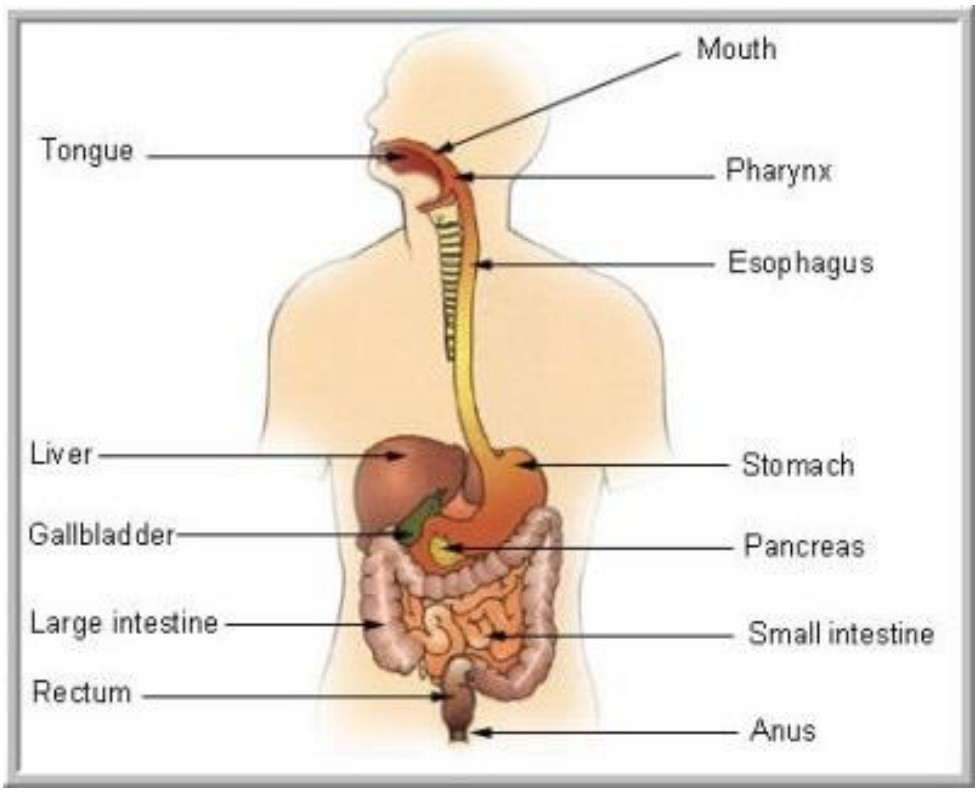
7.3 Medical English: The digestive and urinary systems

The digestive system is also called the gastrointestinal tract. The process of digestion begins in the oral cavity = mouth. The mouth contains the tongue and teeth. There are three pairs of salivary glands that produce a fluid called saliva. It is released from the parotid, submaxillary and sublingual glands and poured in the mouth.
Food passes from the mouth to the pharynx which contains the tonsils. They act as a filter to protect the body against microorganisms and produce lymphocytes which are able to fight disease. The pharynx opens in the oesophagus. It is a muscular tube that leads to the stomach.
The stomach has three parts: the fundus, the body with its greater and lesser curvatures, and the antrum. The openings that allow the food go in and out of the stomach are controlled by rings of muscles called sphincters. The cardiac sphincter is at the end of the oesophagus and the pyloric sphincter lets the food go on after digestion. The lining mucous membrane in the stomach secretes a huge amount of mucus, hydrochloric acid and enzymes. Then there are gastric juices secreted that produce an enzyme pepsin to convert proteins to smaller substances called peptones. Hydrochloric acid is necessary for the proper action of pepsin. The stomach serves to prepare food chemically and mechanically for the passage in the small intestine, further digestion and absorption.
The small intestine begins with the duodenum from where the food passes in peristaltic waves to the jejunum and finally to the ileum. The wall of the small intestine is covered with tiny finger-like structures called villi (sg. villus). They have a dense capillary network so they ensure the passage of food nutrients to the blood stream.
The colon = large intestine extends from the ileum to the anus. It is composed of the cecum with the vermiform appendix (blind intestine), the ascending, transverse and descending colon, the pelvic or sigmoid colon, and the rectum. The large intestine receives the fluid by-products of digestion. Water is reabsorbed in the blood stream and solid materials are excreted from the body as faeces = stool in the process of defecation.



Source: http://upload.wikimedia.org/wikipedia/commons/thumb/8/82/Stomach_colon_rectum_diagram.svg/500px-Stomach_colon_rectum_diagram.svg.png

The liver, the gallbladder and the pancreas access the digestive system. They are key for proper digestion and absorption of nutrients. The liver produces a thick fluid called bile which is stored in the gallbladder. Without bile, most of the food would remain undigested. The liver also keeps the amount of glucose in blood at a normal level, produces protein substances, destroys worn-out red cells, removes poisons and toxins form the blood, forms antibodies to fight diseases, produces urea, etc.
The pancreas is both an exocrine and endocrine organ. It secretes pancreatic juice which helps to break down food. It produces a hormone called insulin which controls the use of sugars in the body.

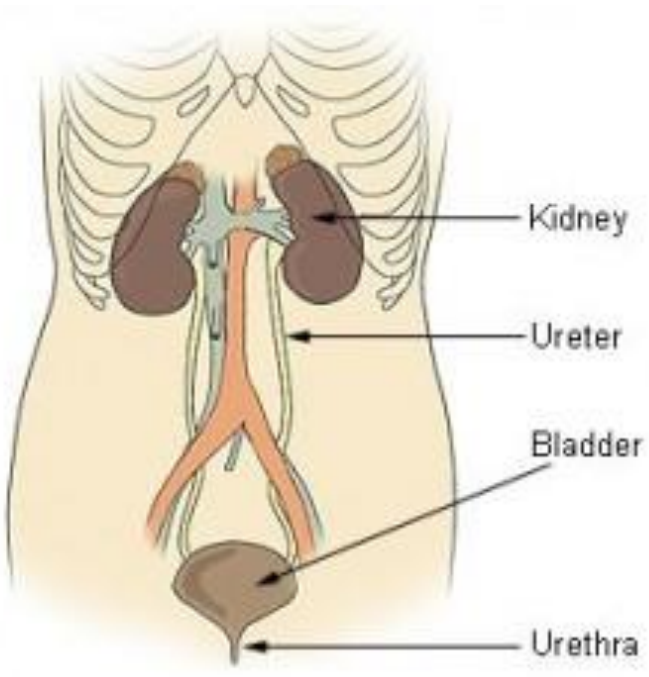


Source: http://askus.unitedspinal.org/index.php?pg=file&from=2&id=236

digestion	trávení, zažívání
salivary glands	slinné žlázy
saliva	sliny
tonsil	mandle
curvature	záhyb
sphincter	svěrač
intestine	střevo

colon	tlusté střevo
vermiform appendix	červovitý přívěsek
ascending	vzestupný
descending	sestupný
solid	pevný
faeces/feces = stool	stolice
bile	žluč
poison	jed

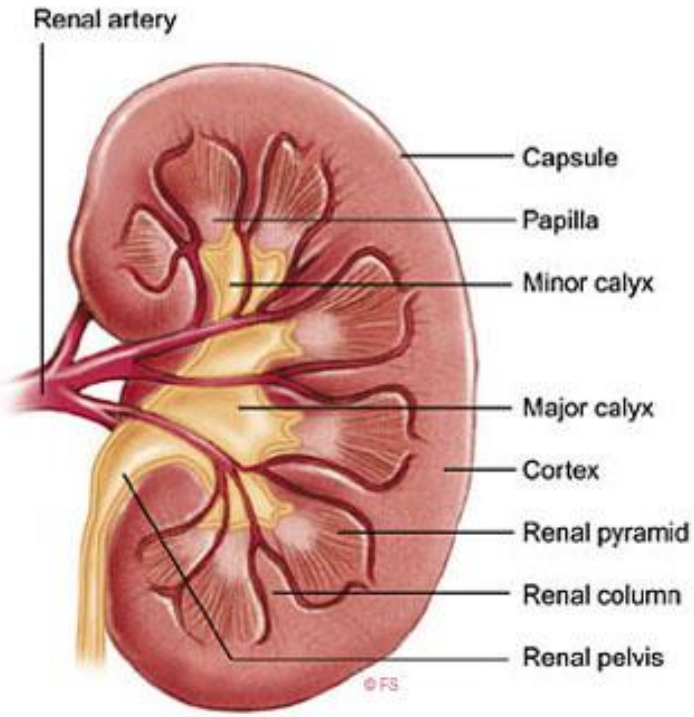
The urinary system is composed of several parts. The most important are of course the kidneys. They are two bean-shaped organs situated behind the abdominal cavity in the lumbar region. They are embedded in a cushion of adipose tissue and surrounded by fibrous connective tissue for protection. They consist of an outer cortex part and an inner medulla part.
Then there are two ureters which lead urine in peristaltic waves from the kidneys to the urinary bladder. They are muscular tubes lined with mucous membrane.
The urinary bladder is a hollow, muscular, distensible sack in the pelvic cavity. It serves as a temporary reservoir for urine.
Finally, the membranous tube through which urine is discharged from the bladder is the urethra. The discharge is called micturition.



Source: http://s2.hubimg.com/u/7624645_f260.jpg

The kidneys are a very sensitive organ that produces urine. Blood leads to the kidneys directly from the aorta through renal arteries. Each of these arteries branches in many arterioles which are thin so the blood passes through them slowly. Blood flow through the

kidneys is essential so they have their own special mechanism to maintain it. If blood pressure falls so that the blood flow decreases, the kidneys produce renin and discharge it in the blood. Renin stimulates the contraction of arterioles so that the blood pressure increases and the blood flow returns to normal.
Each arteriole in the kidney cortex breaks up in tiny intertwined capillaries in the shape of a ball called glomeruli (sg. glomerulus). There are thousands of them in one kidney.
The process of urine formation begins in the glomerulus as water, salts, sugar, urea and other wastes such as creatinin and uric acid filter out in a cup-like structure called Bowman's capsule which encloses each glomerulus. Large molecules such as proteins remain in the blood stream and cannot pass through the walls.
But it is not desirable to discharge water, sugars etc. These substances need to be reabsorbed back in the blood stream. This process takes place through the tubules that lead from Bowman's capsules. They are called renal tubules. Now the fluid is quite concentrated and contains only waste and water. Renal tubules reabsorb about 90% of the primary urine.
Moreover, acids and other unnecessary substances are secreted in the distal renal tubules from the blood stream. They merge and form the renal pelvis, a space that fills most of the kidney medulla. They narrow in the ureter which carries the urine to the bladder. The exit area between the bladder and the urethra is closed by sphincters which keep the urine in the bladder. When it fills up, though, the muscles begin to contract which causes the desire to urinate.



Source:
http://www.urologyhealth.org/urology/articles/images/anatomy_Kidney_midsagital.jpg

embed	uložit

cushion	vycpávka
surround	obklopovat
cortex	kůra
medulla	dřeň
ureter	močovod
urine	moč
urinary bladder	močový měchýř
urethra	močová trubice
micturition	močení
hollow	dutý
distensible	roztažitelný
discharge	vylučovat
intertwine	proplést
desirable	žádoucí
merge	spojit se
renal pelvis	ledvinová pánvička
narrow	úzký, zúžit

Homework
1) Writing. What are your shopping and eating habits? Describe your lifestyle in 350 words.
2) Grammar. Do Units in Murphy: Units 7—14, 69—71, 85—87, 103.

Literatura:
KUŽELOVÁ, Barbara., KYBICOVÁ, Hana., WEBEROVÁ, Blažena. *English for Medical Students*. Praha: Státní pedagogické nakladatelství, 1989.
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8 Medical English: The respiratory systém

8.1 Grammar

8.1.1 Used to

Tvar used to lze považovat za druh minulého času. Používáme ho při popisu událostí, které se především ve vzdálené minulosti děly pravidelně a opakovaně. V češtině jsou ekvivalentem tvary „bývalo“, „chodívala jsem“, „jezdívali jsme“ atd.
Druhým významem je popis jevů, které už neplatí.
Jeho tvoření je velmi jednoduché. Za tvar **used to** přidáváme pouze infinitiv. Je potřeba dávat pozor, aby se v záporných větách a otázkách tvar **used to** změnil na **use to**.

podmět + used to + infinitiv

Examples:
I used to go to my granma's house for holidays when I was small. *Jezdíval jsem k babičce na prázdniny.*
My parents **used to travel** a lot when they were young. *Moji rodiče hodně cestovali, když byli mladí.*
You didn't use to smoke when we were in high school. *Když jsme byli na střední, tak jsi nekouřil.*
I didn't use to like him but then I found out he's not so bad. *Neměla jsem ho ráda, ale pak jsem zjistila, že není tak špatný.*
Did you use to be a little overweight when you were a child? *Býval jsi jako dítě trochu při těle?*
I used to live alone but I no longer do. *Dřív jsem žil sám, ale teď už ne.*

Velmi často tento tvar používáme, když mluvíme o dětství. Je to takzvaný vyprávěcí čas, hodí se pro popis událostí v příběhu, který se odehrával v minulosti.

8.1.2 Second conditional

V páté kapitole jsme probrali **zero** a **first conditional**, které se používají pro popis obecných faktů a jednoduchých podmínek s vysokou mírou pravděpodobnosti.
Druhý kondicionál se používá pro vyjádření podmínek, které jsou málo pravděpodobné, a pro velmi formální žádosti.

Jeho tvar je odvozen od prvního kondicionálu s tím, že se celá tato podmínka posune do minulého času v hlavní větě a podle časové souslednosti do **would** ve vedlejší větě:

If + podmět + sloveso v minulém čase + podmět + would + infinitiv

Examples:
If I won a lottery I **would buy** a Ferrari. *Kdybych vyhrála v loterii, koupila bych si Ferrari.*
If you woke up on time we **wouldn't be** late now! *Kdybys vstal včas, neměli bychom teď zpoždění!*
I **would travel** around the world **if I had** the money. *Kdybych měla tolik peněz, cestovala bych kolem světa.*
Would he do it for you **if you asked** him? *Udělal by to pro tebe, kdybys ho o to požádala?*
I wouldn't hesitate if I had the opportunity! *Neváhal bych, kdybych měl tu příležitost!*
If I could have a superpower **I would like** to be invisible. *Kdybych mohla mít nějakou nadlidskou vlastnost, chtěla bych být neviditelná.*

8.1.3 Comparatives and superlatives

Komparativy a superlativy jsou stupňovací tvary přídavných jmen a příslovcí. V angličtině je jejich tvoření téměř pravidelné kromě několika málo výjimek.
Obecně lze jejich tvoření rozdělit na dva způsoby: pro krátká slova se přidává koncovka **-er** pro komparativ a pro superlativ se přidává určitý člen **the** a koncovka **-est**. U dlouhých slov, tzn. u většiny slov o dvou a více slabikách, se nepřidávají žádné koncovky, ale stupňování se vyjadřuje přidáním slov **more** pro komparative a **the most** pro superlativ.

Examples:
Short words:
cheap → cheaper → the cheapest
long → longer → the longest
nice → nicer → the nicest
rich → richer → the richest

U slov končících na -y [-i] a slov s krátkou samohláskou a jednou souhláskou na konci dochází ke změnám v pravopisu:
happy → happier → the happiest
healthy → healthier → the healthiest
easy → easier → the easiest
friendly → friendlier → the friendliest

thi**n** → thi**nn**er → the thi**nn**est
bi**g** → bi**gg**er → the bi**gg**est
sa**d** → sa**dd**er → the sa**dd**est
hot → ho**tt**er → the ho**tt**est

Long words:
important → more important → the most important
patient → more patient → the most patient
exciting → more exciting → the most exciting

Lze stupňovat i příslovce a to jako dlouhá slova:
more slowly
more quietly
more carefully

Superlativ příslovcí se většinou nepoužívá, bývá nahrazen superlativem přídavného jména.

Nepravidelná přídavná jména a příslovce jsou **good**/**well**, **bad**/**badly** a **far**.
good → better → the best
bad → worse → the worst
far → further → the furthest

Pro srovnávání vlastností dvou objektů používáme slovo **than** = *než*:
Lze použít i quantifiers, tedy slova, která dodají další rozměr, jako jsou **much** (mnohem), **a little**, **a bit** (trochu) apod. Nelze použít slova **many** a **very**.

I am **taller than** you. *Jsem vyšší než ty.*
He runs **faster than** her. *On běží rychleji než ona.*
This film was **more interesting than** the one we saw on Monday. *Tenhle film byl zajímavější než ten, který jsme viděli v pondělí.*
I know her **better than** you do. *Znám ji lépe než ji znáš ty.*
This album si **the best** they have recorded. It's **much better than** the last one. *Tohle album je to nejlepší, co nahráli. Je mnohem lepší než to poslední.*
Is this **the most important** issue? Let's talk about something **more relevant**. *Je tohle to*

nejdůležitější téma? Pojďme se bavit o něčem relevantnějším.

Se superlativy se často používá předpřítomný čas:
His paintings are **by far the ugliest** I have ever seen. *Jeho obrazy jsou zdaleka to nejošklivější, co jsem kdy viděla.*
This was **the best** party I've been to in ages. *Tohle byla nejlepší party, na které jsem za dlouhou dobu byla.*

8.2 Vocabulary

8.2.1 Living faster, living in cities

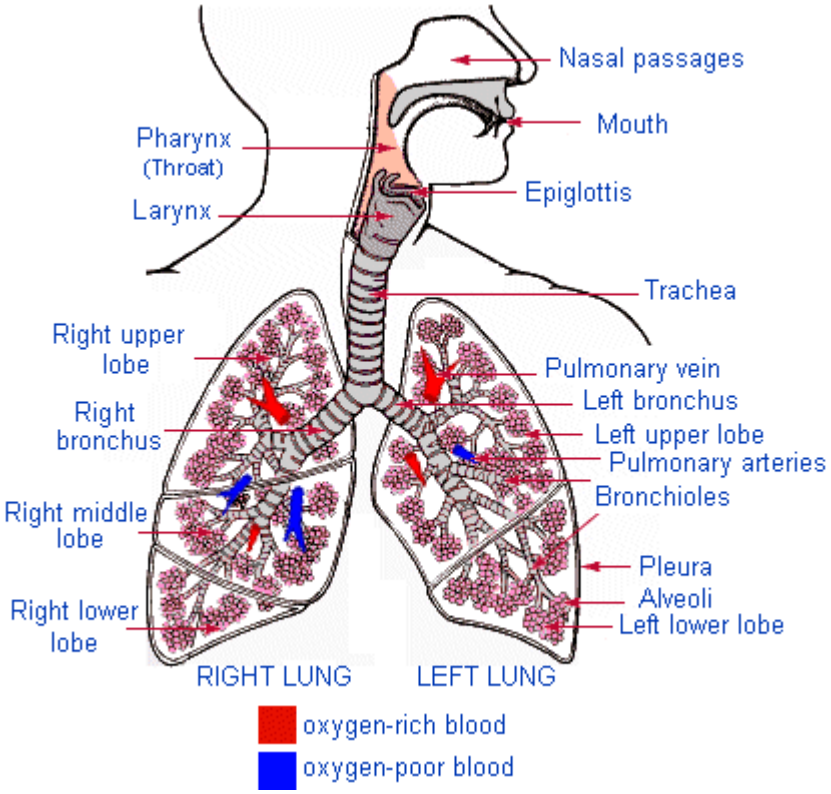
It seems that the world is spinning faster today as we witness an unbelievably rapid technology development, increased migration of people and communication hype. There is more of everything: news, information, mobile phone numbers... Especially in cities, the life is incredibly fast. People are forced to work harder to succeed, they want to travel further, climb higher mountains, see more places, be more independent, feel and look younger, live longer and better than their parents and grandparents. Such a lifestyle might be stressful to many people, especially the older ones who have troubles trying to adapt to the increased speed of life.
Living in big cities involves the possibility to meet many interesting people, but also greater anonymity. In smaller towns people know each other better and are more ready to help each other. Big cities might offer more culture but less nature, towns are quieter but might lack services. These are reasons why people move. Younger people usually prefer the urban lifestyle and migrate for education and new life challenges. Older people would probably go for less chaos and a closer community.
“High speed” is probably today's motto. We want everything quick: internet connection, public transport, highways, careers. We want to have holidays, gifts, houses, cars, electronic appliances right now so we take loans from banks or private companies and then we pay them back at high interests. We prefer careers to families and suffer from infertility. Of course this is not true for everyone, but the overall trend is to achieve our goals more quickly, more efficiently and more independently.

spin	otáčet se
witness	být svědkem
unbelievably, incredibly	neuvěřitelně
hype	horečka, vzrušení
be forced to	být nucen
succeed	uspět
lack	postrádat
challenge	výzva
electronic appliance	elektronické zařízení
loan	půjčka
interest	úrok

infertility	neplodnost
overall	celkový
achieve a goal	dosáhnout cíle

8.3 Medical English: The respiratory system

The respiratory system describes how breathing = respiration and gas exchange take place in the human body.
Air enters the body through the nose and passes through the nasal cavities which are lined with mucous membrane and fine hairs called cilia. These hairs help filter out foreign bodies and warm and moisten the incoming air. Behind the nasal cavities there are the paranasal sinuses which are located within the cranium and filled with air. They also have mucous membrane lining and their function is to provide the lubricating fluid mucus as well as to lighten the skull bones and help produce sound.
Then the air reaches the throat = pharynx. We can divide it in three parts top-down: the nasopharynx, which contains the adenoids. They might obstruct airways if enlarged. Closer to the mouth is the oropharynx where the tonsils are located. And the third part is the hypopharynx = laryngopharynx. Here the pharynx divides in two passageways: the larynx for air, and the oesophagus for the food. The larynx contains the vocal cords and cartilages for support. The vocal cords are the key organ that lets people produce sounds. Those are made as air is expelled from the lungs and the cords vibrate. Their tension determines the high or low pitch of the voice.
Epiglottis is the little valve that prevents food from entering the airways. It is a flap of cartilage attached to the root of the tongue which acts as a lid over the larynx. It lies over the mouth of the larynx which is called glottis. When we swallow the glottis moves under the epiglottis automatically and closes off the larynx so that food cannot enter it.
After passing the larynx the air goes on to the trachea = windpipe. In the region of mediastinum, the trachea divides in two branches called bronchi. Each bronchus leads to a separate lung and subdivides into smaller and finer tubes. The tiniest tubes are called bronchioles. At their end there are clusters of air sacks called alveoli. They have very thin walls which allow for the exchange of gases between the alveolus and the capillaries. The blood which flows through the capillaries accepts oxygen from the alveolus and deposits carbon dioxide in the alveolus to be exhaled.
Each lung is enveloped in a double folded membrane called the pleura. Its outer layer is the parietal pleura and the inner layer is the visceral pleura. The two lungs are not identical. The right lung is divided into three lobes while the left one in only two lobes. The lungs extend from the collar bone to the diaphragm in the thoracic cavity. The diaphragm is a muscular partition which separates the thoracic and abdominal cavities. The diaphragm contracts and descends with each inspiration = inhaling, breathing in, and relaxes and ascends with expiration = exhaling.



Source: http://webschoolsolutions.com/patts/systems/lungs.gif

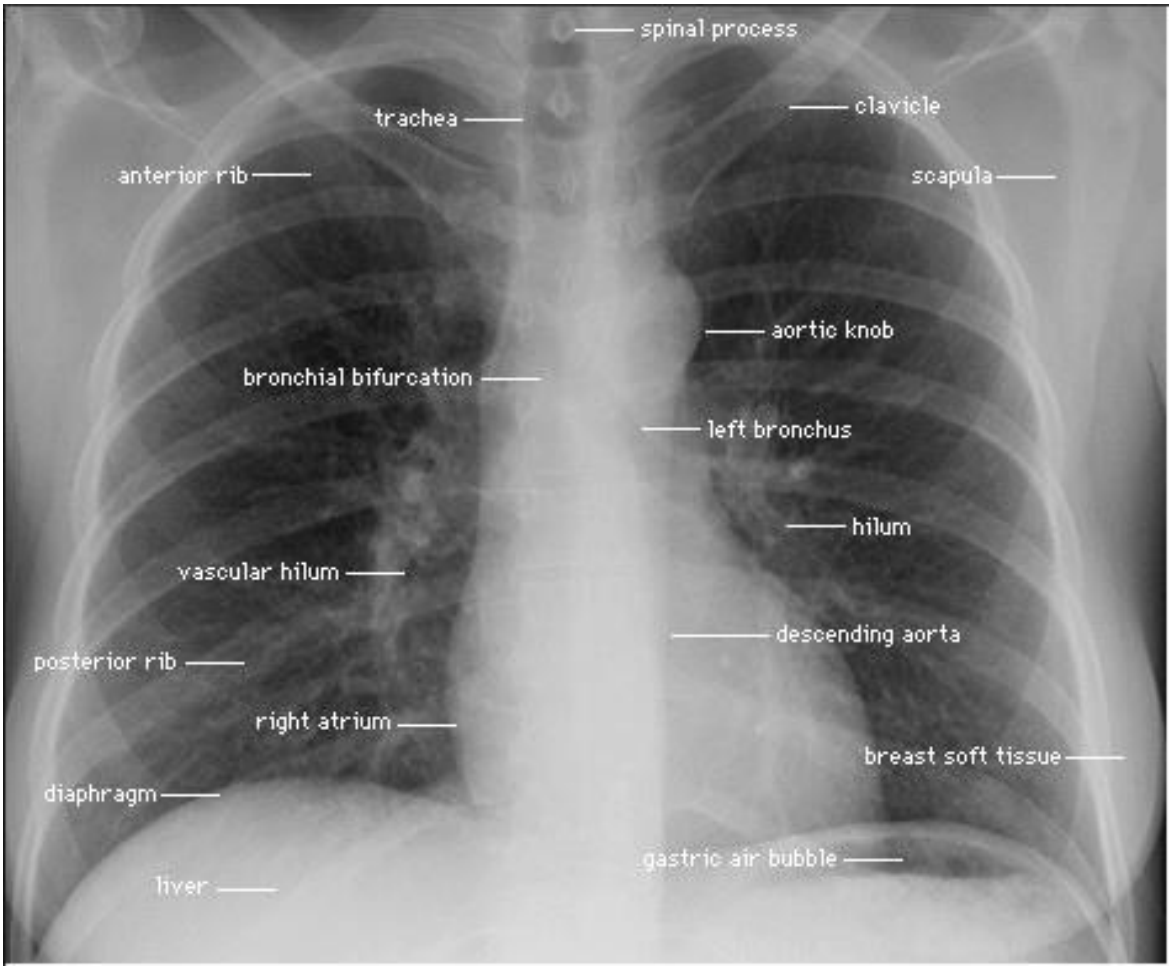
gas exchange	výměna plynů
enter	vstoupit do
nasal cavities	nosní dutiny
cavity, sinus	dutina
foreign bodies	cizí tělesa
warm and moisten	ohřát a zvlhčit
lighten	odlehčit
adenoids	žlázy
airways	dýchací cesty
obstruct	blokovat
enlarged	zvětšený
tonsils	mandle
vocal cords	hlasivky
expell	vyloučit, vytlačit
tension	napětí
pitch	tón
gadget	pomůcka

flap	cíp
lid	poklička
windpipe	průdušnice
tiny	drobný
cluster	hrozen, trs
alveolus	plicní sklípek
deposit	odložit
carbon dioxide	oxid uhličitý, CO_2
envelope	obalit
lobe	lalok
diaphragm	bránice
partition	přepážka
ascend – descend	stoupat – klesat
inspiration – expiration	nádech – výdech

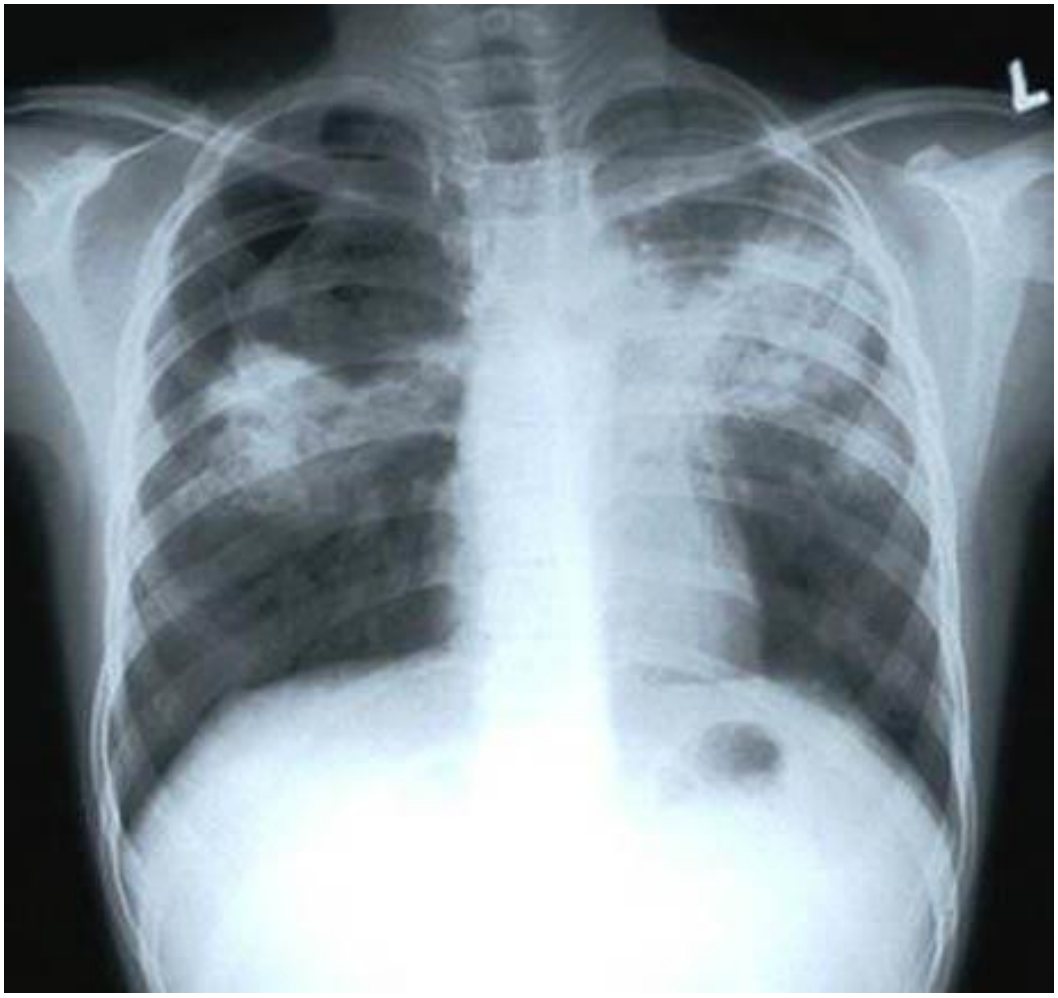
Some complications connected with the respiratory system

A cough is a common symptom of upper respiratory tract infection and lung disease. A cough may be productive = loose, where the patient coughs up sputum= phlegm, or non-productive = dry, where there is no sputum. Sputum may be clear or white (mucoid), yellow due to the presence of pus (purulent), or blood-stained (as in haemoptysis). Lung diseases are often connected with dyspnoea, which is basically getting short of breath.

Doctors examine the patient's breathing by auscultation = listening to the chest with a stethoscope. There are two main added sounds: crackles which sound like hairs being rubbed together and suggest the presence of fluids in the lungs, and wheezes which are more musical, perhaps like whistling, and indicate narrowing of the airways. This is typical for asthma. The sound heard when the pleural surfaces are inflamed as in pleurisy is called a pleural rub. The doctor might ask the patient to say some words to check their vocal resonance. It may be increased as in pneumonia or decreased as in pneumothorax.
There are more lung diseases such as tuberculosis which is quite infectious and life threatening although patients might live many years after contracting it.



Healthy lungs
Source: http://4.bp.blogspot.com/-9JadtjswWKY/UBqypjyWhiI/AAAAAAAAABs/eaysS4wmUjY/s1600/X-ray-Chest.gif



Lungs that suffer from tuberculosis
Source: http://www.healthyfeeds.com/wp-content/uploads/2010/03/tuberculosis-xray.jpg

cough	kašel, kašlat
phlegm [flem]	hlen
pus	hnis
auscultation	poslech
whistle	pískat
narrow	úzký, zúžit
inflamed	zanícený
get short of breath	nemoci popadnout dech
threaten	hrozit, ohrožovat
contract (a disease)	onemocnět čím

Homework
Grammar. Murphy Units 18, 105—108.

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9 Medical English: Diseases

9.1 Grammar

9.1.1 Expressing opinions, agreement and disagreement

To say you agree or disagree with your partner in conversation and to say what you think is vital in any language. In English, there are various phrases how to do that. Let's look at expressing your own opinions first.
The most often used phrase will probably be “I think (that)“. But to use only this one would be a little boring. Let's spice up our vocabulary by some more useful phrases. There are a few that have a quite similar meaning to “I think (that)“:

I guess (that) ...	Hádám, že ...
I reckon (that) ...	Počítám, že ...
I bet (that) ...	Vsadím se, že ...
I suppose (that) ...	Předpokládám, že ...
I believe (that) ...	Věřím, že ...
I feel (that) ...	Cítím, že ...
I estimate (that) ...	Odhaduji, že ...
I doubt (that) ...	Pochybuji, že ...
In my opinion, ...	Podle mého názoru ...

According to (what I think/what I read/my mum/these numbers/...) Podle (toho, co si myslím/co jsem četl/mámy/těchto čísel/...)

Expressing your own opinions is a monologue, but in a conversation you often need to react to what your partner is saying. You agree or not, and there are more than one way how to do that.
Of course, you can just plainly state that you agree with what he or she just said, but we can also use a grammar way.
Now this is a little complicated because it involves using auxiliary verbs. They are **be** and **do**, and modal verbs.
When we agree with a positive statement we can say “Me too,“ or “So [auxiliary/modal verb] [subject]“.

Examples:
A: I **like** bananas.
B: Me too. / So **do** I.

A: I **can** swim.
B: Me too. / So **can** I.

A: I **am** a nurse.
B: Me too. / So **am** I.

A: My father **is** a taxi driver.
B: Mine too. / So **is** my father. / So **is** mine. (Můj taky.)

When we agree with a negative statement we can say “Me neither,“ or “Neither/nor [auxiliary/modal verb] [subject]“ or “[Subject] [auxiliary/modal verb] either.

Examples:
A: I **don't** like beans.
B: Me neither. / Neither **do** I. / Nor **do** I. / I **don't** either.

A: I **can't** fly.
B: Me neither. / Neither **can** I. / Nor **can** I. / I **can't** either.

A: I**'m not** a superman.
B: Me neither. / Neither **am** I. / Nor **am** I. / I**'m not** either.

A: My great grandmother **isn't** alive anymore.
B: Mine neither. / Neither/nor **is** my great grandmother. / Neither/nor **is** mine. / My great grandmother **isn't** either. / Mine **isn't** either.

Now let's look at disagreeing. When you disagree with a negative statement you simply say you do something (compared to your partner who does not do it). And when you disagree with a positive statement you say you do not do it (compared to the partner who does). It works the same with the modal verbs. You can see that the logic is very clear.

A: I **don't** like beans.
B: Oh, I **do**.

A: I **can't** fly.
B: Oh, I **can**.

A: I**'m not** a superman.
B: I **am**!

A: My great grandmother **isn't** alive anymore.
B: Oh, mine **is**. / My great grandmother **is**.

A: I **like** bananas.
B: I **don't**.

A: I **can** swim.
B: Oh, I **can't**.

A: I **am** a nurse.
B: I**'m not**.

A: My father **is** a taxi driver.
B: My father **isn't**. / Mine **isn't**.

If you're replying to a question and want to express your agreement, you can say “I think so.“ If you want to disagree, say “I don't think so.“
Don't ever say anything like “~~I think that yes.~~“ It is a typical mistake, but this phrase does NOT exist in English!

There are other similar phrases like:
I expect so / I don't expect so
I hope so / I hope not
I'm afraid so / I'm afraid not
I guess so / I guess not
I suppose so / I don't suppose so / I suppose not

9.1.2 Giving orders, advice, suggestions, asking for help, saying thank you

Orders are meant to make people do things. We use imperatives which are basic forms of verbs.

Examples:
Buy some apples!
Shut up!
Sit down!
Don't touch it!

But sometimes we want to make orders sound a little more polite, so we can add “**will you?**“ at the end of the sentence.

Examples:
Open the window, will you?
Pass me the salt, will you?
Be quiet, will you?

When you want to advise someone on something, you are basically giving your opinion on the subject. You can use the modal verb **should/should not** or opinion phrases as in 1.1.
Another option is to use the second conditional and say something like “**If I were you, I would...**“

Examples:
A: My belly aches.
B: You should go to the doctor.

A: I cough up yellow phlegm.
B: You shouldn't smoke. You should give up/quit/stop smoking.

A: I am confused by the tax questionnaire.
B: If I were you I'd ask a tax counsellor to help me.

A: I hesitate about buying that old house.
B: I wouldn't do it if I were you.

Suggestions are made by using the phrase "**Let's...**" + (not) + infinitive. To emphasize it we might add "shall we?" at the end of the sentence.

Examples:
Let's go to the cinema tonight!
Let's talk about it later, shall we?
Let's not talk about it right now.
Let's buy some icecream, shall we?

Sometimes we also need to ask for help. There are more way how to say it. Let's look at some common phrases.
Can you...?
Could you...?
Can/could/may I ask you to...?
Would you do me a favour? I need...
Would you be so kind and...?

Examples:
Can you open the window, please?
Could you pass me the pencil sharpener please?
May I ask you to leave?
Would you do me a favour? I need to borrow CZK 1000 until tomorrow. I would pay back the next day.
Would you be so kind and send me more details on the job?

After we receive some favour it is polite to say thanks.
We can say...
... thank you.
... thanks (use this with friends or small favours).
... thank you very much.
... thank you so much!
... thank you, that's very kind of you.

Your partner might reply something like:
You're welcome.
My pleasure.
That's nothing. (with friends)
That's alright. (with friends)

9.2 Vocabulary

9.2.1 Civilization, environment, ecology

When we say "civilization" we often think about how it is changing our living environment and how it is changing people's lives. Some diseases are considered to be diseases of civilization, sometimes also called diseases of longevity or lifestyle diseases. There is much

discussion among scientists as to which diseases are connected to a high level of development and which existed in the past at the same rates.
Civilization has other meanings, too. For the “first world“, Europe and North America, it means a rapid technology development and a high economic level. This comes along with a lot of air, water and soil pollution. This causes not only diseases but also major changes in the nature and the atmosphere. The ozone layer is more and more damaged so it is losing its capability to protect us from harmful ultraviolet radiation from the Sun. That in return exposes us to higher rates of skin cancers. Emissions that stay in the air prevent the Sun radiation from leaving the atmosphere thus warming it up. This is called the greenhouse effect which is responsible for global warming. Other changes are taking place, too. Animal species are dying out, gas supplies are decreasing, icebergs are melting and threatening to flood the land. Scientists are not yet sure if it is necessarily a negative influence on the nature. It might just be a part of a natural cycle.
However, when or better before we run out of gas we will have to come up with some new ways how to substitute engine fuels and plastics. The car industry invented electronic and hybrid cars, but plastics are difficult to replace. That is why it is vital to recycle our waste. The “3R“ strategy is promoted: Reduce, Reuse, Recycle. Reducing means to try to use less plastics than we need, for example packing our bread in a paper bag. Reusing suggests using a plastic product more than once. Recycling demands a little more effort but is quite effective. Look for recycling containers in your neighbourhood and separate your waste: plastic, paper, glass, metal. Many countries refund glass bottles, some even plastic bottles. This separated waste is then used to make new plastic, paper and glass products.

(living) environment	(životní) prostředí
longevity	dlouhověkost
development	rozvoj, vývoj
pollution	znečištění
major changes	velké změny
ozone layer	ozónová vrstva
harmful	škodlivý
greenhouse effect	skleníkový efekt
die out	vymřít
gas supplies	zásoby ropy
species	živočišný druh, druhy
melt	tát
threaten	hrozit
flood	zaplavit, záplava
natural cycle	přírodní cyklus
substitute, replace	nahradit
engine fuel	palivo pro stroje
effort	úsilí

neighbourhood	sousedství
refund	vrátit zálohu

9.3 Medical English: Diseases

Until this chapter we have talked about the anatomical functions of the human body. But people are not always healthy and sometimes they suffer from various disorders, be it functional illnesses or infectious diseases. Let's look at some common disorders.
We can divide the long list of disorders according to which body system they attack. There are blood diseases, heart function disorders, oncological diseases, digestive system disorders, reproduction system disorders, mental illnesses, congenital disorders and many others. We shall discuss infectious diseases first.
Infection is an invasion and multiplication of microorganisms in body tissues which then causes inflammation. Inflammation is the body's immune reaction. The quality of immunity of the individual influences the probability of contracting the given disease. Infectious diseases are those that are transmitted from person to person or from animal to person, often by droplet infection. By definition it is a transmission of respiratory patogens on droplets from an infected individual to a healthy one. The droplets are produced by coughing, sneezing and even talking, landing on oral, nasal or other tissues. Droplet illnesses are for example cold, influenza (flu), mumps, measles, rubella (these three being common children diseases), tuberculosis etc. Flu is a virus infection so it is not cured by antibiotics. Infectious diseases are often accompanied by high temperature or even fever.
Other diseases might be transmitted through another vector such as hands (typically hepatitis A) or blood (hepatitis B and C, HIV virus), or food (salmonella, botulism). A specific group are sexually transmitted diseases such as gonorrhoea, syphilis and AIDS (HIV). Diseases transmitted by animals are for example lyme borelliosis/lyme disease, tick-borne encephalitis, or lyssa/rabies. Some diseases might be transmitted from mother to foetus = unborn baby such as hepatitis or AIDS.

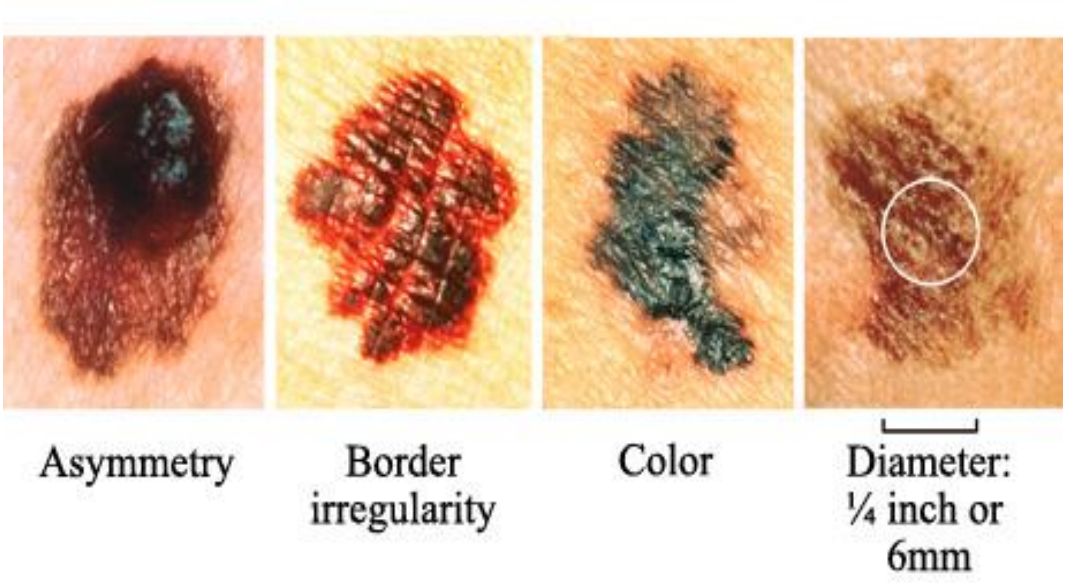
Mumps are highly infectious
Source: http://finkorswim.com/wp-content/uploads/2012/11/mumps.jpg

Disease	Common name
morbilli/rubeola	measles
rubella	German measles
varicella	chickenpox
infectious parotitis	mumps
pertussis	whooping cough
acute laryngotracheitis	croup
scarlatina	scarlet fever
rheumatic fever	rheumatic fever
tetanus	lockjaw
poliomyelitis	polio

Some medical and common terms
Source: Glendinning, Howard, 2007

Congenital disorders include anomalies and malformations such as cleft palate, and genetic disorders such as the Down's syndrome or lactose intolerance. An interesting phenomenon are Siamese twins. They might be connected in heads, hips or another part of their bodies.

A huge part of human disorders are oncological illnesses and cardiovascular diseases. These two are responsible for the majority of deaths in adults. Children are more prone to death by accidents. Cardiovascular diseases are those that affect the heart and the vessels. They are for example ischaemic heart disease, cerebrovascular disease (stroke), bacterial endocarditis, heart failure etc. Risk factors include older age, smoking and air pollution, high blood pressure and fatty diet.
Oncological illnesses are cancers or so called malignant neoplasms. They are a broad group of various diseases which involve unregulated cell growth. Cells divide uncontrollably and form tumors. Not all of them have to be malignant, some might be benign. It is difficult to say why cancers appear in a person, but the best known variables connected with cancer are smoking, radiation, obesity, environmental pollution, hereditary causes etc. The most common cancers are colorectal cancer, lung cancer, prostate cancer, breast cancer, melanoma (skin cancer) caused by sun radiation, and blood cells disorders such as lymphoma and leukemia (the latter being the most frequent cancer in children). Often a person might live long without any symptoms. That is the reason why cancers are such an enemy to people.



Signs of melanoma
Source: http://4.bp.blogspot.com/-jnzt_tpI0l4/TsgAykpt6cI/AAAAAAAAAJ0/pn8lLDFaTuo/s1600/skin_cancer%255B1%255D.jpg

Many disorders are caused by people's unhealthy lifestyle. Lung cancer is common in tobacco smokers, cirrhosis is caused by excessive consumption of alcohol, bones and joints suffer from lack or excess of physical activity. Another frequent disease is diabetes. It basically means that the patient has high blood sugar which is not absorbed into cells to be used as fuel or storage. There are two main types of diabetes mellitus – the first one results

from the inability of the body to produce insulin (formed in pancreas) and is often hereditary, the second type is based on insulin resistance and is triggered by the person's lifestyle – obesity, high blood pressure and smoking. Typical symptoms of diabetes are frequent urination and increased thirst and hunger.
Mental diseases might be connected to incorrect brain chemistry or an unbalanced lifestyle. Depressions, mood and anxiety disorders, and schizophrenia are common along with post-traumatic stress disorder and drug addiction. Stomach ulcers and heart attacks are believed to result from a stressful lifestyle too.
The 10th revision of the International Statistical Classification of Diseases and Related Health Problems (ICD-10) is a list of more than 14 000 health disorders.

disorder	porucha
disease, illness	onemocnění, nemoc
inflammation	zánět
transmit, transmission	přenášet, přenos
droplet	kapénka
sneeze	kýchat
mumps	příušnice
measles	spalničky
rubella, German measles	zarděnky
gonorrhoea	kapavka
tick-borne	přenášený klíštětem
lyssa, rabies	vzteklina
congenital	vrozený
cleft palate	rozštěp patra
prone to	náchylný k
stroke	mrtvice
heart failure	srdeční kolaps
fatty diet	tučná strava
broad	široký
variable	proměnná
hereditary	dědičný
the latter	ten druhý
excessive	nadměrný
fuel	palivo
storage	zásoba
triggered by	podpořen čím

Homework
Grammar. Murphy Units 37, 51, 52.

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10 Medical English: Genetics and reproduction

10.1 Grammar

10.1.1 Past perfect

Předminulý čas je čas, který se v češtině nevyskytuje, ale jeho použití není složité. Používá se pro popis jevů, které se staly před jinými minulými jevy. Existuje jak v prosté formě, tak ve formě průběhové.
Jeho tvoření je podobné předpřítomnému času, jen je pomocné sloveso **have** v minulém čase:
podmět + had + 3rd form
podmět + had + been + -ing

Při jeho použití je první část promluvy v minulém čase a druhá část vyjadřuje událost, která se stala před popisovanou událostí, proto je v předminulém čase.

Examples:
When I came home last night I found out **somebody had broken** into my flat. *Když jsem včera večer přišla domů, zjistila jsem, že se mi někdo vloupal do bytu.*
I was really tired yesterday because **I had been running** all over the town with my friends who were visiting. *Včera jsem byla hrozně unavená, protože jsem celý den běhala po městě s kamarády, kteří přijeli na návštěvu.*
I couldn't go to work yesterday because **I had been** in severe pain the night before. *Nemohl jsem jít včera do práce, protože jsem měl noc předtím strašné bolesti.*
When they introduced us I realized **I had seen** him before. *Když nás představili, uvědomila jsem si, že už jsem ho předtím viděla.*
I was scared to try parachute jump. **I had never done** anything crazy like that before. *Bál jsem se skočit s padákem. Nikdy předtím jsem nic takového šíleného neudělal.*

10.1.2 Have something done

V případech, kdy potřebujeme vyjádřit, že jsme si něco nechali udělat někým jiným, se používá vzor **have something done**. Používá se i pro případ, že se někomu něco stane a

příčinou je někdo jiný*. Lze jej kombinovat s jakýmkoli slovesným časem – minulým, přítomným i budoucím. Je to vlastně druh trpného rodu, kdy podmětem jsme my a předmětem věc, která se mění.

podmět + tvar slovesa have + předmět + 3rd form

Examples:
I had my hair cut last week. *Minulý týden jsem se nechala ostříhat.*
I need to **have my car repaired**. *Potřebuji si nechat opravit auto.*
We are having our house redecorated. *Necháváme si vymalovat dům.*
Have you already **had your eyesight checked**? *Už sis nechal zkontrolovat zrak?*
***Have you** ever **had your wallet stolen**? *Ukradli ti někdy peněženku?*

V hovorové angličtině uslyšíte i tvar **get something done**:
I got my hair cut last week. *Minulý týden jsem se nechala ostříhat.*

10.2 Vocabulary

10.2.1 Technology and inventions

Here is a short overview of some medical and health-connected inventions, ordered from the oldest to the newest. It is not of course a complete list, just a quick journey to the world of technology and inventions.

Toothbrush, 1498
For millennia people have used a fantastic array of implements to keep their teeth brilliant. Frayed twigs, chewing sticks, birds' feathers and porcupine quills; all have been discovered in the excavated remains of the earliest bathrooms. An unknown Chinese was the first, at the turn of the 15th century, to mount bristles at right angles to a handle – the spines were plucked from hogs and set into bamboo or bone. By the 17th century toothbrushes were widely used in Europe.

Microscope, 1590
When the British polymath Robert Hooke published his 1665 masterpiece, Micrographia, people were blown away by its depictions of the miniature world. Samuel Pepys called it "the most ingenious book that I ever read in my life". Until then, few people knew that fleas had hairy legs or that plants comprised cells (Hooke coined the term "cell"). Zacharias Janssen, a Dutch spectacle maker, had invented the first microscope in 1590, although it was then regarded as a novelty rather than a revolution in science.

Thermometer, 1592
It is difficult to place the thermometer in the history of modern invention; it is one of those devices that would inevitably appear. Galileo Galilei is most commonly credited, but his clumsy air thermometer, in which a column of air trapped in water expanded when warmed, was the culmination of more than 100 years of improvement. The classic mercury-in-glass thermometer, still in use today, was conceived by Daniel Fahrenheit in the 1720s.

Condom, 1640
Egyptians used them on 3,000 years ago and the 16th-century Italian gynaecologist

Gabriele Falloppio first advocated their use to prevent the spread of disease. The earliest remains of a condom, which date from 1640, were discovered in Dudley. In modern times, condoms, which until the 1960s were made from animal gut, have allowed generations of couples to avoid unwanted pregnancies and saved an inestimable number of lives by preventing the spread of diseases such as AIDS.

Stethoscope, 1819
You would think in this age of electron microscopes and robot surgeons that a bit of rubber tubing attached to headphones and a diaphragm would have joined the head mirror and the cauterising iron in the graveyard of medical innovation. But so simple and effective is the stethoscope that the sight of one on the shoulders of a white coated doctor remains as familiar as ever. A Frenchman, René Théophile Hyacinthe Laënnec, invented the first device that amplified the sounds of the human body.

Syringe, 1844
Syringe devices have been in use since the 9th century, when an Egyptian surgeon used a glass suction tube to remove cataracts from a patient, but the first hypodermic syringes with needles fine enough to pierce skin did not appear until the 1840s. The Irish physician Francis Rynd used the first syringe to inject a sedative to treat neuralgia, revolutionising medicine with a single push of a plunger.

Aspirin, 1899
Little tablets of acetylsalicylic acid have probably cured more minor ills than any other medicine. Hippocrates was the first to realise the healing power of the substance – his related ancient Greek treatment was a tea made from willow bark, and was effective against fevers and gout. Much later, in turn-of-the-century Germany, chemist Felix Hoffman perfected the remedy on his arthritic father, marketing it under the trade name Aspirin.

The Pill, 1951
The contraceptive pill not only empowered women, but marked a turning point in medicine – it was the first drug used by "healthy" people to prevent something rather than by the sick to treat an ailment. It was developed by a team headed by Carl Djerassi, a chemist, in 1951, but wasn't marketed in the UK until 1962. Since then, more than 300 million women are thought to have used the Pill; in the UK, an estimated three million women use it each year.

Cardiac pacemaker, 1958
It wasn't long ago that if you had a terminally disordered heart you would be sent to hospital and hooked up to a large, static piece of kit. Swedish doctors Rune Elmqvist and Ake Senning designed the first implantable pacemaker. Their device failed within hours and it took the US engineer Wilson Greatbatch to build a reliable model in his garden shed. He tested a prototype on a dog in 1958 and, in 1960, Henry Hannafield, 77, became the first human recipient.

array	seznam, skupina
frayed	roztřepený
feather	brk
porcupine	dikobraz

quills	ostny
excavate	vykopat (archeologie)
turn of the century	přelom století
bristles	fousky, štětiny
handle	držadlo, rukojeť
spine	osten, trn
pluck	vytrhávat
hog	vepř
polymath	vzdělanec
blown away	šokovaný
depiction	zobrazení
ingenious	důmyslný
flea	blecha
comprise	sestávat
spectacle maker	výrobce brýlí
regarded as	považováno za
novelty	novinka
inevitably	nevyhnutelně
clumsy	nešikovný
trapped	uvězněný, zachycený
advocate	podporovat
inestimable	nesčetný
diaphragm	membrána
cauterising	vypalovací
graveyard	hřbitov
suction	sací
plunger	píst
pierce	propíchnout
realise	uvědomit si
willow	vrba
bark	kůra
gout	dna, pakostnice
contraceptive	antikoncepční
turning point	zvrat
ailment	neduh

terminally	smrtelně
kit	sada, souprava
recipient	příjemce

10.3 Medical English: Genetics and reproduction

Genetic factors, DNA and the genes that it carries play key roles in morphologic and physiologic abnormalities that characterize disease entities. Techniques of chromosomal analysis and nuclear sex determination have shown correlations with abnormal sex differentiation, Down's syndrome, mental retardation, somatic defects, infertility and metabolic disorders. The recognition of heterozygote carriers of latent genetic abnormalities may be of great value in directing prophylactic measures (special dietary controls, use of appropriate medication, avoidance of aggravating drugs and environmental factors) and in marriage counselling.

The nucleus of the normal human cell contains 46 chromosomes. Two of these are sex chromosomes – XX in women and XY in men. The remainder can be classified on the basis of physical appearance and segregated into 22 pairs. With technology, it is possible to discern alterations in form and number of chormosomes in cells obtained from blood, bone marrow, skin, mucosa, and othe tissues of specific interest. Recent advances in staining techniques have led to the identification of many normal variants.

The sperm and the ovum normally contain one autosomal chromosome from each pair and one sex chromosome, that is 23 unpaired (haploid) chromosomes. Upon fertilization, the full number of 46 diploid chromosomes is reconstituted. In the normal state, the chromosomal pattern (karyotype) of somatic cells is identical.

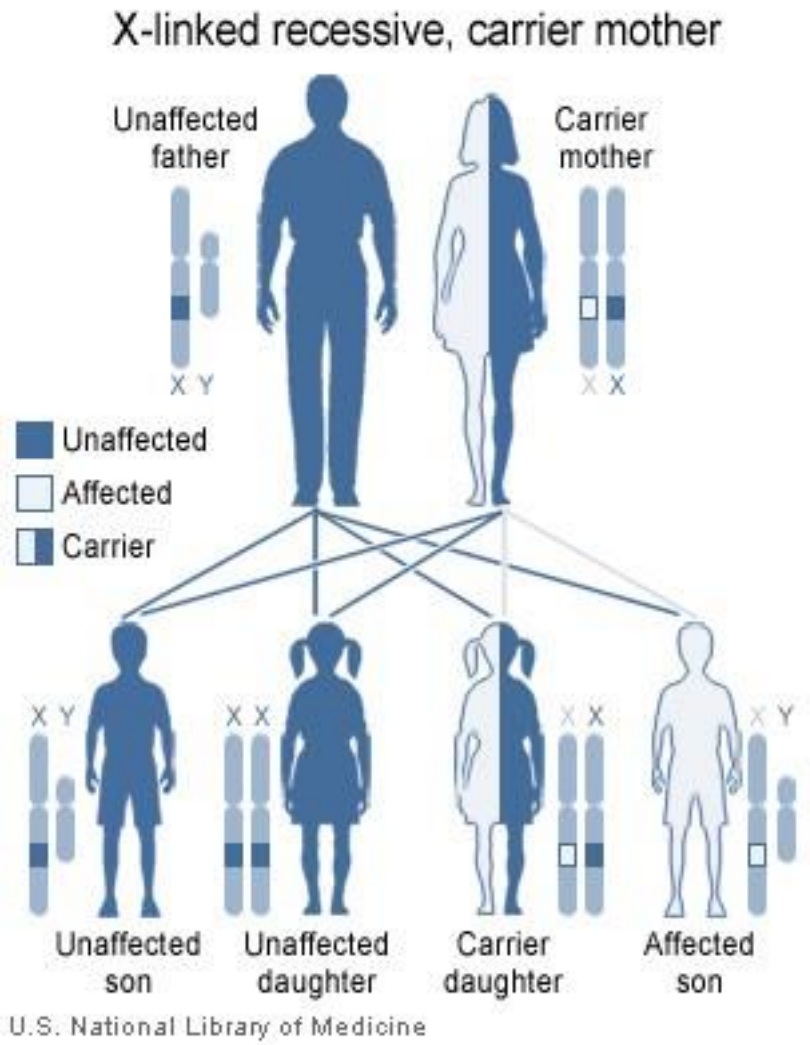
Each chromosome is composed of thousands of genes arranged in regular order. The corresponding genes (alleles) on a chromosome carry identical gene instruction (homozygous) or dissimilar instruction (heterozygous). If the genes are heterozygous one may be expressed as a bodily characteristic (dominant), while the other is unexpressed (recessive).

At fertilization, the reassortment of chromosomes is purely random so that either one of a pair of chromosomes from one parent has an equal chance of combining with either one of the corresponding pair from the other parent. Normal as well as abnormal characteristics are inherited in the same way, either as autosomal dominant, autosomal recessive or x-linked (sex-linked). The term genotype denotes the hereditary constitution or combination of genes that characterizes a give individual or group of genetically identical organisms. The term phenotype denotes the recognizable morphologic or functional characteristics expressed by a genetic trait.

Genes may undergo transformations (mutations) that may produce new somatic or functional characteristics. The older the parenteral age, the greater the incidence of such fresh mutations. They might be inapparent but in many circumstances they can be correlated with the sudden appearance of heritable disease. The mutations are in number or shape of chromosomes, e.g. Down's syndrome appears when the 21st chromosome is tripled.

Genetic counselling is the process of managing the problems associated with the occurence or risk of occurence of a genetic disorder in a family. An appropriately trained proffesional counsellor attempts to help an individual or a family to understand the diagnosis of a genetic disorder, its cause and the available methods of treatment, the contribution of heredity to the disorder, and the risk of reoccurence in specific blood

relatives. Informed genetic counselling often requires the use of diagnostic services such as karyotyping, biochemical tests for inborn errors of metabolism, syndrome recognition and amniotic fluid analysis.



Example of a hereditary genetic trait
Source: http://upload.wikimedia.org/wikipedia/commons/a/a3/XlinkRecessive.jpg

Pregnancy and childbirth

The process by which the fetus and the placenta are pushed out of the uterus is called labour. It is divided into four stages. Labour can be premature, prolonged, spontaneous, induced or also false. Childbirth is also referred to by doctors as parturition. Delivery is the process of helping the child to be born. A spontaneous vaginal delivery (SVD) is a normal delivery. If there are complications, the baby may be delivered by caesarian section (surgically removed).

A full-term pregnancy is 40 weeks, divided into three trimesters. A baby born before this is premature, born after this is postmature. A baby who is born dead, for example because the umbilical cord is around its neck, is stillborn. The expected date of delivery is the date on which a woman is expected to give birth to the child she is carrying (pregnant with). It is calculated by adding 280 days or 40 weeks to the first day of the last menstrual period. A pregnancy may end before term spontaneously with a miscarriage (spontaneous abortion)

or be deliberately terminated with an induced abortion.
Fetal lie is the position of the fetus in the uterus. The normal lie is longitudinal, and the abnormal lie is transverse. Fetal presentation refers to the part of the fetus which occupies the central pelvic canal and which the examining finger feels on vaginal examination. The normal presentation is with the head (vertex presentation). Breech presentation means the buttocks are presenting. Abnormal presentation may require delivery with forceps.
The field of medicine that deals with pregnancy and childbirth is called obstetrics and the doctor is an obstetrician. If women experience troubles becoming pregnant they undergo assisted conception in specialized centres.

Ultrasound scan (pregnancy sonogram) of a fetus
Source: http://blogs.babble.com/being-pregnant/files/2011/03/profile11.jpg

entity	ucelená jednotka
infertility	neplodnost
carrier	nositel
prophylactic	ochranný
avoid	vyhnout se
aggravate	zhoršit
counsel	radit
remainder	zbytek
discern	rozlišit
alteration	změna

staining techique	barvicí technika
dissimilar	různý, nestejný
reassortment	znovuuspořádání
random	náhodný
denote	označovat
hereditary	dědičný
trait	vlastnost, znak
undergo	podstoupit
parenteral age	stáří plodu
inapparent	nezjevný
occurence	výskyt
premature	předčasný, nevyspělý
prolonged	prodloužený
induced	indukovaný
caesarian section	císařský řez
umbilical cord	pupeční šňůra
forceps	kleště
conception	početí

Homework
1) Murphy Units 15, 16, 46.
2) Write a 10-minute presentation about your favourite technical invention. Find out details about its history, its use and its future.

Literatura:
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11 Medical English: Medical examination and hospital care

11.1 Grammar

11.1.1 Reported speech

Reported speech neboli nepřímá řeč slouží pro vyprávění nebo zopakování přímé řeči. V angličtině stojí až na vrcholu gramatiky, protože vyžaduje všechny slovesné časy, modální slovesa a další gramatické jevy.
V nepřímé řeči můžeme přímou řeč posouvat do minulosti (**backshift**) anebo ji nechat v

přítomnosti. Z přímé řeči se v souvětí stává vedlejší věta.
V nepřímé řeči v přítomném čase se mění pouze zájmena, zatímco časová a místní určení zůstávají stejná, protože se držíme ve stejné časové rovině. Při posunu do minulosti je přísudek hlavní věty v minulém čase, proto se přísudek věty vedlejší posouvá o jeden stupeň „dozadu“, do minulosti nebo do jiné pevně dané struktury.
Nejprve se podíváme na tvoření nepřímé řeči pro přítomnost v oznamovacích větách.

He says, „**I speak** English.“ → He says (that) **he speaks** English.
She says, „**My mum doesn't have** time **today**.“ → She says (that) **her mum doesn't have** time **today**.
They say, „**We will go out tonight**.“ → They say (that) **they will go out tonight**.
She says, „**I had** to leave early **last week**.“ → She says (that) **she had** to leave early **last week**.

Vidíme, že se mění pouze zájmena, časy zůstávají stejné a časová určení také, protože přísudek v hlavních větách je v přítomném čase.

Při posunu hlavní věty do minulosti se ale bude měnit i čas přísudku věty vedlejší.
Pro tyto posuny máme tato pravidla:

Direct speech	**Reported speech**
Present simple	Past simple
Present continuous	Past continuous
Past simple	Past perfect simple
Present perfect simple	
Past perfect simple	
Past continuous	Past perfect continuous
Present perfect continuous	
Past perfect continuous	
Am, are, is going to	Was, were going to
Will	Would
Would	

V zásadě tedy přítomný čas posouváme do minulého, minulý do předminulého a dodržujeme formu prostou nebo průběhovou.
Modální slovesa (could, should, might, must atd.) se obvykle nemění.

Významný je také posun časových a místních určení. Ze současného označení se také musí stát minulé, z místního vzdálenější. Např.:

Direct speech	**Reported speech**
today	that day
tonight	that night

yesterday	the day before
tomorrow	the next day / the following day
last week	the week before
.... days ago	... days before
next year	the following year
here	there
this	that
these	those

He said, „**I speak** English.“ → He said (that) **he spoke** English.
She said, „**My mum doesn't have** time **today**.“ → She said (that) **her mum didn't have** time **that day**.
They said, „**We will go out tonight**.“ → They said (that) **they would go out that night**.
She said, „**I had** to leave early **last week**.“ → She said (that) **she had had** to leave early **the week before**.

Přísudky v hlavních větách jsou v minulém čase, proto se vedlejší věty posouvají podle pravidel do minulosti a předminulosti.

U převádění tázacích vět je potřeba dbát na převedení vedlejší věty na nepřímou otázku. Mění se tedy nejen slovesný čas, ale i slovosled! Tzn. nejprve je zájmeno, poté následuje sloveso. Díky tomu se v kladných větách z nepřímé řeči ztrácí pomocné sloveso.

„Why **don't you** speak English?“ → He asked me why **I didn't** speak English.
„Where **did she live**?“ → He asked me where **she had lived**. (pomocné sloveso **do** zmizelo)

U uzavřených otázek (odpovědět na ně lze obecně jen ano/ne) je nutné přidat spojku **whether/if** (jestli):

„**Do you speak** English?“ → He asked me **whether I spoke** English.

Třetím typem převodu jsou žádostí a rozkazy. V češtině obvykle používáme účelové věty vedlejší se spojkou aby, v angličtině ji nahrazuje spojka **to**:
„Zavři okno!“ → Řekla mi, **abych** zavřela okno.
„Close the window!“ → She told me **to close** the window.

Všimněte si, že sloveso ve vedlejší větě je infinitiv, protože následuje za spojkou **to**.
V záporných rozkazech se před tento infinitiv přidává záporka **not to**:

„**Don't be** sad!“ → I told him **not to be** sad.

Rady vyjádřené slovesy **must** a **should** se obvykle převádějí na nepřímou řeč pomocí slovesa **advise**:
„You **must** read that book!“ → He **advised me to** read that book.

Návrhy v podobě fráze **Let's**... se převádějí pomocí slovesa **suggest** spojeného s gerundiem nebo s frází **that we should**:

„**Let's go** to the cinema!“ → He **suggested going** to the cinema. / He **suggested that we should go** to the cinema.

Posun do minulého času se nepoužívá, pokud se mluví o nějakém obecně platném faktu a ve 2. kondicionálu:

She said that Canberra **is** the capital of Australia.
He said that if he **had** more time, he **would learn** French.

Při převádění souvětí se spojkami **and** a **but** se za ně přidává spojka **that** v případě, že za ní nenásleduje sloveso:

He said that he had seen her **but that she hadn't seen** him.
He said that she was a nurse **and worked** in a hospital.

11.2 Vocabulary

11.2. Wards in a hospital

Function
A hospital ward is an area or floor of a hospital in which patients with similar needs are placed together. The function of hospital wards is to keep similar patients together, either according to age, disease, or condition. An emergency ward, floor or unit, groups patients with immediate care needs, while a dialysis ward groups together patients receiving dialysis treatments.

Types
Some of the common types of wards found in hospitals include emergency rooms, maternity, pediatrics, psychiatric, geriatrics, oncology, wards for a specific organ such as the renal ward and dialysis ward and so on. Wards may also have different names from one hospital to another, with some hospitals referring to the maternity ward as the mother and baby unit.

Effects
Grouping together similar patients is an effective method of treating patients and cutting the costs of keeping the hospital running. If patients are just put in any available room, extra specialized equipment is necessary in order to ensure the that the equipment is available to each patient who would immediately need that device in an emergency. However, when similar patients are grouped together in the same area or ward, one or two devices can be placed nearby for patients who would need them in an emergency. In addition to cutting the cost of equipment, grouping together similar patients in hospital wards allows the hospital to employ specialists for each ward of the hospital. Employing ward specialists creates a better quality of care and keeps the necessary specialists also grouped in a specific area, meaning that care is more immediate than if specialists were all over the hospital.

Types of healthcare:

Outpatient: short visit to hospital that lasts one day at the most.
Inpatient: hospital visit that requires at least one night's stay on a ward.

Some usual wards:
Accident and emergency (A&E)
This department (sometimes called Casualty) is where you are likely to be taken if you called an ambulance in an emergency. It's also where you should come if you have had an accident, but can make your own way to hospital.
These departments operate 24 hours a day, every day and are staffed and equipped to deal with all emergencies.

Anaesthetics
Doctors in this department give anaesthetic for operations. They are responsible for the provision of acute pain services (pain relief after an operation), chronic pain services (pain relief in long-term conditions such as arthritis), critical care services (pain relief for those who have had a serious accident or trauma), and obstetric anaesthesia and analgesia (epidurals in childbirth and anaesthetic for caesarean sections).

Cardiology
This department provides medical care to patients who have problems with their heart or blood circulation. It treats people on an inpatient and outpatient basis. Typical procedures performed include electrocardiogram (ECG) and exercise tests to measure heart function, echocardiograms (ultrasound scan of the heart), 24-hour blood pressure tests, insertion of pacemakers, cardiac catheterisation (coronary angiography) to see if there are any blocks in your arteries etc.
Intensive or critical care, ICU – Intensive care unit
This unit is for the most seriously ill patients. It has a relatively small number of beds and is staffed by specialist doctors and nurses, as well as by consultant anaesthetists, physiotherapists and dietitians. Patients requiring intensive care are often transferred from other hospitals or from other departments in the same hospital.

Diagnostic imaging
Formerly known as X-ray, this department provides a full range of diagnostic imaging services including general radiography (X-ray scans), ultrasound scans, angiography (X-ray of blood vessels), CT scanning (scans that show cross-sections of the body), MRI scanning (3D scans using magnetic and radio waves) etc.
Ear, nose and throat (ENT)
The ENT department provides care for patients with general ear, nose and throat diseases, and also cancers of the head and neck area, tear duct problems, balance and hearing disorders, snoring and sleep apnoea, ENT allergy problems, salivary gland diseases, voice disorders etc.

Gastroenterology
Run by consultants specialising in bowel-related medicine, this department investigates and treats upper and lower gastrointestinal diseases, as well as diseases of the pancreas and bile duct system. This includes endoscopy and nutritional services. Endoscopy involves a small thin tube with a camera on the end. This is guided down the throat to investigate problems in your oesophagus and digestive system. Small surgical instruments can be guided down in the same way, meaning it can be used for diagnosis and treatment.

Sub-specialities include colorectal surgery, inflammatory bowel disease and swallowing problems.

General surgery
The general surgery ward covers a wide range of surgery, for example thyroid surgery, kidney transplants, colon surgery, laparoscopic cholecystectomy (gallbladder removal), and many other types. Day surgery units have a high turnover of patients who attend for minor surgical procedures such as hernia repairs.

Gynaecology
These departments investigate and treat problems of the female urinary tract and reproductive organs, such as endometritis, infertility and incontinence.
They also provide a range of care for cervical smear screening and post-menopausal bleeding checks.

Haematology
Haematology services work closely with the hospital laboratory. These doctors treat blood diseases and malignancies linked to the blood, with both new referrals and emergency admissions being seen.

Maternity departments and obstetrics ward
Women now have a choice of who leads their maternity care and where they give birth. Care can be led by a consultant, a GP or a midwife. Maternity wards provide antenatal care, care during childbirth and postnatal support. Antenatal clinics provide monitoring for both routine and complicated pregnancies.

Nephrology
This department monitors and assesses patients with kidney (renal) problems.
Nephrologists (kidney specialists) supervise the dialysis day unit for people who are waiting for a kidney transplant or who are unable to have a transplant for any reason.

Neurology
This unit deals with disorders of the nervous system, including the brain and spinal cord. It's run by neurologists and their staff. There are also paediatric neurologists who treat children. Neurologists may also be involved in clinical research and clinical trials.
Specialist nurses (epilepsy, multiple sclerosis) connect with patients, consultants and GPs to help with any problems that may occur between outpatient appointments.

Oncology
This department provides radiotherapy and a full range of chemotherapy treatments for cancerous tumours and blood disorders.
Staffed by specialist doctors and nurses trained in oncology (cancer care), it has close links with surgical and medical teams in other departments.

Orthopaedics
Orthopaedic departments treat problems that affect your musculoskeletal system. That is the muscles, joints, bones, ligaments, tendons and nerves. The doctors and nurses who run this department deal with everything from setting bone fractures to carrying out surgery to correct problems such as torn ligaments and hip replacements.

Urology
The urology department is run by consultant urology surgeons and their surgical teams. It investigates all areas linked to kidney and bladder-based problems. The department performs flexible cystoscopy bladder checks, prostate assessments and biopsies, shockwave lithotripsy to break up kidney stones etc.

pain relief	úleva od bolesti
insertion	vložení, zavedení
imaging	zobrazování
cross-section	průřez
tear duct	slzný kanálek
snoring	chrápání
guide down	zavádět
turnover	obrat
cervical smear	stěr z děložního čípku
clinical trial	klinický test
appointment	schůzka, kontrola
full range	široký rozsah

11.2.2 Some surgical instruments

Surgical forceps
In many surgeries, the surgeon has to grasp, lift and displace tissue, blood vessels and organ walls. They must do so without causing further injury to the patient. There are various sizes of forceps the surgeon can choose to use, and they each have different opposing tips. Opposing tips are the ends of the forceps and may be straight, curved, serrated or toothed.

Surgical scissors
Surgical scissors are used for cutting and dissecting tissues. They also cut bandages and sutures. Each procedure has a separate pair of scissors that is used to complete it. Surgical scissors are required in any surgery and have value and durability not seen in regular scissors. Surgical scissors come in many shapes and varieties. They can be made from materials such as stainless steel or titanium. They also come in varieties depending on their use such as bandage scissors, dissecting scissors, operating scissors, stitch scissors, plastic surgery scissors etc.

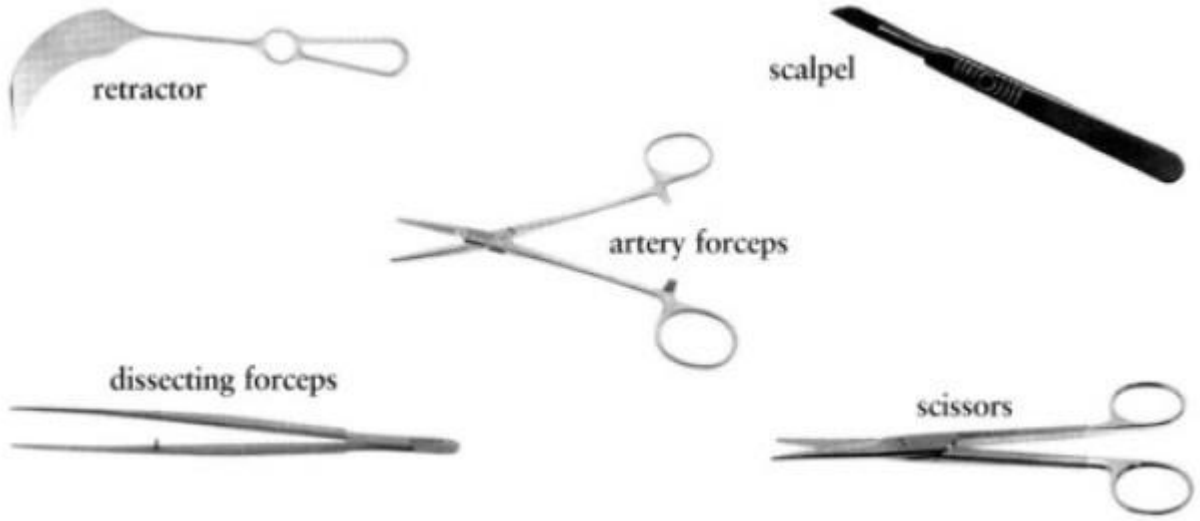
Surgical retractors
Retractors hold back underlying organs and tissues so that the parts under the incision may be operated. They also separate the sides of a surgical cut. They are available in many shapes and sizes. They are important because they expose hidden areas and have a tight grip, allowing the surgeon to work easily on a particular section. There are two types of retractors. The first kind is a self-retaining retractor. This kind of retractor does not require an assistant to hold them in place. Instead they can be locked in place. Rib spreaders fall

under this category because they hold the ribs apart and are locked in place during operations. The second kind is a hand-held retractor. These require an assistant to hold them. It must be held firmly and steadily by an assistant and expose the maximum area.

Surgical scalpels
Scalpels are extremely sharp knives used to cut and make incisions in a surgery. They are fine blades and require steady and fine cutting. Scalpels are composed of two parts: the handle and the blade. A surgeon must decide which blade is to be used in each surgery depending on the tissue that is to be cut. The blades are curved and angled for greater precision. They are made of specialized and specific materials such as obsidian, medical grade fine steel or a diamond knife blade.

And last but not least...
Autoclave
When you go to the hospital you want to be sure that the equipment and instruments being used are sterile. To ensure that this is the case, the hospital will use an autoclave. This is a type of machine that heats water to produce a pressurized steam that kills all germs on the instruments placed in it.

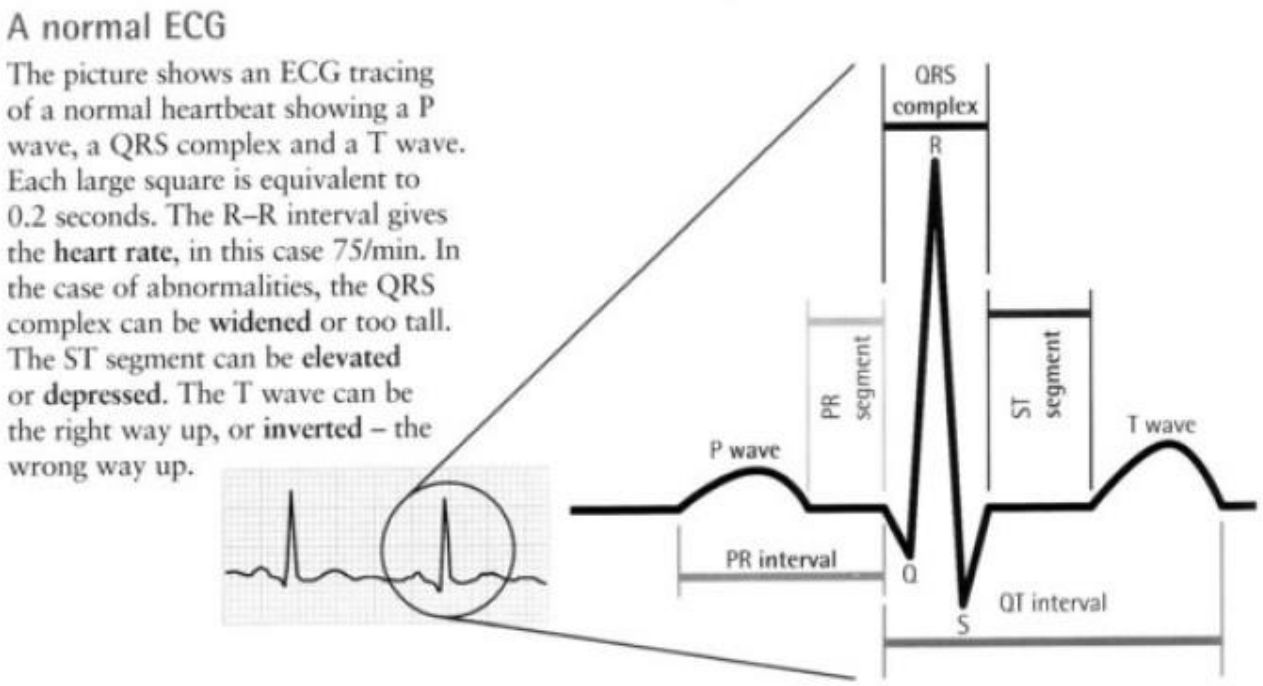
grasp, grip	držet pevně
serrated	zubatý, pilovitý
tip	špička
sutures, stitches	stehy
spread	roztáhnout
firm, tight	pevný
blade	čepel



Surgical instruments.
Source: Glendinning, Howard, 2007.

11.3 Medical English: Medical examination and hospital care

Patients in need of medical treatment usually go to see the GP – the general practitioner. In order to make the patient's diagnosis the GP must learn about common symptoms, the subjective manifestations of the patient's chief complaint. He or she may complain of sore throat, cough, nausea, weakness, tremor or pain. The physician will want to know if the patient has a high temperature and will measure it with a thermometer. The most common symptoms include sweating, general body ache, headache, backache, muscle or joint ache, diarrhoea or constipation, and breathlessness.
On examination the doctor may find rash, swelling, distension or tumor. These belong under objective findings called signs which also include the results of routine laboratory examination of the blood, sputum, urine, stools and sometimes even the cerebrospinal fluid. For example the blood or erythrocyte sedimentation rate (BSR or ESR) and blood count, simple or differential, are important guides for a reliable diagnosis. So is the examination of sputum for bacilli of tuberculosis, pneumococci, staphylococci, pus or blood. The urine is analyzed for the presence or exact proportions of albumin, sugar, acetone, blood, bilirubin as well as for colour, specific gravity and total quantity per 24 hours.
In order to obtain a clear clinical picture, the doctor may want to have the patient x-rayed or send him or her for ECG or EEG test. Perhaps gastric juices might be analyzed or a bronchoscopy etc. performed. Usually these examinations are carried out in a hospital rather than in a GP's consulting room.



A normal ECG.
Source: Glendinning, Howard, 2007.

In the GP's office they are likely to use the four classical methods: inspection to observe visible signs of the patient's condition, palpation to feel tumors, swelling etc., percussion – tapping on the chest or other parts of the body and listening to the quality of the sound, and

auscultation to hear chest sounds, irregularity of the heart beat or peristaltic sounds in the abdominal cavity.
In examining the patient the doctor proceeds top down, from the head over the chest and abdomen to the limbs. Together with the patient's past history and family history the examinations help establish a reliable diagnosis and determine what kind of treatment the patient needs. The GP then writes a prescription for drugs, recommends bed rest or hospitalization, or refers the patient to a specialist.

Symptom	Meaning	Patients say
tiredness lethargy fatigue lassitude	loss of energy	I **feel tired** all the time. I **feel** completely **worn out.** Lately I've been feeling completely **exhausted** at the end of the day.
malaise	general feeling of being unwell	I feel unwell. I don't feel well. I've been **feeling off-colour** for two days. I **haven't been feeling myself** for a week. I've been **out of sorts** all day.
anorexia	loss of appetite	My appetite is very **poor.** I've been **off my food** for days.
weight gain	increase in weight	I've **put on** eight kilos in the last year. I've **gained** five kilos.
weight loss	decrease in weight	I'm not eating any less than usual but I've **lost** a lot of weight recently.
constipation	hard, infrequent faeces	My **motions** are very hard. I've been quite **constipated** lately. I'm not very **regular.**

Symptoms and patients' expressions. Source: Glendinning, Howard, 2007.

Hospital care
The practice of medicine is concerned with the prevention, investigation, diagnosis and treatment of diseases, the alleviation of suffering and promotion of medical knowledge and education. The career system in the United Kingdom is different from the Czech system. In the UK there are GPs – general practitioners also called family doctors. Doctors engaged in specialist practice (surgery, pathology, radiology etc.) are referred to as specialist. The specialists who hold consultant posts in hospitals are called consultants. This is the most senior grade in medical posts. Doctors occupying medical assistant's posts have many years of experience but lack the appropriate training to become consultants. Doctors who have the highest degree of their chosen specialty hold medical or surgical registrar posts. A house officer or houseman is a junor doctor who si gaining experience in a hospital. He or she is often resident in the „house", that is the hospital. A nursing officer or ward sister is in charge of the ward administration. These workers are responsible to the medical staff and the head nurse. Nursing officers are assisted by fully qualified staff nurses, enrolled nurses with shorter training, student nurses, pupil nurses, nursing auxiliaries and ward orderlies.

Links with the community are provided by health visitors and medical social workers who help the patients with their problems. In addition to these there might be other people working in allied professions, for example chiropodists, dieticians, physiotherapists, laboratory technicians etc., referred to as paramedical staff.

general practitioner	praktický lékař
chief	hlavní
sweating	pocení
constipation	zácpa
swelling	otok
distension	roztažení
specific gravity	specifická váha
palpation	pohmat
percussion	poklep
tap	poklepat
establish	ustanovit
determine	určit
bed rest	klid na lůžku
alleviation	úleva
houseman	sekundář
enrolled nurse	ošetřovatelka
ward orderly	sanitář
allied	příbuzný, připojený

Homework

1) Murphy Units 47, 48.

2) Read and listen to this audio: http://learnenglish.britishcouncil.org/en/magazine-articles/asthma. Then answer the questions about asthma and check if you were right.

Literatura:

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