

WORD ANALYSIS – A USEFUL TOOL IN LEARNING THE LANGUAGE OF MEDICINE IN ENGLISH

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ANALÝZA SLOVA – AKO ZVLÁDNUŤ MEDICÍNSKU TERMINOLÓGIU V ANGLICKOM JAZYKU?

Derivated medical terms can consist of a prefix, one or two word roots, a combining vowel, and a suffix in various combinations. To teach medical vocabulary means to teach the tools of word analysis that will enable understanding of complex terminology instead of memorising the whole medical dictionary. (Ref. 6.)

Key words: word analysis, affixation, derivation, prefix, suffix.

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Individual fields of science and technology differ mainly in their vocabularies. That is why vocabulary teaching and learning is considered to be a decisive factor in medical English study. This study can be made easier and more effective if students get insight into some basic rules of word-building by derivation, i.e. by changing the word by adding affixes (prefixes, infixes, suffixes). As both semantisation and internalisation of medical terms can benefit from word analysis, the paper presents some of the most active derivational elements.

Affixation

Although the basic anatomical terms are simple words (roots) of English origin, such as *arm, finger, leg, liver, lung, hand, heart, knee* etc., commonly used in colloquial language, there are many terms of Latin or Greek origin. Such words initially sound strange and complicated, although they may stand for commonly known English terms, such as *ophthalmologist* meaning eye doctor.

Because of Latin classes, students are getting familiar with medical terminology more easily. The students' knowledge of

Aj v medicíne sa angličtina stala medzinárodným jazykom. Zvládnutie základnej lekárskej terminológie v anglickom jazyku predstavuje len prvý malý krok pri vstupe na cestu získavania najnovších informácií. Uľahčenie a zefektívnenie štúdia medicínskej angličtiny znamená dobre si osvojiť niektoré základné pravidlá slovnej analýzy. (Lit. 6.)

Kľúčové slová: slovný rozbor, prípony, derivácie, predpony.

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basic medical Latin supports understanding of new English medical terms based on Latin, but often interferes with correct pronunciation in English. The problem of stress and pronunciation deserves greater attention but it is not the topic of the present paper.

An important goal of teaching medical vocabulary is to teach the tools of word analysis that will enable understanding of complex terminology. "Medical terms are very much like individual jigsaw puzzles. They are constructed of small pieces that make each word unique, but the pieces can be used in different combinations in other words as well." (Chabner, 1996).

Derivated medical terms can consist of a prefix, one or two word roots, a combining vowel, and a suffix in various combinations, as witnessed in the following:

myocardium	myo- (prefix) means <i>muscle</i> , card(ium) (root) refers to the <i>heart</i>
endocarditis	endo- (prefix) means <i>within</i> , card (root) refers to the <i>heart</i> , -itis (suffix) indicates <i>inflammation</i>
cytology	cyt(o) (root) means <i>cell</i> , -logy (suffix) refers to <i>study of something</i>
gastroenterology	gastr(o) (root) means <i>stomach</i> , enter(o) (root) means <i>intestines</i> , -logy (suffix) refers to <i>study of something</i>
adenoma	aden(o) (root) means <i>gland</i> , -oma (suffix) means <i>tumour</i>

In layman's language these examples mean:
muscle of the heart
inflammation inside the heart
study of cells

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study of the stomach and intestines
tumour of a gland

Many derived words would be difficult to pronounce if they were written without a combining vowel (usually *o*, less *e*, *i*). Such word parts ending in a vowel are called **combining forms**. From the following examples you can easily recognize the meaning of the given medical terms:

Combining form	Meaning	Term
arthr(o)	joint	arthritis
bi(o)	life	biology
derm(o)/dermat(o)	skin	dermatitis
haem(o)/haemat(o)	blood	haematoma
hepat(o)	liver	hepatitis
neph(r)o	kidney	nephritis
neur(o)	nerve	neurology
onc(o)	tumour	oncology
path(o)	disease	pathology

For better understanding, the combining forms can be presented arranged into logical groups - terms describing:

body substances, or	body fluids	or denoting some colours
adip(o)/lip(o) - fat	chol(e) - bile	erythr(o) - red
calc(i) - calcium	haem(a/o) - blood	leuk(o) - white
glyc(o) - sugar	hydr(o) - water	alb(o)/albin(o) - white
lith(o) - stone	hidr(o) - sweat	chlor(o) - green
thromb(o) - clot	py(o) - pus	cyan(o) - blue

A **Suffix** (an ending) is attached to the end of a word to modify its meaning. Suffixes can be added to word root to form nouns, adjectives, adverbs or verbs. Suffixes used in English medical terminology are usually: noun-forming: *circulation*, and adjective-forming: *circulatory* system.

Although suffixes **-ist** and **-ian** are used to form nouns expressing specialists in their fields, there is no rule regarding usage,

e.g. *scientist*, *psychologist*, *anaesthetist*, *biologist* and not (*scientician*, *psychologian*, *anaesthetician* or *biologian*) but

obstetrician, *paediatrician*, *geriatrician* and not (*obstetrist*)
In American English it is also possible to use *pediatrist*, and *geriatrist*.

Similarly it is not easy to decide when to use **-logy**, **-ics**, **-tomy**, or **-iatry** to express individual fields of medicine unless the students know it or consult a dictionary, e.g.

biology, *psychology*, *pathology*, *obstetrics*, *paediatrics*, *geriatrics*, *anaesthetics*, *anatomy*, *psychiatry* and not *paediatry* or *geriatry*.

While in our mother tongue we have only one suffix **-cký** to build adjectives to the above mentioned terms, in English there are two suffixes:

- **ical**: *biological*, *psychological*, *pathological*, *anatomical* (AmE also: *biologic*, *psychologic*, *pathologic*, *anatomic*)
- **ic**: *geriatric*, *psychiatric*, *paediatric*, *anaesthetic*, *obstetric(al)* and not *geriatrical* or *paediatrical*.

Suffixes **-ac**, **-al/-ial**, **-(ul)ar**, **-ary/-ory**, **-ous**, and **-ic/-ical** are used to form adjectives from nouns or verbs with the meaning of *pertaining to*, or *relating to something*.

E.g. spine - spinal cord cell - cellular tissue

sternum - **sternal** bone
cranium - **cranial** nerves
face - **facial** part
thorax - **thoracic** cavity
pancreas - **pancreatic** duct
pelvis - **pelvic** cavity
aorta - **aortic** valve

muscle - **muscular** activity
articulation - **articular** connection
mandible - **mandibular** bone
medulla - **medullary** cavity
element - **elementary** school
respire - **respiratory** organs
circulate - **circulatory** system

Some adjectives are formed from Latin or Greek roots by means of the same suffixes:

vessel - **vascular** diseases
bone - **osseous** tissue
liver - **hepatic** duct
heart - **cardiac** muscle but a **cordial** smile/handshake
neck - **cervical** vertebrae
kidney - **renal** colic
stomach - **gastric** juices

Some other noun suffixes and their meaning

Suffix	Meaning	Term
-cyte	cell	erythrocyte
-algia	pain	neuralgia
-ectomy	removal	nephrectomy
-aemia	blood condition	leukaemia
-gram	record	electroencephalogram
-ion	process	excision
-opsy	process of viewing	biopsy
-pathy	disease condition	adenopathy
-scope	instrument to visually examine	endoscope
-tomy	process of cutting	osteotomy

The **prefix** is a small part that is attached to the beginning of a term. Not all medical terms contain prefixes, but the prefix can have an important influence on meaning, e.g.

hyperglycemia **hyper-** (prefix) means *excessive, above, more than normal*

glyc(o) (root) means *sugar*;

-emia (suffix) means *blood condition*

subgastric **sub-** (prefix) means *under*;
gastr(o) (root) means *knowledge*,
-ic (suffix)

diagnosis **dia-** (prefix) means *complete*,
gnos(o) (root) means *knowledge*,
-sis (suffix) means *state of something*

Some other prefixes and their meaning:

Prefix	Meaning	Term
a-/an-	no/not/without	anemia
endo-	within	endocrinologist
epi-	above, upon	epigastric
ex-	out	excision
hypo-	deficient, less than normal	hypoglycemia
in-	into, in	incision
inter-	between	intervertebral
intra-	inside	intravenous
meta-	change	metabolism
pro-	before	prognosis
re-	back, again	resection
retro-	behind	retrocardiac
sub-	below, under	subhepatic
trans-	across, through	transhepatic

Of course it is not possible to introduce all roots, prefixes and suffixes used in medical terminology on one or two pages. Every body system has also its own specific terms used to describe structure, function or problems connected with the respective organ(s). But once you know how to break down a word into its parts, you are able to understand and recognize thousands of other medical words, instead of the impractical memorising of the whole medical dictionary.

Conclusion

As a great number of scientific and technical terms bear the same ending or are coined from one and the same root or prefix, the paper provided some insight into the principles of word building, permitting to recognize and use many terms without having to learn them separately, one by one.

Although the fundamental role of a doctor is to treat patients, he/she must keep abreast of the latest developments in his/her field, in order to do his/her work effectively. This can be achieved also by reading current literature which is published

mainly in English. Mastering basic medical terminology in English is the first step into the gateway to the latest information.

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PREDSTAVUJEME NOVÉ KNIHY

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Každý odbor má svoju špecifickú literatúru. To sa samozrejme týka aj medicíny. Napriek tomu vo všetkých profesiách je nevyhnutné občas získať informácie z odboru, ktorý je odlišný, alebo doplnujúci. Klinická psychológia je rýchlo sa rozvíjajúcim odborom, ktorý čoraz častejšie zasahuje do rôznych oblastí medicíny. Potrebnou sa stáva spolupráca klinických psychológov najmä na oddeleniach psychiatrie, kde sa zúčastňujú na diagnostike a terapii. Detská klinická psychológia nachádza svoje uplatnenie najmä v detských psychiatrických liečebniach, ale aj na pediatrických oddeleniach. Keďže malých pacientov s psychickými poruchami pribúda, je pre lekára nevyhnutné rozšíriť si vedomosti aj v tejto oblasti. O rozvoji odboru a o tom, že predložená publikácia je veľmi aktuálna a žiaduca, svedčí aj to, že 3. doplnené vydanie vychádza už necelé dva roky po 2. vydání.

Preštudovanie tejto knihy je prospešné. Kniha sa delí na štyri časti. Prvá z nich sa venuje všeobecným otázkam detskej klinickej psychológie. Ďalšia časť, ktorá sa venuje poruchám psychického vývoja, tvorí najrozsiahljšiu časť knihy. Práve v nej nachádza lekár najpotrebnejšie informácie. Má možnosť prostredníctvom niekoľkých kapitol lepšie porozumieť problematike psychológie chorých detí, či už detí postihnutých vrodenou vývojovou chybou, detí s neurologickým, sluchovým alebo zrakovým postihnutím. Dieťa ako pacient nikdy neprichádza k lekárovi samo, vždy sú s ním rodičia. Preto autori rozoberajú aj rôzne reakcie

rodičov pri ich oboznámení sa so závažnou chorobou dieťaťa. Mnoho problémov u dieťaťa vzniká pri jeho odlúčení od matky, po nástupe do školy. Autori teda nezabudli venovať pozornosť problematike školskej zrelosti, špecifickým poruchám učenia a chovania, ako aj emočným poruchám. Dôležitý determinujúci činiteľ pri formovaní osobnosti dieťaťa je prostredie. Priamo v rodinnom prostredí často dochádza k zanedbávaniu, zneužívaniu, týranu dieťaťa. Ale vo svojom okolí sa dieťa tiež prvýkrát stretáva s alkoholom, cigaretami a ďalšími návykovými látkami. Práve pre nezrelosť detskej osobnosti môžu tieto faktory spôsobiť oveľa vážnejšie problémy. Aj to sú témy, ktorým sa v tejto knihe venuje pozornosť. Posledné dve časti sa zaoberajú klinickou psychodiagnostikou a psychoterapiou. Aj keď nie vždy s nimi prichádza do kontaktu aj lekár, ich preštudovanie napomáha porozumeniu odboru.

Podstatná časť publikácie je spracovaná vo forme textu. Tabuliek a obrázkov je v nej málo. Napriek tomu to nie je negatívum, keďže text sa vyznačuje zrozumiteľnosťou a dôležité informácie sú zvýraznené. Psychické poruchy sú spracované v súlade s 10. medzinárodnou klasifikáciou chorôb. Podkladom pri spracovaní tém sa stalo aj množstvo článkov domácich aj zahraničných autorov. Toto všetko zaručuje aktuálnosť publikácie. Každý lekár, ktorý dennodenne prichádza do kontaktu s deťmi, či už so psychickou poruchou alebo bez nej, môže nájsť v tejto knihe výborného pomocníka.

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