

DEBATE AND EDUCATION

Application of word-formation models in medical terms fixation

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In their article the authors present goals of Latin teaching at medical faculties in Slovakia. They analyze in more details word-formation and structure of one-word medical terms from the point of view of their model teaching/learning and fixation. Presentation of the medical terms in models proved to be very effective for adult learners because they provide exact and easy-to-memorize scheme mechanisms that can be analogically applied in the production/manipulation and fixation of a whole range of medical terms. In conclusion several examples – excercises are presented to illustrate their use in teaching practice. (Fig. 1, Ref. 7.)

Key words: medical terminology, word-formation models, word-analysis, one-word terms, medical terms teaching, fixation.

Integral part of each scientific branch is its terminology – its development and care of it. In medicine medical terminology is one of the means how to obtain professional knowledge, therefore it is an obligatory part of syllabuses at medical schools/faculties in the Central Europe, including Slovakia.

Goals in teaching medical Latin include achievement of terminological competence, i.e. capacity to use medical terminology accurately and correctly both in oral and written forms, as well as basic orientation in general characteristics of medical terminology supported by cultural and historical aspects (in the development) of the ancient and medieval medicine and its terminology.

Medical Latin teaching is focused on:

a) specific features of Latin and Greek grammars to provide rules and paradigms necessary in formation/production of selected noun and verbal forms. Selection and the scope of word-formation morphemes is strictly limited with their frequency and practical use and needs of medicine,

b) word-formation as a key to simple and logic fixation of notions and terms in their meaning and structure,

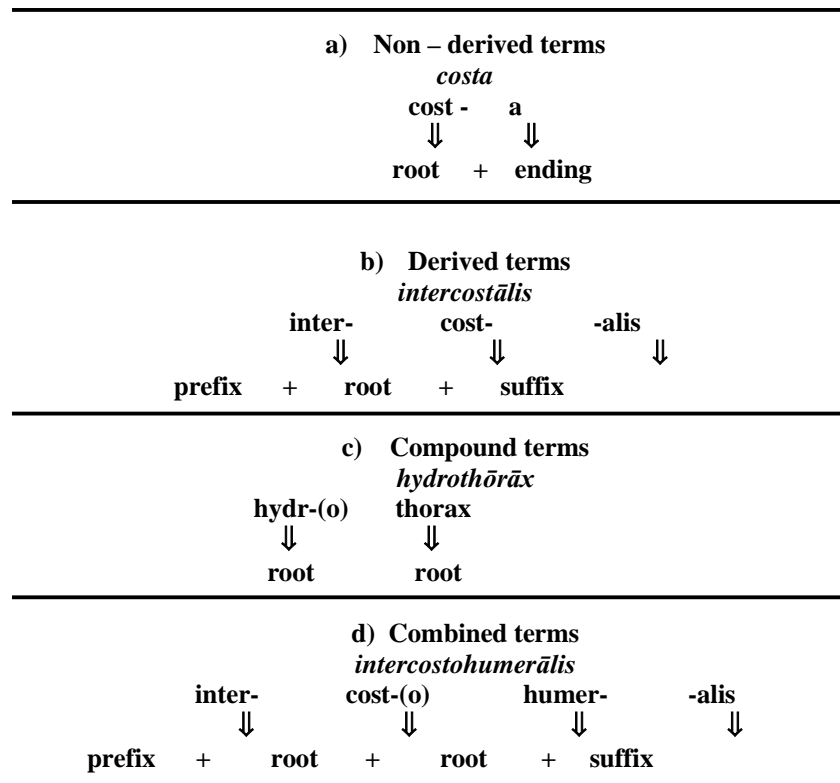
c) vocabulary – selected basic corpus of medical terms representing especially anatomy, but including also exemplary examples of clinical and pharmacological terms. Vocabulary presentation is staged and sequenced according to the grammatical stuff.

In our article we want to concentrate on word-formation and the structure of medical terms. Knowledge of the rules governing the structure of terms, affixation, frequency of word-forming elements/parts and their meanings and relations (synonymic, homonymic, antonymic and polysemantic meanings of prefixes, polyfunctional meaning of suffixes) – all these provide good help in the semantic orientation of compound nouns/terms as well as in an ability to synthesize and analyze/decipher their single constituents. Our teaching experience confirmed effectiveness of model processing and presentation of the terms and language phenomena taught because they provide an exact and easy-to-memorize mechanism of schemes that can be applied in the production and manipulation with a whole range of terms.

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**Word-formation models
illustrating the structure of one-word terms**



Word structure of Greco-Latin medical terms

Basically, terms are divided into **one-word terms** (terms consisting of 1 word) and **complex terms** (terms consisting of more words). In this paper we want to focus just on the structure of one – word terms.

One – word terms can be:

- simple (non-derived): *costa* (*rib*), *vīta* (*life*), *cor* (*heart*)
- derived from the word basis – **root** – by means of **prefixes** and/or **suffixes**: *intercostālis* (*intercostal*), *nanismus* (*nanism*), *anaemia* (*anaemia*)
- composed of two or more single **roots**: *hypophysis* (*hypophysis*), *cheilognathopalātoschisis* (*split of the upper lip, mandible and the palate*)
- various combinations of b) and c): *sternocostālis* (*sternocostal*), *hypothalamotomia* (*hypothalamotomy*).

Although the amount of the needed terms could be studied by memorizing, it seems to be preferable to concentrate on

* They are internationally accepted suffixes which have standard meanings in medicine and in medical terminology present quite extensive inventory, e.g. *-algia*, *-dynia*, *-ectomy*, *-phobia*, *-genesis*, *-graphia*, *-iāsis*, *-iātria*, *-itis*, *-logia*, *-lysis*, *-ōma*, *-ōsis*, *-pathia*, *-penia*, *-plēgia*, *-pnoē*, *-ptoē*, *-rrhaphia*, *-rrhagia*, *-rrhoē*, *-schisis*, *-scopia*, *-stomia*, *-tomia*, *-trophia*, etc.

identification of single **constituent parts**, which means to **know**:

- the **meanings** and **roots** of flexible words, namely exemplary vocabularies, but also Parallel L – G – E glossary
- prefixes** (together with prepositions)
- suffixes** and **professional suffixes** *

In conclusion we present exercises that proved effective in application of word-formation models in medical terms fixation.

E x e r c i s e s

1. What is the common denominator of the following terms?

agraphia () - *anaesthētica* ()
invaliditās () - *impotentia* ()
dissimilis () - *dysgraphia* ()

2. What have the following terms in common?

biventer () - *bīnoculāris* ()
ducentī () - *dicentricus* ()
diplocardia ()

Keys to Exercises 1 and 2 : 1 - negation

2 - two/double

3.A. Three or more Latin or Greek prefixes can express the following meanings:

- “many, more”
- “small”

c/ "away, from"
 d/ "excessive, above"
 e/ "backward"

Which are they?

Key to Exercise 3 A: a/ poly-, plūri-, multi-, pleo-; b/ micro-, lepto-, parvi-; c/ ē-, ex-, dē/des-, ā/ab-; d/ per-, ultrā-, hyper-, super-; e/ opistho-, retrō-, dorso-

3. B. Two or more Latin or Greek prefixes can express the following meanings:

a/ "white"
 b/ "yellow"
 c/ "red"
 d/ "four"
 e/ "one"
 f/ "double"
 g/ "against"

Which are they?

Key to Exercise 3 B: a/ leuco-, alb(i)-; b/ xantho-, cirrho-; c/ rubr-, erythro-; d/ quadri-, tetra-; e/ uni-, mono-; f/ diplo-, bi-, di- g/ o,ob-, contra-, anti-;

4. The following suffixes denote a state or process. Fill in the meaning of the suffix and supply the Latin example from medical dictionary:

-algia	-ōsis
-ōma	-pathy
-cyst	-penia
-odynia	-phobia
-ema	-ptosis
-ia	-rrhage
-iasis	-rrhea
-itis	-stasis
-malacia	-tonia

5. The following suffixes indicate a diagnostic or surgical procedure. Match column A with column B.

Column A	Column B
1. - centēsis	A. setting free, dissolution
2. - ectomia	B. act or method of recording
3. - graphia	C. creation of a mouth or opening
4. - lysis	D. fixation
5. - stomia	E. puncture of a cavity
6. - tomia	F. looking at, examining
7. - pexis	G. cutting
8. - rrhaphia	H. closure by suturing, repair
9. - scopia	I. excision, cutting out

Key to Exercise 5: 1 E, 2 I, 3 B, 4 A, 5 C, 6 G, 7 D, 8 H, 9 F

6. The pregnancy history of a woman is expressed in special terms. Match column A with column B.

Column A	Column B
1. gravida 2, para 1	A. woman who has given birth more than once

2. multipara	B. woman giving birth to her first child
3. nullipara	C. woman who has never had children
4. primipara	D. woman who has been pregnant twice and has one living child

Key to Exercise 6: 1 D, 2 A, 3 C, 4 B

7. Choose the right term for the given condition:

- a) inflammation of many joints:
monarthrītis - polyarthrītis - pānarthrītis
- b) establishment of an artificial opening into the stomach
gastroctomia - gastrotomia - gastrostomia
- c) abnormal smallness of the head:
micrencephalia - microcephalia - microphthalmia
- d) abnormally large ears:
macrosōmia - macrostomia - macrōtia
- e) scanty urination:
oligūria - anūria - dysūria
- f) inflammation of a muscle:
phlebītis - myelītis - myosītis
- g) dissection of the muscles:
myodynia - myotonia - myotomia

Key to Exercise 7: a – polyarthrītis, b – gastrostomia, c – microcephalia, d – macrōtia, e – oligūria, f – myosītis, g – myotomia

8. Translate these expressions by means of adjectives:

Example: injection applied into the vein - *injectiō intrāvenōsa*

Injection –	applied into the artery
	applied into the muscle
	applied into the heart
	applied under the skin

abscess –	inside the skull
	under the mucous membrane
	behind the cecum
	outside the dura mater

gland –	under the tongue
	under the mandible
	bellow the ear
	above the kidney

space –	between the ribs
	between the bones
	surrounding the pharynx
	behind the peritoneum

Key to Exercise 8:

injectiō –	intrāarteriālis, intrāmūsculāris, intrācardiālis, intrācutānea
abscessus –	intrācrāniālis, submūcōsus, retrōcaecālis, extrādūrālis
glandula –	sublinguālis, submandibulāris, parōtis, suprārēnālis
spatium –	interosseum, intercostāle, peripharyngeum, retrōperitoneāle

9. Try to deduce the meanings of the following terms; check the meanings in the central vocabulary:

microangiōscopia	mammographia
spondylarthrōsis	carcinophobia
gastrodynia	laparotomia
haemangiōma	alcoholismus
polymenorrhoea	spasmolysis

10. Find the expressions with the opposite meanings:

a) tachypnoē	f) anaesthēsia tōtālis
b) eutrophia	g) bradycardia
c) dystopia	h) praemātūrus
d) nodī praevesicālēs	i) thermotherapia
e) heterosexuālis	j) pneumonia atypica

Key to Exercise 10: a) bradypnoē; b) dystrophia; c) eutopia; d) postvesicālēs; e) homosexuālis; f) locālis; g) tachycardia; h) mātūrus; i) cryotherapia j) typica

Our paper shows how it is possible to facilitate one-word medical terms teaching/learning and fixation. Complex (multiverbal) medical terms require similar attention and approach and we would like to present them in some next issues.

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