

УДК 81-115

DOI: [https://doi.org/10.14258/zosh\(2021\)1.05](https://doi.org/10.14258/zosh(2021)1.05)

ОСНОВНЫЕ МЕХАНИЗМЫ ТЕРМИНОЛОГИЗАЦИИ ДЕНТАЛЬНОЙ МЕДИЦИНЫ

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BASIC MECHANISMS OF DENTAL MEDICINE TERMINOLOGY

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Следует цитировать / Citation:

Танева С.Й. Основные механизмы терминологизации дентальной медицины // Здоровье человека, теория и методика физической культуры и спорта. — 2021. — 21 (1). — С. 38–45. URL: <http://journal.asu.ru/index.php/zosh>. DOI: [https://doi.org/10.14258/zosh\(2021\)1.05](https://doi.org/10.14258/zosh(2021)1.05).

Taneva S. Y. (2021). Basic mechanisms of dental medicine terminology. Health, Physical Culture and Sports, 21 (1), pp. 38–45 (in Russian). URL: <http://journal.asu.ru/index.php/zosh>. DOI: [https://doi.org/10.14258/zosh\(2021\)1.05](https://doi.org/10.14258/zosh(2021)1.05).

Поступило в редакцию / Submitted 21.09.2020

Принято к публикации / Accepted 30.12.2020

Аннотация. *Цели работы:* обобщить все механизмы создания базы дентальной терминологии; в первую очередь метафоризацию общеупотребительной лексики; сформировать метафорические модели и подмодели в английской и болгарской терминологии дентальной медицины; сосредоточить внимание на практической ценности исследования (преподавание и изучение дентальной терминологии на английском и болгарском языках, чтение лекций по общей лингвистике и прикладной дентальной терминологии, повышение лингвистической компетентности стоматологов). *Материалы и методы исследования:* 173 односложных и сложносоставных английских и болгарских метафорических термина (включая синонимичные варианты обоих языков) были случайным образом собраны из различных специализированных изданий. Применены методы анализа дефиниций, когнитивного анализа, концептуальной интеграции, компонентного анализа и метафорического моделирования. *Обсуждение и результаты исследования:* дается краткое описание основных механизмов образования терминов в области дентальной медицины (лексико-семантический, лексико-морфологический, лексико-синтаксический и заимствование). Акцент делается на *метафоризации*, которая лежит в основе структуры и концептуализации целых систем знаний в специализированных областях. На основе метафорической номинации, взаимодействия специализированных областей и метафорического мэппинга рассматриваемая дентальная терминология была разделена на антропоморфные и неантропоморфные метафорические модели и подмодели: «Человек», «Строительство и архитектура», «Условия жизни», «Продукты питания», «Пространство и время», «Мифология и фольклор», «Природные компоненты»,

«Аква», «Цвет и оттенок», «Акустика» и др. Сделаны следующие *выводы*: 1. Исследованы идентификационная, описательная и номинативная функции дентальной терминологии; 2. Доступны четыре основных метода терминологического образования: лексико-семантический, лексико-морфологический, лексико-синтаксический и заимствование; 3. Метафоризация отмечена как чрезвычайно продуктивный лексико-семантический процесс в дентальной терминологии (посредством метафорического мэппинга); 4. Оценен вклад метафоризации в познание и осмысление реальности в дентальной науке. 5. Обеспечение специализированной коммуникационной стратегии посредством метафоризации, основанной на диалогичности.

Ключевые слова: стоматологическая терминология, механизм формирования терминов, метафоризация, англо-болгарские терминологические единицы, метафорические модели и подмодели.

Abstract: *Objectives:* to summarize all the mechanisms for creating a dental terminology base; to specify one of them: metaphorization of commonly used vocabulary; to form metaphorical models and sub-models in English and Bulgarian dental medicine terminology; to focus on the practical value of the study (teaching and learning English and Bulgarian dental terminology, giving lectures on general linguistics and applied dental terminology, increasing linguistic competence of dental specialists). *Materials and research methods.* 173 monosyllabic and compound English and Bulgarian metaphorical terms (including synonymous variants of both languages) have been collected at random from various specialized editions. Methods of definition analysis, conceptual integration, cognitive analysis, component analysis and metaphorical modelling have been applied. *Discussion and results of the study.* A brief description of the main mechanisms of term formation in dental medicine (lexico-semantic, lexico-morphological, lexico-syntactic and word borrowing) is given. The emphasis is on metaphorization, which underlies the structure and conceptualization of entire knowledge systems in specialized domains. Based on the metaphorical nomination, interaction of specialized domains and metaphorical mapping, the considered dental terminology has been divided into anthropomorphic and non-anthropomorphic metaphorical models and sub-models: „Person”, „Construction and Architecture”, „Living conditions”, „Foodstuffs”, „Space and Time”, „Mythology and Folklore”, „Natural components”, „Aqua”, „Colour and Hue”, „Acoustics”, etc. *Conclusions.* The following conclusions have been made: 1. Identifying, descriptive and nominative functions of dental terminology. 2. Four basic term formation methods: lexico-semantic, lexico-morphological, lexico-syntactic and word borrowing are available. 3. Metaphorization as an extremely productive lexico-semantic process in dental terminology (by means of a metaphorical mapping). 4. Metaphorization contribution to knowing and conceptualizing reality in dental science. 5. Providing a specialized communication strategy by metaphorization (based on dialogicity).

Keywords: dental terminology, term-forming mechanism, metaphorization, English/Bulgarian terminological units, metaphorical models and sub-models.

Introduction

Modern dental terminology is an international unified and codified system, built on the basis of Greek and Latin languages and presented in written form in Latin. The following areas are traditionally formed within its frames:

Fundamental Dental Terminology, Special Dental Terminology, Dental Medicine Technical Aids Terminology and Pharmacological Terminology.

Fundamental Dental Terminology includes terminological units related to:

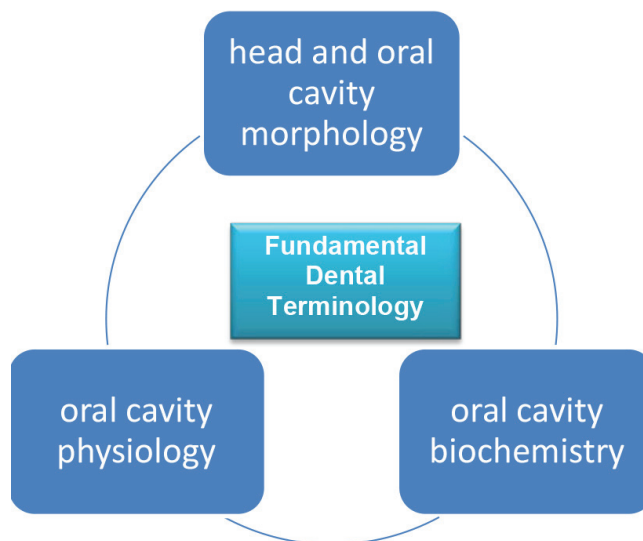


Fig.1. Fundamental Dental Terminology

Special Dental Terminology involves terms associated with:

- conservative dentistry (areas of cariesology and endodontics),
- orthodontics,
- oral and maxillofacial surgery,
- periodontology,

- prosthetic dental medicine,
- pediatric dental medicine,
- dental imaging,
- dental clinic,
- allergology,
- oral pathology,
- implantology.

Dental Medicine Technical Aids Terminology includes terminological units referring to:

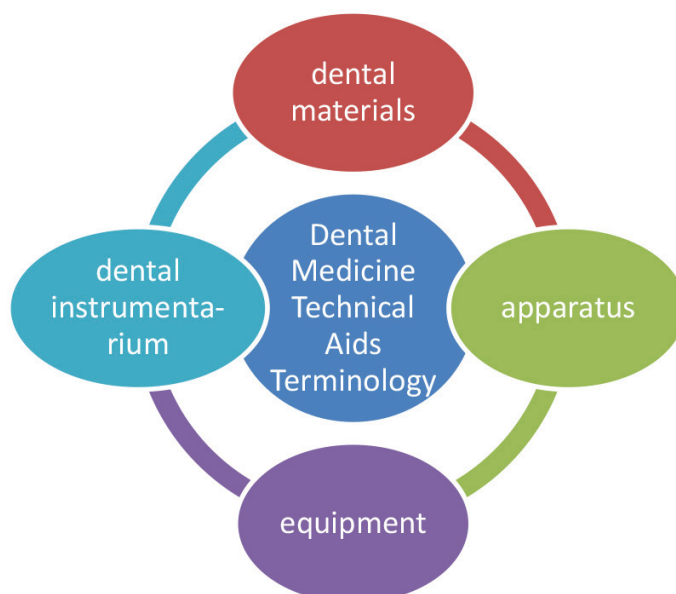


Fig.2. Dental Medicine Technical Aids Terminology

Pharmacological Terminology comprises:

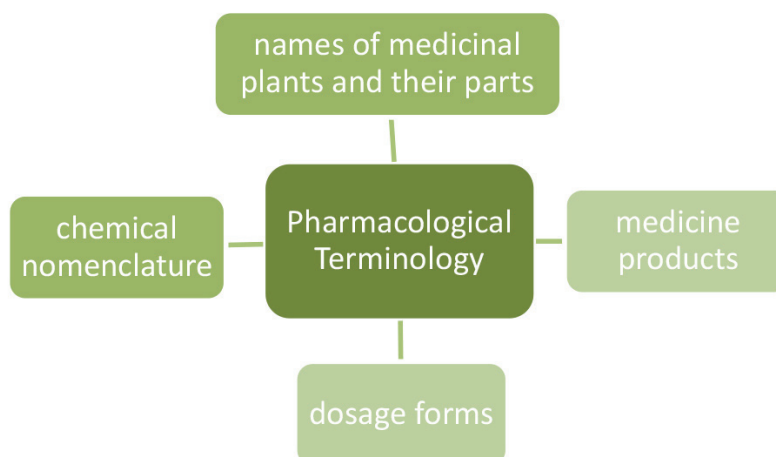


Fig. 3. Pharmacological Terminology

Training in dental medicine requires both competence in diagnosis, etiology, pathogenesis, prevention and treatment of dental diseases, as well as precision and accuracy in handling of dental terminology. Knowledge of the relevant terminology is a must for any specialist in dental medicine. This could easily be realized after one's introduction into the basic mechanisms of terminology.

Purpose and objectives of the study

Therefore, the objectives we have set ourselves in the present research are as follows:

1. To summarize all the mechanisms for creating a dental terminology base.

2. To pay more specific attention to one of them, namely: metaphorization of commonly used vocabulary.

3. To form metaphorical models and sub-models in English and Bulgarian terminology of dental medicine in order to clarify and specify

4. Practical focus – A. to be applied in the process of teaching and learning English and Bulgarian in the dental faculties of medical universities, in giving lectures and conducting seminars on general linguistics and applied terminology; B. to increase the linguistic medical competence of medical doctors, dentists, nurses.

Materials and Methods

The materials we have used and the examples that illustrate the current linguistic research are in English and Bulgarian medical academic

language. **173 monosyllabic and compound English-language metaphorical terms** and their analogous **Bulgarian-language metaphorical equivalents** (including synonymous variants of both languages) have been collected at random from monographs, articles, textbooks, terminological dictionaries, encyclopedias, reference books, Internet catalogs, specialized dental magazines, issued in France, Great Britain, Germany, as well as from official documents, international classifications, etc.

The present study is realized from a nominative-cognitive perspective using **the following methods**: 1. Method of definition analysis; 2. Method of conceptual integration and Method of cognitive analysis (allowing language to be considered as a mental entity generated by human thought and as one of the most important systems of representation of human knowledge); 3. Method of component analysis (the linguistic meaning of semantic markers (components) is divided, a formula with the structure of meanings is constructed and the objectivity of the individual components of meaning is checked); 4. Method of metaphorical modelling.

Discussion and results

Dental medical terminology is a system of terms approved by the national scientific tradition. Terminological units are assimilated formally and grammatically in the respective medical text and presented in written form in Latin (English text) or Cyrillic (Bulgarian text).

By designation, they duplicate the international Greek-Latin terms in accordance with the needs of English/ Bulgarian medical text and have wide word-forming branches in it.

Lexico-semantic, lexico-morphological, lexico-syntactic term formation are the active term-forming processes in dental medical terminology. Along with them, word borrowing (so-called loanwords) is considered as the main term-forming way.

Lexico-semantic term formation is the formation of terms by altering the semantic side of generally spoken language words (Manolova, 1980, 220, Manolova 1994, 46; Hristova, 1999, 224). In connection with the qualitative essence of this change, two lexico-semantic term-forming processes are distinguished: **specialization** of commonly used vocabulary and **transfer of meaning (metaphorization and metonymization** of commonly used vocabulary). Being undergone specialization or transference of meaning, a number of commonly used words live a second life as terms.

Affixation and composition are basic processes of **lexico-morphological term formation**. **Affixation** is expressed in addition of word-forming elements - prefixes and suffixes - to the initial bases of different parts of speech in order to form new terminology words. In this respect, prefixes and suffixes of the respective language acquire the character of terminological elements and are components of the semantic structure of the term. By composition (word formation by combining two or more initial bases of full words in one complex derivative word) a large number of terms nouns and adjectives are formed.

Lexico-syntactic term formation is the formation of term word combinations and is defined as the most productive way of forming terminological units. It is approached from a formal-structural point of view in order to establish the great diversity in terms of the number of components (full lexemes).

Word borrowing is essential to address the needs of terms in English and Bulgarian dental medical literature. Word borrowing of the basic medical terms is from classical Greek-Latin terminology. Most often it is realized

in two ways: **word borrowing by translation and word borrowing of ready-made terms (direct borrowing)**.

The current study focuses in details on **metaphorization in dental medicine terminology** as one of the basic term-forming mechanisms that accompanies the study of human anatomy since antiquity.

In classical language theories, **metaphor** is seen as a phenomenon of language, not thought. It is believed that after the founder of the cognitive theory of metaphor, Michael Reddy, has pointed out that English is much more metaphorical than previously thought, metaphor plays a leading role in the conceptualization of the world and consequently, its sources should not be sought in language but in thought (Reddy, 1979) — a new period in the development of metaphorology begins.

According to contemporary understanding of the role of metaphor in the process of nomination, it is considered to be a cognitive mechanism by which abstract concepts are made meaningful in more specific terms. Therefore, metaphor is one of the fundamental ways of knowing and conceptualizing reality.

Provoked by the change in the paradigm of research as a whole („Cognitive reversal“ period), Lakoff and Johnson provide linguistic evidence that metaphor penetrates the language and thought of everyday life (Lakoff & Johnson, 1998; Lakoff, 1993). They reject the possibility of giving absolute and objective truth, explaining that human experience and understanding play a central role. According to cognitive paradigm view, metaphor is directly related to the thought process and directly affects the perception of reality. This idea is formulated in a concentrated form in Lakoff and Johnson's book „Metaphors We Live By“ (1980), which underlies the cognitive theory of metaphor.

In his works, Jose Ortega-y-Gasset speaks about the communicative focus of the metaphorical nomination (Ortega-y-Gasset, 1990, 71). E.S. Kubryakova emphasizes the dependence of nomination act on the communicative factor. According to her, the new designations are created not only to fix the results of human cognitive and emotional activity, but also to make these results available to other people (Kubryakova, 2004, 63). Since any scientific communication is based on

mutual mental cooperation and mutual dialogue, we can assume that, being a mechanism for the formation of terminological units, scientific metaphorization provides this communicative strategy on the basis of dialogicity.

Thus, taking into account the scale of metaphorical nomination as one of the productive processes of generating language units in today's speech practice, we should recognize metaphor as one of the most significant sources for the formation of terminology (Lipilina, 1998; Taneva, 2015).

Metaphor is the basis for many conceptual connections and ways to connect domains. It is often an interaction of two domains (two-domain operation). Metaphorization involves the partial mapping of one experiential domain onto another. In cognitive linguistics, when studying the internal structure of domains, cognitive models, image schemes and frames are formed. Particularly, in one

of the latest terminological theories – frame-based theory - it is the frames (templates) that have been proposed as the main structural mechanism for specialized domains (Faber, 2005).

The study of metaphorical terms in the system of dental medicine in English and Bulgarian allows us to talk about the essential role of metaphorization as a way of forming terms. Metaphorical terms in the sublanguage of dental medicine are not just single or accidental lexemes, but a whole system in which key concepts from this field of knowledge are verbalized by means of metaphorical transmission. The number of indicated terms in English and Bulgarian dental medicine materials, the thematic lexical diversity, which served as a basis for metaphorization, allow the distribution of metaphorical terms according to the following metaphorical models:

I. Anthropomorphic metaphorical models

Anthropomorphic metaphorical model	Anthropomorphic metaphorical sub-model	Exemplary metaphorical terms (English - Bulgarian)
„PERSON“	„STATES“, „BODY PARTS“, „PHYSICAL ABILITIES“, „SOCIETY“, „QUALITIES“	double-blind placebo/ двойно сляпо плацебо; neck of a tooth / зъбна шийка; jump flap / мигриращо ламбо; orphan disease/ рядка болест, болест „сирак“; wisdom tooth/ мъдрец
„CONSTRUCTION AND ARCHITECTURE“		bridgework / мостовидна (зъбна) протеза; ethmoidal labyrinth/ лабиринт на решетъчната (етмоидална) кост; mouth floor / „под“ (основа) на устната кухина; vestibule of the nose/ предверие на носа; Black's sidewalks/ тротуарите на Блек
„LIVING CONDITIONS“	„HOUSEHOLD ITEMS“, „GAME ITEMS“	bed/ легло, ложе (алвеола); lacrimal sac / слъзна торбичка; cell pellets/ клетъчни пелети; doll's eye symptom / рефлекс на куклените очи
„PROFESSIONAL EQUIPMENT“		chisel/ длето; frenulum linguae / юздичка на езика, френулум; malleus / „чукче“ (кост в средното ухо); sickle flap/ сърповидно ламбо
„MUSICAL INSTRUMENTS“		accordion graft/ „акордеонна“ присадка (трансплантат); drum membrane/ тъпанчева мембрана; lyra / лира
„ACTIVITY“	„OCCUPATION“, „HABITS“	cobbler's suture / обушарски шев; pilot drill / пилотен борер; smoker's tongue / синдром на „черен космат език“
„FOODSTUFFS“		cheesy necrosis, / казеозна, сиренеста некроза; safe an lait spots / родилни петна тип „кафе с мляко“ ; egg bur / яйцевиден борер
„CLOTHING AND TEXTILE“		cap crown / зъбна коронка; capeline bandage / шапка на Хипократ; mantle / мантия, кора (на главния мозък)
„MILITARY AFFAIRS“	„WAR“, „WEAPON“, „AGGRESSION“	guillotine / гилотина (хирургичен инструмент); killing the nerve / умъртвяване на нерв; lanceolate incisor / копиевиден резец ; sagittate suture of skull / стреловиден, сагитален шев на черепа
„SPACE AND TIME“		anterior occlusion / предна захапка; closed bite / дълбока захапка; golden hour / златен час, критичен час; height of disease / разгар, пик на болестта
„MYTHOLOGY AND FOLKLORE“		atlas / атлас (първи шиен прешлен); chimeric tooth/ зъб-химера; ugly duckling stage / стадий „грозното пате“
„LETTER“		O-ring attachment / пръстеновиден атачмънт; sigmoid sinus / сигмоиден синус; „T“ shaped flap / Т-образно ламбо

Table 1. Classification of anthropomorphic metaphorical models and sub-models in dental medicine terminology (including English and Bulgarian examples)

II. Non-anthropomorphic metaphorical models

Non-anthropomorphic metaphorical model	Non-anthropomorphic metaphorical sub-model	Exemplary metaphorical terms (English - Bulgarian)
„NATURAL COMPONENTS“	„RELIEF“, „SOIL AND COMPOSITION“	cavernous sinus / пещерист синус; floor / дъно; fossa / ямка; petrotympanic fissure / петрозно-тъпанчева фисура; acervulus / „мозъчен пясък“
„AQUA“		lacrimal lake / „слъзно езеро“; submandibular duct / канал на долната челюст; water cancer / воден рак (нома, влажна гангрена); primary erythroblastic anemia / средиземноморска анемия
„FAUNA WORLD“	„BODY PARTS“, „BEHAVIOR“, „APPEARANCE“, „APPEARANCE AND BEHAVIOR“	monkey face, monkeyrox / маймунско лице, маймунска вариола; cat cry syndrome, cri-du-chat syndrome / синдром на котешкото мяукане; butterfly rash / пеперудо-подобен обрив по лицето; „rat tail“ rasp / пила тип „миша опашка“
„FLORA WORLD“	„GROUND SURFACE PLANTS“, „FRUIT“, „SEEDS“, „VEGETABLES“	brain stem / мозъчен ствол; root of tongue / корен на езика; taste bud / вкусова луковица; strawberry tongue / „ягодов“ език; oat cell carcinoma / карцином с овесовидни клетки; hair bulb / космена луковица
„ASTRONOMY AND NATURAL PHENOMENA“		flame bur / пламъковиден борер; , semilunar hiatus / полулунна цепка; stellate fracture / звездовидна фрактура
„COLOUR AND HUE/ NUANCE“		purpura / пурпура (тъмночервен или виолетов обрив); raspberry tongue / малинов език; port-wine mark / винени, родилни петна; black hairy tongue / черен космат език
„ACOUSTICS“		machinery murmur, Gibson's murmur, continuous murmurs / сърдечни шумове на Гибсън, механични сърдечни шумове; cracked-pot sound / симптом на „шум от счупено гърне“; pup's murmur / венозен шум, венозно бучене - бръмчене, жужене
„NATIONALITY AND GEOGRAPHY“		Turkish saddle / турско седло; geographical tongue, lingua geographica / набразден, географски език; German measles / рубеола, немска дребна шарка

Table 2. Classification of non-anthropomorphic metaphorical models and sub-models in dental medicine terminology (including English and Bulgarian examples)

The considered and classified examples of dental metaphorical terminological units, the separate metaphorical models and sub-models according to the source field definitely identify metaphorization as a mechanism facilitating the formation of new terms (neologisms) and the processing of existing ones.

Conclusions

1. Dental terminology, as well as fundamental terminology, A) identifies, B) describes and C) names the concepts in the specialized field.

2. Modern English and Bulgarian dental medical terms are formed in conformity with the four basic term formation methods: lexico-semantic, lexico-morphological, lexico-syntactic and word borrowing.

3. Metaphorization of commonly used vocabulary is an extremely productive lexico-semantic process in which a new terminological

unit is formed by means of a metaphorical mapping from one experimental domain to another.

4. As a truly dynamic process, metaphorization provokes linguistic creativity in dental terminology.

5. Being a cognitive mechanism metaphor is one of the fundamental ways of knowing and conceptualizing reality in life and science.

6. Metaphorization contributes to achievement of the main purpose of terminology, namely, to facilitate communication in one or many languages between different users in a particular field of scientific knowledge.

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