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TEACHING MEDICAL TRANSLATION: LINGUISTIC FEATURES OF ENGLISH MEDICAL TERMINOLOGY AND THE DEVELOPMENT OF TRANSLATION COMPETENCE

The article examines the linguistic aspects of translating English medical texts, with particular attention to the difficulties encountered by students of higher medical education institutions when translating scientific medical literature. As English has become the principal language of international medical communication, translation competence is essential for accessing current research, using evidence-based resources, and participating in professional communication.

The study employs analytical, descriptive, and systematisation methods to investigate recent developments in English medical terminology and the challenges of its translation into Ukrainian. The analysis focuses on the structural and semantic characteristics of medical terminology, including borrowings, neologisms, multi-word terms, abbreviations, acronyms, eponyms, and metaphorical and metonymic expressions. It also examines the influence of context on the interpretation and translation of specialised terms.

The findings indicate that the main translation difficulties arise from specialised terminology, polysemy, false cognates, abbreviations, interlingual interference, and structurally complex multi-word terms requiring accurate contextual interpretation. The study demonstrates that successful medical translation depends on linguistic competence combined with a sound understanding of medical concepts and terminology. The results support the integration of language instruction with subject-specific medical training and emphasise the value of a competence-based approach to translator education. The study contributes to the improvement of English for Specific Purposes and medical translation courses and may assist in developing more effective approaches to teaching medical terminology in higher medical education.

Keywords: *English medical terminology, term formation, translation competence, medical discourse, translation studies.*

Statement of the problem. Today, medicine faces complex challenges that require the continuous development of healthcare professionals’ knowledge, practical skills, and clinical competence. Progress in this field depends on international cooperation and the exchange of scientific and professional expertise. Accordingly, English-language instruction in medical universities aims to develop students’ ability to read professional literature, locate and critically evaluate relevant scientific information, and communicate effectively on specialised medical topics. The ability to read and understand original medical publications has become an essential component of medical education, reflecting the growing reliance on English-language research as a source of current scientific evidence and clinical knowledge.

Proficiency in foreign languages, particularly medical English, enables healthcare professionals to keep

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abreast of advances in medicine, critically evaluate English-language scientific literature, and engage in international scientific communication. It also facilitates collaboration with colleagues worldwide and participation in multinational clinical research, promoting the exchange of knowledge and the dissemination of evidence-based medical practice.

These demands highlight the need for high-quality translation of medical literature and underscore the relevance of the present study.

Analysis of recent research and publications. Translation linguistics is a key area of contemporary Translation Studies concerned with the cognitive, textual, and linguistic aspects of meaning transfer between languages. Its development has been shaped by scholars from different research traditions, especially in the United States, the United Kingdom, Canada, and France. The work of Roman Jakobson, Eugene Nida, and Peter Newmark established many of the theoretical principles that continue to inform research on translation processes and methods.

E. Nida argued that effective translation should produce a response in the target audience as close as possible to that of the original readers, emphasising communicative effect rather than formal correspondence [8, p. 12]. R. Jakobson distinguished three types of translation – intralingual, interlingual, and intersemiotic – a classification that remains a cornerstone of translation theory and linguistic research [5, p. 233]. P. Newmark distinguished semantic and communicative translation, arguing that translation methods should reflect the purpose, style, and communicative context of the source text [7, p. 39].

Ukrainian scholars have also made important contributions to Translation Studies. L. Chernovaty, O. Rebriy, T. Kyyak, A. Naumenko, and others have advanced research in translation theory, comparative linguistics, cultural aspects of translation, and translator education.

Medical translation has been widely studied by A. Botsman, S. Vostrova, V. Kalashnyk, I. Korneyko, M. Pylypenko, O. Snezhyk, Yu. Bondar, O. Snitovska, I. Kucherenko, and M. Adamenko, whose work has greatly contributed to the study of medical terminology, specialised translation, and medical discourse. Research on medical translation pedagogy has also been carried out by Yu. Lysanets, O. Ostapchuk, O. Slipchenko, D. Syzonov, N. Hrytsenko, O. Kositska, L. Zastrizhna, and other Ukrainian scholars.

Despite extensive research on medical translation, important issues remain insufficiently studied, including translation strategies, translation transformations, competence-based training, and the integration of language instruction with Latin and clinical terminology. This study examines the linguistic features and word-formation mechanisms of English medical terminology, identifies the main translation challenges faced by medical students, and proposes approaches to improving translation competence in medical education.

Task statement. The purpose of the article is to provide a comprehensive investigation of the linguistic features of English medical terminology, analyse the productive mechanisms underlying its formation, identify the principal challenges encountered by medical students when translating English-language medical texts, and substantiate approaches to enhancing translation competence in medical education.

The research is based on qualitative linguistic methods. The methodology includes: *descriptive method* to classify and interpret English medical terms with regard to their structural, semantic, and functional features; *componential analysis* to examine the semantic structure of medical lexical units; *systematisation* to organise the collected material into thematic and structural groups, providing a basis for further analysis; *Analysis* and *synthesis* to interpret and generalised findings.

The corpus analysed in the study is compiled by means of continuous sampling from English-language research articles, medical textbooks and dictionaries, as well as from the specialised reference sources.

Outline of the main material of the study. Medical language contains extensive specialised terminology related to diseases, physiological processes, pharmaceuticals, diagnostics, and treatment. Consequently, medical translation involves various professional documents, including clinical reports, discharge summaries, case histories, guidelines, and treatment protocols.

In medical education, English for Specific Purposes (ESP) courses introduce students to professional texts from the early stages of training, requiring them to acquire specialised concepts alongside language skills. Medical translation is highly demanding, as it requires linguistic competence and knowledge of medical terminology and practice. Students often face difficulties with terminology, false friends, grammatical and stylistic errors, and abbreviations.

Developing medical translation competence requires knowledge of the main sources of medical terminology: (1) lexical and word-forming resources, (2) borrowings from other languages, and (3) neologisms. Understanding these sources enables future translators to recognise the origin, structure, and semantic development of medical terms, ensuring more accurate and consistent translation. This classi-

fication helps explain the formation and expansion of the medical lexicon.

More specifically, B. Dzhuhanova states that English medical terminology develops through various productive processes, including Greek and Latin borrowings, affixation, compounding, abbreviations and acronyms, eponymy, metaphorical and metonymic extension, and the continuous emergence of neologisms driven by scientific and technological advances [4, pp. 56–65].

Ukrainian scholars T. Kyiak, A. Diakov, and Z. Kudelko distinguish three principal approaches to term formation: the exploitation of the language's internal resources, the creation of new lexical items, and the development of specialised terminology through terminologisation, compounding, and the formation of multi-word terms [1, p. 78].

The standardised nature of medical language has led to the widespread use of multi-word terms in English medical discourse. A similar tendency is observed in scientific communication, where specialised concepts are expressed through diverse terminological structures. Such terms are especially common in emerging and rapidly developing fields, enabling precise and concise representation of complex knowledge. Consequently, multi-word terms have become an essential feature of contemporary scientific discourse. According to R. Martínez, multi-word expressions are pervasive in English and should be treated as lexical units rather than as combinations of independent words [6, pp. 184–186].

The highly standardised nature of medical language has led to the widespread use of multi-word terms in English medical discourse. These structures allow complex concepts to be expressed accurately, precisely, and concisely. As a specialised form of professional communication, medical language relies on standardised and unambiguous terminology, with multi-word lexical units providing an effective means of conveying complex scientific meanings while maintaining clarity.

The formation of multi-word terminological units has therefore become a key mechanism of medical term formation. Such combinations enable the precise representation of highly specific concepts while maintaining semantic density and linguistic economy. Examples of this pattern are provided in Table 1.

An important aspect of teaching medical terminology and translation is introducing students to the increasing use of everyday vocabulary in contemporary medical English. This tendency improves the semantic transparency of terms and facilitates their understanding by healthcare professionals and students.

A considerable number of medical terms is formed through metaphorical transfer, in which familiar objects, colours, shapes, and physical states are used to describe complex conditions and procedures. Examples include *keyhole surgery* (minimally invasive procedures), *butterfly rash* (a characteristic facial erythematous eruption), *strawberry tongue* (an enlarged, red tongue with prominent papillae), *ground-glass opacity* (hazy areas of increased pulmonary attenuation on CT), *frozen shoulder* (a painful condition with restricted shoulder movement), and *broken heart syndrome*

Table 1

Categories and examples of multi-word medical terms formed from the lexical and word-formation resources of the general language

Aspect	Description	Examples
Diseases and disorders	Multi-word terms denoting clinical conditions	*coronary heart disease; heart failure with preserved ejection fraction; chronic obstructive pulmonary disease*; *acute respiratory distress syndrome*; *malignant arterial hypertension; degenerative-dystrophic changes in the spine*
Anatomical structures	Multi-word terms referring to parts of the human body	*anterior cruciate ligament*; *common bile duct*; *internal carotid artery; b**one marrow***
Diagnostic procedures	Multi-word terms designating diagnostic techniques and laboratory methods	*next-generation sequencing; computed tomography angiography*; *magnetic resonance imaging*; *polymerase chain reaction; positron emission tomography*
Therapeutic procedures/ surgical interventions	Multi-word terms referring to medical and surgical treatment procedures	*renal replacement therapy*; *intravenous fluid administration*; *coronary artery bypass grafting*
Pathophysiological conditions	Multi-word terms describing pathological processes and clinical syndromes	*systemic inflammatory response syndrome*; *multiple organ dysfunction syndrome*; *drug-induced liver injury*

(temporary cardiac dysfunction triggered by severe stress) [3].

In contrast, terms such as tennis elbow (lateral epicondylitis) and golfer's elbow (medial epicondylitis) are more appropriately interpreted as examples of metonymy rather than metaphor, since their meanings are motivated by the activities typically associated with these conditions rather than by perceived resemblance.

Hence, metaphor is a distinctive feature of English medical terminology and an effective way of introducing specialised vocabulary. Many medical terms are based on familiar images, shapes, colours, and everyday experiences, allowing complex concepts to be understood through recognisable associations. Their semantic transparency facilitates comprehension and helps students acquire new terminology more effectively.

Borrowing has been a major factor in the development of English medical vocabulary. The modern medical lexicon combines native English resources with terms from classical and modern languages. Greek and Latin borrowings are largely integrated into English and follow its linguistic conventions, whereas many modern European loanwords retain elements of their original form, reflecting a lower degree of assimilation. French has contributed such medical terms as massage, plaque, curette, lavage, and triage; Spanish has introduced mosquito and dengue; Italian has provided influenza, malaria, and quarantine; while German has exerted its greatest influence through eponymous designations commemorating prominent physicians and scientists, including Alzheimer disease, Röntgen rays (a historical term), and Koch's bacillus [2, pp. 6–10].

In developing medical students' translation competence, particular attention should be given to "translator's false friends", or false cognates – words from different languages that appear similar in form or pronunciation but differ in meaning and etymological origin. Such lexical similarities may lead to misinterpretation and represent a considerable challenge in the translation of specialised texts.

In English and Ukrainian, "translator's false friends" comprise several thousand lexical units belonging to four main parts of speech: nouns, adjectives, adverbs, and verbs. Drawing on theoretical approaches developed in linguistics, as well as evidence from dictionaries and medical texts, this study aims to identify the most common types of semantic discrepancies among false cognates used in medical discourse [9, p. 87].

In medical translation, false cognates within specialised terminology present particular difficulties, as terms such as *angina, intoxication, prescribe, sympathetic*, and *complex* may be misinterpreted due to their formal similarity across languages. Such inaccuracies can result in incorrect rendering of medical information and potentially affect the clarity and reliability of clinical communication.

Scientific and technological advances have reshaped medical communication by introducing new concepts in biotechnology, biomedical engineering, artificial intelligence, molecular biology, and digital healthcare. Consequently, medical translation requires not only accurate terminology but also an understanding of the scientific principles behind emerging technologies and treatments. These changes highlight the need to update medical translator training by incorporating current biomedical developments, new terminology, and modern translation methods. Such an approach enhances translation competence and enables specialists to support the accurate exchange of medical knowledge in research and clinical practice.

The vocabulary of medical English continues to expand alongside advances in biomedical science. Progress in genetics, molecular biology, biotechnology, digital medicine, and public health has introduced new terms for emerging diseases, diagnostic methods, treatments, medical devices, and healthcare technologies. This ongoing development reflects the close connection between scientific progress and linguistic change, as medical terminology evolves to represent new concepts in research and clinical practice.

Current medical vocabulary is continually enriched by a variety of productive word-formation processes and semantic developments. Among these, compounding remains one of the main mechanisms of terminological extension, generating expressions such as *telemedicine*, *telehealth*, *immunotherapy*, *digital therapeutics*, and *liquid biopsy*. Prefixation has produced forms including *eHealth*, *mHealth*, and *nanomedicine*, whereas suffixation has introduced items such as *organoid*, *proteomics*, *transcriptomics*, and *anosmia*. Blending has similarly become an established source of lexical innovation, giving rise to such terms as *infodemic*, *microbiome*, *exposome*, and *cyberchondria*. The English medical lexicon has likewise expanded through borrowing from other languages, incorporating terms such as *coronavirus, microbiota, curettage,* and *triage*.

Abbreviations, initialisms, and contractions (e.g., *AIDS, HIV, SARS, CRISPR, EHR, EMR, CAR-T, PBMC, mAb, and ncRNA*) are integral to international medical communication, providing concise desig-

nations for complex biomedical concepts. Although they reflect the English language's tendency towards economy and compression, their formation and interpretation often present challenges for translators and learners.

Medical terminology evolves not only through the introduction of new lexical units but also through shifts in meaning. Existing English words often acquire specialised senses when adopted into professional discourse. Examples include driver in *driver mutation*, storm in *cytokine storm*, blind in *double-blind study*, and architecture in *tissue architecture*. The interaction of these semantic developments with established word-formation processes enables medical vocabulary to reflect advances in biomedical research while meeting the communicative demands of clinical practice and scientific scholarship.

Taken together, these mechanisms account for the continuing growth and flexibility of English medical terminology, allowing it to keep pace with ongoing developments in biomedical science and healthcare.

Conclusions. Medical translation is a highly demanding area of specialised translation, requiring not only advanced language skills but also a clear understanding of medical concepts and terminology. The ongoing progress of biomedical science has led to the constant expansion of medical vocabulary through borrowing, semantic change, neologisation, and productive word-formation processes, creating a diverse and evolving terminological system. The study demonstrates that multi-word terminological units are a distinctive feature of contemporary English medical discourse and one of the main challenges in translation. Their accurate interpretation often depends on understanding the meaning of the term as a whole rather than translating its separate components. Similar difficulties occur with abbreviations, eponyms, metaphorical terms, and newly introduced terminology, which require familiarity with medical practice and accepted professional usage. The results emphasise the need to combine terminology studies, medical knowledge, and practical translation training in the preparation of future medical translators. Knowledge of term-formation patterns, semantic development, and the origins of medical vocabulary helps students analyse unfamiliar terms more effectively and select appropriate translation equivalents.

Further studies may explore translation strategies for emerging terminology in precision medicine, genomics, artificial intelligence, and digital healthcare. Important areas for future research also include corpus-based investigations of medical discourse, the development of standardised Ukrainian equivalents for new English medical terms, and the integration of digital tools into translator education.

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Прокоп І. А., Кітура Г. Я., Єлагінп Н. І. НАВЧАННЯ МЕДИЧНОГО ПЕРЕКЛАДУ: ЛІНГВІСТИЧНІ ОСОБЛИВОСТІ АНГЛІЙСЬКОЇ МЕДИЧНОЇ ТЕРМІНОЛОГІЇ ТА РОЗВИТОК ПЕРЕКЛАДАЦЬКОЇ КОМПЕТЕНТНОСТІ

У статті розглянуто особливості перекладу англомовних медичних текстів та труднощі, що виникають у здобувачів вищої медичної освіти під час роботи з науковою медичною літературою. Важливість вивчення цієї проблематики пов'язана з провідною роллю англійської мови у міжнародній

медичній комунікації, що потребує сформованої перекладацької компетентності для опрацювання сучасних наукових джерел, використання ресурсів доказової медицини та професійного спілкування.

Проаналізовано розвиток англійської медичної термінології та особливості її перекладу українською мовою. Розглянуто структурно-семантичні характеристики медичних термінів, зокрема запозичення, неологізми, багатокомпонентні термінологічні одиниці, абревіатури, акроніми, епоніми, а також метафоричні й метонімічні вирази. Визначено роль контексту у тлумаченні спеціалізованої лексики та виборі перекладацьких відповідників. Окремі труднощі становлять терміни, значення яких не завжди можна передати шляхом буквального перекладу окремих компонентів, оскільки їх інтерпретація залежить від структури терміна, галузевого контексту та особливостей медичного дискурсу.

Виявлено, що найбільші труднощі під час перекладу медичних текстів пов'язані зі спеціальною термінологією, полісемією, «хибними друзями перекладача», абревіатурами, міжмовною інтерференцією та складними багатокомпонентними термінами. Їх точне відтворення потребує не лише мовних знань, а й розуміння медичної терміносистеми та фахової концептуальної бази. Це підтверджує доцільність поєднання мовної підготовки з медичними знаннями у процесі формування перекладацької компетентності. Результати дослідження можуть бути використані під час розроблення та вдосконалення курсів англійської мови для спеціальних цілей (ESP), навчальних програм із медичного перекладу та методики викладання медичної термінології у закладах вищої медичної освіти.

Ключові слова: *англійська медична термінологія, термінотворення, перекладацька компетентність, медичний дискурс, перекладознавство.*

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