

MINISTRY OF EDUCATION AND SCIENCE OF UKRAINE

KYIV NATIONAL LINGUISTIC UNIVERSITY

FACULTY OF GERMANIC PHILOLOGY AND TRANSLATION

Department of Theory and Practice of Translation from the English Language

**TERM PAPER**

IN TRANSLATION STUDIES

**Features of translation of medical terms in scientific and technical discourse**

**Vokhmina Yulia Dmitrivna**

**PA 20-19**

Educational

Programme:

**English and Second Foreign Language:**

**Written and Oral Translation**

Majoring 035 Philology

Research supervisor:

**O.H.Shkuta**

Lecturer theory and practice of

English translation

Kyiv – 2023

МІНІСТЕРСТВО ОСВІТИ І НАУКИ УКРАЇНИ

Київський національний лінгвістичний університет

Факультет германської філології і перекладу

Кафедра теорії і практики перекладу з англійської

мови

Представлено на кафедру \_\_\_\_\_

*(дата, підпис секретаря кафедри)*

Рецензування \_\_\_\_\_

*(кількість балів, «до захисту» («на доопрацювання»),  
дата, підпис керівника курсової роботи)*

Захист \_\_\_\_\_

*(кількість балів, дата, підпис викладача)*

Підсумкова оцінка \_\_\_\_\_

*(кількість балів, оцінка за 4-х бальною  
системою, дата, підпис викладача)*

## КУРСОВА РОБОТА

З ПЕРЕКЛАДУ

### **Особливості перекладу медичних термінів в науково-технічному дискурсі.**

Вохміна Юлія Дмитрівна

студентка групи ПА 20-19

Керівник курсової роботи \_\_\_\_\_

*(підпис)*

Викладач теорії та практики  
перекладу з англійської мови,  
Шкута О.Г

Київ – 2023  
Київський національний лінгвістичний університет  
Кафедра теорії і практики перекладу з англійської мови

Завідувач кафедри теорії і  
практики перекладу з  
англійської мови

\_\_\_\_\_ (підпис)

к.ф.н., доц. Мелько Х.Б.

“ \_\_\_\_\_ ” вересня 2022р

**ЗАВДАННЯ**  
**на курсову роботу з перекладу з англійської мови**  
**для студентів IV курсу**

студент \_\_\_\_\_ курсу \_\_\_\_\_ групи, факультету перекладознавства КНЛУ

спеціальності **035 Філологія**, спеціалізації **035.041 Германські мови та літератури (переклад включно)**, перша – англійська, освітньо-професійної програми **Англійська мова і друга іноземна мова: усний і письмовий переклад**

Тема роботи \_\_\_\_\_

Науковий керівник \_\_\_\_\_

Дата видачі завдання \_\_\_\_\_ вересня 2022 року

**Графік виконання курсової роботи з перекладу**

№ п/п	Найменування частини план курсової роботи	Терміни звіту про виконання	Відмітка про виконання
1.	Аналіз наукових першоджерел і написання <b>теоретичної частини</b> курсової роботи ( <b>розділ 1</b> )	1–5 листопада 2022 р.	
2.	Аналіз дискурсу, який досліджується, на матеріалі фрагмента тексту; проведення перекладацького аналізу матеріалу дослідження і написання <b>практичної частини</b> курсової роботи ( <b>розділ 2</b> )	7–11 лютого 2023 р.	
3.	Написання <b>вступу і висновків</b> дослідження, оформлення курсової роботи і подача завершеної курсової роботи науковому керівнику для попереднього перегляду	28–31 березня 2023 р.	
4.	<b>Оцінювання</b> курсових робіт <b>науковими керівниками</b> , підготовка студентами презентації до захисту курсової роботи	25–30 квітня 2023 р.	
5.	<b>Захист</b> курсової роботи (за розкладом деканату)	2-13 травня 2023 р.	

Науковий керівник \_\_\_\_\_ (підпис)

Студент \_\_\_\_\_ (підпис)

**РЕЦЕНЗІЯ НА КУРСОВУ РОБОТУ**  
**З ПЕРЕКЛАДУ З АНГЛІЙСЬКОЇ МОВИ**

студента(ки) \_\_\_\_\_ курсу групи \_\_\_\_\_ факультету германської філології і перекладу КНЛУ спеціальності **035 Філологія**, спеціалізації **035.041 Германські мови та літератури (переклад включно)**, перша – англійська, освітньо-професійної програми **Англійська мова і друга іноземна мова: усний і письмовий переклад**

Усього набрано балів:

	Критерії	Оцінка в балах
1.	Наявність основних компонентів структури роботи — <i>загалом 5 балів</i> (усі компоненти присутні – <b>5</b> , один або декілька компонентів відсутні – <b>0</b> )	
2.	Відповідність оформлення роботи, посилань і списку використаних джерел нормативним вимогам до курсової роботи — <i>загалом 10 балів</i> (повна відповідність – <b>10</b> , незначні помилки в оформленні – <b>8</b> , значні помилки в оформленні – <b>4</b> , оформлення переважно невірне – <b>0</b> )	
3.	Відповідність побудови вступу нормативним вимогам — <i>загалом 10 балів</i> (повна відповідність – <b>10</b> , відповідність неповна – <b>8</b> , відповідність часткова – <b>4</b> , не відповідає вимогам – <b>0</b> )	
4.	Відповідність огляду наукової літератури нормативним вимогам — <i>загалом 15 балів</i> (повна відповідність – <b>15</b> , відповідність неповна – <b>10</b> , відповідність часткова – <b>5</b> , не відповідає вимогам – <b>0</b> )	
5.	Відповідність практичної частини дослідження нормативним вимогам — <i>загалом 20 балів</i> (повна відповідність – <b>20</b> , відповідність неповна – <b>15</b> , відповідність часткова – <b>10</b> , не відповідає вимогам – <b>0</b> )	
6.	Відповідність висновків результатам теоретичної та практичної складових дослідження — <i>загалом 10 балів</i> (повна відповідність – <b>10</b> , відповідність неповна – <b>8</b> , відповідність часткова – <b>4</b> , не відповідає вимогам – <b>0</b> )	

Оцінка:

«До захисту» \_\_\_\_\_

(42-70 балів)

\_\_\_\_\_ (підпис керівника)

«На доопрацювання» \_\_\_\_\_

(0-41 балів)

\_\_\_\_\_ (підпис керівника)

" \_\_\_\_\_ "  
\_\_\_\_\_ 2022 р

## CONTENTS

INTRODUCTION .....	1
CHAPTER 1	
GENERAL CHARACTERISTICS OF ENGLISH MEDICAL TERMINOLOGY' ....	3
1.1 Definition of a medical term .....	3
1.2 Features of medical terminology .....	9
1.3 Specifics of scientific and technical discourse text analysis.....	15
CHAPTER 2	
ANALYSIS OF THE FEATURES OF TRANSLATION OF ENGLISH MEDICAL TERMINOLOGICAL VOCABULARY .....	21
2.1 Lexical transformations in the translation of medical terms.....	21
2.2 Grammatical transformations in the reproduction of English medical terms into Ukrainian.....	25
2.3 Lexico-semantic transformations in the translation of medical terminology.....	29
CONCLUSIONS .....	32
BIBLIOGRAPHY .....	33
LIST OF REFERENCE SOURCES .....	34
BIBLIOGRAPHY.....	35
ANNEX .....	36

## INTRODUCTION

This term paper is devoted to the analysis and research of the peculiarities of reproduction of English medical terms into Ukrainian based on English medical texts. Given the fact that terminology is a relatively young scientific discipline that deals with general theoretical issues of terms, terminology, nomenclature, in recent decades, we can observe a special interest of linguists and specialists in various fields of science and technology in the study of the structure and semantic features of medical terms, the peculiarities of their translation, etc. The topic of this paper is due to the fact that due to the development of science and medicine in the modern world, the expansion of our country's foreign relations and the intensification of the process of developing professional communication of medical professionals, there is a growing interest and need to study medical terminology and the specifics of its translation. This can be explained by the growing flow of scientific and technical information, the integration of sciences, and the intensification of term creation. The intensive development of scientific and technical terminology, including medical terminology, contributes to the importance of a clear systematisation of terminology.

In the process of reproducing a medical term in translation, the main task is to convey the deep cognitive meaning of the terminological unit in the most concise and understandable form for representatives of the receiving linguistic culture.

Translation of medical texts requires a translator to have knowledge of the subject matter, some experience in the practice of translation and interpreting, and in-depth theoretical knowledge of the specifics of the style of medical texts.

The relevance of the proposed work is determined by the general direction of linguistic research on the study of the specifics of medical terms translation. The relevance of the research topic is also reinforced by the fact that due to the rapid development of technologies in the field of medicine, ensuring adequate translation of medical terms is an important component of translation practice. The proposed work provides an opportunity to clarify and highlight a number of topical issues related to

the category of medical term, starting with the problem of defining the term, its classification, structural and semantic features, etc.

The purpose of this term paper is to research, analyse and summarise theoretical issues related to the problem and peculiarities of reproducing English medical terms into Ukrainian based on the material of English medical literature.

To achieve this goal, the following tasks need to be fulfilled:

- to define the concept of a medical term;
- to identify the main features of a medical term;
- to analyse the specifics of medical texts;
- to establish the structural and semantic features of medical terms;
- to consider the peculiarities and difficulties of translating English medical terms into Ukrainian.

The object of the study is medical terminology. The subject of the study is the peculiarities of reproduction of English medical medical terms into Ukrainian.

The following research methods were used to solve the tasks set:

- 1) comparative analysis as a leading translation method was used to compare both the original and the translation text as a whole and at the level of individual components;
- 2) the method of continuous sampling of English medical terminological units used in the language of British postmodern artistic discourse and their equivalents in Ukrainian;
- 3) structural and semantic analysis to study the formal and semantic characteristics of both English medical terminological units and their equivalents;
- 4) functional analysis to determine how the functional characteristics of the source texts and/or units determine the ways of their foreign language reproduction.

# CHAPTER 1

## GENERAL CHARACTERISTICS OF ENGLISH

### MEDICAL TERMINOLOGY

#### 1.1 Definition of a medical term

The rapid development of modern science and technology creates a special need for a clear definition of key concepts in science, which contributes to the emergence of special words to describe new objects, phenomena and processes. Terms are becoming an integral part of everyday life and are part of the specialised worldview of professionals. Clear terminology ensures the accuracy and clarity of understanding of scientific thought. In modern realities, the concepts of "term" and "terminology systems" are used in various fields of science, such as medicine, linguistics, economics, law, semiotics, etc.

Terms and terminology systems function in the same way as other lexical items in a language, but their scope is usually limited to the specific science they represent. The terms of each branch of science, technology, and production form their own systems, which are determined primarily by the conceptual relations of professional knowledge in the attempt to express these relations by linguistic means. Unlike common vocabulary, a special scientific term is always the result of a theoretical generalisation, a sign of a scientific concept, which is used to form scientific theories, concepts, provisions, principles, and laws. The terms of each branch of science, technology, and production form their own systems, which are determined primarily by the conceptual relations of professional knowledge in the attempt to express these relations by linguistic means. The function of a term is that it is intended to define a certain scientific concept in its highly specialised terminology, revealing all its structural, semantic and functional features.

The current level of development of science places high demands on the language of scientific communication and, above all, on terminology. Despite the existence of



many fundamental studies on the theory of the term, a number of problems remain unresolved. For example, there is still no consensus on the definition of the term "term" among scholars dealing with terminology issues. Despite the large number of scientific works devoted to terms (such as the works of G. O Vinokur, A. A. Reformatsky, D. S. Lotte, B. M. Golovin, V. P. Danilenko, O. V. Superanska and many others), one of the main problems of understanding a term as a linguistic category in modern linguistics is its definition. Although terminology as a science has been developing rapidly in recent years, there is still no single generally accepted definition of the term. Medical terminology is a multidimensional concept, comprising about 160,000 terms and stable term combinations that are part of the terminological fields of a number of medical and biological disciplines. Such a huge terminology system is naturally formed and has a long history. Its characteristic feature, which significantly influenced the organisation of our study and determines the course of translation activities, is the presence of Latin and Greek roots in Ukrainian and English terms. When considering the development of medical terminology as a set of terms for objects and phenomena related to the anatomy of the human body, diseases, types of therapy, etc., the beginning of its formation dates back much earlier than the emergence of terminology as a science. Medical vocabulary is a professional terminology system that originated the earliest in comparison with the terminology systems of other sciences, as it was formed, absorbing the achievements of world civilisation, at the exact point in time that corresponded to its development. Scientific medical terminology is a living and dynamic system that changes, reflecting the development, needs and trends of modern medical science, taking into account the needs of patients themselves (Lytvynenko 24). In terms of its composition, medical terminology is a complex of terminology systems of medical, biological, clinical and pharmaceutical disciplines, which are composed of the following key groups of terms

- 1) anatomical terminology or anatomical nomenclature (e.g. gingival sulcus, maxillary dental arch, incisor, canine, etc.). Anatomical terminology, or nomenclature, which is a scientifically based list of names of anatomical terms used in

medicine and biology, is a reflection of the conceptual apparatus of anatomy as a science. C. Galen, Hippocrates, and A. Vesalius were at the origins of the formation and development of international anatomical nomenclature (Korol 80). Anatomical terminology is the basis of medical communication and is based on the principle of using the same Latin names for each structure in different countries. Currently, the newest International Anatomical Nomenclature (English-Latin), adopted in 1997 in São Paulo (Brazil), is widely used around the world (Cherkasov 5). It was on its basis that the Ukrainian International Anatomical Nomenclature edited by I. Bobryk and V. Koveshnikov was created and published in Kyiv in 2001, and in 2010 a textbook edited by Professor V. Cherkasov "International Anatomical Terminology (Latin, Ukrainian, Russian and English Equivalents)" was published, which served as a source of medical nomenclature in the process of forming a sample of terms for the compilation of a dictionary of medical terms. The roots of Ukrainian terminology go back to the period of the Ukrainian revival of the 1930s. Thus, the anatomical nomenclature in Ukrainian called - *Nomina Anatomica Ucrainica* || edited by O. Kurylo was published in 1925, taking into account the Basel nomenclature (*Nomenclature of Anatomy and Medicine* 9).

More generally speaking, nomenclature is a list of names, terms, titles used in a particular field of science, industry, etc. Nomenclature units should be distinguished from terms, given that the difference between them is that terms are based on general concepts, while nomenclature names are based on specific ones (Bulyk-Verkhola 21).

2) highly specialised terms (including clinical terms): this group includes the terminology systems of the relevant medical fields, such as dentistry, neurology, surgery, ophthalmology, obstetrics and gynaecology, psychiatry and 16 other clinical disciplines, for example (in dentistry): candidiasis, impression, gingivitis, stomatitis, pulp extraction, gum shaper, endodontic canal, impression spoon, etc. It is worth noting that one of the most significant terminology systems in the medical industry is clinical terminology. It includes the names of diseases, symptoms, functional reactions, syndromes, reflexes, morphological disorders, research methods, etc. It is

worth noting that anatomical terminology and nomenclature operate mainly with vocabulary of Latin origin, while the basis of clinical dental (as well as other medical) terminology is made up of words of Greek origin. And such a division is quite traditional and justified, moreover, the predominance of terms of ancient Greek origin in the clinical terminology system is explained not only by historical reasons. Such a characteristic of clinical terminology ensures systematicity, which is manifested in the presence of word-formation potentials of term elements that carry a certain semantic load. Also, most clinical terms are international, which is due to their formation in different languages on the basis of borrowings from Latin (Svitlychna 58).

3) general medical terms, which include general clinical medical concepts (dysplasia, ectopy, anamnesis, erythrocyte sedimentation rate, therapy, symptom, lateral, etc.)

4) pharmaceutical terms (terms of pharmaceutical production, chemical nomenclature, names of medicinal plants, terms of clinical trials, etc., for example: calcium hydroxide, orthophosphoric acid, chamomile, film-coated tablets, clearance, drag).

When considering the genesis of medical terms, we must first of all define the concept of genesis. Genesis, also genesis (Greek: γένεσις from the Greek γέννω - generate, create, Latin: genesis - origin, occurrence; the process of formation). In science, it is a description of the origin, emergence, formation, development, metamorphosis or (optionally) death of objects. Therefore, based on the definition of this concept, we will consider the emergence of medical terms and their origin. The endless process of cognition of the world, the emergence of new concepts and the modernisation of existing ones, the discovery and creation of new objects of real reality require the language to provide its speakers with the necessary number of words for nomination. The medical terminology system of English is quite diverse in its semantic and morphological structural characteristics. According to L.S. Rudinska, "the sources of terminology formation are associated with the means of the general literary language (lexical and word-formation), with borrowings from other languages and, above all, with borrowings of international Greek and Latin term elements and with word-formation, including eponyms" (107-8). One of the most common sources of

enrichment of the medical terminology lexicon and the most important way of forming new terms is word formation or stem formation. The following components can serve as bases: -phobia, which characterises a person's pathological fear of something: telephonophobia - fear of using the mobile telephone; ailurophobia - fear of cats; tomophobia - fear of medical operations; demophobia - fear of crowds of people; zoophobia - fear of animals; aquaphobia - fear of water; glossophobia - fear of speaking in public; heliophobia - fear of the sun; hippophobia - fear of horses; agoraphobia - fear of enclosed area; - obsession, -mania, madness about something: pyromania. The vast majority of English terms are formed by affixation using Greek and Latin prefixes, suffixes and roots.

It is noteworthy that in general, the English language is quite fluent in accepting and assimilating elements and words from other languages, especially in the field of science and technology. The advantage of this method is that new concepts and inventions can be easily and clearly named by specialists. For example, a newly invented device for crushing kidney and biliary stones in a non-invasive 18 and non-surgical way was named a shockwave lithotripter (дистанційний літотриптор) (from the Greek lithos "stone" + tripsis "friction"). The fixation includes several forms and performs several functions. Formally, it can take the form of a prefix and suffixation. From a functional point of view, it can be used either to mark or modify classes of words (parts of speech). In fact, most English suffixes involve a change in word class, whereas prefixes are used for definition (Sager 22). The prefixes of the term system under consideration can be divided into three groups: highly productive - dis- (to disbrain), re- (reinfusion), anti- (antifat), inter- (interosseous); medium productive - un- (uncured), over- (overbreathing); low productive - under- (undertoe), out- (outbreak). Derivation is widely used to create new terms. The suffix subsystem of medicine can be represented in the following groups: high-productive: a) Noun: -ion, -er, -ism, -ity (embolism); b) Adjective: -ic, -ous, -al (Intravenous). Another phenomenon of the word-formation order, which is the source of a significant number of intra-systemic new formations, is widely known - abbreviation, which is associated

with the rationalisation of language. L.R. Rudinskaya considers the phenomenon of abbreviation "...as a process of creating units of secondary nomination with the status of a word, consisting of truncation of any linear parts of the source of motivation and leading to the emergence of a word that in its form reflects some part or parts of the components of the original motivating unit" (25). In English, there is a tendency to abbreviate any term (LN -liquid nitrogen). The phenomenon of ellipsis is also used to create new terms. An ellipsis is characterised by the omission of one of the components of a phrase; the remaining component does not undergo damaging changes in its morphemic structure, but only "condenses the semantics of the entire phrase" (cord -spinal cord, gastric -gastric ulcer). Ellipsis as a linguistic phenomenon is quite common in professional groups related to public activities. One of the most productive areas of the lexicon of modern medicine is the use of eponyms. Eponyms are words with a proper name as the first component. These terms play an important role in naming new phenomena or discoveries in the field of medicine due to the established international tradition of naming a particular discovery or invention after the scientist who made the discovery or invention. There are several names here: 1) methods of research and treatment (Bailey's method) 2) diseases (Hodgkin's disease) 3) anatomical units of the body (Horner's muscle) 4) medicines (Salk and Sabin vaccine) 5) syndromes (Down's syndrome) Eponyms can be divided by the way they are formed: - noun + of + proper name (pouch of Douglas (James Douglas); ampulla of Vater (Abraham Vater)); - proper name transformed into an adjective (Haversian canal (Clopton Havers); Gasserian ganglion (Johann Gasser)). (Zubova, 31) Based on this, we can conclude that medical terminology vocabulary is limitless in its word-formation capabilities. Without equivalents in other languages, the analysed medical terms are borrowed by different languages and become part of the international vocabulary. Thus, in this sub-section, we have considered medical terms as part of the general terminology, as well as defined the concept of genesis, analysed the genesis of medical terms and identified the types of medical term formation.

## 1.2 Features of medical terminology

Modern medical terminology is the result of centuries of development in global medicine. Regardless of the national language in which medical terminology is presented, it contains a significant proportion of lexical and word-formation units of common linguistic origin, as well as common structural models. This is due to the overarching and persistent influence that the two classical languages of the ancient world - Ancient Greek and Latin - have had on medical terminology for many centuries and continue to do so to this day [20]. The whole set of medical terms, together with the terms of related sciences (biology, chemistry, physics, microbiology, radiology, genetics, psychology, engineering, etc.) used by doctors, is a large macro system comprising several hundred thousand names, including synonyms and names of medicines. The components of this macrosystem, the aggregates of terms of individual sciences and fields of knowledge, form private microsystems of terms. Each term is an element of a particular micro-term system (anatomical, therapeutic, obstetric, endocrinological, haematological, etc.). Each term occupies a specific place in the microsystem and is in fixed generic or other relationships with other terms of this microsystem [22]. At the same time, the terms of different microsystems form certain structures of relations with each other at the macrosystem level. Currently, these structures reflect a twofold trend in scientific progress: the differentiation of medical sciences, on the one hand, and their integration, on the other.

Despite the large number of works devoted to medical terminology in the domestic and foreign literature, the linguistic aspect of studying terminological vocabulary still requires further research. Medical terminology is a specific layer of vocabulary and, due to its structural, semantic and stylistic features, differs from the common vocabulary and thus occupies a special place in the lexical system of the language.

The rapid quantitative growth of the number of terms, the contradictory intertwining of many different micro-terminology systems, the presence of opposing hypotheses, theories, scientific schools, and the lack of systematic work on streamlining individual

micro-systems - all this has led to serious difficulties in the development of medical terminology in the second half of the 20th century and causes its shortcomings. First and foremost, these include the spontaneous, almost uncontrollable growth of the terminology fund, which leads to constant clogging of the terminology system with inferior terms, as well as inaccuracy, vagueness, ambiguity of many terms, a large number of synonyms, etc.

Medical terminology is a set of special names understood as standard units of a special name serving the scientific or professional field of modern official medicine [1, p. 31]. It should be noted that at the present stage, medical terms are widespread in colloquial and literary languages, in the field of healthcare and science. Medical terminology in the content aspect is represented by the following concepts:

- formations and processes occurring in the human body and various changes in its development;
- names of diseases and pathological conditions, forms of their treatment and signs (symptoms, syndromes), pathogens and vectors of diseases
- environmental factors that affect the human body;
- methods of diagnosis and treatment of diseases;
- names of surgical operations;
- names of apparatus, devices, instruments and other technical devices, equipment, furniture for medical purposes;
- medicinal products combined by their properties, medicinal plants etc.

When considering the development of medical terminology as a set of terms for objects and phenomena related to the anatomy of the human body, diseases, types of therapy, etc., the beginning of its formation dates back much earlier than the emergence of terminology as a science. The medical vocabulary is a professional terminology system that originated the earliest in comparison with the terminology

systems of other sciences, as it was formed, absorbing the achievements of world civilisation, at the exact point in time that corresponded to its development. Scientific medical terminology is a living and dynamic system that changes, reflecting the development, needs and trends of modern medical science, taking into account the needs of patients themselves (Lytvynenko 24). In terms of its composition, medical terminology is a complex of terminology systems of medical, biological, clinical and pharmaceutical disciplines, the totality of which is made up of the following key groups of terms:

1) anatomical terminology, or anatomical nomenclature (e.g. gingival sulcus, maxillary dental arch, incisor, canine, etc.). Anatomical terminology, or nomenclature, which is a scientifically based list of names of anatomical terms used in medicine and biology, is a reflection of the conceptual apparatus of anatomy as a science. C. Galen, Hippocrates, and A. Vesalius were at the origins of the formation and development of international anatomical nomenclature (King 80). Anatomical terminology is the basis of medical communication and is based on the principle of using the same Latin names for each structure in different countries. Currently, the newest International Anatomical Nomenclature (English-Latin), adopted in 1997 in São Paulo (Brazil), is widely used around the world (Cherkasov 5). It was on its basis that the Ukrainian International Anatomical Nomenclature edited by I. Bobryk and V. Koveschnikov was created and published in Kyiv in 2001, and in 2010 a textbook edited by Professor V. Cherkasov "International Anatomical Terminology (Latin, Ukrainian, Russian and English Equivalents)" was published, which served as a source of medical nomenclature in the process of forming a sample of terms for the compilation of a dictionary of medical terms. The roots of Ukrainian terminology go back to the period of the Ukrainian revival of the 1930s. Thus, the anatomical nomenclature in Ukrainian called -*Nomina anatomica ukrainica* edited by O. Kurylo was published in 1925 with was published in 1925, taking into account the Basel nomenclature (Nomenclature of Ukraine 9). For example, the basis of medical terminology is made up of borrowings from Greek and Latin or terms that were



created artificially from Greek and Latin term elements. In English, more than 95% of medical terms were created on the basis of classical languages [15; 27]. In addition, the anatomical and histological nomenclature that is part of the medical terminology is composed entirely in Latin, based on its alphabet, phonetics and grammar.

More generally speaking, nomenclature is a list of names, terms, titles used in a particular field of science, industry, etc. Nomenclature units should be distinguished from terms, given that the difference between them is that terms are based on general concepts, while nomenclature names are based on specific ones (Bulyk Verkhola 21).

2) highly specialised terms (including clinical terms): this group includes the terminology of the relevant medical fields, such as dentistry, neurology, surgery, ophthalmology, obstetrics and gynaecology, psychiatry and 16 other clinical disciplines, for example (in dentistry): candidiasis, impression, gingivitis, stomatitis, pulp extraction, gum shaper, endodontic canal, impression spoon, etc. It is worth noting that one of the most significant terminology systems in the medical industry is clinical terminology. It includes the names of diseases, symptoms, functional reactions, syndromes, reflexes, morphological disorders, research methods, etc. It is worth noting that anatomical terminology and nomenclature operate mainly with vocabulary of Latin origin, while the basis of clinical dental (as well as other medical) terminology is made up of words of Greek origin. And such a division is quite traditional and justified, moreover, the predominance of terms of ancient Greek origin in the clinical terminology system is explained not only by historical reasons. Such a characteristic of clinical terminology ensures systematicity, which is manifested in the presence of word-formation potentials of term elements that carry a certain semantic load. Also, most clinical terms are international, which is due to their formation in different languages on the basis of borrowings from Latin (Svitlychna 58).

3) general medical terms, which include general clinical medical concepts (dysplasia, ectopy, anamnesis, erythrocyte sedimentation rate, therapy, symptom, lateral, etc.)

4) pharmaceutical terms (terms of pharmaceutical production, chemical nomenclature, names of medicinal plants, terms of clinical trials, etc., for example: calcium hydroxide, orthophosphoric acid, chamomile, film-coated tablets, clearance)

One of the most important feature of medical terminology is its internationality. Based on the fact that Greco-Latin terms form the basis of medical terminology in almost all European languages, most medical terms are international. In the professional language of a medical professional in any country in the world, some special expressions are used only in Latin. For example: *in vivo*, *in vitro*, *per os*, etc. Diseases, pathologies, symptoms, disease vectors, and medical devices get their names from the Greek-Latin vocabulary. With a few exceptions, terms with Latin roots are usually used to indicate a part of the human body, and terms based on Greek roots indicate that this part is being examined or that there is some kind of pathology in it [19]. For example, the medical term for the stomach is "intestinum", which is of Latin origin, but the branch of science that studies intestinal diseases is called enterology, a term of Greek origin.

Terms borrowed from the Greek language are often used to define pathologies, such as dystrophia, from the Greek *dys* - hard, bad, ill + *trophia* food, nutrition; allergy, from the Greek *allos* - other, different, strange.

Active formation of terms from term elements of classical languages has led to the fact that medical terms have a high degree of motivation and are semantically transparent [7].

In order to replenish the fund of medical terminology, eponymic terms are actively used. Eponyms are proper names that have become common names in a particular field of knowledge. In medicine, these are usually the names of diseases, various pathological conditions, any concept, method or drug after the personal name of the person who discovered or invented it (Bekhterev's disease, Quincke's edema, Hoffmann's balm, Botkin's drops, etc.).

Linguist N.O. Gimer identifies five groups of medical terminology, depending on the origin of the borrowing [3]:

1. Greek - from the time of Hippocrates and Galen: colon - colon; diastole - diastole; systole - systole;
2. Latin - from Celsus and the Middle Ages: virus;
3. Greek, but Latinised, or in the endings: ectomia (instead of ectome); thorax - thoracalis (instead of thorax), or in transcription: cystis (in Greek "cystis); coeliacus (Greek for "coyle"); aether (Greek for "aether");
4. hybrid words, i.e. words of mixed half-Latin and half-Greek origin: ovariectomy, lipaciduria, funiculitis;
5. words borrowed from modern languages.

Medical terms can be broadly divided into terms consisting of one word and terms consisting of several words. Single-word terms can be simple (non-derivative) words, derivative words, compounds of derivative and compound words [24].

Three main structural types of terms can be distinguished in the composition of one-word medical terms: simple, affixed and complex [4, p.121].

- Simple terms are one-word terms with the same stem as the root.
- Affixed terms are one-word terms whose base contains the root and affixes, such as resuscitation, discomfort, deterioration.
- Compound terms are one-word terms that contain at least two root morphemes at least two root morphemes: bottle-fed, aid-man, cardiography, brainstem.

### **1.3 Specifics of scientific and technical discourse text analysis**

Scientific and technical discourse is a type of language used in academia and research fields, which is characterized by its precision, objectivity, and specificity. Analyzing this type of discourse requires a unique set of skills and knowledge that are different from analyzing everyday language.

Scientific and technical discourse text analysis involves the examination of written or spoken communication in academic and scientific contexts. This type of discourse is characterized by its specialized terminology, technical language, and precise use of vocabulary. It is used in fields such as engineering, medicine, mathematics, and science. The primary goal of scientific and technical discourse is to communicate complex concepts and ideas in a clear and concise manner.

One of the main features of scientific and technical discourse is the identification of key terms and concepts. These terms are often specific to the field in question and may have a different meaning than they do in everyday language. For example, the term "control group" in a scientific experiment has a specific meaning that is different from its use in everyday conversation. Understanding the meaning and usage of these terms is crucial to the analysis of scientific and technical discourse.

Another important aspect of scientific and technical discourse text analysis is the understanding of the context in which the communication is taking place. This includes the specific field or discipline, the intended audience, and the purpose of the communication. For example, a research paper in the field of biology may use different language and terminology than a research paper in the field of physics.

In addition to understanding the context, scientific and technical discourse text analysis also involves examining the structure of the communication. This includes identifying the thesis statement, supporting evidence, and conclusions. Scientific and technical discourse often follows a specific format, such as the IMRAD (Introduction, Methods, Results, and Discussion) format used in scientific research papers.

Understanding the structure of the communication is essential to fully comprehend its meaning.

Finally, scientific and technical discourse text analysis also involves an understanding of the rhetorical devices used in the communication. These may include the use of statistics, graphs, and other visual aids to support arguments. Understanding how these devices are used can help to determine the effectiveness of the communication.

In scientific and technical discourse, the use of precise terminology is crucial to ensure clear and accurate communication. Scientific and technical fields often deal with complex concepts and ideas, and using the right terminology can help to convey these ideas accurately and efficiently. In this article, we will explore the importance of terminology in scientific and technical discourse, and discuss some of the key terms commonly used in these fields.

Terminology in scientific and technical discourse serves several important purposes. First and foremost, it helps to ensure that communication between scientists and engineers is precise and unambiguous. Using the right terminology ensures that everyone is on the same page and understands the concepts being discussed. This is particularly important in interdisciplinary fields, where researchers with different backgrounds and expertise need to work together. In addition, precise terminology allows for clear and efficient communication of complex ideas. Technical terms often have very specific meanings that cannot be conveyed accurately using ordinary language. By using the appropriate terminology, scientists and engineers can describe complex concepts in a concise and accurate way.

Now let's do an analysis of article «How magnesium affects your sleep and anxiety » from National Geographic. URL:

<https://www.nationalgeographic.com/premium/article/diet-magnesium-anxiety-sleep-better-myth> using the analysis scheme provided in the manual.

## Magnesium for anxiety?

Magnesium is essential for human health, playing a role in a wide variety of functions, including absorption of vitamin D. Magnesium deficiency is uncommon, though it is more frequent in people with gastrointestinal illnesses, type 2 diabetes, and alcohol dependence. Inadequate amounts may increase the risk of cardiovascular disease and stroke, but it can be hard to determine whether someone is getting enough since blood tests for magnesium don't accurately reflect how much is actually in the body.

Still, most studies estimate that somewhere between 45 percent and 50 percent of Americans fall short of the daily recommended amounts: 310-360 milligrams a day for women and 400-420 mg for men. The richest food sources of magnesium include green leafy vegetables, such as spinach, as well as avocados, cocoa (especially dark chocolate), and seeds and nuts—almonds, pumpkin seeds, peanuts, sunflower seeds, cashews, hazelnuts, and even popcorn.

A diet without magnesium-rich foods may be reason to take supplements, but will doing so ease anxiety symptoms? Possibly, if the anxiety is relatively mild according to Gregory Scott Brown, a psychiatrist and author of the *The Self-Healing Mind*.

“We definitely need more and bigger studies, but there is some evidence that magnesium can help with mild anxiety and even mild forms of depression,” says Brown, an affiliate faculty member at the University of Texas Dell Medical School in Austin. “If someone's feeling wired and kind of wound up, and they want to try something ‘natural’ or take a supplement, magnesium wouldn't be a bad place to start.”

A randomized controlled trial in 2017 found that magnesium supplements improved mild depression and anxiety symptoms, building on previous research finding a positive impact on mood. A 2017 systematic review concluded that about half the studies looking at magnesium and anxiety found a positive effect, but the studies were poor quality. A slightly larger trial similarly found improvements in anxiety and stress symptoms, and a 2020 systematic review found benefits for mild depression symptoms and anxiety. But the benefits didn't show up in studies specifically in people with panic disorder or generalized anxiety disorder, both of which typically require management by a physician.

“For anyone who is experiencing suicidal thoughts or severe functional impairment,” such as “anxiety so severe that they're having trouble leaving their house or engaging with their family or friends or going to work, I wouldn't necessarily start off with magnesium,” Brown says. “At that point, you definitely want to make sure you're working with a mental health professional therapist or psychiatrist.”

### **What about better sleep?**

While evidence for magnesium's benefits for mild anxiety seem encouraging, its benefits for sleep remain unproven. Brown mentioned that insomnia that's caused primarily by mild anxiety might improve with magnesium, but that doesn't mean magnesium can help with insomnia more broadly.

“The evidence is weak,” says Muhammad A. Rishi, an associate professor of medicine at Indiana University School of Medicine in Indianapolis. “The studies that mostly show some positive association with improved sleep are observational, which basically tell us there may be a connection, but they're not cause and effect.” Research suggesting people with magnesium-rich diets sleep better, for example, might mean those people have other helpful habits, such as exercising daily, says Rishi, also vice chair of the Public Safety Committee of the American Academy of Sleep Medicine.

For example, a systematic review in 2021 found only three randomized controlled trials, with 151 total participants, assessing magnesium's effects on sleep. The results suggested magnesium helped people fall asleep 17 minutes faster, but they didn't find that people slept any longer, and the trials were low quality.

A 2022 study of nearly 4,000 participants found borderline improvement in sleep quality, but it was an observational trial, and the benefits did not occur in people with depression. The most recent systematic review, published in January this year, also saw benefits in observational trials but only contradictory results in randomized controlled trials. They also had few participants, and the trial duration was too short to yield meaningful answers.

“Most sleep doctors will not prescribe magnesium for somebody having poor sleep quality because we just don't have the data, so most of the patients taking magnesium to improve sleep are taking it unsupervised,” Rishi says. Poor sleep quality can also encompass a wide

range of problems: trouble falling asleep, trouble staying asleep, or sleeping fine but waking up too early and not falling back asleep. “Obviously, each needs a different type of treatment regimen,” Rishi says.

### ANALYSIS

The text under investigation is an extract from the study How magnesium affects your sleep and anxiety, published in the National Geographic portal on April 11, 2023. The article belongs to the scientific discourse and pertains to the artefact texts since its primal functions are communicative and informative ones. Its communicative intention is realized in the need to provide the addressee with credible information by referencing to the scientific research and its conclusions. From the viewpoint of its implementation, the text relies on actual data and results, thus reflecting the real world with the help of scientific and technical terms.

It is an informative text, since it serves to inform the readers about the benefits and risks of taking magnesium supplements, the diseases it can treat and might lead to, and to urge that self-medication can be harmful.

In regard to communicative and pragmatic characteristics, we may come out with the next macro proposition: I (the author) hereby inform you (the reader) about the studies on magnesium consumption, statistics of positive reactions, cases of improvement, aggravation or with no visible change.

On a structural level, the article is both lexically and semantically coherent due to such repetition links:

- Simple lexical repetition: supplement – supplements, anxiety – the anxiety, food - foods;
- Complex lexical repetition: improvements – improved,
- Simple paraphrase: positive effect – improvement, low – poor, having trouble – experiencing suicidal thoughts;
- Complex paraphrase: wide – uncommon, unsupervised – controlled, mild – severe;
- Substitution: people – they;
- Co-reference repetition: Brown – an affiliate faculty member, Muhammad A. Rishi – vice chair of the Public Safety of the American Academy of Sleep Medicine.



Grammatically, cohesion is achieved and expressed by the usage of prepositions, conjunctions, and parenthesis e.g., *Still, most studies estimate that somewhere between 45 percent and 50 percent of Americans fall short of the daily recommended amounts: 310-360 milligrams a day for women and 400-420 mg for men.*

Given that the article represents scientific and technical discourse, its distinctive feature is the absence of stylistic devices and emotive language which is dominated by scientific and medical terminology e.g., *deficiency, supplement, type 2 diabetes, gastrointestinal illnesses*. As we stated above, one of the important roles of artefact texts is to support the narration with evidence –numbers (*in 2017, 45%, 400-420 mg*), proper names (*The Self-Healing Mind, University of Texas Dell Medical School*) and titles (*an associate professor of medicine*). The article also proves to be a scientific one as it contains Latin words (*magnesium*), utilizes clusters (*Indiana University School of Medicine*), impersonal pronouns (*It can be hard to determine*), and gives preference to complex or compound sentences (*A randomized controlled trial in 2017 found...*).

On balance, we have examined the key features of scientific discourse texts and outlined the challenges it may present for translation, which will determine our choice transformations in the practical chapter.

## CHAPTER 2

### ANALYSIS OF THE FEATURES OF TRANSLATION OF ENGLISH MEDICAL TERMINOLOGICAL VOCABULARY

#### 2.1 Lexical transformations in the translation of medical terms

The most commonly used formal lexical transformations (practical transcription, transliteration, traditional reproduction, loan translation); lexical and semantic transformations (generalization, differentiation, substantiation, modulation), let's analyze the lexical transformations of the translation of the sentences of the medical vocabulary.

Transcription and transliteration are the means of translating a lexical unit of the original by reproducing its form with the help of letters of the target language, whereby transcription reproduces the sound form of a foreign language word, and transliteration - its graphic form.

Usage these transformations:

- 1) Cholera leads to intestinal damage, diarrhoea, nausea and dehydration – Холера (transcription) призводить до ураження кишечника, діареї (transcription), нудоти та зневоднення (transcription);
- 2) The beta-blocker that had caused her fainting lowered her blood pressure even further - Бета-блокатор (transliteration), який був причиною її непритомності, знизив її тиск ще більше;
- 3) Doctor Braun will not be able to make an appointment until the following Monday. - Доктор Браун (transliteration) зможе записати вас на прийом лише у наступний понеділок;
- 4) Every year, about 450 children with Down's syndrome are born in Ukraine - Кожного року в Україні народжується близько 450 дітей із синдромом Дауна(transcription).

- 5) Eye myosis is an element of Horner's muscle edema and therefore the correct functioning of the lens should be checked - Міоз ока становить елемент набряку м'яза Горнера (transcription) і тому слід перевірити правильність функціонування кришталика.
- 6) The medicine Prasugrel blocks harmful trombocyte receptors - Ліки Прасугрель (transcription) блокують шкідливі рецептори тромбоцитів.
- 7) Dacryocystitis is an inflammatory process inside the lacrimal sac cavity that develops as a result of blockage of the lacrimal canals - Дакріюцистит (transliteration) — це запальний процес всередині порожнини слізного мішка, який розвивається внаслідок закупорки слізних каналів.
- 8) Inhibitors are a group of natural and synthetic chemical compounds used to treat and prevent heart and kidney failure - Інгібітори (transcription) - група природних і синтетичних хімічних сполук, що застосовуються для лікування і профілактики серцевої та ниркової недостатності.
- 9) Pathophysiology is a branch of medicine and biology that studies the patterns of onset, development and outcome of pathological processes - Патофізіологія (transliteration) - розділ медицини та біології, що вивчає закономірності виникнення, розвитку та результату патологічних процесів
- 10) Acne is a disease associated with increased sebum secretion, enlarged and clogged sebaceous glands - Акне (transliteration) - це захворювання, пов'язане з підвищенням виділення шкірного сала, збільшенням і закупоркою сальних залоз.

Calquing is also widely used in the translation of medical terms. Calquing is a method of translating a lexical unit of the source language by replacing its constituent parts (morphemes or words) with their lexical equivalents in the target language. Calquing is one of the most common translation transformations that ensures equivalence and achieves unambiguous correlation with the original word. It should also be noted that

calquing mostly ensures the internationalisation of the content of terms while preserving their national form, which plays an important role in translating medical vocabulary from English into Ukrainian. Usage this transformation:

- 1) An EchoCG is an ultrasound image of the heart and associated large blood vessels – ЕхоКГ (Calquing) - це ультразвукове зображення серця і пов'язаних з ним великих кровоносних судин;
- 2) Hypercoagulability is the initial stage in the development of serious diseases associated with haemostasis, the process of blood clotting – Гіперкоагуляція (Calquing) є початковою стадією розвитку серйозних захворювань, пов'язаних з порушенням гемостазу — процесу згортання крові;
- 3) Coagulopathy is a disorder of the blood clotting system – Коагулопатія (Calquing) - це порушення роботи системи згортання крові.
- 4) Ischemic heart disease is a disease that results from absolute or relative impairment of the blood supply to the myocardium due to damage to the coronary arteries of the heart - Ішемічна хвороба серця (Calquing) - захворювання, яке виникає внаслідок абсолютного або відносного порушення кровопостачання міокарда через ураження коронарних артерій серця.
- 5) Chronic obstructive pulmonary disease, or COPD, is a group of diseases that cause blockage of airflow and breathing problems - Хронічне обструктивне захворювання легень (Calquing), або ХОЗЛ, відноситься до групи захворювань, які викликають блокування повітряного потоку і проблеми з диханням.

Another important form of transformation in translation is the translation of acronyms. Usage this transformation:

- 1) AIDS is transmitted by the transmission of body fluids containing the immunodeficiency virus from one person to another. - СНІД (Practical transcription) передається під час передачі біологічних рідин, що містять вірус імунодефіциту, від однієї людини іншій .

2) MRI is a method of medical imaging and examination of internal organs and tissues using the physical phenomenon of nuclear magnetic resonance – МРТ (Practical transcription) це метод медичної візуалізації та дослідження внутрішніх органів і тканин з використанням фізичного явища ядерного магнітного резонансу.

3) CT is another visualization tool used for the diagnosis and evaluation of dementia, especially for cases at early stages - КТ (Practical transcription) - інструмент візуалізації, який використовується для діагностики та оцінки деменції, особливо на ранніх стадіях.

4) An ECG is a procedure to diagnose diseases of the cardiovascular system that can lead to haemoptysis - ЕКГ (Practical transcription) - процедура, що дає змогу діагностувати хвороби серцево-судинної системи, які можуть призвести до кровохаркання.

In some cases, medical terminology varies between different regions or countries. To ensure consistency, translators may standardize terms according to a specific reference source or glossary. For example, the World Health Organization publishes the International Classification of Diseases, which provides standardized terminology for medical conditions and procedures.

Medical research and advances in medical technology often result in the creation of new medical terms that are not yet part of the standard medical vocabulary. In these cases, translators may create neologisms by combining existing words or using a combination of Latin and Greek roots. For example, the term "telemedicine" was created to describe the use of telecommunication and information technologies to provide medical care from a distance.

Analysing lexical transformations in 20 examples, we found 10 transcriptions, 5 cases of transliteration, and 5 cases of calculation. Thus, transcription accounts for 50%, transliteration for 25%, and calquing for 25%.

## 2.2 Grammatical transformations in the reproduction of English medical terms into Ukrainian

Grammatical transformations in translation involve changing the structure of a sentence in whole or in part. Most often, if the main members of a sentence are replaced, it is a complete transformation, and if only the secondary members of a sentence are replaced, it is a partial transformation. Grammatical transformations include syntactic equivalence and grammatical substitution. Syntactic equivalence or literal translation is a method of translation in which the syntactic structure of the source language is transformed into a similar structure of the target language. This type of transformation is used when there are parallel syntactic structures in the source and target languages. I will analyze next sentences to find out which of these transformations prevails in sentences:

1) The doctor prescribed a high dose of antibiotics to treat the infection.

Лікар призначив високу дозу антибіотиків для того, щоб вилікувати інфекцію.

Transformations: Replacement of "prescribed" with "призначив" and addition of "для того, щоб вилікувати" at the end.

2) The side effects of the medication include drowsiness and nausea.

Побічні ефекти препарату включають сонливість та нудоту.

Transformations: Replacement of "medication" with "препарат".

3) It is important to take your medication as prescribed by your doctor.

Важливо приймати ваш препарат згідно з призначенням лікаря.

Transformations: Replacement of "medication" with "препарат" and addition of "згідно з призначенням лікаря" at the end.

4) A holistic approach to medicine considers the mind, body, and spirit as interconnected components of health and wellbeing.

Голістичний підхід до медицини розглядає розум, тіло та дух як взаємопов'язані складові здоров'я та благополуччя.

Transformations: replacement of "interconnected" with "взаємопов'язані" and addition of "та благополуччя".

5) Medicine has greatly evolved over the years with the introduction of new technologies and treatments.

Медицина значно еволюціонувала протягом років з появою нових технологій та лікувань.

Transformations: replacement of "has greatly evolved" with "значно еволюціонувала" and addition of "протягом років" for grammatical correctness.

6) The side effects of medication can sometimes be worse than the illness it was intended to treat.

Побічні ефекти лікарських засобів можуть бути іноді гіршими, ніж хвороба, для якої ці ліки призначені.

Transformations: Transposition of "it was intended to treat" to the end of the sentence for grammatical correctness.

7) The development of vaccines has been integral in preventing the spread of deadly diseases.

Розробка вакцин була інтегральною у запобіганні поширенню смертельних захворювань.

Transformations: Replacement of "has been integral" with "була інтегральною" for grammatical correctness.)

8) It's important to always be honest with your doctor about any medications you are taking or medical conditions you have.

Важливо завжди бути чесним зі своїм лікарем щодо будь-яких лікарських засобів, які ви приймаєте, або вашого стану. - Addition of " вашого стану " for clarification and grammatical correctness; Omission for "medical".

Grammatical substitution is a method of translation in which a grammatical unit in the source language is transformed into a unit of language with a different grammatical meaning. In this case, a grammatical language unit of any level can be replaced, for example, a word form, part of speech, sentence member, or a certain type of sentence. In the process of translation, part of speech substitution is a fairly common type of grammatical substitution, such as replacing a noun with a verb and an adjective with a noun. Grammatical substitution: structure and function - структурно-функціональний, identification – розпізнавати, reduction – знижати, a nonfatal heart-failure event - нефатальні випадки серцевої недостатності.

One of the most common grammatical transformations is the conversion of sentences from active to passive voice and vice versa. Medical terminology often uses passive constructions, which can be difficult to translate. For example, the sentences "The patient was given a medication" can be translated as «Пацієнту було призначено ліки», where the active form has been transformed into the passive; «Antibiotics were prescribed by the doctor to treat the infection» can be translated as « Для лікування інфекції лікар призначив антибіотики», where the passive form has been transformed into the active; « The patient was given a flu shot by the nurse» can be translated as «Медсестра зробила пацієнтові щеплення від грипу» where the passive form has been transformed into the active.

In addition, medical terminology often uses complex verb forms such as infinitive, gerund, and participle, which may also require transformation. For example, the sentence «The doctor recommended taking the medication» can be translated as «Лікар рекомендував приймати ліки», where the infinitive phrase "taking the medication" has been transformed into the verb "приймати", «Diagnosing a rare disease can be challenging, often requiring specialized knowledge and expertise» can



be translated as «Діагностика рідкісного захворювання може бути складним завданням, що часто вимагає спеціальних знань і досвіду» where the gerund «Diagnosing» has been transformed into the noun «Діагностика», «Understanding the mechanism of action of a medication is essential for prescribing it safely and effectively» can be translated as «Розуміння механізму дії ліків має важливе значення для їх безпечного та ефективного призначення» where the gerund «Understanding» has been transformed into the noun «Розуміння».

Another important aspect of translating medical terminology is to use the correct form of the noun. For example, in English, many terms are used in the singular, while in Ukrainian, the corresponding terms can be used in the plural. Thus, when translating, it is necessary to pay attention to the context and choose the correct form.

### 2.3 Lexico-semantic transformations in the translation of medical terminology

Lexico-semantic transformations include specification, generalisation and modulation. Among them, we can distinguish such translation transformations as modulation, generalisation and concretisation, which allow us to convey the meaning of the translated text as close as possible to the Ukrainian language, while preserving its national features, but at the same time adapting it to the environment of Ukrainian-language terminology.

In some cases, modulation is the only way to adequately convey the original meaning to the reader. Specificisation or narrowing of meaning is a method of translation in which a foreign language word or phrase that has a broader meaning is replaced by a word in the broader meaning by a word in the translation that has a narrower meaning

Another instance of lexico-semantic transformation can be observed in the sentence "The side effects of medication can sometimes be worse than the illness it was intended to treat." In the Ukrainian translation, the phrase "it was intended to treat" is transposed to the end of the sentence to preserve the meaning while adhering to the language's sentence structure.

Similarly, the sentence "The development of vaccines has been integral in preventing the spread of deadly diseases" requires some modification in the Ukrainian version, which replaces "has been integral" with "була інтегральною" in order to make it grammatically correct.

In some cases, additional information may be needed for clarity and proper expression of medical terminology. For instance, the sentence "It's important to always be honest with your doctor about any medications you are taking or medical conditions you have" is modified in Ukrainian to include the phrase "щодо будь-яких лікарських засобів, які ви приймаєте, або медичних станів, які ви маєте" for clarification and grammatical correctness.

Lastly, sometimes certain phrases can be omitted from the original text altogether if they are implied in the structure of the target language. This is seen in the sentence

"The research conducted by medical professionals has led to breakthroughs in the treatment and understanding of various illnesses," where the phrase "conducted by medical professionals" is left out as it is already understood in the Ukrainian syntax. In conclusion, mastering lexico-semantic transformations is crucial when translating medical terminology. Accuracy, clarity, and grammatical correctness are essential in conveying important scientific information, and a skilled translator must be able to make the necessary modifications while preserving the meaning of the original message.

Usage of these transformations:

- 1) Resynchronisation therapy is the restoration of synchronisation in the ventricles, which leads to an increase in myocardial efficiency and a decrease in the manifestations of heart failure - Ресинхронізаційна терапія (Modulation) це відновлення синхронності в роботі шлуночків, що призводить до підвищення ефективності роботи міокарда та зниження проявів серцевої недостатності.
- 2) The patient was prescribed artificially induced ischaemia to restore his health - Пацієнту прописали штучно індуковану ішемію (Modulation) для відновлення його самопочуття.
- 3) It took two months and a lot of tests to diagnose this patient - Визначення діагнозу (Modulation) цього пацієнту заняло два місяці та багато аналізів.
- 4) Dyspeptic disorders indicate that there are disorders in the gastrointestinal tract - Диспепсичні розлади (Modulation) вказують на те, що існують порушення в роботі шлункового та кишкового тракту.
- 5) The plasma blood level of an adult is about 3500 millilitres - Плазмовий рівень (Modulation) крові дорослої людини становить близько 3500 мілілітрів.
- 6) It took 12 nurses and two days of work to distribute the patients in this department of the hospital - Розподіл хворих (Modulation) у цьому відділі лікарні заняло 12 медсестер та дві доби роботи.

- 7) Disorders of the endocrine glands occur when hormone production is insufficient -  
Порушення функцій (Modulation) ендокринних залоз виникають у випадку недостатнього вироблення гормонів.
- 8) Consider what causes might have triggered such condition - Потрібно розглянути, які причини могли спровокувати патологію (Specification).
- 9) This drug is prescribed by doctors in the treatment of serious illnesses - Цей препарат (Specification) призначається лікарями при лікуванні важких хвороб.
- 10) Such regularities lead to deterioration of treatment conditions and further prolongation of treatment - Такі закономірності (Specification) приводять до погіршення умов лікування та подальшого продовження лікування.

## CONCLUSIONS

Medical translation is one of the most challenging types of translation, as it requires not only bilingual skills, but also a high level of medical knowledge. With the constant development of science and technology, the terminology of medical sciences is changing very rapidly, which poses a challenge to the translator to maintain accuracy and proper interpretation of terms.

Terminology as a specific part of the lexical system of the language of medical texts attracts the attention of many researchers and remains relevant due to the development of science and technology. A term is a word or phrase of a particular field of knowledge used to nominate a certain concept.

Translating a medical text involves certain difficulties, such as the problem of translating medical terminology, transferring abbreviations, international standards and pseudo-international words, eponyms, and differences in the classification and nomenclature of various organs and body systems.

In the process of translation, a translator uses various lexical and grammatical transformations both to achieve equivalence and to maximise the approximation of the source text and its adequacy. However, in order to correctly apply the most effective transformation techniques, i.e. translation transformations, it is necessary that the translator has a good command of the terminology of the source and target languages, as well as an understanding of the specifics and peculiarities of medicine in general.

The solution to these difficulties is possible through the use of appropriate translation transformations. This paper presents the practical part of this work, which includes a translation analysis of lexical and grammatical transformations based on medical articles and article annotations, as well as a comparative analysis of the translation of terms from English into Ukrainian with by means of lexical and grammatical transformations.

## LIST OF REFERENCE SOURCES

1. Gimer N.O. Terms as the basis of professional language. Bulletin of Dnipropetrovs'k University. University. Series: Linguistics. 2013. Issue 19. pp. 89-93.
2. Statsiuk R. V. Basic approaches to the definition of the term in modern linguistic science. Scientific Bulletin of Drohobych Ivan Franko State Pedagogical University. Series "Philological Sciences (Linguistics)". 2016. No. 5(2). pp. 112-116.
3. Dyakov AS, Kiyak TR, Kudelko ZB Fundamentals of term formation: Semantic and sociolinguistic aspects. K.: KM Academia, 2000. 218 pp.
4. Zanizdra N.O. The problem of motivation of a scientific term Bulletin of Ostrohradsky Kyiv State Pedagogical University. 2007. Issue 2/2007 (43). pp. 91-102
5. Kvitko IS The term in a scientific document. Lviv: Higher school, 1976. 128 pp.
6. Kiyak T.R., Ogui O.D., Naumenko A.M. Theory and practice of translation. Vinnytsia: New Book, 2006. 592 pp.
7. Lotte D.S. Formation of the system of scientific and technical terms. M., 1961. 73 pp.
8. Protsenko T.V. Different approaches to the definition of a term in terminology. Actual problems of philology: linguistics, literary studies, methods of teaching philological disciplines. Mariupol. 2010. pp. 143- 147.
10. Determinology of medical vocabulary in media discourse. Actual problems of Ukrainian linguistics: theory and practice. 2016. Issue 20. pp. 149-156.

## BIBLIOGRAPHY

1. Danyliuk, M.Y. Short English-Ukrainian Medical Dictionary. Jersey City, New York: Liberty, 1970. 51 pp.
2. Selivanova O.O. Linguistic encyclopaedia. Poltava: Dovkilya-K, 2011. 844 pp.
3. Avrakhova, Liudmyla. English-Ukrainian Medical Dictionary. Book Plus, 2010.
4. Anisimova, Anastasia. Methodology of translation of English-language terms of humanities and social and political sciences. Kyiv University, 2010.
5. Larysa Bilozerska and Natalia Voznenko. Terminology and Translation. New Book, 2010.
6. Botsman, Anatolii. Structural, semantic and pragmatic features of pharmaceutical texts (based on the material of English-language instructions for use of medicines) 2006, pp. 67-69.
7. Vakulenko, Maria. Ukrainian terminology: a comprehensive linguistic analysis: [monograph]. Foliant, 2015.
8. Litvinenko Nina. Stylistic aspects of professional speech (on the basis of medical vocabulary). Scientific and journalistic journal "Digest", 2004, pp. 24-26.
9. Medical abbreviations. URL: [medalmanah.ru/abbreviations](http://medalmanah.ru/abbreviations)
10. Cambridge Dictionary. URL: [dictionary.cambridge.org](http://dictionary.cambridge.org)
11. Dictionary by Farlex. Medical dictionary. URL: [medicaldictionary.thefreedictionary.com](http://medicaldictionary.thefreedictionary.com)
12. The language of medicine. Journal of the royal society of medicine. URL: [www.ncbi.nlm.nih.gov/pmc/articles/PMC1079361/](http://www.ncbi.nlm.nih.gov/pmc/articles/PMC1079361/)
13. Translation of Medical Terms. Translation journal. URL: [translationjournal.net/journal/49medical1.htm](http://translationjournal.net/journal/49medical1.htm)

## ANNEX

<p>1. The etiology of hypertension is multifactorial and involves both genetic and environmental factors.</p> <p>2. Patients with bronchial asthma often exhibit airway hyperresponsiveness to various triggers such as allergens and irritants.</p> <p>3. The pathophysiology of rheumatoid arthritis involves chronic inflammation of the synovial membrane and subsequent joint destruction.</p> <p>4. The mechanism of action of beta-blockers involves blocking beta-adrenergic receptors, resulting in decreased heart rate and blood pressure.</p> <p>5. The prognosis of a patient with metastatic cancer depends on several factors, including the site of the primary tumor and the extent of metastasis.</p> <p>6. The diagnosis of Alzheimer's disease is typically based on clinical</p>	<p>1. Етіологія гіпертензії є багатофакторною і включає як генетичні, так і екологічні фактори.</p> <p>2. Пацієнти з бронхіальною астмою часто демонструють гіперреактивність дихальних шляхів до різних тригерів, таких як алергени та подразники.</p> <p>3. Патофізіологія ревматоїдного артрити полягає у хронічному запаленні синовіальної оболонки та подальшому руйнуванні суглобів.</p> <p>4. Механізм дії бета-блокаторів полягає у блокуванні бета-адренергічних рецепторів, що призводить до зниження частоти серцевих скорочень і артеріального тиску.</p> <p>5. Прогноз пацієнта з метастатичним раком залежить від декількох факторів, включаючи місце розташування первинної пухлини і ступінь метастазування.</p> <p>6. Діагноз хвороби Альцгеймера, як правило, базується на клінічній</p>
---	--



<p>presentation, neuropsychological testing, and brain imaging studies.</p> <p>7. Patients with end-stage renal disease often require hemodialysis or peritoneal dialysis to manage their condition.</p> <p>8. The treatment of hepatitis C typically involves a combination of direct-acting antiviral medications and/or interferon-based therapy.</p> <p>9. Chronic obstructive pulmonary disease is a progressive lung disease characterized by airflow limitation and chronic bronchitis and/or emphysema.</p> <p>10. Patients with diabetes mellitus may require insulin therapy to control their blood glucose levels.</p> <p>11. The mechanism of action of statins involves inhibiting the HMG-CoA reductase enzyme, resulting in decreased cholesterol synthesis and lower serum cholesterol levels.</p> <p>12. Patients with chronic kidney disease often exhibit decreased glomerular filtration rate and impaired renal function.</p>	<p>картині, нейропсихологічному тестуванні та візуалізаційних дослідженнях головного мозку.</p> <p>7. Пацієнти з термінальною стадією захворювання нирок часто потребують гемодіалізу або перитонеального діалізу для підтримання їхнього стану.</p> <p>8. Лікування гепатиту С зазвичай включає комбінацію протівірусних препаратів прямої дії та/або терапію на основі інтерферону.</p> <p>9. Хронічне обструктивне захворювання легень - це прогресуюче захворювання легень, що характеризується обмеженням повітряного потоку та хронічним бронхітом і/або емфіземою.</p> <p>10. Пацієнти з цукровим діабетом можуть потребувати інсулінотерапії для контролю рівня глюкози в крові.</p> <p>11. Механізм дії статинів полягає в інгібуванні ферменту ГМГ-КоА-редуктази, що призводить до зменшення синтезу холестерину та</p>
--	---

<p>13. The etiology of osteoporosis involves decreased bone mineral density and alterations in bone microarchitecture, resulting in increased risk of fractures.</p> <p>14. Patients with heart failure may require treatment with diuretics, angiotensin-converting enzyme inhibitors, or beta-blockers to manage their symptoms.</p> <p>15. The prognosis of a patient with liver cirrhosis depends on several factors, including the underlying cause of the cirrhosis and the extent of liver damage.</p> <p>16. Patients with Parkinson's disease typically exhibit degeneration of dopaminergic neurons in the substantia nigra region of the brain.</p> <p>17. The pathophysiology of migraine headaches involves alterations in cortical excitability and changes in cerebral blood flow.</p> <p>18. The treatment of osteoarthritis often involves nonsteroidal anti-inflammatory drugs, physical</p>	<p>зниження рівня холестерину в сироватці крові.</p> <p>12. У пацієнтів з хронічними захворюваннями нирок часто спостерігається зниження швидкості клубочкової фільтрації та порушення функції нирок.</p> <p>13. Етіологія остеопорозу полягає у зниженні мінеральної щільності кісткової тканини та зміні мікроархітектури кісток, що призводить до підвищеного ризику переломів.</p> <p>14. Пацієнти з серцевою недостатністю можуть потребувати лікування діуретиками, інгібіторами ангіотензинперетворюючого ферменту або бета-блокаторами для усунення симптомів.</p> <p>15. Прогноз пацієнта з цирозом печінки залежить від декількох факторів, включаючи основну причину цирозу та ступінь ураження печінки.</p> <p>16. У пацієнтів з хворобою Паркінсона зазвичай</p>
--	---

<p>therapy, and/or joint replacement surgery.</p> <p>19. Patients with chronic obstructive pulmonary disease may require supplemental oxygen therapy to manage their condition.</p> <p>20. The mechanism of action of angiotensin-converting enzyme inhibitors involves inhibiting the conversion of angiotensin I to angiotensin II, resulting in decreased vasoconstriction and blood pressure.</p> <p>21. Patients with multiple sclerosis typically exhibit demyelination of axons in the central nervous system, resulting in motor and sensory deficits.</p> <p>22. The prognosis of a patient with leukemia depends on several factors, including the subtype of leukemia and the presence of genetic mutations.</p> <p>23. Patients with sickle cell anemia exhibit abnormal hemoglobin molecules that cause the red blood cells to assume a sickle shape and</p>	<p>спостерігається дегенерація дофамінергічних нейронів в області чорної субстанції головного мозку.</p> <p>17. Патофізіологія мігрені пов'язана зі змінами збудливості кори головного мозку та змінами мозкового кровотоку.</p> <p>18. Лікування остеоартриту часто включає нестероїдні протизапальні препарати, фізичну терапію та/або хірургічне втручання із заміни суглобів.</p> <p>19. Пацієнти з хронічними обструктивними захворюваннями легень можуть потребувати додаткової кисневої терапії для контролю свого стану.</p> <p>20. Механізм дії інгібіторів ангіотензинперетворювального ферменту полягає у пригніченні перетворення ангіотензину I в ангіотензин II, що призводить до зменшення вазоконстрикції та зниження артеріального тиску.</p> <p>21. У пацієнтів з розсіяним склерозом зазвичай спостерігається демієлінізація</p>
---	---

<p>lead to increased risk of vaso-occlusive crises.</p> <p>24. The etiology of gastroesophageal reflux disease involves impaired function of the lower esophageal sphincter, resulting in acid reflux into the esophagus.</p> <p>25. Patients with chronic hepatitis B may require treatment with antiviral medications to manage their condition.</p> <p>26. The mechanism of action of antihistamines involves blocking histamine receptors, resulting in decreased allergic reactions and symptoms.</p> <p>27. Patients with anemia may require iron supplementation to increase their hemoglobin levels and improve their symptoms.</p> <p>28. The pathophysiology of stroke involves a disruption of blood flow to the brain, resulting in neuronal damage and subsequent neurological deficits.</p>	<p>аксонів у центральній нервовій системі, що призводить до рухових і сенсорних порушень.</p> <p>22. Прогноз пацієнта з лейкемією залежить від декількох факторів, включаючи підтип лейкемії та наявність генетичних мутацій.</p> <p>23. У пацієнтів із серповидноклітинною анемією спостерігаються аномальні молекули гемоглобіну, які змушують еритроцити набувати серповидної форми і призводять до підвищеного ризику вазооклюзивних кризів.</p> <p>24. Етіологія гастроєзофагеальної рефлюксної хвороби полягає в порушенні функції нижнього стравохідного сфінктера, що призводить до рефлюксу кислоти в стравохід.</p> <p>25. Пацієнти з хронічним гепатитом В можуть потребувати лікування противірусними препаратами для контролю свого стану.</p> <p>26. Механізм дії антигістамінних препаратів полягає у блокуванні</p>
---	---

<p>29. The pathologist identified malignant cells in the patient's biopsy sample.</p> <p>30. The orthopedic surgeon performed a total knee replacement on the patient.</p> <p>31. The cardiologist recommended lifestyle changes to manage the patient's heart disease.</p> <p>32. The patient suffered a myocardial infarction and required emergency treatment.</p> <p>33. The oncologist recommended chemotherapy for the patient's breast cancer.</p> <p>34. The urologist performed a cystoscopy to evaluate the patient's bladder function.</p> <p>35. The patient presented with symptoms of gastroesophageal reflux disease (GERD).</p> <p>36. The pulmonologist prescribed a bronchodilator for the patient's asthma.</p> <p>37. The patient was diagnosed with osteoporosis and prescribed calcium supplements.</p>	<p>гістамінових рецепторів, що призводить до зменшення алергічних реакцій та симптомів.</p> <p>27. Пацієнтам з анемією може знадобитися прийом препаратів заліза для підвищення рівня гемоглобіну і поліпшення симптомів.</p> <p>28. Патофізіологія інсульту полягає в порушенні кровопостачання головного мозку, що призводить до пошкодження нейронів і подальшого неврологічного дефіциту.</p> <p>29. Патологоанатом виявив злоякісні клітини в біоптаті пацієнта.</p> <p>30. Хірург-ортопед провів пацієнтові тотальну заміну колінного суглоба.</p> <p>31. Кардіолог порекомендував пацієнтові змінити спосіб життя для лікування хвороби серця.</p> <p>32. Пацієнт переніс інфаркт міокарда і потребував невідкладного лікування.</p>
---	---

<p>38. The radiologist identified a herniated disc in the patient's lumbar spine.</p> <p>39. The patient required a blood transfusion due to anemia.</p> <p>40. The nephrologist prescribed medication to manage the patient's kidney disease.</p> <p>41. The patient presented with symptoms of acute appendicitis.</p> <p>42. The ophthalmologist diagnosed the patient with cataracts and recommended surgery.</p> <p>43. The patient was diagnosed with multiple sclerosis and prescribed disease-modifying therapy.</p> <p>44. The hematologist identified a blood clot in the patient's leg.</p> <p>45. The patient required emergency surgery due to a ruptured appendix.</p> <p>46. The patient presented with symptoms of a urinary tract infection (UTI).</p> <p>47. The endodontist performed a root canal on the patient's infected tooth.</p>	<p>33. Онколог порекомендував пацієнтці хіміотерапію для лікування раку молочної залози.</p> <p>34. Уролог провів цистоскопію для оцінки функції сечового міхура пацієнта.</p> <p>35. Пацієнт звернувся з симптомами гастроєзофагеальної рефлюксної хвороби (ГЕРХ).</p> <p>36. Пульмонолог призначив пацієнту бронхолітик для лікування астми.</p> <p>37. Пацієнту поставили діагноз остеопороз і призначили препарати кальцію.</p> <p>38. Рентгенолог виявив грижу міжхребцевого диска в поперековому відділі хребта пацієнта.</p> <p>39. Пацієнту знадобилося переливання крові через анемію.</p> <p>40. Нефролог призначив пацієнтові ліки для лікування захворювання нирок.</p> <p>41. У пацієнта з'явилися симптоми гострого апендициту.</p>
--	---

<p>48. The patient suffered a traumatic brain injury and required intensive care.</p> <p>49. The patient was diagnosed with Parkinson's disease and prescribed medication to manage symptoms.</p> <p>50. The gastroenterologist recommended a colonoscopy to screen for colon cancer.</p>	<p>42. Офтальмолог діагнував у пацієнта катаракту і порекомендував операцію.</p> <p>43. Пацієнту поставили діагноз "розсіяний склероз" і призначили хворобомодифікуючу терапію.</p> <p>44. Гематолог виявив тромб у нозі пацієнта.</p> <p>45. Пацієнту потрібна термінова операція через розрив апендикса.</p> <p>46. У пацієнта з'явилися симптоми інфекції сечовивідних шляхів (ІСШ).</p> <p>47. Ендодонтист пролікував кореневий канал на інфікованому зубі пацієнта.</p> <p>48. Пацієнт отримав черепно-мозкову травму і потребував інтенсивної терапії.</p> <p>49. Пацієнту поставили діагноз "хвороба Паркінсона" і призначили ліки для полегшення симптомів.</p> <p>50. Гастроентеролог порекомендував зробити колоноскопію для скринінгу раку товстої кишки.</p>
---	--