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## FORMATION METHODS OF CARDIOLOGICAL TERMS IN ENGLISH AND THEIR TRANSLATION INTO UZBEK

**Annotation:** This article examines the methods of formation of cardiological terms in English and their translations into Uzbek. The article highlights, with examples, the main methods used in the formation of new cardiological terms, alongside the stages of development of terminology and terminological fields.

**Key words:** terminology, cardiological, morphological, prefix, suffix.

**Аннотация:** В данной статье рассматриваются способы образования кардиологических терминов на английском языке и их переводы на узбекский язык. В статье на примерах освещены основные методы, используемые при создании новых кардиологических терминов, а также этапы развития терминологии и терминологических областей.

**Ключевые слова:** терминология, кардиологический термин, морфологический, приставка, суффикс

**Annotatsiya:** Ushbu maqola ingliz tilida kardiologik terminlarning yasash usullari ba ularning o'zbek tilidagi tarjimalarini o'rganadi. Maqolada termin va terminologiya sohalarini rivojlanish davri bilan birga yangi kardiologik terminlar yasashda qo'llaniladigan asosiy usullar qanday yasash holati hamda misollar bilan yoritilib berilgan.

**Kalit so'zlar:** terminologiya, kardiologik termin, morfologik, sintaktik, old qo'shimcha, orqa qo'shimcha.

### Introduction

In recent years, terminology, particularly medical terminology, has gained significant attention among researchers. It can be said that the field of terminology remains an integral and relevant branch of linguistics. This is due to the continuous advancement of science and medicine, as well as the emergence of new diseases. Cardiological terms that arise in the medical field need to be assimilated into different languages and interpreted for both scholars and the general public. This necessity underscores the importance of studying this field. The study of terminology has been widely pursued among linguists, and the history of terminology dates back to ancient times.

### Literature Review

Terminology is the most sensitive part of vocabulary to external influences. It is in terminology that the impact of society on language is most clearly manifested, making it an essential tool in analyzing historical development stages of states, their formation, types of civilizations, and their cultural, scientific, and technical potential. <sup>1</sup>

<sup>1</sup> Смирнова Е.В. Структурно-семантический и лексикографический аспекты медицинской терминологии (на примере кардиологической лексики). - Ярославль, 2012.-12с

The study of terms is carried out by a branch of linguistics known as terminography. According to M.N. Volodina, there are several main directions in terminology studies, including methodological research, terminology theory, philological research on terminology, functional-stylistic studies, diachronic research on terminology, regulation and standardization of terminology, terminography, scientific and technical translation, professional linguodidactics, and field-specific terminology research.<sup>2</sup>

Several Uzbek scholars have conducted research in the field of terminology and medical terminology, contributing to the development of dictionaries and textbooks. Among them are M. Umarxo'jayev, O'. Po'latova, F. Abdulxairova, B. Suyunov, A. Qosimov, A.K. Shadmonov, N. Rasulova, and others.

### Research Methodology

This article is based on the analysis of linguistic and cardiological terms, with a focus on comparing the formation methods of cardiological terms in English and their translations into Uzbek. The research methodology includes classification (categorizing terms based on their formation method), comparative analysis, and statistical analysis. More than 100 cardiological terms were studied and analyzed in terms of their formation methods.

### Main Body

According to the 'Explanatory Dictionary of the Uzbek Language,' a term (from Latin 'terminus' – boundary, limit) is a word or phrase that precisely and consistently expresses a specific concept related to a particular field of science, technology, or profession.<sup>3</sup> Terminology (from Latin 'terminus' – boundary + Greek 'logos' – study, science) plays a crucial role in forming the scientific and standardized worldview. Terms function as fundamental units in scientific texts.

The systematic formation of terminology dates back to the 18th century when scholars began organizing and systematizing terms in their specialized fields, laying the foundation for modern terminology. One of the pioneers in this field was Carl Linnaeus (1707–1778), who established rules for organizing and naming concepts in his work 'Fundamenta Botanica,' which became the first systematic terminology in botany. Other applied terminological developments also emerged during this period. However, a theoretical approach to terminology only formed in the 20th century, initiated by Austrian scientist E. Wüster, who proposed that terminology consists of two parts: one related to systematic concepts in a particular field and the other concerning their linguistic designation. As a result, terminology studies gained significance both within linguistics and in specialized fields.<sup>4</sup>

### Methods of Word Formation in Cardiological Terminology

The methods of forming medical terms, particularly cardiological terms, have been extensively studied by scholars. The general expansion of vocabulary occurs through three primary methods:

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<sup>2</sup> Володина М.Н. Когнитивно - информационная природа термина (на материале терминологии средств массовой информации). М.: Моск. уни-т, 2000. Вып. 2. 54с

<sup>3</sup> O'zbek tilining izohli lug'ati: Toshkent.,2008-yil. 73-bet

<sup>4</sup> Kirsten Packeiser. International Business Communication Copenhagen Business School. July 2009.- p6

1. Creating new words
2. Generating new meanings for existing words
3. Borrowing words from other languages<sup>5</sup>

Some linguists classify <sup>6</sup>the formation of new terms into the following categories:

1. Morphological – forming new words through derivation, compound words, and abbreviations.
2. Syntactic – creating phrases and multi-word expressions.
3. Semantic – narrowing the meaning of general words (specification) or transferring meaning metaphorically or metonymically.
4. Borrowing words from other languages.

### Morphological Derivation in Cardiological Terms

The most effective method of forming cardiological terms is **derivation**, <sup>7</sup> where affixes (prefixes, suffixes, and infixes) are added to word stems in various combinations. In English, cardiological terms are formed through **prefixation**, **suffixation**, and **infixation**, <sup>8</sup> as illustrated in the following examples: Prefixes and Their Meanings in Cardiological Terms:

Prefixes	Meaning	Examples-misollar
(qo'sh.lar)	(ma'no)	
<b>myo</b>	mushak	myo+N = myo + cardium (n) yurak mushak qavati
<b>brady</b>	sekin	brady+N= brady+cardia (n) (yurak urushi sekinlashishi)
<b>tachy</b>	tez	tachy+N= tachy+cardia(n) yurak urushi sekinlashishi
<b>hypo</b>	past	hypo+N= hypo+tension(n) past qon bosimi
<b>hyper</b>	yuqori	hyper+N= hyper+tension n) yuqori qon bosimi
<b>athero</b>	yog'li	athero+N+athero+sclerosis (n) tomirlar devorining qattiqlashishi (tomirlarda yog'to'planishi natijasida)

Root	Suffixes	Meaning	Examples
<b>Thrombo</b>	osis	holat, kasallik	trombosis (N)(qon tomirlarda trombo(qon ivishi) hosil bo'lish kasalligi, holati)
<b>Cardi</b>	ac	...ga oid	Cardiac (Adj) (yurakka oid)
<b>Card</b>	itis	yallig'lanish	Carditis (N)(yurak yallig'lanishi)
<b>Hemo</b>	statis	to'xtash, turg'unlik	Hemostatis (N)(qon oqishining to'xtatilishi)

<sup>5</sup> Peprník, J. (1992): Anglická lexikologie. Rektorát Univerzity Palackého. Filozoická fakulta. Olomouc. -p7.

<sup>6</sup> Poštolková, B. et al. (1983).- p34.

<sup>7</sup> Peprník, J. (1992).- p10.

<sup>8</sup> Pulatova U.S. Ingliz va o'zbek tillarida yuridik terminlarining chog'ishtirma tadqiqi. –Andijon, 2023.-p73

### Compound Words in Cardiological Terminology

Many cardiological terms are formed by combining multiple word stems. Examples include:

English language			
English term	Structure	compound word	meaning
cardiopulmonary	N+N	Cardio+pulmonary	related to the heart and lungs(yurakka va o'pkaga oid)
<b>cardiomyopathy</b>	N+N+N	cardio+myo+pathy	heart muscle disease (yurak mushak kasalligi)
<b>cardiothoracic</b>	N+N	cardio+thoracic	yurak ko'krak qafasiga doir
<b>hemangio endothelioma</b>	N+N+N+N	hema+angio+endothel io+oma	A tumor originating from blood vessel linings (Tomir ichki qoplamasidan kelib chiqadigan o'sma)
<b>cardiovascular</b>	N+N	cardio+vascular	related to the heart and blood vessels (yurak tomirlari)

A significant portion of cardiological terminology is composed of terms formed by two or more words, which are interpreted as single terms. This is the second most effective method, known as **compounding**, and the process of creating compound words. Compound words are fixed phrases formed from multiple words, as illustrated in the following examples:

**Blood pressure** – arterial pressure, **cardiac arrest** – cessation of heart activity, **congenital heart defect** – congenital heart abnormality, **congestive heart failure** – heart failure, **coronary arteries** – coronary (crown) arteries, **diastolic blood pressure** – diastolic pressure.

There are no strict rules regarding the writing of such compound terms, and they are categorized into three types:

1. Open compounds (written as separate words): **heart murmur, high blood pressure, ischemic heart disease, myocardial infarction**
2. Hyphenated compounds (written with a hyphen): **open-heart surgery, second-degree heart block, arterio-venous, electro-cardiogram**
3. Closed compounds (written as a single word): **electrocardiogram, hemodynamics, arteriosclerosis**

These methods are classified as morphological processes. Looking at earlier cardiological terms, word formation through affixation and compounding was predominant, with Latin and Greek roots and prefixes playing a key role. However, in modern cardiological terminology, the **syntactic** method—creating multi-word phrases—has become widely used.<sup>9</sup> For example, Transient Ischemic Attack (TIA), Ventricular Assist Device (VAD), Cardiovascular Disease (CVD), Acquired Immune Deficiency Syndrome (AIDS) are long and inconvenient terms, which is why they are later abbreviated. Many abbreviated terms in modern medical terminology have become international terms,

<sup>9</sup> Božena Džuganová\* English medical terminology – different ways of forming medical terms .-p58

and even non-specialists in the field recognize their shortened forms but may not be aware of their full-word equivalents.

For instance, HID (Heart Ischemic Disease) and AIDS (Acquired Immunodeficiency Syndrome) are widely used abbreviations. The use of such terms in their abbreviated form is also common in the Uzbek language, with YIK (Yurak Ishemik Kasalliklari) and OITS (Orttirilgan Immunitet Tanqisligi Sindromi) serving as local equivalents of the aforementioned terms.

The fourth type of word formation is abbreviations. An abbreviation is a shortened form of a word or phrase. There are many ways to form abbreviations. Typically, though not always, they consist of letters or groups of letters taken from the original word or phrase. Abbreviations can also be acronyms, such as ICD (Implantable Cardioverter Defibrillator)—a medical device that monitors and regulates heart rhythm—formed from the initial letters of the words in the full term.

According to Kristall, acronyms are abbreviations formed from initial letters that are pronounced as words, such as BMI (Body Mass Index)—a measure of the relationship between a person's weight and height. Sometimes, acronyms can be formed from parts of words, for example, CAS (Cardiolipin Antibody Syndrome) might be shortened to Cardisyn. However, this type of acronym is rare in cardiological terminology because this field requires precision. Moreover, the abbreviation CAS can stand for multiple medical terms, necessitating the full term in parentheses alongside the abbreviation.

For example:

CAS (Cerebral Artery Stroke)

CAS (Cardiac Arrest Syndrome)

CAS (Clinical Assessment Score)

Acronyms and initialisms are typically considered subcategories of abbreviations. Some linguists do not distinguish clearly between acronyms and initialisms, using the term "acronym" for both.

The methods mentioned above are among the most common approaches to forming cardiological terms.

## Conclusion

Since medical terminology is continuously evolving, this article remains highly relevant. It explores the most common methods of forming cardiological terms and provides examples along with their meanings in Uzbek. The study delves into how cardiological terms are created in English, particularly through methods such as prefixes, suffixes, derivation, abbreviation, and compounding. These methods allow for a clear morphological structure and precise meaning of cardiological terms.

Most of these terms originate from Greek and Latin elements, which are combined to form new terms. When translated into Uzbek, explanatory definitions are often added to ensure clarity, or the original terminology is preserved.

The correct formation and translation of terminology are essential for effective communication among specialists in the field of cardiology. The accurate and precise use of terms is crucial not only in academic research but also in patient treatment. Therefore, when forming, translating, and using cardiological terms, scientific accuracy, clarity, and universality must be ensured.

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