DIVERSITY OF LITHUANIAN AND LATIN ANATOMICAL TERMS IN THE TEXBOOK “ŽMOGAUS ANATOMIJA. KAULAI. JUNGTYS”

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Abstract

The Romans took over Greek medical knowledge, translating and re-writing Greek books. The greatest Roman scholar was Celsius who is considered a founder of Latin medical terminology. The Latin language lacked the names for many medical notions, especially the terms for pathological conditions, which is why Celsius and others had to translate Greek terms into Latin, while simultaneously using Greek terms in the Greek form. This way the two-fold Latin-Greek medical terminology was founded. The Greek part of the terminology was latinized.

Even long after the fall of the Roman Empire, Latin was still the language of communication. Medical terminology based on Latin and Greek has several advantages: it provides continuity between the past and the present as well as continuity inspace; Latin terminology is used all over the world; the grammatical system and vocabulary of Latin and Greek do not change, therefore; modern terms are still based on these dead languages; it has a practical importance in Medicine – the patient does not understand it and cannot draw adequate conclusions (Bujalková, 2018).The object of the article is the relations between Lithuanian and Latin one-word and compound anatomical terms. The purpose of the article is to reveal the similarities and differences between one-word and compound Englishand Latin anatomical terms by structureof components. To achieve the purpose, the following research tasks are set:to review the evolution of anatomical nomenclature, to compare Englishand Latin one-word and compound anatomical terms according to the diversification of structure of components, to systematize diversification aspects of components of English and Latin terms. The method of theoretical analysis is used to examine scientific literature, the comparative analysis of terms enables systematization and generalization of English and Latin anatomical terms in the resource.

Key words: Lithuanian anatomical terms, Lithuanian one-word terms, grammatical configurations, Lithuanian compound terms; diversity of compound term structures

LATIN IN MEDICAL TERMINOLOGY

There is hardly any other aspect of medicine that is so discouraging for the beginning student as medical terminology. The first impact of the long, unfamiliar words is decidedly depressing. Although medical terms have been drawn from many languages, a large majority are from Greek and Latin. Some familiarity with the meaning of the most frequently used roots, prefixes, and suffixes will clarify the whole field. With a little study, it will be found that the long and formidable sounding medical terms are a combination of words which describe parts of the body, a function, or a condition. The basic terms occur over and over again in various combinations. A knowledge of the meaning of the roots, prefixes, and suffixes enables the student to analyze the medical terms into component parts. This is of the greatest aid in learning to understand the vocabulary of medicine. Some names of diseases given by the ancients and still used to-day are, in many instances, simply descriptions of the outstanding symptoms (Banay, 1948).

The study of Latin and Greek provides with a better understanding of the language which has been so strongly influenced by Roman and Greek languages. The pursuit of Latin and Greek language skills not only provides the broadening experience which comes from learning how to think and express oneself in anotherlanguage, but can also be great aid to building vocabulary and language skills in English and other languages. Latin and Greek literature and mythology introduce you to classical authors whose excellence is beyond question and whose works and genres have influenced Western literature down to our ownday.

<table>
<thead>
<tr>
<th>Greek language is the language of</th>
<th>Homer, Socrates, Plato, Aristotle, Diogenes, Plutarch and the Bible</th>
</tr>
</thead>
<tbody>
<tr>
<td>Latin language is the language of</td>
<td>Plautus, Terence, Cicero, Vergil, Horace, Ovid, St. Augustine and St.Francis of Assisi.</td>
</tr>
</tbody>
</table>
After the Roman conquest of Britain under Emperor Claudius, the native Picts’ Celtic language first became infused with Latin, then merged with the new invaders’ Germanic (Anglo-Saxon) dialects, and finally became English (Kondratjev, 2005).

As the Romans conquered, Latin became the universal language of Italy and the provinces. Many centuries after the fall of Rome, Latin still ruled supreme. To this very day, Latin is the language of the Catholic Church, and during the formative period of the western European languages it was in corporated in everyone of them. The Romance languages, and especially French, is modern Latin, preserving most of the formand spirit of the ancient language. English is to some extent Germanic informand part of its vocabulary, but a considerable section is of Latin ancestry borrowed from the French. Most of the common roots of speech are Anglo-Saxon, but from the moment we leave primitivy life and advance to more civilized living, our words immediately become Latin. We walk, start, stop, breathe, sleep, wake, talk, live and lieien Anglo-Saxon but we advance, retreat, approach, retire, inspire, confer, discuss, compare, refute, debate, perish, survive in Latin, and the predominant part of the vocabulary of business, commerce, finance, government, diplomacy, and the sciences is Latin. Greek medicine migrated to Rome at an early date, and many Latin terms crept into its terminology. Latin was the language of science up to the begininn of the 18th Century, so all medical texts were written in Latin. Under the influence of the great anatomical work of Andreas Vesalius, De humani corporis fabrica (1543), the terminology of anatomy is almost exclusively Latin (Banay, 1948).

The branches of science in which Latin has traditionally found its application involve indisputably medicine. While until the close of the Middle Ages a medical text not written in Latin was a rare exception, modern languages began to gain ground with increasing intensity from the 16th century on. Although in France there even was a court case held against a certain doctor named Rivièvre, in which he was accused of not being actually able to be a doctor because he did not have a good command of Latin, it wasin France that Latin first started retreating from medicine, followed by Italy and later England. On the other hand, in Germany and in the central European area Latin survived even in teaching until as late as the 19th century. Despite the obvious retreat of Latin from the medical terminology in the 20th century, Professional communicative acts in the NATIONAL languages have so far been realised with the use of international Latin-Greek terms. This state follows from the advantages that have been generally known: terminologicalcontinuity, on the one hand the present paper offers an up-to-date view of the status of Latin as the language of medicine, namely in its terminological component. It is concerned in greater detail with the three basic terminological vocabularies in which a doctor cannot sofar manage without its knowledge. In this sense a primary rank is occupied by anatomical nomenclature whose international version remains Latin in the full extent(Marecková, Šimon, Cervený, 2002).Apart from this, Latin and Greek constitute a unique stock which may also be drawn upon in case of the need of creating a new term. The incomprehensibility of the two languages for the patient is a specific moment of preference, as it is not always in his or her interest to understand the utterances of physicians.

The first attempt to unify the nomenclature of anatomy was made by the German Anatomical Society. In 1895, the Congress of Anatomists in Basel discussed and approved the draft of the nomenclature of anatomy, submitted by a special commission that worked on it for 8 years, which later acquired the name BaselerNominaAnatomica(BNA). In 1998, a new classifier of anatomical terms, Corpus, TerminologiaAnatomica, was published. FCAT (Federative Committee on Anatomical Terminology) endorsed Latin expressisverbis as “the best (definitive) language for terminology”. Latin is described as global and “non-global”; i.e., intended for the entire world and all professional levels. As a “dead” language, Latin does not change and does not belong to any nation. Due to the long-lasting closure of the countries’ international scientific relations, the medical science in each country was developing its own nomenclature. In the long run, a great confusion of anatomical terms arose, since newly discovered parts of human organs were called by names chosen on different principles. Many organs or their parts had several names each, and there were also numerous terms related to the names of discoverers, the priority of whom could not always be determined with certainty. As indicated by the Medical Terminology Commission, there are few terms that would be recognized, accepted by all; we do not have many terms at all, and this causes great difficulties not only for authors of articles, the teachers of medicine, but also for every doctor. The purist attempts of scholars at the beginning of this century to maximally or even completely abandon international terms did not receive approval (Keinys, 1980). The same can be also said about the medical terminology of other nations. Polish scholar shave composed almost all terms in Polish (Indrašius, 1967). Cze bah and Hungarians have replaced many international terms with their own, often not quite right words (Rosinas, 1999).
Medical terminology may be divided into two main parts: anatomical (based on Latin) and clinical (based on Greek). The modern anatomical terminology is based on the centuries-old tradition and knowledge that is constantly revised. Clinical medicine has not finished its development. The names of diseases were formed empirically in various times and places therefore clinical terminology is not so uniform. Besides, clinical subjects continue to develop, so their knowledge must be continually revised (Bujalková, 2018).

It is estimated that about three-fourth so four medical terminology is of Greek origin. The main reason for this is that the Greeks were the founders of rational medicine in the golden age of Greek civilization in the 5th century B.C. The Hippocratic School land, lateron, Galen (the Greek from Asia Minor who lived in Rome in the 2nd century A.D.) formulated the theories which dominated medicine up to the beginning of the 8th century. The Hippocrates were the first to describe diseases based on observation, and the names given by them to many conditions are still used today. A second reason for the large number of Greek medical terms is that the Greek language lends itself easily to the building of compounds. The fact is that about one-half of our medical terminology is less than a century old. A third reason for using the classical roots is that they form an international language, easily understood by anyone familiar with the subject matter. (Banay, 1948).


According to the authors of the book, human anatomy is the study of the structure of the body and its parts, ontogenesis, age and gender peculiarities, and the connection between form and function. One of the main parts of this science studies the apparatus of support and movement, consisting of active (muscles) and passive (bones and their joints) parts.

This textbook does not delve into the history of human anatomy, nor does it provide knowledge of muscle tissue and muscles. The focus is on descriptions of tissues, bones and joints. The text is supplemented with the Latin equivalents of the main terms, and the Picture with the corresponding Latin terms are placed next to the pictures with the Lithuanian terms.

According to the number of words that make up the term, medical terms, like terms in general, are divided into one-word and compound terms. In the nomenclature of anatomy, Nomina Anatomica, the axial names of parts of the human body are one-word. All English and Latin one-word anatomical terms are nouns. According to the provisions of the PNA, every organ must be named by only one term. One-word anatomical terms make up only a small portion of anatomical terms. They name the concepts of the main parts and organs of the human body.

In terms of origin, one-word Lithuanian anatomical terms found in the source have formed on the basis of the lexic of their own language: kraujas – sanguisZAKJ8; limfa – lymphaZAKJ9; os – kaulasZAKJ13; ašis – axisZAKJ17; dantis – densZAKJ17; viršūnė – apexZAKJ18; skiautė – cristaZAKJ18; šonkaulis – costaZAKJ18; kūnas – corpusZAKJ18;

Most of one-word anatomical terms are simple Lithuanian and Latin or Greek root words. From the given Lithuanian and Latin one-word terms, it can be seen that most of them are short: monosyllabic or bisyllabic. The analysis of the terms shows that rarely one-word terms are trisyllabic and foursyllabic.

Latin equivalents of Lithuanian one-word anatomical terms can be Latin one-word terms, Latin two-word terms and Latin three-word terms. Statistically, it looks like this:

![Fig. 2. Latin equivalents of Lithuanian one-word terms in terms of structure](image)

**LITHUANIAN AND LATIN COMPOUND ANATOMICAL TERMS**

1. LITHUANIAN TWO-WORD ANATOMICAL TERMS AND THEIR LATIN EQUIVALENTS

However, medical terminology is mostly made up of compound terms. According to scholars, only combinations of words can have an accurate scientific expression, because the more words make up the term, the more precisely it can be expressed (Danilenko, 1986).

Lithuanian and Latin compound terms form a separate group in medical terminology. Their productivity is determined by the suitability of the Latin language to economically and succinctly express an idea when the native language equivalent is expressed in a periphrasis (Marečkova, Šimon, Červeny, 2002). Lithuanian two-word anatomical terms and their Latin equivalents form ten used types of grammatical configurations:

1. Adj1s+ SN→ SN + AdjIN (Litevkienė, 2006)
2. AdjIN+ SN→ SN + AdjN;
3. SG + SN→ SN + SG;
4. SG + SN→ SN + AdjIN;
5. AdjIN + SN→ SN + AdjI;
6. AdjIN + SN→ SN + AdjINC;
7. AdjI + SN→ SN + AdjINC;
8. SG + SN→ SN + Adj INC;
9. AdjIN + SN→ SN + AdjN + AdjIN;
10. SG + SN→ SN

The following grammatical configurations are characteristic of Lithuanian two-word terms and their Latin equivalents:

**Type 1.** Nominative of a pronominal adjective (attribute) + nominative of a noun (determinative) ≡ nominative of a noun (determinative) + nominative of an adjective (attribute):

\(^{1}\)S – Noun; Adj – adjective; P – participle; N – numeral; N0 – ordinal, N – Nominative; G – Genitive; c – comparative degree; s – superlative degree, _ – combined

\(^{2}\)identical
Type 2. Nominative of an adjective with the suffix inis,ė(attribute) + nominative of a noun (determinative) = nominative of a noun (determinative) + nominative of anadjective (attribute):

Type 3. Genetiveof anoun (attribute) + nominativeof a noun (determinative) = nominativeof a noun (determinative) + genetive of a noun(attribute):

Type 4. Genetive of a noun (attribute) + nominative of a noun (determinative) ≠ nominative of a noun (determinative) + nominative of an adjective(attribute):
slinkstelio anga – foramen vertebraleZAKJ17; stuburo kanalas – canalis vertebralisZAKJ17; kalko slinkstelie – vertebrae cervicalesZAKJ17; kūrinės slinkstelie – vertebrae thoracicaesZAKJ17; juomsens slinkstelie– vertebrae lumbalesZAKJ18; jungo įlanka – incisura jugularisZAKJ19.

Type 5. Nominative of an adjective with the suffix inis,ė(attribute) + nominative of a noun (determinative) ≠ nominative of a noun (determinative) + nominative of an adjective(attribute): tarpšlenkstelinė anga – foramen intervertebraleZAKJ17; pakauškaulio žvynas – squama occipitalisZAKJ24; šeivikaulėnė įlanka – incisura fibularisZAKJ22; alkūnkuošiurkštuma – tuberositas ulnaeZAKJ20; alkūnkuošiulga – caputulnaeZAKJ20; šulnikaulio galva – caput femorisZAKJ22; krykaulio kanalas – canalis sacralisZAKJ18; stuburgalia slinkstelie – vertebrae coccygeaeZAKJ18; zastikuauko kaklas – collum anatomicumZ20.

Type 6. Nominativeofanadjectivewith the suffix inis,ė(attribute) + nominativeof a noun (determinative) ≠ nominativeof a noun (determinative) + nominativeof anadjective (attribute):
priekinis lankas – arcus anteriorZAKJ17; užpakalinės lankas – arcus posteriorZAKJ17; užpakalinis lankas – arcus posteriorZAKJ43; priekinis lankas – arcus anteriorZAKJ43; užpakalinis gumburėlis – tuberculum posteriusZAKJ43; priekinis gumburėlis – tuberculum anteriorZAKJ43.

Type 7. Nominativeofapronominal adjective(attribute) + nominative of a noun (determinative) ≠ nominative of a noun (determinative) + nominative of a comparative (attribute):

Type 8. Genetiveofanoun (attribute) + nominativeof a noun (determinative) ≠ nominativeof a noun (determinative) + genetiveofa noun (attribute) + genetiveofanadjective:
sėdynkuošišaka – ramus ossis ischiiZAKJ22; krykauliuošiurkštuma – tuberositas ossis sacriZAKJ15; sėdynkuošišaka – ramus ossis ischiiZAKJ22.

Type 9. Nominativeof an adjective with the suffix inis,ė(attribute) + nominative of a noun (determinative) ≠ nominative of a noun (determinative) + nominative of an adjective + nominative of anadjective:
vidinis pleištukas – os cuneiforme medialeZAKJ139; vidurinis pleištukas – os cuneiforme intermediumZAKJ139.
Type 10. Genitive of a noun (attribute) + nominative of a noun (determinative) ≠ nominative of a noun (determinative):

According to the frequency of identity or difference between the components of terms, the terms in this group are grouped as follows:

<table>
<thead>
<tr>
<th>Lithuanian two-word terms</th>
<th>Identity/difference</th>
<th>Latin equivalents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Types</td>
<td>subordinate component</td>
<td>maincomponent</td>
</tr>
<tr>
<td>AdjN + S N → S N + AdjN</td>
<td>adjective (nominative)</td>
<td>noun (nominative)</td>
</tr>
<tr>
<td>N° = 18</td>
<td></td>
<td></td>
</tr>
<tr>
<td>AdjN + S N → S N + AdjN</td>
<td>adjective (nominative)</td>
<td>noun (nominative)</td>
</tr>
<tr>
<td>N° = 41</td>
<td></td>
<td></td>
</tr>
<tr>
<td>S G + S N → S N + S G</td>
<td>noun (genitive)</td>
<td>noun (nominative)</td>
</tr>
<tr>
<td>N° = 16</td>
<td></td>
<td></td>
</tr>
<tr>
<td>AdjN + S N → S N + AdjN</td>
<td>adjective (nominative)</td>
<td>noun (nominative)</td>
</tr>
<tr>
<td>N° = 10</td>
<td></td>
<td></td>
</tr>
<tr>
<td>AdjN + S N → S N + AdjNc</td>
<td>adjective (nominative)</td>
<td>noun (nominative)</td>
</tr>
<tr>
<td>N° = 6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>AdjN + S N → S N + AdjNc</td>
<td>adjective (nominative)</td>
<td>noun (nominative)</td>
</tr>
<tr>
<td>N° = 10</td>
<td></td>
<td></td>
</tr>
<tr>
<td>S G + S N → S N + S G + AdjG</td>
<td>noun (genitive)</td>
<td>noun (nominative)</td>
</tr>
<tr>
<td>N° = 3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>AdjN + S N → S N + AdjNc</td>
<td>adjective (nominative)</td>
<td>noun (nominative)</td>
</tr>
<tr>
<td>N° = 2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>S G + S N → S N + AdjNc</td>
<td>noun (genitive)</td>
<td>noun (nominative)</td>
</tr>
<tr>
<td>N° = 3</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 1. Frequency of components of compound terms by grammatical configurations.

In Lithuanian two-word anatomical terms, the secondary component is usually expressed by the agreed attribute (types 1,2,5,6,7,9); less often, by the non-agreed attribute (types 3, 4, 8, 10). Secondary components are usually expressed by adjectives. In Latin equivalents, secondary components are usually expressed by agreed attributes (types 3, 8). Identical types of Lithuanian and Latin two-word anatomical terms account for 30 percent of all types of terms of this kind. Two-thirds of types of grammatical configurations are different. The secondary components also usually expressed by adjectives (positive adjectives or comparative adjectives).

When discussing aspects of coincidence and difference between Lithuanian and Latin components, it is necessary to point out that there are no forms of the pronominal adjective and participle in Latin.

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*Number of terms.
Almost half of Lithuanian attributive components consist of adjectives with suffixes-inis, -inė (4 out of 10 configuration types).

2. LITHUANIAN THREE-WORD TERMS AND THEIR LATIN EQUIVALENTS

Lithuanian three-word anatomical terms make up 14% of all found compound anatomical terms; Latin three-word CTs\(^5\), 15%. Statistically, these Lithuanian and Latin terms are used quite often in anatomical terminology. They are surpassed only by two-word terms. Latin equivalents of Lithuanian three-word terms can be three-word and four-word terms.

The following types of configurations of Lithuanian three-word terms and Latin equivalents have been observed:

1. \[\text{Adj}[Ni] + \text{P}[N] + \text{SN} \leftrightarrow \text{SN} + \text{Adj}[N] + \text{Adj}[N]\];
2. \[\text{Adj}[N] + \text{P}[Ni] + \text{SN} \leftrightarrow \text{SN} + \text{Adj}[N] + \text{Adj}[N];\]
3. \[\text{Adj}[Ni] + \text{P}[Ni] + \text{SN} \leftrightarrow \text{SN} + \text{Adj}[N] + \text{Adj}[NC];\]
4. \[\text{Adj}[Ni] + \text{SG} + \text{SN} \leftrightarrow \text{SN} + \text{Adj}[N] + \text{Adj}[N];\]
5. \[\text{Adj}[G] + \text{SG} + \text{SN} \leftrightarrow \text{SN} + \text{SG} + \text{Adj}[G];\]
6. \[\text{Adj}[Ni] + \text{Adj}[Ni] + \text{SN} \leftrightarrow \text{SN} + \text{Adj}[N] + \text{Adj}[N];\]
7. \[\text{Adj}[Ni] + \text{SG} + \text{SN} \leftrightarrow \text{SN} + \text{Adj}[N] + \text{Adj}[NC];\]
8. \[\text{Adj}[G] + \text{SG} + \text{SN} \leftrightarrow \text{SN} + \text{Adj}[N] + \text{Adj}[GC];\]
9. \[\text{Adj}[GNC] + \text{SG} + \text{SN} \leftrightarrow \text{SN} + \text{SG} + \text{Adj}[G];\]
10. \[\text{SG} + \text{SG} + \text{SN} \leftrightarrow \text{SN} + \text{SG} + \text{SG};\]
11. \[\text{SG} + \text{SG} + \text{SN} \leftrightarrow \text{SN} + \text{Adj}[N] + \text{Adj}[N];\]
12. \[\text{SG} + \text{SG} + \text{SN} \leftrightarrow \text{SN} + \text{SG} + \text{SG};\]
13. \[\text{Adj}[Ni] + \text{SG} + \text{SN} \leftrightarrow \text{SN} + \text{Adj}[NC] + \text{SG} + \text{SG};\]
14. \[\text{SG} + \text{SG} + \text{SN} \leftrightarrow \text{SN} + \text{SG} + \text{SG} + \text{Adj}[GC];\]

**Type 1.** Nominative of a pronominal adjective (attribute) + nominative of a pronominal participle (attribute) + nominative of a noun (determinative) ≠ nominative of a noun (determinative) + nominative of an adjective (attribute) + genitive of an adjectival + nominative of an adjective (attribute: purusis Jungiamasis audinys – textus connectivus luxus ZAKJ9.

**Type 2.** Nominative of an adjective with the suffix inis,ė(attribute) + nominative of a pronominal participle (attribute) + nominative of a noun (determinative) ≠ nominative of a noun (determinative) + nominative of an adjective (attribute) + genitive of an adjective + nominative of an adjective (attribute: skaidulinas Jungiamasis audinys – textus connectivus fibrosus 10ZAKJ;išorinė klausomoji anga – porus acusticus externus ZAKJ25; vidinė klausomoji anga – porus acusticus internus ZAKJ25; išorinė klausomoji landa – porus acusticus externus ZAKJ66.

**Type 3.** Nominative of an adjective with the suffix inis,ė(attribute) + nominative of a pronominal participle (attribute) + nominative of a noun (determinative) ≠ nominative of a noun (determinative) + nominative of an adjective (attribute) + nominative of an adjective (attribute) + nominative of a comparative (attribute):

užpakalinė pavestoji atauga – processus clinoidedes posterior ZAKJ65.

**Type 4.** Nominative of an adjective with the suffix inis,ė (attribute) + genitive of a noun (attribute) + nominative of a noun (determinative) ≠ nominative of a noun (determinative) + nominative of an adjective (attribute) + nominative of an adjective + nominative of an adjective (attribute):

sjanarinis riešo paviršius – facies articularis carpalis ZAKJ20; vidinis pakauškauilo kyšulyis – protuberantia occipitalis interna ZAKJ24; viršutinė sprando linija – linea nuchae superiori ZAKJ9; išorinė pakauškauilo kyšuly – protuberantia occipitalis externa ZAKJ24; šalutinis alkūnauikio raištis – ligamentum collaterale unolare ZAKJ35; šalutinis stipinkaulio raištis – ligamentum collaterale radiale ZAKJ35; žedinis stipinkaulio raištis – ligamentum anulare radii ZAKJ 35; šalutinis stipinkaulio raištis – ligamentum collaterale radiale ZAKJ36; žedinis stipinkaulio raištis – ligamentum anulare radii ZAKJ36; skersinis padikaulių raištis – ligamentum metatarsale transversum ZAKJ40; slankstelinės arterijos vaga – sulcus arteriae vertebralis ZAKJ43; tarpinės kryžkauilo skiautėrės – crista saecrales mediales ZAKJ18; šoninės kryžkauilo skiautėrės – crista saecrales laterales ZAKJ18; šokikaulinis kulnakaulio raištis – ligamentum talocalcaenum interosseum ZAKJ139.

**Type 5.** Genitive of an adjective with the suffix inis,ė (attribute) + genitive of a noun (attribute) + nominative of a noun (determinative) = nominative of a noun (determinative) + genitive of a noun (attribute) + nominative of an adjective + genitive of an adjective (attribute):

skersinių ančių vaga – sulcus sinus transversi ZAKJ24.

\(^5\)Compound terms
Type 6. Nominative of an adjective with the suffix inis,ė(attribute) + nominative of an adjective with the suffix ins,ė(attribute) + nominative of a noun (determinative) ≡ nominative of a noun (determinative) + nominative of an adjective (attribute) + nominative of an adjective (attribute): Skridinės psmėnulės įlanka – incisura trochlears semilunarisZAKJ20; ausinės sažarinės paviršių – facies articularis auricularisZAKJ22; šeivikaulinis sažarinis paviršius – facies articularis fibularisZAKJ23; skiauterinės nugarinės angos – foramina sacralia dorsaliaZAKJ18

Type 7. Nominative of an adjective with the suffix inis,ė(attribute) + genitive of a noun (attribute) + nominative of a noun (determinative) + nominative of an adjective of a comparative (attribute) + nominative of a comparative (attribute):

- viršūtinė smilkinoji linija – lineateemporalis superiorZAKJ25; apatinė sprando linija – linea nuchae inferiorZAKJ59; viršūtinė sprando linija – linea nuchae superiorZAKJ59; viršūtinė smilkinoji linija – linea temporalis inferiorZAKJ62; apatinė smilkinoji linija – linea temporalis superiorZAKJ62; viršūtinės sažarinės ataugos – processus articularis superiorZAKJ17; apatinė sažarinės ataugos – processus articularis inferiorZAKJ17; viršūtinė sažarinės ataugos – processus articularis inferiorZAKJ17;
- viršūtinė sažarinės ataugos – processus articularis inferiorZAKJ17; apatinė slankstelio įlanka – incisura vertebralis inferiorZAKJ17;
- viršūtinė sažarinės ataugos – processus articularis inferiorZAKJ44; apatinė sažarinės ataugos – processus articularis inferiorZAKJ44; priekinis sažarinės paviršius – facies articularis anteriorZAKJ45; užpakalinis sažarinis paviršius – facies articularis posteriorZAKJ45

Type 8. Genitive of a pronominal adjective(attribute) + genitive of a noun(attribute) + nominative of a noun (determinative) ≡ nominative of a noun (determinative) + nominative of an adjective (attribute) + genitive of a comparative (attribute):

- mažoji gumburėlio skiauterė – crista tuberculi minorisZAKJ20; didžiojo gumburėlio skiauterė – crista tuberculi majorisZAKJ20

Type 9. Genitive of an adjective with the suffix inis,ė(attribute) + genitive of a noun (attribute) + nominative of a noun (determinative) ≠ nominative of a noun (determinative) + genitive of an adjective (attribute) + genitive of an adjective (attribute):

- veido nervo kanalas – canalis nervi facialisZAKJ25

Type 10. Genitive of a noun(attribute) + genitive of a noun(attribute) + nominative of a noun (determinative) ≠ nominative of a noun (determinative) + genitive of a noun (attribute) + genitive of a noun (attribute):

- šoknailio galvos sąnarys – articulatio capitis ZAKJ34

Type 11. Genitive of a noun(attribute) + genitive of a noun(attribute) + nominative of a noun (determinative) ≠ nominative of a noun (determinative) + nominative of an adjective (attribute) + nominative of an adjective (attribute):

- vidurio kryžkauilio skiauterė – crista sacralis medianaZAKJ18

Type 12. Genitive of a noun(attribute) + genitive of a noun(attribute) + nominative of a noun (determinative) ≠ nominative of a noun (determinative) + genitive of a noun (attribute) + genitive of a noun (attribute) + genitive of a noun (attribute):

- šlaunikaulio galvos duobutė – fovea capitis ossis femorinisZAKJ99; šlaunikaulio galvos duobutė – fovea capitis ossis femorinisZAKJ99

Type 13. Nominative of an adjective with the suffix inis,ė(attribute) + genitive of a noun (attribute) + nominative of a noun (determinative) ≠ nominative of a noun (determinative) + nominative of a comparative (attribute) + genitive of a noun (attribute) + genitive of a noun (attribute) + genitive of a comparative (attribute) + genitive of a comparative (attribute):

- pečių lanko kaulai – ossa cinguli membra superiorisZAKJ19

According to the frequency of identity or difference between the components of terms, the terms in this group are grouped as follows:

<table>
<thead>
<tr>
<th>Lithuania</th>
<th>three-word terms</th>
<th>Identifying difference</th>
<th>Latin equivalents</th>
</tr>
</thead>
</table>

20
<table>
<thead>
<tr>
<th>Types</th>
<th>III subordin ate comp onent</th>
<th>I subordin ate comp onent</th>
<th>mainc comp onent</th>
<th>$\equiv/\neq$ maincom ponent</th>
<th>I subordinate component</th>
<th>Illsubordin ate comp onent</th>
<th>Illsubordin ate comp onent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adj$<em>{N1}$ + P$</em>{N1}$ + S$_N$ ↔ S$<em>N$ + Adj$</em>{N1}$ + Adj$_N$ $N=1$</td>
<td>adjectiv e(nominative)</td>
<td>participl e (nominative)</td>
<td>noun (nominative)</td>
<td>$\neq$ noun (nominative)</td>
<td>adjective(nominative)</td>
<td>adjective(nominative)</td>
<td>adjective(nominative)</td>
</tr>
<tr>
<td>Adj$<em>{N1}$ + P$</em>{N1}$ + S$_N$ ↔ S$<em>N$ + Adj$</em>{N1}$ + Adj$_N$ $N=4$</td>
<td>adjectiv e(nominative)</td>
<td>participl e (nominative)</td>
<td>noun (nominative)</td>
<td>$\neq$ noun (nominative)</td>
<td>adjective(nominative)</td>
<td>adjective(nominative)</td>
<td>adjective(nominative)</td>
</tr>
<tr>
<td>Adj$<em>{N1}$ + P$</em>{N1}$ + S$_N$ ↔ S$<em>N$ + Adj$</em>{N1}$ + Adj$_N$ $N=1$</td>
<td>adjectiv e(nominative)</td>
<td>participl e (nominative)</td>
<td>noun (nominative)</td>
<td>$\neq$ noun (nominative)</td>
<td>adjective(nominative)</td>
<td>adjective(nominative)</td>
<td>adjective(nominative)</td>
</tr>
<tr>
<td>Adj$_{N1}$ + S$_G$ + S$_N$ ↔ S$<em>N$ + Adj$</em>{N1}$ + Adj$_N$ $N=21$</td>
<td>adjectiv e(nominative)</td>
<td>noun(genetive)</td>
<td>noun (nominative)</td>
<td>$\neq$ noun (nominative)</td>
<td>adjective(nominative)</td>
<td>adjective(nominative)</td>
<td>adjective(nominative)</td>
</tr>
<tr>
<td>Adj$<em>{N1}$ + Adj$</em>{N1}$ + S$_N$ ↔ S$<em>N$ + Adj$</em>{N1}$ + Adj$_N$ $N=1$</td>
<td>adjectiv e(nominative)</td>
<td>adjectiv e(nominative)</td>
<td>noun (nominative)</td>
<td>$\equiv$ noun (nominative)</td>
<td>noun(nominaive)</td>
<td>adjective(nominative)</td>
<td>adjective(nominative)</td>
</tr>
<tr>
<td>Adj$<em>{N1}$ + Adj$</em>{N1}$ + S$_N$ ↔ S$<em>N$ + Adj$</em>{N1}$ + Adj$_N$ $N=4$</td>
<td>adjectiv e(nominative)</td>
<td>noun(genetive)</td>
<td>noun (nominative)</td>
<td>$\neq$ noun (nominative)</td>
<td>adjective(nominative)</td>
<td>adjective(nominative)</td>
<td>adjective(nominative)</td>
</tr>
<tr>
<td>Adj$<em>{N1}$ + Adj$</em>{N1}$ + S$_N$ ↔ S$<em>N$ + Adj$</em>{N1}$ + Adj$_N$ $N=27$</td>
<td>adjectiv e(nominative)</td>
<td>noun(genetive)</td>
<td>noun (nominative)</td>
<td>$\neq$ noun (nominative)</td>
<td>adjective(nominative)</td>
<td>adjective(nominative)</td>
<td>adjective(nominative)</td>
</tr>
<tr>
<td>Adj$<em>{N1}$ + Adj$</em>{N1}$ + S$_N$ ↔ S$<em>N$ + Adj$</em>{N1}$ + Adj$_N$ $N=2$</td>
<td>adjectiv e(nominative)</td>
<td>noun(genetive)</td>
<td>noun (nominative)</td>
<td>$\neq$ noun (nominative)</td>
<td>adjective(nominative)</td>
<td>adjective(nominative)</td>
<td>adjective(nominative)</td>
</tr>
<tr>
<td>Adj$<em>{N1}$ + Adj$</em>{N1}$ + S$_N$ ↔ S$<em>N$ + Adj$</em>{N1}$ + Adj$_N$ $N=1$</td>
<td>adjectiv e(nominative)</td>
<td>noun(genetive)</td>
<td>noun (nominative)</td>
<td>$\neq$ noun (nominative)</td>
<td>adjective(nominative)</td>
<td>adjective(nominative)</td>
<td>adjective(nominative)</td>
</tr>
<tr>
<td>Adj$<em>{N1}$ + Adj$</em>{N1}$ + S$_N$ ↔ S$<em>N$ + Adj$</em>{N1}$ + Adj$_N$ $N=1$</td>
<td>adjectiv e(nominative)</td>
<td>noun(genetive)</td>
<td>noun (nominative)</td>
<td>$\neq$ noun (nominative)</td>
<td>adjective(nominative)</td>
<td>adjective(nominative)</td>
<td>adjective(nominative)</td>
</tr>
</tbody>
</table>
Latin equivalents of Lithuanian three-word terms are three-word, four-word terms. A total of 14 grammatical configurations of Lithuanian terms consisting of three components and Latin equivalents were found in the source. There are 10 grammatical configurations of identical Lithuanian three-word terms and their Latin equivalents.

Components of three-word Lithuanian terms can be divided as follows: the first secondary component is expressed by the agreed attribute in types 1, 2, 3, 4, 5, 6; the agreed attribute is the second secondary component in types 1, 2, 3, 6, 7, 8, 9, 13. Secondary components in Latin equivalents are distributed as follows: the first secondary component is the agreed attribute in types 1, 2, 3, 4, 7, 8, 11 (42.85% in Latin equivalents, respectively), the second secondary component is the agreed attribute in types 1, 2, 3, 5, 6, 7, 8, 9, 11 (28.57% in Latin equivalents, respectively). Lithuanian three-word terms that have their first secondary component expressed by the non-agreed attribute make up 57.14% and the ones that have their second secondary component expressed by the non-agreed attribute make up 35.71%.

### 3. LITHUANIAN FOUR-WORD TERMS AND THEIR LATIN EQUIVALENTS

It has already been mentioned that the majority of Lithuanian anatomical terms and their Latin equivalents consist of two words (respectively, 116 and 109) and three words (respectively, 69 and 72), which come in various configurations. 18 Lithuanian four-word terms and 23 Latin equivalents were found. This makes up 7.2% of the studied Lithuanian terms. This represents 9.75% of the studied Latin terms. 9 configurations of Lithuanian terms and Latin equivalents are distinguished.

The grammatical configurations of Lithuanian and Latin four-word terms by components can be grouped as follows: four-word Lithuanian terms ↔ four-word Latin equivalents, four-word Lithuanian terms ↔ three-word Latin equivalents.

Summarizing the analyzed examples, the following chart showing links between components in Lithuanian four-word terms and in their Latin equivalents can be drawn up:

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Table 2. Frequency of compound term components by grammatical configurations.

<table>
<thead>
<tr>
<th>N=1</th>
<th>Adjective</th>
<th>Noun (genitive)</th>
<th>Noun (nominative)</th>
<th>≠</th>
<th>Noun (nominative)</th>
<th>Noun (genitive)</th>
<th>Noun (genitive)</th>
<th>Noun (genitive)</th>
<th>Noun (genitive)</th>
</tr>
</thead>
<tbody>
<tr>
<td>SG + SG + SN ↔ SN + SG + SG</td>
<td>adjective(nominative)</td>
<td>noun(genitive)</td>
<td>noun(nominative)</td>
<td>≠</td>
<td>noun(nominative)</td>
<td>noun(genitive)</td>
<td>noun(genitive)</td>
<td>noun(genitive)</td>
<td>noun(genitive)</td>
</tr>
<tr>
<td>N=2</td>
<td>AdjNC + SG + SG + SN ↔ SN + SG</td>
<td>noun(genitive)</td>
<td>noun(nominative)</td>
<td>≠</td>
<td>noun(nominative)</td>
<td>noun(genitive)</td>
<td>noun(genitive)</td>
<td>noun(genitive)</td>
<td>compative(genitive)</td>
</tr>
</tbody>
</table>

---
Types of configurations of four-word anatomical terms:

**Type 1.** Nominative of an adjective with the suffix inis,ė(attribute) + genitive of a noun(attribute) + nominative of a noun (determinative) ≠ nominative of a noun (determinative) + nominative of an adjective(attribute) + nominative of a comparative(attribute) + nominative of a comparative (attribute): AdjNn + AdjNn +SG+ Sn ≠ Sn + AdjN + AdjNC + AdjNC;

**Type 2.** Nominative of an adjective with the suffix inis,ė(attribute) + genitive of an adjective with the suffix inis,ė(attribute) + genitive of a noun(attribute) + nominative of a noun (determinative) ≠ nominative of a noun (determinative) + genitive of a noun(attribute) + nominative of a comparative(attribute) + genitive of a comparative (attribute): AdjNn + AdjGn +SG+ Sn ≠ Sn + SG + AdjN + AdjGc;

viršutinė strėlinio ančio vaga – sulcus sinus sagittalis superiorisZAKJ24; apatinė strėlinio ančio vaga – sulcus sinus sagittalis inferiorisZAKJ25

**Type 3.** Nominative of an adjective with the suffix inis,ė (attribute) + genitive of a noun (attribute) + genitive of a noun (attribute) + nominative of a noun (determinative) ≠ nominative of a noun (determinative) + genitive of a noun (attribute) + genitive of a noun (attribute) + nominative of a comparative (attribute): AdjNn + SG +SG+ Sn ≠ Sn + SG + SG + Adjnc;
prieininis šeivikaulio galvos raištis – ligamentum capsitis fabulae anteriusZAKJ137; viršutinis krūtinės ląstos atvaras – apertura thoracis superiorZAKJ19; apatinis krūtinės ląstos atvaras – apertura thoracis inferiorZAKJ19.

**Type 4.** Nominative of an adjective with the suffix inis,ė (attribute) + genitive of a noun (attribute) + genitive of a noun (attribute) + nominative of a noun (determinative) ≠ nominative of a noun(determinative) + genitive of a noun (attribute) + genitive of a noun (attribute) + nominative of a comparative (attribute): AdjNn + SG +SG+ Sn ≠ Sn + SG + SG + AdjN;

spindulinis šonkaulio galvos raištis – ligamentum capitis costae radiatum34

**Type 5.** Genitive of an adjective (attribute) + genitive of a noun (attribute) + genitive of a noun (attribute) + nominative of a noun (determinative) ≠ nominative of a noun (determinative) + genitive of a noun (attribute) + genitive of an adjective (attribute) + genitive of a noun (attribute): AdjG + SG +SG+ Sn ≠ Sn + SG + AdjG + SG;
dvigalvio žasto raumens sausgyslė – tendo musculi bicipitis brachiiZAKJ121

**Type 6.** Nominative of a pronominal of an adjective (attribute) + nominative of an adjective with the suffix inis,ė(attribute) + genitive of a noun (attribute) + nominative of a noun (determinative) ≠ nominative of a noun (determinative) + nominative of a noun (attribute) + nominative of an adjective (attribute) + nominative of an adjective (attribute): AdjNc + AdjNn +SG+ Sn ≠ Sn + AdjN + AdjN + AdjNc;
gilieji skersniai dnelakaulių raiščiai – ligamentameta carpea transversa profundaZAKJ125

**Type 7.** Genitive of an adjective (attribute) + genitive of a noun(attribute) + genitive of a noun (attribute) + nominative of a noun (determinative) ≠ nominative of a noun (determinative) + genitive of a noun (attribute) + genitive of an adjective (attribute) + genitive of a noun (attribute): AdjG + SG +SG+ Sn ≠ Sn +SG +AdjG+SG;
dvigalvio šlaunies raumens sausgyslė – tendo musculi bicipitis femorisZAKJ135; dvigalvio žasto raumens sausgyslė – tendo musculi bicipitis brachiiZAKJ121

**Type 8.** Genitive of a noun (attribute) + genitive of a noun(attribute) + nominative of an adjective with the suffix inis,ė(attribute) + nominative of a noun (determinative) ≠ nominative of a noun (determinative) + nominative of an adjective (attribute) + genitive of a noun(attribute) + genitive of a noun (attribute): SG + SG + AdjK + Sn ≠ Sn + AdjN + SG + SG;

šonkaulio galvos sąnarinis paviršius – facies articularis capitis costaeZAKJ116; šonkaulio gumburėlio sąnarinis paviršius – facies articularis tuberculi costaeZAKJ53

**Type 9.** Nominative of an adjective with the suffix inis,ė (attribute) + nominative of an adjective with the suffix inis,ė(attribute) + genitive of a noun(attribute) + nominative of a noun (determinative) ≠ nominative of a noun (determinative) + nominative of an adjective (attribute) + nominative of an adjective (attribute): AdjNn + AdjNn + SG + Sn ≠ Sn + AdjN + AdjN;
prieininis krūtinėkaulinis raktikuolio raištis – ligamentum sterni claviculare anteriusZAKJ118; tolimasis stipinkaulinis alkūnkaulio sąnarys – articulatio radiculnaris distalisZAKJ127
First secondary components of Lithuanian four-word terms are non-agreed attributes in eight grammatical configurations, which accounts for 88.89% of all configurations. Second secondary components are non-agreed attributes in 5 configurations, third secondary components expressed by non-agreed attributes occur in only one configuration. First secondary components in Latin equivalents are non-agreed attributes occurring in five configurations; second secondary components are non-agreed attributes occurring in only three configurations, third secondary components are non-agreed attributes occurring also in three configurations.

According to the frequency of configurations, it can be stated that term pairs of type 5 are most productive. There are fewer pairs of terms of types 3 and 9: 13% each.

4. LITHUANIAN FIVE-WORD TERMS AND THEIR LATIN EQUIVALENTS

Only 1 pair of Lithuanian five-word terms and their Latin five-word equivalents was found.

Genitive of an adjective (attribute) + genitive of a noun (attribute) + genitive of a participle (attribute) + genitive of a noun + nominative of a noun (determinative) ≠ nominative of a noun (determinative) + genitive of a noun (attribute) + genitive of an adjective (attribute) + genitive of a noun (attribute) + genitive of an adjective (attribute):

\[ \text{Adjs} + \text{Ss} + \text{Ps} + \text{Ss} + \text{SN} \leftrightarrow \text{SN} + \text{Ss} + \text{Adjg+Ss} + \text{Adjg}; \]

pavirištinio pirštų lenkiamojo raumens sausgyslė – tendo musculi flexoris digitorum superficialis ZAKJ125.

Conclusions

Over the centuries, the development of medical terminology has been based on the process of creating parallel national and international terms, known all over the world and well-defined. In the field of medical, biological and pharmaceutical sciences, such a reliable tool of communication was Latin and Greek. Latin enables us to precisely define and differentiate between concepts. The benefits flowing from knowledge of Latin are so significant that it seems impossible to imagine a physician, pharmacist or physiotherapist without even elementary knowledge of this language. Most terms used in biology and medicine are derived from classical languages; i.e., Latin and Greek. It may be concluded that the modern language of medicine basically represents the ancient Greek language transcribed into Latin (Jóskowska, Grabarczyk, 2013).

Lithuanian one-word anatomical terms make up only a small part of anatomical terms. They refer to the concepts of the main parts and organs of the human body. In terms of origin, Lithuanian one-word anatomical terms found in the source have formed on the lexicon of their own language, while 90% of Latin one-word anatomical terms are composed on the basis of Latin.

Lithuanian and Latin two-word and three-word anatomical terms are used quite often: 116 Lithuanian two-word and three-word terms and 109 Latin ones were found in the source. This accounts for 42.96% of the sample of Lithuanian terms and 40.37% of the sample of Latin terms. Two-thirds of Lithuanian two-word terms and almost two-thirds of Latin two-word terms consist of terms linked by the syntactic relations of the agreed attribute. The majority of Lithuanian two-word terms are built by the nominative of adjective with suffixes -inis, -inë + the nominative of noun; while of Latin ones, by the nominative of noun + the nominative of adjective. In Lithuanian anatomical terms, the species attribute usually precedes the determinative. Latin compound terms are characterised by the inverted order of components in compound terms. The material studied has shown that Lithuanian and Latin two-word terms with participles, numerals and pronouns as components are notabundant. Secondary components of more than a third of Lithuanian and Latin three-word terms are agreed attributes; of a fifth, the agreed and non-agreed attribute. The majority of Lithuanian four-word terms, 18 of which were found in the sources, and Latin four-word terms, 23 of which were found in the sources, has different grammatical configurations. One pair of Lithuanian five-word terms and their Latin equivalents has been found.

Resources


References


Jóskowska, K., Grabarczyk, Z. (2013). Department of Applied Linguistics, Nicolaus Copernicus University, Collegium Medicum in Bydgoszcz, Poland Greek and Latin in medical terminology.


Jóskowska, K., Grabarczyk, Z. (2013). Department of Applied Linguistics, Nicolaus Copernicus University, Collegium Medicum in Bydgoszcz, Poland Greek and Latin in medical terminology.


Marecková, E. Šimon, F., Cervený, L. (2002). Latin as the language of medical terminology: some remarks on its role and prospects. Swiss medical weekly: official journal of the Swiss Society of Infectious Diseases, the Swiss Society of Internal Medicine, the Swiss Society of Pneumology.


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