**Basics of anatomical terminology**

**INTRODUCTION**

 It is well known that one can master a profession only in the process of mastering the language of this profession and particularly the system of special conceptions and of the terms designating them.

Hundreds of thousands of words and word combinations are included into the professional language which is considered to be one of the means of international communication of the representatives of the medical profession. The modern medical terminology is one of the most complicated term systems due to the traditional use of the Greek and Latin languages in it.

In our course we shall pay attention to those elements of the Latin language, which are necessary and satisfactory for mastering the language of medicine. You will study those elements of the Latin grammar, which will help you to understand the structure of medical terms and the correlation between the words within a term. You will learn to construct medical terms according to the Latin grammar rules and to give the definitions to the scientific notions, expressed through medical terms in English.

The word “term” is Latin by origin (“terminus”) and means “a limit, a boundary”.

The main function of a term is to denote exactly and in a full and concrete form some conception in the field of science, technology, etc.

Each scientific notion has its definition, which explains the essence of it.

For example, being non-specialists you will say, that “a tablet” is a drug, round in form, bitter or sweet, and so on. On the other hand, a specialist will define “a tablet” as a scientific term, and you will read here: “A tablet is a solid dosage drugform obtained by pressing and forming a special mixture of medical and additional substances”.

So you see, that in a definition the language of medicine gives an exact, concrete and full description of a scientific notion, expressed through a scientific medical term.

“Terminology” is a system of concepts. It is a combination of names, words and combinations of words used to denote exactly and in a concrete way scientific notions in the system of concepts of a given science.

The vast subsystems of terms within the medical terminology are:

1. **Terminology of Anatomy and Histology** – The International Anatomo-Histological Nomenclature. It is used to name a definite unit or structure of a human body. The anatomical terminology is a base for medical communication. Its international version remains Latin in the full extent.

2. **Clinical Terminology** (general medical terminology), which unites the terminologies of sciences concerned with the prevention, diagnostics and treatment of diseases or pathological conditions. Using the clinical terminology a doctor uses over 70% terms of Greek/Latin origin.

3. **Pharmaceutical Terminology** includes the terminologies of the sciences concerned with the exploration, production and testing the effect of medical substances and drugs.

In this course of Latin you will get acquainted with all these systems of terms and you are to begin with the study of the terms used in Anatomy.

The English language of medicine has Greek and Latin words in abundance. There is a famous saying in Latin which sounds as follows: **“Invia est in medicina via sine lingua Latina”,** which means: “There is no way into medicine without the Latin language”.

The modern language of physicians and pharmaceutists is a product of development of world medicine which lasted for centuries.

As far back as in the 5th century B. C. there lived and worked in Greece the famous Hippocrates. His scientific work laid the foundation to the scientific medical terminology, which was later on developed and enriched by Aulus Cornelius Celsus in the 1st century A. D. He is considered to be the founder of the medical terminology in the Latin language. So you see that from the very beginning the medical terminology has been developing on the basis of two languages: Greek and Latin.

In the epoch of Renaissance the foundation for the international medical terminology in Latin was laid.

Nowadays Latin is an international language of physicians and pharmaceutists. The majority of new medical terms are constructed on the base of the building material taken from the Latin language.

So, we wish you success in mastering the language of your future profession!

**ANATOMICAL TERMINOLOGY**

**LESSON 1**

**LATIN ALPHABET.** **Rules of reading.**

 The Latin alphabet, also called the Roman alphabet, includes all the letters of the English alphabet, except for ***w***. It contains 25 letters, six vowels and nineteen consonants. You should become familiar with the Latin alphabet that follows:

Aa [a], Bb [be], Cc [tse], Dd [de], Ee [e], Ff [ef], Gg [ge], Hh [gha], Ii [i], Jj [jot], Kk [ka], Ll [el’], Mm [em], Nn [en], Oo [o], Pp [pe], Qq [ku], Rr [er], Ss [es], Tt [te], Uu [u], Vv [ve], Xx [iks], Yy [ypsilon], Zz [zeta].

**Pronunciation of vowels**

|  |  |  |
| --- | --- | --- |
| Letter | Pronunciation | Examples |
| **a** | **[a]** | c***á***put *(head)*; ***a***rtéri***a****(artery)* |
| **e** | **[e]** | vértebra; int***é***rnus *(internal)* |
| **i** | **[i]** | ***i***nfér***i***or; f***í***bra *(fiber)* |
| **o** | **[o]** | c***ó***rpus *(body)*, d***ó***rsum *(back)*,***ó***rbita *(orbit)* |
| **u** | **[u]** | p***ú***lmo *(lung)*; ***u***terín***u***s *(uterine)* |
| **y** | **[i]** | t***ý***mpanum *(drum)*; pter***y***goídeus *(wing-shaped)*  |

**Exercise 1. *Read anatomical terms as follows:***

Vértebra (spinal bone), dórsum (back), distális (distal), intérnus (internal), médius (middle), séptum (septum), abdómen (abdomen), aórta (аоrtа), apertúra (opening), nérvus (nerve), artéria (artery), fémur (femur, thigh), brévis (brevis, short), meátus (meatus), fíbra (fiber), forámen (foramen, opening), rotúndus (round), ovális (oval), fúndus (fundus), ligaméntum (ligament), mánus (hand), mémbrum (limb), nódus (node), órbita (orbit), uterínus (uterine), vómer (vomer), orbitális (orbital), parietális (parietal).

**Exercise 2*. Read the following aloud. Pay special attention to* y:**

Amýgdala (tonsil), pterygoídeus (wing-shaped), týmpanum (tympanum), cóndylus (condyle), dáctylus (finger), embryológia (embryology), gýrus (convolution), pýramis (pyramid), myológia (myology), styloídeus (styloid), spóndylos (vertebra), crystallisátus (crystal).

**Pronunciation of consonants**

|  |  |  |
| --- | --- | --- |
| **Cc** | **[ts]** | before **e, i, y, ae, oe**:**cé**rvix[tserviks] *(neck);* **cý**stis[tsistis] *(bladder);* **caé**cum[tsekum] *(cecum)* |
| **[k]** | before **a, o, u**, before consonants and at the end of a word: ***cá***put*(head);* ***có***sta*(rib);* ***cu***tis*(skin);* ***cr***ísta*(crest);*  |

|  |  |  |
| --- | --- | --- |
| **Ss** | **[z]** | Between two vowels or between a vowel and the voiced consonant ***m*** or ***n***: ná***s***us*(nose);* compó***s***itus (complicated); pla***s***ma; ton***s***ílla *(tonsil)* |
| **[s]** | before vowels, consonants and at the end of a word:***s***úlcu***s****(furrow),* po***s***terior*;* pe***s*** *(foot)*; ó***ss***eus *(bony)* |

|  |  |  |
| --- | --- | --- |
| **g** | is always pronounced as **[g]** | ***g***in***g***íva*(gum)*; ***g***lándula *(gland)* |
| **h** | is pronounced like a sound intermediate **between** the English **[h]** and **[g]**  | ***h***ómo *(a human being)****h***iátus*(opening)****h***épar *(liver)* |
| **j**  | is always pronounced as **[j]** | má***j***or *(big)****j***unctúra*(junction)*  |
| **l**  | is always palatalized and soft  | ***l***abium[l’abium] *(lip);* ***l***ac *(milk)* |
| **x** | is pronounced as **[ks]** | dé***x***ter*(right)*; ápe***x****(tip, apex)* |
| **z** | In Greek words it is always pronounced as **[z]** **but in words of other origin it is pronounced as [ts]** | ***z***ygomáticus *(zygomatic)* ***Z***íncum*(zinc)**influén****z***a*(grippe)* |

**Exercise 3*. Read the following aloud. Pay special attention to* c *and* cc:**

a) Сóllum (neck), trúncus (trunk, body), árcus (arch), cávum (cavity), cránium (skull), colúmna (column), crísta (crest), dúctus (duct), córnu (horn), cardíacus (cardiac), clavícula;

b) cérebrum (brain), fácies (face), fáscia (fascia), scéleton (skeleton), cýtus (cell);

c) ócciput (back of head, occiput), occipitális (occipital), músculi coccygéi (coccygeal muscle).

**Exercise 4*. Read the following aloud. Pay special attention to* s *and* ss:**

a) Dorsális (dorsal), pes (foot), súlcus (furrow), transvérsus (transversal), commissúra (commissure), compréssor (compressor), crus (leg), fissúra (fissure), ósseus (bony);

b) incisúra (notch), mucósa (mucous membrane), vása vasórum (vasa vasorum);

c) adipósus (adipose), serósus (serous), dens incisívus (incisor), pars spongiósa (spongiose part), procéssus accessórius (accessory process), fóssa dúctus venósi (fossa of venous duct), tuberósitas (tuberosity), compósitus (complicated), násus (nose), cavernósus (cavernous);

d) prísma (греч.) (prism), tonsílla (tonsil), cytoplásma (cytoplasm), platýsma (platysma, subcutaneous muscle of the neck), organísmus (греч.) (organism).

**Exercise 5*. Read the following aloud. Pay special attention to* l:**

Ála (wing), álbus (white), alvéolus (alveole), úlna (ulna), pélvis (pelvis), búlbus (bulb), glándula (gland), fíbula (fibula), lábium (lip), lámina (lamina), lóbulus (lobule), papílla (papilla), púlmo (lung), púlvis (powder), tabulétta (tablet).

**Exercise 6*. Read the following aloud. Pay special attention to* g *and* h:**

a) Gingíva (gum), glándula (gland), gástricus (gastric), márgo (margin), génu (knee);

b) hépar (liver), hílus (hilus), hyoídeus (sublingual), húmerus (humeral bone), hiátus (hiatus), húmor (moisture), hérba (herb), hérnia (hernia).

**Exercise 7*. Read the following aloud. Pay special attention to* x *and* z:**

a) Áxis (axis), máximus (largest), lárynx (larynx), córtex (cortex), extrémitas (extremity), índex (index), maxílla (upper jaw, maxilla), pléxus (plexus), rádix (root, radix), símplex (simple);

b) os trapézium (trapezoid bone), zygomáticus (zygomatic), horizontális (horizontal), zonuláris (zonular), zoológia (zoology), Zíncum (zinc).

**Diphthongs**

|  |  |  |
| --- | --- | --- |
| Diphthongs | Pronunciation | Examples |
| **ae** | **[e]** | h***áe***ma*(blood)****; ae***grótus *(ill);* peron***áe***us *(peroneal, fibular)* |
| **oe** | **[e:]** | ***oe***dema;am***óe***ba *(ameba)* |
| **au** | **[au]** | ***au***ris['aurıs] *(ear)****;***c***áu***da *(tail, cauda)* |
| **eu** | **[eu]** | s***eu***['seu] *(or)****;*** n***eu***róma *(neuroma)* |

**Nota Bene!***(take special note):* Two dots placed over the letter e indicate that***ae***or***oe***are treated not as diphthongs and their letters denote different sounds:

á**ë**r [aer] (air); díplo**ё** ['dıploe] (spongy substance), dýspno**ё** ['dıspnoe] (breathlessness)

**Exercise 8. *Read the following aloud. Pay special attention to* ae, oe, au, eu:**

a) Peronáeus (peroneal, fibular), háema (blood), incisúrae (notches), vénae cávae (vena cava), túnica vesícae félleae (coat of the gallbladder), aegrótus (ill), dens praemoláris (premolar tooth);

b) oedéma (oedema), roentgenográmma (roentgenogram), oecológia (ecology), amóeba (ameba);

c) áuris (ear), cáuda (tail, cauda), áuctor (author), cáusa (cause), auriculáris (ear; aural);

d) aponeurósis (aponeurosis), paraneurális (paraneural), neuroblástus (neuroblast), pleurális (pleural), aneurýsma (aneurysm), pléura (pleura), neuróma (neuroma), néuter (neuter (gender));

e) áёr (air), aёrosólum (aerosol, spray), liniméntum Áloёs (liniment of aloe).

**Letter combinations**

|  |  |  |
| --- | --- | --- |
| **ngu** | **[ngv]** | when followed by a vowel, lí***ngu***a['lingva] *(tongue, language)*  |
| **[ngu]** | when followed by a consonant,á***ngu***lus['angulus] *(angle)* |
| **ti** | **[tsi]** | when followed by a vowel and proceeded by any letter, exept for **s, t, x**,spá***ti***um['spatsium] *(space);* articulá***ti***o[artiku'latsio] *(joint);*but os***ti***um['ostium] *(opening)*  |
| **[ti]**  | before consonants, after **s,t, x,*****tí***bia['tibia] *(shinbone);* car***ti***lágo *(cartilage);* míx***ti***o *(mixing)* |
| **qu** | **[kv]** | á***qu***a['akva] *(water),* lí***qu***or *(liquor, liquid)*s***qu***ama['skvama] *(scales)*  |

**Exercise 9. *Read the following aloud. Pay special attention to* ti:**

a) Ópticus (optic, visual), palatínus (palatine), cartilágo (cartilage), tíbia (shinbone, tibia), acústicus (auditory), rétina (retina), caróticus (carotic);

b) аbdúctio (abduction), articulátio (joint, articulation), protuberántia (protuberance), respirátio (respiration), séctio (section), spátium (space), substántia (substance), solútio (solution);

c) míxtio (mixing), digéstio (digestion), óstium (orifice), combústio (burn).

**Exercise 10. *Read the following aloud. Pay special attention to* qu *and* ngu:**

a) oblíquus (oblique), líquor (liquor, liquid), squamósus (squamous, scaly), squáma (squama), quádriceps (quadriceps), áqua (water), acquisítus (acquired);

b) únguis (nail, unguis), unguális (nail, unguinal), unguéntum (ointment), linguális (lingual);

c) angulus (angle), singuláris (single), úngula (hoof, unguis).

**Digraphs**

*A digraph* is a group of two consonants representing one sound.

|  |  |  |
| --- | --- | --- |
| **ch** | **[h]** | nú***ch***a[nuha] *(neck)*; cón***ch***a *(concha);*brá***ch***ium *(arm, brachium)* |
| **ph** | **[f]** | ***ph***arynx['farinks] *(gullet)*; encé***ph***alon *(brain)*; ***ph***álanx |
| **rh** | **[r]** | ***rh***á***ph***e['rafe] *(suture)*; ***rh***izóma *(rhizome)* |
| **th** | **[t]** | ***th***órax['toraks] *(chest)*; labyrín***th***us *(labyrinth)* |

**Exercise 11. *Read the following aloud. Pay special attention to* ch, ph, th, rh:**

a) bráchium (arm, brachium), cóncha (concha), trachéa et brónchi (trachea and bronchi), ischiádicus (ischiadic, sciatic), núcha (nucha), trochánter (trochanter), stómachus (stomach);

b) encéphalon (brain), oesóphagus (esophagus), phárynx (pharynx), phálanx (phalanx), diaphrágma (diaphragm), sphenoidális (wedge-shaped, sphenoidal), saphénus (subcutaneous);

c) thyreoídeus (thyroid), ethmoidális (ethmoid), thórax (thorax), arthron (joint, articulation), labyrínthus (labyrinth), thorácicus (thoracic), ophthálmicus (ophthalmic);

d) rheumatísmus (rheumatism), rháphe (suture, raphe), rhinális (nasal), rhizóma (rhizome).

**SELF-ASSESSMENT QUESTIONS**

1. How many letters are there in the Latin alphabet? Name all the letters.
2. Name vowel and consonant letters.
3. How are the Latin vowels pronounced?
4. What distinctive features does the pronunciation of the letters **L, H, C, S, X, Z** have?
5. What is “diphthong”?
6. What is “digraph”?
7. How many diphthongs are there in Latin? How are they pronounced?
8. How are pronounced the letter combinations **qu, ngu, ti**? Give examples.
9. How are pronounced the letter combinations **ch, ph, th, rh**? Give examples.

**LESSON 2**

**LATIN NOUN AND ITS GRAMMATICAL CATEGORIES**

The **noun** is one of the basic parts of speech. A noun is a name given to an object or idea. The nouns answer the questions “who”, “what”. In the Human Anatomy the nouns are used to name the units and structures of the human body, e.g, *vertĕbra (spinal bone), costa (rib), cranĭum (skull)*. The Latin nouns have grammatical categories as follows:

**GENDER:**

There are three genders in Latin: *Masculine, Feminine and Neuter*. All nouns in Latin have gender. This is the grammatical gender, i.e. the gender of Latin nouns is determined by endings and not by their biological sex. We cannot answer why is *vertebra*feminine while *cranium* is neuter. It is best to memorize the gender of each noun you learn.

The genders of a noun are indicated in the dictionaries with the letters:

* **m – masculine**
* **f – feminine**
* **n – neuter**

The gender of a noun is defined in Latin from its endingsin the **Nominative case Singular.** Thus, nouns ending in **-a**are feminine: *scapŭla* (shoulder blade), nouns ending in **-us** are masculine: *muscŭlus* (muscle), nouns ending in **–um** are neuter: *cranĭum* (skull) etc.

**NUMBER:**

The Latin has two numbers – the Singular and Plural. In Latin the ending of the plural varies according to the gender and declension: *vertěbrae (vertebrae), nervi (nerves), corpŏra (bodies), facĭes (surfaces) etc.*

**CASE:**

Case is defined as the change of the noun form according to its relation to other words. In modern English we can speak about “common case” and “possessive case”. In contrast to English there are six cases in Latin, but only **two cases** are used in the anatomical terminology:

|  |  |
| --- | --- |
| *English* | *Latin and abbreviation* |
| **Nominative**  | **Nominatīvus (Nom.)**  |
| **Genitive**  | **Genitīvus (Gen.)**  |

**Nominative** indicates the subject and answers the questions **who, what**.

**Genitive** indicates the possession and answers the questions **whose, of what.**

**DICTIONARY FORM OF A LATIN NOUN**

The dictionary form of a Latin noun includes three components:

**1. Nominative singular**

**2. Genitive singular**

**3. Gender (**it is usually abbreviated: ***m, f, n*).**

|  |  |  |
| --- | --- | --- |
| **Written form** | **Oral form** | **English equivalent**  |
| ala, ae *f*  | ala, alae, feminīnum  | wing  |
| ligamentum, i *n*  | ligamentum, ligamenti, neutrum  | ligament  |
| nervus, i *m* | nervus, nervi, masculīnum  | nerve  |

**DECLENSIONS OF LATIN NOUNS**

**First declension**

Nouns of this declension usually end in **-a** and are typically **feminine**.

The Genitive form of the first declension nouns ends in **-ae.**

***E.g.,*** *costa, ae f (rib), vertebra, ae f, lingua, ae f (language, tongue)*

**Second declension**

In the Latin anatomical terminology the second declension is a large group of nouns consisting of **masculine** nouns ending in **-us** and **neuter** nouns ending in **-um** and **-on.**

The Genitive form of the second declension nouns ends in **-i.**

***E.g.,*** *nasus, i m (nose), collum, i n (neck)*

The ending **-on** have the following anatomical terms:

* colon, i *n* (*large intestine),*
* encephălon, i *n*  (*brain)*
* ganglĭon, i *n* (*nerve-knot*),
* skelĕton, i *n* (skeleton);

**Third declension**

The third declension includes nouns of **all three genders** which have **different endings** in Nominative singular and **–is** in Genitive singular.

***E.g.****, canālis, is m (canal), os, ossis n (bone), regĭo, ōnis f (region)*

**Fourth delension**

The fourth declension includes masculines which end in **-us**, and the neuters which end with **–u**. The Genitive singular form of these nouns ends in **-us**.

***E.g.,*** *arcus, us m (arch), cornu, us n (horn).*

***NB!***  In the anatomical terminology there are only two neuters of the 4-th declension which end in **-u**: cornu, us *n* (*horn*), genu, us *n* (*knee*).

The fourth-declension noun **manus, us *f***(*hand*) is an exeption.

**Fifth declension**

The fifth declension is a small group of nouns consisting of feminines ending in **-es**. These nouns have the enfing **-ēi** in the genitive singular form.

***E.g.:*** *facĭes, ēi f (surface, face) –* this is the only noun of the fifth declension you meet in the Latin anatomical terminology.

**Memorize the endings of**

**Nominative and Genitive Singular and Plural of all declensions**:

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Declension** | **First** | **Second** | **Third** | **Fourth** | **Fifth** |
| **Case\ Gender** | ***f*** | ***m*** | ***n*** | ***m f*** | ***n*** | ***m*** | ***n*** | ***f*** |
| **Nominative****Singular** | **-a** | **-us****-er** | **-um****-on** | different | **-us** | **-u** | **-es** |
| **Genitive****Singular** | **-ae** | **-i** | **-is** | **-us** | **-ēi** |
| Nom.Plural | -ae | -i | -a | -es | -a (-ia) | -us | -ua | -es |
| Gen. Plural | -arum | -orum | -um (-ium) | -uum | -erum |

**Finding the stem of a noun**

How do we determine what the stem (i.e., the part before the ending that remains the same in each case) is and what the ending is? Knowing endings for the genitive singular, all we need to do is to delete the ending from the word. Therefore, *cristae*loses the *-ae* and becomes *crist-*. That is what is known as stem of the noun.

**E.g.,**

|  |  |  |
| --- | --- | --- |
| **Dictionary form**  | **Genitive**  | **Word stem**  |
| **crista, ae *f*** | **crist – aе**  | **crist –**  |
| **collum, i *n*** | **coll – i**  | **coll –**  |
| **facies, ēi *f***  | **faci – ēi**  | **faci –**  |
| **caput, ĭtis *n***  | **capĭt – is**  | **capĭt –** |

The stem is necessary for: a) declension (the case endings are added to it);

b) formation of the compound medical terms.

**SELF-ASSESSMENT QUESTIONS**

1. What is a Noun? What grammatical categories does a Latin Noun have?
2. What genders do Latin nouns have?
3. How are the genders of Latin nouns abbreviated?
4. How many cases does the Latin language have? What cases are used in the Latin anatomical terminology?
5. What components does the dictionary form of a Latin noun consist of?
6. How many declensions are there in the Latin language?
7. Name the Nominative singular endings of all five declensions.
8. Name the Genitive singular endings of all five declensions.
9. How can we define the declension of a noun?
10. How can we define the gender of a noun?
11. How can we determine the stem of a Latin noun?

**VOCABULARY**

|  |  |
| --- | --- |
| ***Latin*** | ***English*** |
| **1-st declination** |
| аla, ae *f*artéria, ae *f* clavicŭla, ae *f*fíbula, аe *f*lamĭna, ae *f* sutúra, ae *f*tíbia, ae *f* | wing artery claviclefibula, splint-bone plate, layer suture, stitch tibia, shin-bone |
| **2nd declination** |
| cavum, i *n*cranium, i *n*digĭtus, i *m* humerus, i *m*nasus, i *m*septum, i *n* | cavity, channelskullfinger humerus, shoulder bonenose partition, dividing wall |
| **3rd declination** |
| basis, is *f*caput, ĭtis *n* corpus, ŏris *n* forāmen, ĭnis *n*os, ossis *n* | base headbody opening bone |
| **4th declination** |
| cornu, us *n* ductus, us *m*meātus, us *m*processus, us *m* sinus, us *m* | horn ducta passage (as for air) or channel process, outgrowth sinus, cavity, channel |
| **5th declination** |
| facies, ēi *f* superficies, ei *f* | surface, facesurface |

**EXERCISES**

**Exercise 1. *Divide the words in three groups:*** а) *masculine,* b) *feminine,* c) *neuter nouns:*

Mandibŭla, radius, genu, facies, muscŭlus, collum, crista, nervus, skeleton, glandŭla, nucleus, cornu, tibia, arcus, incisūra, dorsum, ductus, vertĕbra, ganglion, angŭlus, sinus, lingua, nasus, tubercŭlum.

**Exercise 2. *Determine the declension of the nouns, find the stem:***

Truncus, i *m*; fovea, ae *f*; caput, ĭtis *n*; os, ossis *n*; aorta, ae *f*; sinus, us *m*; cornu, us *n*; corpus, ŏris *n*; bronchus, i *m*; canālis, is *m*; ramus, i *m*; genu, us *n*; palātum, i *n*; basis, is *f*; forāmen, ĭnis *n*.

**Exercise 3. *Complete the dictionary form of the nouns:***

Lingua; truncus, i; genu; ganglion; ductus, us; nasus, i; encephălon; tonsilla; muscŭlus, i; spatium; protuberantia; recessus, us; medulla; facies; vesīca; intestīnum; ramus, i; bursa; canalicŭlus, i; spina; cornu; ala; tympănum.

**LESSON 3**

**Invia est in medicina via sine lingua Latina**.

*There is no way into medicine without the Latin language.*

**STRUCTURE OF ANATOMICAL TERMS.**

**LATIN NOUN. NON-AGREED ATTRIBUTE.**

Anatomical terms are for the most part combinations of words, consisting of a noun – the nucleus of any term and some attributes to it, which may be expressed either by nouns in Genitive, or by adjectives, having agreement with the corresponding noun.Therefore, within an anatomical term a noun may be either ***a nucleus***, or a ***non-agreed attribute.***

The **nucleus** is a noun, which answers the question "what?" (Nominativus) and is always positioned in the first place in a term.

**Non-agreed attribute** is a noun, which answers the quiestion "of what?",is positioned*after* the nucleus in Genetive case and doesn't change (is not declined!)

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| ***E.g.,*** | *Lat.* | cavum nasi ossa craniifundus gastris | *–* | *Eng*. | nasal cavity *or* cavity of the nosecranial bones *or* bones of the skullfundus of the stomach |

**The scheme of CONSTRUCTING a TERM with NON-AGREED ATTRIBUTE**

1. Define *the structure* of an English term: find out a nucleus word and a non-agreed attribute by asking questions "what?" and "of what?".
2. Write out *dictionary forms* of every Latin word in the term; define the declensions.
3. Write down the nucleus word in the first place (in Nominativus).
4. Find out the Genetive case in the dictionary form of the non-agreed attribute and write it down in the second place in the term.
5. Decline the term: put it in Genetivus singularis.

**NB! The non-agreed attribute must be in *Genetivus,* it is not changed!**

**EXAMPLE (**of constructing a term with non-agreed attribute according to the scheme)*:*

***the angle of the eye***

1. what? - *the angle* - the nucleus word (Nom. Sing.)

the angle of what? - *of the eye* - non-agreed attribute (Gen. Sing.)

1. angulus, i m – II

oculus, i m – II

1. 4. Nom. Sing. angulus ocul**i**

5. Gen. Sing. angul**i** ocul**i**

(so we decline the nucleus word according to the 2-nd declension, but the non-agreed attribute is not changed - it is always in Genetivus.)

**GRAMMAR ANALYSIS for proper translation of anatomical terms**.

When a term is given in Latin, you should first of all analyse its structure, so that be sure you undrerstand and translate it properly.

***EXAMPLE:*** *tuberculum maxillae*

The word *tuber* is a nucleus word, because it stands in the first place in Nominativus Singularis. Therefore, it answers the question "what?" The word *maxillae* placed after it has the ending of Genetivus Singularis. So it must be a non-agreed attribute, it answersthe question "of what?" of what?

Thus: *tuberculum maxillae –* a tubercle of the upper jaw

N. Sg G.Sg

**SELF-ASSESSMENT QUESTIONS**

1. What are the grammar categories of Latin nouns?
2. What does a dictionary form of a noun consist of?
3. How can one recognize each of the five declensions?
4. How can one determine the stem of a noun?
5. What is the nucleus word?
6. What is a non-agreed attribute?
7. Recall the scheme of constructing a term with non-agreed attribute.

**VOCABULARY**

|  |  |
| --- | --- |
| ***Latin*** | ***English*** |
| **1-st declension** |
| capsŭla, ae *f*cósta, ae *f*crísta, ae *f*fossa, ae *f* fovea, ae *f*mandibŭla, ae *f* maxílla, ae *f* scapŭla, ae *f*spina, ae *f* vena, ae *f* vertěbra, ae *f* | capsuleribcrest, ridgetrench (a hollow or depressed area) pit (small pit or depression)mandible, lower jaw maxilla, upper jaw scapula (shoulder-blade)spine, thorn, backbone veinvertebra |
| **2-nd declension** |
| angŭlus, i *m*capitŭlum, i *n*collum, i *n* ligamentum, i *n* muscŭlus, i *m*radius, i *m*sulcus, i *m*tubercǔlum, i *n* | angle headneckligament muscle radial bone groove, furrowtubercle |
| **3-d declension** |
| cor, cordis *n* tuber, ěris *n* | heart tubercle |
| **4-th declension** |
| arcus, us *m*genu, us *n* | arch knee |

**EXERCISES**

**Exercise 1. *Make grammar analysis and translate the following terms:***

1. angŭlus costae; arteria colli; ligamentum scapŭlae; tubercŭlum humeri; fossa cranii; basis cranii; os digiti; capitulum humeri; corpus vertebrae; meatus nasi; sinus aortae; os fibulae; tuberculum maxillae; corpus fibŭlae; arcus vertĕbrae, tubercŭlum muscŭli, collum mandibŭlae; sulcus sinus; vena faciēi;
2. crista colli costae, facies capĭtis fibŭlae, ligamentum capĭtis costae, facies capĭtis costae;
3. ***(control terms)*** angulus mandibulae; collum radii; crista tuberculi; facies maxillae; spina scapulae.

**Exercise 2. *Construct the terms in Latin in Nominativus and Genetivus Singularis:***

a) head of rib; neck of radius; suture of skull; angle of rib; neck of scapula; head of mandible; body of vertebra; base of skull; passage of nose; dividing wall of nose; small pit of process; bone of the skull; foramen of maxillaе;

b) ***(control terms)*** arch of vertebra; crest of neck of rib; ligament of tubercle of rib; ligament of scapula; muscle of neck.

**MEMORIZE LATIN PROVERBS AND PROFESSIONAL SAYINGS:**

1. **Invia est in medicina via sine lingua Latina**– *There is no way into medicine without the Latin language.*
2. **Habitus aegroti** – *General appearance of the patient.*
3. **Lapsus linguae** – *A slip of the tongue.*
4. **Lapsus memoriae** – *Absent-mindedness; (error of memory).*
5. **Modus vivendi** – *The mode of life*.

**LESSON 4**

**Omne principium difficile**.

*Every beginning is difficult****.***

**ADJECTIVES**

|  |  |  |  |
| --- | --- | --- | --- |
|  | **1-st group** | **2-nd group** | **Comparative degree** |
| Dictionary form |  *m f n*long**us**, **a**, **um**dext**er**, tr**a**, tr**um** |  *m, f n*vertebral**is**, **e** |  *m, f n*super**ior**, **ius** |
| Declension | ***m, n*** *–* **II**  decl. ***f*** *–* **I** decl. | **III** declension | **III** declension |
| Examples  | *m f n**N.Sg.*  long**us**, long**a**, long**um***G.Sg.* long**i**, long**ae**, long**i** | *m, f n**N.Sg.*  vertebral**is**, vertebral**e***G.Sg.* vertebral**is** *(m, f, n)* |  *m, f n**N.Sg.* super**ior**, super**ius***G.Sg.* super**ioris** *(m, f, n)* |
|  | Adjectivesof this group are formed from nouns with the help of suffixes: **-in-; -os-;** **-e-; -ide-; -ic-:**palatum → palat + **in** + us, a, um (palatine)os, ossis → oss + **e** + us, a, um (bony)oleum → ole + **os** + us, a, um (oily) | 2-nd group includes adjectives with two endings. Masculine and feminine forms have the common ending **-is,** neutral **– -e.**  Adjectivesof this group are the most numerous. They are formed from nouns with the help of suffixes **-al-** or **-ar-:** *Ex.*: vertebra → vertebr + **al** + is, emusculus → muscul + **ar** + is, e | **NB!**Memorize the following adjectives:inferior, iusposterior, iusanterior, iusmajor, jusminor, us |
|  |  | **NB!** There aresomeadjectives with one ending, common for 3 genders. The dictionary form of these adjectives includes the Nominative form and the Genetive ending:simpl**ex**, icis (simple)*m,f,n*G.Sgteres, etis (round)biceps, ipitis (biceps) |  |

**1-st GROUP OF ADJECTIVES**

Adjectives that have three gender endings make up the **1-st group**. Masculine forms have the ending **–us** or **-er**, feminine – **-a**, neuter– **-um**:

|  |  |  |
| --- | --- | --- |
| ***Masculine*** | ***Feminine*** | ***Neuter*** |
| **longus**(long) | **longa** | **longum** |
|

|  |
| --- |
| **dexter** (right) |

 | **dextra** | **dextrum** |

The dictionary form of the 1-st group adjectives includes three components:

**1. Adjective in the masculine form.**

**2. Ending of the feminine form.**

**3. Ending of the neuter form.**

**E.g.,** *longus, a, um (long), dextrer, tra, trum (right)*

The adjectives of this group are declined like the nouns of the first and second declensions, that is, masculine and neutral forms – like the nouns of the second declension, feminine forms–like the nouns of the first declension.

**First and second declension *-er* adjectives.**

Some first and second declension adjectives’ masculine form end in an **-er**. In the anatomical nomenclature only several such adjectives are used.

***NB!*** Most adjectives ending in **"-er"** keep the letter **"e"** only in Nom. Sing. of the masculine gender. In all other cases and genders this letter is omitted, which means, that there changes the stem of the word (the base). That is why the Dictionary form shows the ending of the stem of adjectives of this type.

 **E.g.,** sinister, tra, trum (left) – stem – sinistr-

Memorize the adjectives as follows:

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | *Masculine* | *Feminine* | *Neuter*  | *Dectionary Form* | *English* |
| *Nominative* | **dexter** | dextr**a** | dextr**um** | dext**er**, tr**a**, tr**um** | right |
| *Genitive* | dextr**i** | dextr**ae** | dextr**i** |  |  |
| *Nominative* | **sinister** | sinistr**a** | sinistr**um** | sinist**er**, tr**a**, tr**um** | left |
| *Genitive* | sinistr**i** | sinistr**ae** | sinistr**i** |  |  |

**EXERCISES**

**Exercise 1. *Write down the dictionary form of the following adjectives:***

Profundus, thyreoidĕus, petrōsum, ossĕus, medium, lymphatĭca, pterygoidĕum, zygomaticus, dextrum, interna, palatīna, thoracicum.

**Exercise 2. *Name Feminine and neuter forms of the following adjectives:***

Sinister, internus, pterygoidĕus, profundus, spinōsus, externus, palatīnus, dexter, lymphatĭcus.

**Exercise 3. *Form Genitivus singularis of the following adjectives:***

Ossĕus, a, um; sinister, tra, trum; fibrōsus, a, um; transversus, a, um; venōsus, a, um; palatīnus, a, um; zygomatĭcus, a, um.

**AGREEMENT OF ADJECTIVES AND NOUNS**

For example, you translate from English into Latin the following anatomical term: *mastoid process*

*Process – processus*: masculine, singular, Nominative.

*Mastoid – mastoiděus, a, um*: adjective of 1-st Group.

*Mastoideus* is the adjective. It has to agree with the noun it modifies, here, *processus*. We agree the adjective *mastoiděus* in the masculine gender, singular number, and Nominative case: **processus mastoiděus**.

**STRUCTURE OF ANATOMICAL TERMS WITH ADJECTIVES**

1. The nucleus in an anatomical term is **a noun in Nominative**. It always occupies **the first position.** The modifiers (nouns or adjectives) are placed after the first noun in Nominative. In all Latin anatomical terms *the position of an adjective is* ***after*** *the noun it modifies*.

2. An adjective may appear (typically) immediately after the noun it modifies,

***e.g.,*** ligamentum transversum *(transverse ligament),*

os palatīnum *(palatine bone),*

arcus zygomatĭcus *(zygomatic arch)*,

or disjoint from the noun it modifies, ***e.g.:***septum nasi osseum*(osseous nasal septum).*

Within the anatomical terms adjectives are used as **agreed attributes***.* An agreed attribute, expressed by an adjective, answers the question "what kind of?" and MUST HAVE ***agreement*** in ***number, gender and case*** with the corresponding noun.

**NB!** In the Latin language the word order in the terms with agreed attributes is *reverse* as compared with the term in English; that is, an adjective follows a noun in a Latin term.

***e.g.,***

|  |  |  |
| --- | --- | --- |
| *English* | a transverse process  | (adjective + noun) |
| *Latin* | processus transversus | (noun + adjective) |

**The scheme of CONSTRUCTING a TERM with an AGREED ATTRIBUTE**

1. Define *the structure* of an English term: find out a nucleus word and an agreed attribute by asking questions "what?" and "what kind of?".
2. Write out *dictionary forms* of every Latin word in the term.
3. Point out the gender of the nucleus word.
4. In the dictionary form of the adjective point out the ending corresponding with the gender of the nucleus word.
5. Write down the nucleus word in the first place (in *Nominativus*) and the adjective of the corresponding gender in the second place (in Nominativus either).
6. Define the declination of each word and put the term in *Genetivus singularis*, (then Nominativus and Genetivus pluralis.)\*

**NB!** Pay attention! The declination of the noun and the agreed adjective may coinside, but often they differ.

**EXAMPLE:**

1. broad muscle

(what? – muscle *– the nucleus;*

what kind of? – broad *– an adjective, i.e. agreed attribute*)

 2. musculus, i, **m** - II

lat**us**, a, um - (broad) - II

3, 4. as the nucleus word is of masculine gender, then we must take the adjective with the ending of masculine gender -us.

 II II

 5. *Nom. Sing*. musculus latus

 6. *Gen. Sing*. muscul**i**lat**i**

**NB!**

1. The declination of the nucleus and attribute in this term *coinside.*
2. Underline the stem of each word so that not to make a mistake while declining the words.

**SELF-ASSESSMENT QUESTIONS**

1. What is the Adjective?
2. What adjectives belong to the 1-st group?
3. Name the gender endings of the 1-st group adjectives.
4. What components does the dictionary form of the 1-st group adjectives consist of?
5. How is the stem of the 1-st group adjectives found?
6. What is grammatical agreement?
7. How do adjectives and nouns agree?
8. What is the structure of anatomical terms including adjectives?
9. What is an agreed attribute?
10. What is the word order in the terms having agreed attributes?
11. Recall *the scheme* of constructing a term with an agreed attribute

**VOCABULARY**

|  |  |
| --- | --- |
| ***Latin*** | ***English*** |
| **Nouns** |
| columna, ae *f*fascia, ae *f*fissūra, ae *f*incisūra, ae *f*nervus, i *m*ramus, i *m*  | column

|  |
| --- |
| fascia *(a band of fibrous tissue)* |

fissurenotch nerve branch |
| **Adjectives** |
| albus, a, umdexter, tra, trum externus, a, um internus, a, um latus, a, umlongus, a, um mastoideus, a, umniger, gra, grumobliquus, a, um ossěus, a, um palatīnus, a, um petrōsus, a, um profundus, a, um pterygoiděus, a, um rectus, a, um sinister, tra, trum spinōsus, a, um thoracĭcus, a, um transversus, a, um venōsus, a, um zygomatĭcus, a, um | whiteright externalinternalbroadlongmastoidblackslanted (obique)osseous, bonypalatal, palatine petrous deep, profound pterygoide; (wing-shaped)straightleft spinous, thorny thoracictransversevenouszygomatic |

**EXERCISES**

**Exercise 1. *Agree the following adjectives with the nouns:***

Angŭlus, i *m* (mastoideus, a, um); articulatio, ōnis *f* (sinister, tra, trum); facies, ēi *f* (internus, a, um; dexter, tra, trum); musculus, i *m* (longus, a, um); nervus, i *m* (petrōsus, a, um); ramus, i *m* (externus, a, um); processus, us *m* (palatīnus, a, um).

**Exercise 2. *Make grammar analysis of the term: define the part of speech, case and number of each word. Translate into English:***

1. sinus transversus, ligamentum profundum, vena sinistra, septum ossĕum, os zygomatǐcum, canālis pterygoidĕus, scapula dextra; processus pterygoideus, muscǔlus spinōsus, sulcus palatīnus;
2. ***(control terms)*** facies zygomatica; sinus petrosus; vertebra thoracica.

**Exercise 3. *Construct the terms in Latin in Nominativus and Genetivus Singularis:***

1. bony palate, zygomatic process, internal surface, deep vein, external tubercle, venous groove, palatine bone, venous ligament, palatine crest, thoracic nerve,long muscle;
2. ***(control terms)*** pterygoide muscle; transverse ligament; slanted (obique) muscle.

**MEMORIZE LATIN SAYINGS AND PROFESSIONAL EXPRESSIONS:**

1. **Exitus letalis** - lethal exit, death

2. **Casus ordinarius** - an ordinary case

3. **Casus extraordinarius** - an extraordinary case

4. **Omne principium difficile** - Every beginning is difficult

**LESSON 5**

**Nulla aetas ad discendum sera**.

*It is never too late to learn.*

**ADJECTIVES**

**ADJECTIVES WITH TWO ENDINGS**

The third declension adjectives **with two ending** have the common ending **-is** for masculine and feminine forms, and the ending **-e** forneuter form. They are declined according to the third declension.

**The dictionary form** is: *frontalis, e* (frontal); *brevis, e* (brief, short).

**Finding the stem of the 2-nd Group adjectives:** the stem of an adjective is the part before the ending that remains the same in each case, in order to find the stem we should simply delete the gender ending **-is** or **-e** from the word:

|  |  |
| --- | --- |
| * frontālis
 | stem: frontal-  |
| * brevis
 | stem: brev- |

|  |  |  |  |
| --- | --- | --- | --- |
| **Masculine and Feminine form** | **Neutral form** | **Genitive form** | **Stem** |
| brevis (brief, short)  | breve  | brevis  | brev-  |
| frontālis (frontal)  | frontāle  | frontālis  | frontal-  |

**NB! This kind of adjectives are the most numerous in every branch of medical terminology.**

**ADJECTIVES WITH ONE ENDING**

The third declension adjectives with one ending have single Nominative ending for all three genders. The dictionary form of such adjectives consists of two components: Nominative form for all three genders and the Genitive ending with the changed part of the stem: Memorize these adjectives:

|  |  |
| --- | --- |
| * simplex, ĭcis
 | simple |
| * teres, ĕtis
 | round |
| * biceps, cipĭtis
 | biceps |

**Finding the stem of the one-ending adjectives:** to find the stem we should simply delete the ending **-is** from the **Genetive form**:

|  |  |  |
| --- | --- | --- |
| **Dictionary form** | **Genitive singular** | **Stem** |
| simplex, ĭcis  | simplĭcis  | simplĭc-  |
| teres, ětis | terětis  | terět-  |
| biceps, cipĭtis | bicipitis | bicipit- |

**COMPARATIVE DEGREE OF LATIN ADJECTIVES**

The **dictionary form** of the adjectives in the comparative form has two components:

1. Nominative singular masculine (the same as the feminine form) with the suffix **-ĭor;**

2. Suffix **-ĭus** of the Nominative singular neuter form.

***E.g.****, anterĭor, ĭus*

The grammar agreement of the comparative form with nouns follows the common rules:

processus, us ***m*:** Nom.Sg. processus long**ior,** ligamentum, i ***n*** : ligamentum long**ius**

*m,f n m,f n*

long**ior**, ius longior, **ius**

The adjectives in the comparative form are declined on the pattern of the **third declension**. The Genetive singular form in the comparative degree is formed by adding the ending **-is** to the stem: ***E.g.,*** *stem -* **superior** *+ Genitive ending of the 3rd declension* ***-*is** *=* **superiōris**

(for masculine, feminine and neuter).

**NB!** The Genitive for all genders is formed by adding **-iōris**.

The adjectives in the comparative degree are typically placed**on the last position**:

***E.g.,*** nervus cutaněus brachĭi laterālis **inferĭor** – *inferior lateral cutaneous nerve of the arm*

In the Latin anatomical nomenclature only six adjectives in the comparative form are used. Memorize these adjectives in all grammatical forms:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| ***Masculine Feminine*** | ***Neuter*** | ***Genetive*** | ***English*** | ***Dictionary Form*** |
| **anterior**  | **anterius**  | **anteriōris**  | anterior *(situated at the front)*  | anterior, ius  |
| **posterior**  | **posterius**  | **posteriōris**  | posterior *(situated at the back)*  | posterior, ius  |
| **superior**  | **superius**  | **superiōris**  | superior *(situated above)* | superior, ius  |
| **inferior**  | **inferius**  | **inferiōris**  | inferior *(situated below)*  | inferior, ius  |
| **major**  | **majus**  | **majōris**  | greater (major, great)  | major, jus  |
| **minor**  | **minus**  | **minōris**  | lesser (minor)  | minor, us  |

**SUPERLATIVE DEGREE OF LATIN ADJECTIVES**

Commonly, the superlative degree is formed by adding the suffix **-issĭm-** and gender endings

**-us, -a, -um** to the stem of the positive degree:

|  |  |  |  |
| --- | --- | --- | --- |
| **Positive degree** | **Stem** | **Superlative degree** | **English equivalent** |
| latus, a, um (broad, vast, wide)  | lat-  | lat +issĭm+us, a, um =latissĭmus, a, um | the broadest (vastest, widest), latissimus (in Anatomy)  |
| longus, a, um (long)  | long-  | long + issĭm+ us, a, um =longissĭmus, a, um | the longest  |

The **dictionary form** of the adjectives in the superlative form has the same components as the

1-st group adjectives:

1. Adjective in the masculine form.

2. Ending of the feminine form.

3. Ending of the neuter form.

***E.g.,*** *supremus, a, um* (supreme).

In the Latin anatomical nomenclature only several adjectives in the superlative form are used. Memorize these adjectives in the dictionary form:

|  |  |
| --- | --- |
| **Superlative degree** | **English anatomical equivalent** |
| **latissĭmus, a, um** | the broadest (vastest, widest) |
| **longissĭmus, a, um** | the longest |
| **suprēmus, a, um** | supreme, the highest |
| **maxĭmus, a, um** | the greatest, maximus |
| **minĭmus, a, um** | the least, minimus |

**These adjectives** are declined on the pattern of the 1-st group adjectives, i.e., they end in Genetive singular masculine and neuter in **-i**, in Genitive singular feminine in -**ае**.

The quality of great (large) or little (small) can be expressed in Latin anatomical terminology by different forms of comparison degrees but the use of these forms, as a rule, is strictly regulated.

Let us systematize the forms of comparison degrees of the above mentioned adjectives:

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Latin** **positive degree** | **English equivalent** | **Latin comparative degree** | **English anatomical****equivalent** | **Latin superlative degree** | **English****anatomical equivalent** |
| magnus, a, um  | great, large, magnus  | major, majus  | greater, larger, major  | maxĭmus, a, um  | maximus, major |
| parvus, a, um  | little, small  | minor, minus | lesser, smaller, minor  | minĭmus, a, um  | minimus, little |

**SELF-ASSESSMENT QUESTIONS**

1. On what pattern are the 2-nd group adjectives declined?
2. Name all gender endings of the 2-nd group adjectives.
3. What components does the dictionary form of the 2-nd group adjectives consist of?
4. How is the stem of the 2-nd group adjectives found?
5. What components does the dictionary form of adjectives with one ending consist of?
6. Name all one-ending adjectives you know.
7. How many degrees of comparison are there?
8. Name all adjectives in Comparative used in the anatomic nomenclature.
9. Name all adjectives in Superlative used in the anatomic nomenclature.
10. On what pattern are the adjectives in Comparative degree declined?
11. On what pattern are the adjectives in Superlative degree declined?
12. What components does the dictionary form of adjectives in Comparative consist of?
13. What components does the dictionary form of adjectives in Superlative consist of?

**VOCABULARY**

|  |  |
| --- | --- |
| ***Latin*** | ***English*** |
| **2-nd group adjectives** |
| alāris, e articulāris, e cervicālis, e cerebrālis, e ethmoidālis, frontālis, e laterālis, emandibulāris, e maxillāris, e nasālis, e occipitālis, e orbitālis, eovālis, eparietālis, etemporālis, e vertebrālis, e superficiālis, e | alar articular cervical cerebral ethmoid frontal lateralmandibularmaxillary nasal occipital orbitalovalparietaltemporal vertebral superficial |
| **Adjectives in the Comparative Degree:** |
| major, ius minor, us superior, ius inferior, ius anterior, ius posterior, ius | greater, larger, majorlesser, smaller, minorsuperior, upper inferior, lower anterior, front posterior, back |
| **Adjectives in the Superlative Degree:** |
| latissĭmus, a, umlongissĭmus, a, um | latissimus, widestlongissimus, longest |
| **Adjectives with one ending, common for the three genders** |
| biceps, ĭpitissimplex, ĭcisteres, ětis | bicepssimpleround |
| **Adjectives** |
| magnus, a, ummaxĭmus, a, umminĭmus, a, umparvus, a, um | greatmaximus, largestminimus, littlesmall, little |

**EXERCISES**

**Exercise 1. *Determine gender of the adjectives, name their dictionary form:***

Superficiālis, ethmoidāle, temporalis, maxillare, cerebralis, occipitale.

**Exercise 2. *Name feminine and neuter forms of the following adjectives:***

Occipitālis, laterālis, nasālis, frontālis, alāris.

**Exercise 3. *Form Genitive singular of the following adjectives:***

Orbitālis, e; ovālis, e; articulāris, e; teres, ĕtis; horizontālis, e; commūnis, e.

**Exercise 4. *Agree the following adjectives with the nouns:***

Lamĭna (orbitālis, e) sutūra (frontālis, e), os, ossis *n*(temporalis, e) arcus, us *m* (vertebrālis, e), facies (articulāris, e), tuberculum (parietālis, e), fissūra (horizontālis, e), crista (ethmoidālis, e).

**Exercise 5*. Find adjectives in the comparative and superelative forms, name the dictionary form:***

Mediālis, posterius, laterāle, dexter, latissĭma, suprēmum, longum, anterior, transversus, minĭmus, profunda, internus, media, petrōsus, maxĭma, horizontāle, superficiāle, externus, longissĭmus, minus, superior, inferius, cavus, majus.

**Exercise 6. *Make grammar analysis of the term: define the part of speech, case and numberof each word. Translate into English:***

1. Ramus laterālis, os occipitāle, incisūra ethmoidālis, forāmen vertebrāle, facies laterālis, angǔlus frontālis, fascia cervicālis, sulcus laterālis, canālis vertebrālis, sinus ethmoidāls, incisūra vertebrālis, sulcus ethmoidālis, incisūra parietālis, caput laterāle,
2. angŭlus inferior; facies anterior; arcus superior; vena inferior; tuberculum minus; cornu majus; sulcus minor; ligamentum posterius; ramus inferior; sinus posterior;
3. ***(control terms)*** angǔlus occipitālis; arcus vertebrālis, cornu minus; facies articulāris; ligamentum teres; ala major; processus superior; sutūra frontalis; os temporāle.

**Exercise 7.*Construct the terms: write out the dictionary form of each word, translate the term into Latin, form Genetive singular:***

1. occipital opening, temporal fossa, lateral head, frontal notch, orbital septum, temporal bone, cervical branch, teres (round) muscle, articular surface, medial root, occipital artery, palatine process, superficial vein, vertebral column;
2. little finger, lower lip,lesser horn, posterior ligament;
3. ***(control terms)*** costal arch; external tubercle; frontal crest; greater tubercle; occipital angle; inferior surface; superficial vein.

**Learn Latin sayings and professional expressions:**

1. **Status localis** – local state;

2. **Status naturalis** – natural state;

3. **Status quo** – the existing (present) state;

4. **Tabula rasa** – a clean board (may be addressed to a person, who knows nothing in a certain field of activities);

5. **Terra incognita**– an unknown land (an unknown field of knowledge is implied).

**LESSON 6**

**Scientia potentia est!**

*Knowledge is power!*

**STRUCTURE OF ANATOMICAL TERMS**

The anatomical terms consist only of

* **nouns and adjectives in only two cases in the singular and plural**. The two cases are Nominative (subjective) and Genitive (possessive).

The **anatomical term** is a word or word-combination used to name a definite unit or structure of a human body. Anatomical terms may consist of one, two, three, four and more words (up to 8).

**STRUCTURES OF TREE-WORD ANATOMICAL TERMS**

**Three-word terms** may consist of:

**1.** Three nouns:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **nucleus word***(in Nom.)* | **+** | **non-agreed attribute** *(in Gen.)* | **+** | **non-agreed attribute** *(in Gen.)* |

**ligamentum tubercŭli costae**

*ligament of tubercle of rib*

**NB!** The word order in the Latin and English terms is the same.

**2.** One noun and two adjectives:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **nucleus word***(in Nom.)* | **+** | **agreed attribute***(in Nom.)* | **+** | **agreed attribute***(in Nom.)* |

**processus articulāris superĭor**

*superior articular process*

**NB!** The word order in the Latin term is reversed as compared with the English one.

**3.** Two nouns and one adjective:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **nucleus word***(in Nom.)* | **+** | **non-agreed attribute***(in Gen.)* | **+** | **agreed attribute***(in Nom.* or *in Gen.)* |

**caput fibŭlae anterius**

*Nom. Gen. Nom.*

*anterior head of fibula*

**sulcus nervi spinālis**

*Nom. Gen. Gen.*

*furrow of the spinal nerve*

**Multiword Terms** may consist of several nouns and adjectives in the singular and plural:

fissūra horizontālis pulmōnis dextri *(horizontal fissure of right lung);*

facĭes temporālis alae minōris ossis sphenoidālis

*(temporal surface of the smaller wing of the sphenoid bone).*

**NB!** To get the proper understanding of any Latin term one must analyse its grammar structure and recognize grammar dependence between the words.

**SELF-ASSESSMENT QUESTIONS**

1. What is “nucleus”?
2. What is “non-agreed attribute”?
3. What is “agreed attribute”?
4. How many words may anatomical term consist of?
5. What is the structure of three-word anatomical terms?
6. What is the structure of multiword anatomical term?

**VOCABULARY**

|  |  |
| --- | --- |
| ***Latin*** | ***English*** |
| **Nouns** |
| apertúra, ae *f* brachium, i *n* glandŭlalínea, ae *f*membrum, i *n*nucleus, i *m*palatum, i *n*skeleton, i *n* | aperture, opening shoulder glandlinelimbnucleus palate - roof of the mouth skeleton |
| **1-st group adjectives** |
| lymphatĭcus, a, um medius, a, um nervōsus, a, um thyreoidĕus, a, um | lymphatic middle nervousthyroid |
|  **2-nd group adjectives** |
| auricular, ehorizontālis,emusculāris, esphenoidālis, e | auricularhorizontālismuscular sphenoidal |

**EXERCISES**

**Exercise 1. *Fill in the blanks and translate the termsinto English:***

1. fissura orbital … infer…
2. foramen ethmoidal…anter…
3. processus articular… infer…
4. ligamentum longitudinal…poster…
5. spina tympanic…min…
6. tuberculum thyroide…super…

**Exercise 2. *Make grammar analysis of the term: define the part of speech, case and numberof each word. Translate into English:***

1. sulcus sinus petrōsi; corpus vertĕbrae thoracĭcae; crista occipitālis interna; sutūra palatīna transversa; spina ossis sphenoidālis;arcus ductus thoracĭci; ductus lymphatĭcus sinister; fascia thoracĭca profunda; fossa cranii media; septum nasi ossĕum; ligamentum transversum scapulae; nervus transversus colli; processus frontālis maxillae; musculus longissimus capitis; linea temporalis superior; musculus teres major;
2. capsŭla fibrōsa glandŭlae thyreoidĕae; fovea articulāris processus articulāris; lamĭna orbitālis ossis ethmoidālis;sulcus arteriae temporālis mediae; facies articulāris capĭtis costae; facies palatīna lamĭnae horizontālis;ligamentum capitis fibulae anterius;
3. ***(control terms****)* crista occipitālis interna; fossa cranii anterior; sulcus palatinus major; facies articularis anterior; linea temporalis superior; skeleton membri superioris; musculus teres major; ligamentum posterius scapulae.

**Exercise 2. *Construct the terms: write down the dictionary form of each word, translate the term into Latin, form Genetive singular.***

1. lesser palatine groove, ligament of vertebral column, middle temporal artery, vein of pterygoid canal, arch of thoracic duct, groove for transverse sinus, deep lingual vein, opening of frontal sinus, fossa of venous duct, lamina of pterygoid process, groove for occipital artery, spinal muscle of head, anterior nasal thorn, greater round muscle, head of biceps muscle;
2. internal surface of cranial base, right lobe of thyroid gland, articular surface of tubercle of rib,horizontal plate of palatine bone, superficial fascia of neck, lateral plate of pterygoid process, notch for ligamentum teres, thyroid auricular surface;superior head of the pterygoid muscle; the inferior petrosal sinus; greater wing of sphenoid bone; the widest muscle of back;
3. ***(control terms****)* ligament of the vertebral column; lateral muscle of the shoulder; aperture of the frontal sinus; lesser petrosal (petrous) nerve; inferior articular process.

**MEMORIZE LATIN SAYINGS AND PROFESSIONAL EXPRESSIONS:**

1. **Scientia potentia est!** – *Knowledge is power!*
2. **Status praesens aegroti –** the present state of the patient;
3. **Usus est optimus magister –** experience is the best teacher;
4. **Ars longa, vita brevis est –** art is eternal, and life is passing (short)**.**

**LESSON 7**

**THIRD DECLENSION OF NOUNS**

|  |
| --- |
| **Non scholae, sed vitae discĭmus.** |

*We learn not for school but for life.*

The 3-d declension of nouns is characterized by the ending ***-is*** in *Genetivus singularis*. Nouns of the 3-d declension may be of masculine, feminine or neuter gender.

*e. g.*: pars, partis *f*

crus, cruris*n*

apex, icis*m*

As you remember, we define *the gender* of the nouns of the 1, 2, 4, and 5th declensions with the help of their endings in the Nominative case singular. It is more difficult to define the gender of the nouns of the 3rd declension due to a large number of peculiarities. They are:

1. In the Nominative singular they may have various endings, though they are related to the same gender:

*e. g.: pulm****o*** *(m)*

*cort****ex*** *(m)*

*pari****es*** *(m)*

2. Most nouns have different stems in the Nominative and Genitive singular,

*e. g.*: Nom. cort-ex: rad-ix: cap-ut

 Gen. cortic-is; radic-is capit-is

The **Dictionary form** of such nouns shows *the stem ending* before the ending **-is:**

*e.g*.: apex, icis *m* (*stem*–apic-)

tempus,oris *n* (*stem*–tempor-)

cartilago, inis *f* (*stem*–cartilagin- )

You will not be able to decline the noun without knowing its*stem* in the Genitive singular. Thus, the stem of a noun of the 3-d declination corresponds to its form in the Genitive Case singular but without ending -**is.**

3. There are nouns with an ***equal*** number of syllables in the Nominative and Genitive singular, and there are nouns which have an extra syllable in the Genitive as compared to the Nominative –***non-equal syllables***. The last mentioned group includes this extra syllable into its Dictionary form as the stem ending, *e.g.*, rete, is *n* (equal number of syllables),***but***  apex, icis *m* (non-equal number of syllables).

|  |  |  |
| --- | --- | --- |
| ***m*** | ***f*** | ***n*** |
| **Nominative singular**  | **Genitive singular (with part of** **the stem)** | **Nominative singular** | **Genitive singular** **(with part of** **the stem)** | **Nominative singular** | **Genitive singular** **(with part of** **the stem)** |
| **-o****-or****-os** **-ex****-er****-es** | **-ōnis** **-ōris** **-ōris** **-ēris** **-ĭcis** **-ēdis \- ĕtis**  | **-io/-go/-do****-s** (*except* -os)**-x** (*except* -ех) | **-ĭnis /-ōnis** **- tis** **- cis** | **-us****-en****-ma****-ut****-ur****-(a)l****-e****-c****-ar** | **- ūris** **- ĭnis** **- ătis** **- ĭtis** **- ŏris**  |
| **Exceptions** |
| cor, cordis ***n*** – *heart* gaster, tris ***f*** – *stomach*mater, tris ***f***– *1) mother, 2) medullary tunic*os, oris ***n*** – *mouth* os, ossis ***n***– *bone*tuber, ěris ***n*** – *tuber* | canālis, is ***m*** – *canal* dens, dentis ***m*** – *tooth* hallux, ucis ***m*** *– great toe*larynx, ngis ***m*** *– larynx*margo, ĭnis ***m*** – *border* pancreas, atis ***n*** *– pancreas*pharynx,ngis ***m*** *– throat*thorax, acis ***m*** *– chest*vas, vasis ***n*** – *vessel*  | lien, liēnis ***m*** – *spleen* ren, renis ***m*** – *kidney* splen, splenis ***m*** *– spleen* |

**NB!** The third declension **neuter** nouns ending in **-ma** should be distinguished from the third declension **feminine** nouns ending in **-a**: *e.g*., **systēma, ătis *n* –** *system*

**SELF-ASSESSMENT QUESTIONS**

1. What are the peculiarities of the 3-d declension?
2. What endings are characteristic for the masculine gender?
3. Recollect the exceptions from the rule on the masculine gender of the 3-d declension.
4. What is the way to single out the base of the noun of the 3-d declension?
5. Describe the structure of anatomical terms denoting muscles according to their functions in Latin and in English.
6. What endings are characteristic for the feminine gender?
7. What are the exceptions from the rule on the feminine gender?
8. What endings are characteristic for the neuter gender?
9. What are the exceptions from the rule on the neuter gender?

**VOCABULARY**

|  |  |
| --- | --- |
| ***Latin*** | ***English*** |
| **Nouns** |
| abdomen, inis *n*apex, ĭcis *m* articulatio, onis *f*auris, is *f*canālis, is *m*cartilāgo, ĭnis *f*cavitas, atis *f*cervix, icis *f*cortex, icis *m*crus, cruris *n*cutis, is *f*dens, dentis *m*femur, ŏris *n*frons, ntis *f*gaster, tris *f*hepar, atis *n*lien, liēnis *m*margo, ĭnis *m*mater, tris *f*meninx, ngis *f*occiput, itis *n*paries, etis *m*pars, partis *f* pes, pedis *m*pollex, icis *m*pulmo, onis *m*radix, icis *f*regio, onis *f*ren, renis *m*rete, is *n*splen, splenis *m*systema, atis *n*thorax, acis *m* vas, vasis *n* | abdomen, bellyapex, tipjointearcanalcartilagecavity1) cervix (of the uterus, urinary bladder, tooth); 2) neckbarkcrus, limb, legskintooththigh, hip foreheadstomachliverspleenborder1) mother, 2) medullary tunicmedullary tunicback of the headwallpartfoot thumlungrootregionkidneynetworkspleensystemchestvessel |

**NAMES OF MUSCLES ACCORDING TO THEIR FUNCTION**

|  |  |
| --- | --- |
| muscŭlus abductor (ōris *m*)muscŭlus adductor (ōris *m*) muscŭlus depressor (ōris *m*) muscŭlus extensor (ōris*m*)muscŭlus flexor (ōris *m*) muscŭlus levātor (ōris *m*) muscŭlus rotātor (ōris *m*) | - abductor muscle (*muscle that moves a part away from an axis or from the midline of the body or some other structure)*- adductor muscle *(muscle that moves a part toward an axis or toward the midline of the body or some other structure)*- depressor muscle *(a muscle that presses down)* - extensor muscle *(a muscle that straightens a joint*) - flexor muscle *(a muscle that flexes a joint)* - levator muscle *(a muscle that elevates an organ or structure)* - rotator muscle *(muscle that produces a rotation)* |

**NB!** It is important to remember that in Latin terms the following strict word order of muscle names is observed:

1. The noun “muscle” takes the 1st place.
2. The name of muscle takes the 2nd place.
3. The name of the structure, where the muscle is functioning, takes the third place and this name consisting of one or two words is always presented in the Genitive.
4. If the muscle has an adjective (*long, short, vast* and so on), this adjective is the last in the combination:

***e.g.,*** muscǔlus extensor digĭti minĭmi

**EXERCISES**

**Exercise 1*. Single out the stems of the nouns with an equal and unequal number of syllables:***

Os,ossis *n*; os,oris *n*; foramen, inis *n*; canalis, is *m*; regio, onis *f*; dens, dentis *m*; cutis, is *f*; radix, icis *f*; aponeurosis, is *f*; terminatio, onis *f*; tuber, eris *n*; tuberositas, atis *f*; cor,cordis *n*; axis, is *m*; vas, vasis *n*; pars, partis *f*; mors, mortis *f*; auris, is *f*; incus, udis *f*; crus, cruris *n*.

**Exercise 2. *Make grammar analysis of the term: define the part of speech, case and numberof each word. Translate into English:***

1. apex cornus posteriōris, facies mediālis pulmōnis, incisūra apĭcis cordis, forāmen ethmoidāle posterius, spina ossis sphenoidālis, ventricŭlus dexter cordis, apex pulmōnis sinistri, digĭtus minĭmus pedis, cartilāgo alāris major, cartilāgo septi nasi, canālis radīcis dentis, pars thoracĭca aortae, forāmen apĭcis dentis, forāmen palatīnum majus, vas lymphatĭcum profundum, cartilāgo nasi laterālis, articulatio capĭtis costae, forāmen apĭcis dentis, fossa capĭtis femŏris, muscŭlus rectus abdomĭnis, regio femŏris anterior, ligamentum capĭtis femŏris;
2. muscŭlus levātor glandŭlae thyreoideae; muscŭlus flexor digĭti minĭmi brevis; muscŭlus depressor septi nasi; muscŭlus constrictor pharyngis;muscŭlus depressor anguli oris;
3. processus temporālis ossis zygomatĭci; facies laterālis ossis zygomatĭci, pars tympanǐca ossis temporālis, margo superior partis petrōsae, pars laterālis ossis occipitālis, cavǐtas tympanǐca auris mediae, canālis nervi petrōsi majōris, margo posterior partis petrōsae, plexus venōsus foramĭnis ovālis, crus posterius capsŭlae internae, muscŭlus obliquus abdomĭnis internus, forāmen venae cavae inferiōris, crus mediāle cartilagǐnis alāris minōris, caput superius muscǔli pterygoidei,apex pulmonis dextri; musculus biceps femoris;
4. ***(control terms)*** muscŭlus levātor scapŭlae; muscǔlus levātor labii superiōris; muscŭlus abductor digĭti minĭmi;muscŭlus depressor septi nasi;margo inferior pulmonis; foramen palatinum minus; caput ossis femoris; basis cranii externa;

**Exercise 3. *Construct the terms: write down the dictionary form of each word, translate the term into Latin, form Genetive singular.***

1. vein of the right lung, left ventricle of heart,notch of the left lung,lesser horn of bone,apex of head of fibula, great cardiac vein,superficial lymphatic vessel,anterior region of neck, articulation of rib head,artery of pterygoid canal, spinal muscle of neck, simple osseous crus,magnus occipital foramen, deep vein of thigh, central nervous system, fibrous capsule of kidney,simple osseous crus, round ligament of liver, long muscle of head, posteror nerve of thigh, posterior region of leg,transverse muscle of abdomen, rectus muscle of thigh, part of nasal septum, greater palatal canal; cartilage of nasal septum**;**
2. extensor muscle of little finger; depressor muscle of lower lip; bursa of tensor muscle; sulcus of flexor muscle; rotator muscle of neck;
3. ethmoidal sulcus of nasal bone, horizontal fissure of right lung, dorsal venous arch of foot, nasal spine of frontal bone, abdominal external oblique muscle, dorsal venous network of foot,
4. ***(control terms****)* tip of nose; bone of foot; large occipital foramen; deep lymphatic vessel; major alar cartilage; central nervous system; elevator muscle of the rib; sulcus of flexor muscle;rotator muscle of neck.

**MEMORIZE LATIN SAYINGS AND PROFESSIONAL EXPRESSIONS:**

|  |
| --- |
| 1. **Non scholae, sed vitae discĭmus.** *– We learn not for school but for life.*
2. **Prognōsis anceps –** *An uncertain prognosis*
3. **Prognōsis fausta –** *A good prognosis*
4. **Prognōsis infausta –** *An unfavorable prognosis*
 |

**LESSON 8**

**STRUCTURE OF ANATOMICAL TERMS**

**REVISION OF GRAMMAR AND LEXICAL MATERIAL**

**SELF-ASSESSMENT QUESTIONS**

1. What does a dictionary form of a noun consist of?
2. How many declinations of nouns are there in Latin?
3. How can one determine the declension of a noun?
4. How can one recognize each of the five declensions?
5. How can one determine the gender of Latin nouns?
6. How can one determine the stem of a noun?
7. What grammar categories have adjectives?
8. How many and what generic endings have the adjectives of the *first* group?

How are they declined?

1. How many and what generic endings have the adjectives of *the second* group?

What is the peculiarity of the dictionary form of adjectives with one generic ending?

1. How are the adjectives of the second groupdeclined?
2. How many generic endings have an adjective in comparative degree? What are they? How are the comparative degree adjectives declined?
3. What is called a non-agreed attribute?
4. What is the word order in the terms having non-agreed attributes?
5. What is *the scheme* of constructing a term with a non-agreed attribute?
6. What part of speech may be used as agreed attribute? How can you define an agreed attribute?
7. What is the word order in the terms having agreed attributes?
8. What is *the scheme* of constructing a term with an agreed attribute?

**REVIEW EXERCISES**

**Exercise 1. *Make grammar analysis of the term: define the part of speech, case and numberof each word. Translate into English:***

|  |  |
| --- | --- |
| **VARIANT 1** | **VARIANT 2** |
| 1. foramen palatinum minus
2. meatus nasi inferior
3. facies temporalis alae majoris
4. apex radicis dentis
5. musculus flexor pollicis
 | 1. concha nasalis inferior
2. caput superius musculi pterygoidei
3. regio thoracis posterior
4. musculus depressor anguli oris
5. caput ossis femoris
 |

**Exercise 3. *Construct the terms: write down the dictionary form of each word, translate the term into Latin, form Genetive singular.***

|  |  |
| --- | --- |
| **VARIANT 1** | **VARIANT 2** |
| 1. lesser tubercle of humerus
2. rotator muscle of chest
3. major alar cartilage
4. arcus ductus thoracĭci
5. maxillary process of inferior nasal concha
 | 1. tip of head of fibula
2. elevator muscle of the rib
3. apex of posterior horn
4. lesser occipital nerve
5. canal of greater petrosal nerve
 |

**LATIN-ENGLISH ANATOMICAL VOCABULARY**

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| --- | --- |
| **A****abdōmen, ĭnis *n***– abdomen**abdominālis, e** – abdominal **ala, ae *f***– wing**alāris, e** – alar**alveolāris, e –** alveolar**angŭlus, i *m***– angle**anterior, ius** – anterior **aоrta, ae *f –***aorta**apertūra, ae *f***–opening, aperture**apex, ĭcis *m*** – apex, tip**arcus, us *m***– arch**artеrĭa, ae *f –***artery**articulāris, e** – articular (relaiting to joint) **articulatĭo, ōnis *f*** – joint, articulation**atlas, antis *m***– 1-st cervical vertebra**atrĭum, i *n*–**atrium*(1-st chamber of the heart****)*****auriculāris, e -** auricular**auris, is *f***–ear**B****basis, is *f* –** base**biceps, bicipĭtis –** biceps**biliāris, e (felleus, a, um) –**cholic, gall, bile**brachĭum, i *n*–** shoulder**brevis, e –** short**bursa, ae *f* –** sac**C****caecum, i *n* –** cecum, blind gut**calcanēus, i *m –*** calcaneus, heel bone**canālis, is *m* –** canal *(some tubular structure)***capitŭlum, i *n*–** head**cаpsŭla, ae *f –*** capsule**caput, ĭtis *n* –** head**cartilāgo, ĭnis *f*–** cartilage**cavernōsus, a, um**– cavernous **cavĭtas, ātis *f* –** cavity**cavum, i *n* –** cavity**cavus, a, um –** hollow**centrālis, e–** central **cerebrālis, e–** cerebral**cerebellum, i *n* –** cerebellum**cerӗbrum, i *n*–** brain, cerebrum **cervicālis, e–** cervical *(relaiting to neck)***cervix, īcis *f*–** neck **сircumflexus, a, um –**circumflex**clavicŭla, ae *f*–** clavicle**collum, i *n*–** neck**columna, ae *f*–** column**gastrĭcus, a, um–**gastric**genu, us *n* –** knee**glandŭla, ae *f*–**gland**glutaeus, a, um** – gluteal, relating to the buttocks**H****hallux, ūcis *m*–**great toe**hepar, ătis *n* –**liver **hepatĭcus, a, um –** hepatic**horizontālis, e–** horizontal**humӗrus, i *m*–**humerus, shoulder bone**hyoidӗus, a, um –**hyoid (bone)**hypoglossus, a, um –** sublingual (nerve)**I****incisūra, ae *f*–** notch**index, ĭcis *m*–** index, forefinger**inferior, ius–**inferior, lower**internus, a, um –** internal**intestīnum, i *n*–** intestine**ischiadĭcus, a, um –** ischiadic or sciatic**L****labium, i *n*–** lip**lamĭna, ae *f* –** plate**larynx, yngis *m*–** larynx**laterālis, e –** lateral**latissĭmus, a, um –** widest, broadest**latus, a, um –** broad**lien, liēnis *m*–** spleen**ligamentum, i *n*–** ligament**linӗa, ae *f*–** line**lingua, ae *f* –** tongue**linguālis, e –** lingual**lobus, i *m* –** lobe**longissĭmus, a, um –** longest **longus, a, um –**long**lumbālis, e –** lumbar **lymphatĭcus, a, um–** lymphatic**M****magnus, a, um –**large, great **major, jus –** larger, greater **mandibŭla, ae *f*–**mandible, lower jaw**mandibulāris, e–** mandibular(relating to the lower jaw)**manus, us *f* –**hand**margo, gĭnis *f* –** margin, border**mastoidӗus, a, um –** mastoid, breast shaped**mater, tris *f* –** mater**maxilla, ae *f*–**maxilla, upper jaw**maxillāris, e –** maxillary **maxĭmus, a, um –** maximus, largest**parvus, a, um –** small**pelvis, is *f* –**pelvis**pelvis renalis –** renal pelvis**pes, pedis *m*–** foot**petrōsus, a, um –** petrous, stony**phalanx, ngis *f* –** phalanx*(bone in a finger or toe)***pharynx, yngis *m* –** pharynx *(throat)***plexus, us m –** plexus (*a network of veins or nerves*) **plica, ae *f*–**fold**pollex, ĭcis *m*–**thumb**posterior, ius –** posterior**processus, us *m*–** process, outgrowth**profundus, a, um –** deep, profound**pterygoidӗus, a, um –** pterygoid, wing-shaped**pulmo, ōnis *m*–** lung**pulmonālis, e –** pulmonary**R****radius, i *m*–** radius**,** radial bone**radix, īcis *f* –** root**ramus, i *m* –** branch**rectālis, e –** rectal **rectum, i *n*–** rectum **rectus, a, um–** straight**regĭo, ōnis *f*–**region**ren, renis *m*–** kidney**renālis, e**– renal **rete, is *n*–**network**rotundus, a, um –** round**S****sanguis, ĭnis *m*–** blood**scapŭla, ae *f* –** scapula**septum, i *n*–** septum, partition, dividing wall**simplex, ĭcis –** simple**sinister, tra, trum –** left **sinus, us *m* –** sinus; cavity**skelěton, i *n***– skeleton **skin*–***cutis, is *f* **sphenoidālis, e–** sphenoid **spina, ae *f*–** spine, thorn**spinālis, e –** spinal **spinōsus, a, um –** spinous, thorny**splen, ēnis *n***(*греч.*) – spleen **squama, ae *f* –**squama, scale**squamōsus, a, um –**squamous; *covered with scales***sublinguālis e –** sublingual *(excepting nerve and bone)***substantia, ae *f –*** substance **sulcus, i *m* –** sulcus, groove**superficiālis, e –** superficial**superficies, ei *f*–** surface**superior, ius –** superior | **concha, ae *f* –** shell, concha **conjunctiva, ae *f*–** conjunctive tunic**cor, cordis *n* –** heart**cornu, us *n –*** horn**corpus, ŏris *n –*** body **cortex, ĭcis *m*–** cortex **costa, ae *f*–** rib**costālis, e –** costal **craniālis, e –** cranial **cranium, i *n*–** skull**crista, ae *f* –** crest, ridge**crus, cruris *n*–** crus, limb**cutis, is *f –*** skin**D****dens, dentis *m* –** tooth**dentālis, e**– dental**dexter, tra, trum –** right**digĭtus, i *m* –** finger**dorsālis, e –** dorsal **dorsum, i *n*–**back of the body **ductus, us *m* –**duct, canal**duodenum, i *n*–** duodenum**dura mater**–hard medullary tunic**durus, a, um**–hard, solid**E****encephălon, i *n***= cerӗbrum, i *n***–**brain **et –** and **ethmoidālis, e –** ethmoidal, cribriform **externus, a, um –**external**F****faciālis, e –** facial **facies, ēi *f*–**face, surface**fascĭa, ae *f* –** fascia *(a band of fibrous tissue)***felleus, a, um (= biliaris, e) –** cholic, gall, bile**femur, ŏris *n*–** thigh, hip**fibrōsus, a, um –** fibrous**fibŭla, ae *f*–** fibula, slint-bone**fissūra, ae *f*–**fissure**flavus, a, um –** yellow**forāmen, ĭnis *n*–**opening**fossa, ae *f* –**trench**fovӗa, ae *f*–**pit **frons, frontis *f*–**forehead**frontālis, e –** frontal *(referring to the forehead)***G****gaster, tris *f*–** stomach**meātus, us *m*–** meatus (passage)**mediālis, e –** medial **mediānus, a, um** – middle **medius, a, um –** middle**medulla spinalis–** spinal cord**membrum, i *n*–** limb, extremity**meninx, ngis *f* –** medullary tunic**minĭmus, a, um –** minimus, smallest**minor, us –** lesser, smaller, minor**musculāris, e–** muscular*(pertaining to muscle)***muscŭlus, i *m* –** muscle**muscŭlus abductor (ōris *m*) –** abductormuscle**muscŭlus adductor (ōris *m*) –**adductor muscle**muscŭlus constrictor (ōris *m*) –**constrictor muscle**muscŭlus depressor (ōris *m*) –**depressor muscle**muscŭlus extensor (ōris*m*) –**extensor muscle**muscŭlus flexor (ōris *m*) –**flexor muscle**muscŭlus levātor (ōris *m*) –**levātor muscle**muscŭlus rotātor (ōris *m*) –**rotātor muscle**muscŭlus sphincter (ēris *m*) –**sphincter muscle**muscŭlus (ōris *m*) –**tensor muscle**N****nasālis, e–** nasal *(relating to the nose)***nasus, i *m* –** nose**nervōsus, a, um –** nervous**nervus, i *m*–** nerve**niger, gra, grum–** black**nodus, i *m*–** node**nucha, ae *f*–**nape, back of neck**nuclӗus, i *m*–** nucleus**O****oblīquus, a, um –** oblique, slanted**occipitālis, e –** occipital**occĭput, ĭtis *n*–** occiput (back of the head)**ocŭlus, i *m* –**eye**orbĭta, ae *f –*** orbit, eye-socket**os, oris *n*–** mouth**os, ossis *n*–** bone**ossӗus, a, um –** osseous, bony**ostĭum, i *n* –** orifice, entrance**ovālis, e –** oval**P****palatīnus, a, um –** palatal, palatine**palātum, i *n*–** palate **palpӗbra, ae *f*–** eyelid**pancrӗas, ātis *n*** *–* pancreas **parĭes, ētis *m* –** wall**parietālis, e –** parietal **pars, partis *f*–**part**sutūra, ae *f*–** suture, stitch**systēma, ătis *n*–**system**T****temporālis, e –** temporal *(relating to temple)***tempus, ŏris *n*–**1) temple; 2) time**teres, ӗtis –**round *(in shape)***thoracĭcus, a, um –** thoracic**thorax, ācis *m*–** thorax; chest**thyreoidĕus, a, um –** thyroid**tibĭa, ae *f*–** tibia**tibiālis, e –** tibial **tonsilla, ae *f* –** tonsil **transversus, a, um –**transverse**truncus, i *m***– trunk **tuber, ӗris *n* –** tuber**tubercŭlum, i *n* –** tubercle**tunica, ae *f* –** 1) layer, coat; 2) membrane**tympanĭcus, a, um -** tympanal**U****ulna, ae *f*–** ulna*(bone of the elbow)***urinarius, a, um –** urinary **utӗrus, i *m*–**uterus; womb**V****vas, vasis *n*–***(blood)*vessel**vena, ae *f*–**vein**venōsus, a, um –**venous**ventricŭlus, i *m*–** ventricle (of the heart, brain)**vertӗbra, ae *f*–** vertebra, spinal bone**vertebrālis, e–**vertebral**vesīca, ae *f* –** bladder**Z****zygomatĭcus, a, um–**zygomatic |

**ENGLISH-LATIN ANATOMICAL VOCABULARY**

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| **A****abdomen,belly** – abdōmen, ĭnis *n***abdominal**– abdominālis, e **abductor muscle–** muscŭlus abductor (ōris *m*)**adductor muscle –** muscŭlus adductor (ōris *m*)**alar**– alāris, e**alveolar –** alveolāris, e**and –**et **angle** – angŭlus, i *m***anterior** – anterior, ius**aorta** – aоrta, ae *f***aperture** – apertūra, ae *f***apex;** summit, tip – apex, ĭcis *m***arch** – arcus, us *m***artery** – artеrĭa, ae *f***articular***(relating to joint)*– articulāris, e**articulation, joint**– articulatĭo, ōnis *f***atrium** – atrium, i *n***auricular** – auriculāris, e**B****back of the body**– dorsum, i *n***back of the head***(occiput)* – occĭput, ĭtis *n***base–** basis, is *f***biceps –** biceps, bicipitis**black–** niger, gra, grum**bladder–** vesīca, ae *f***blind gut, cecum –** caecum, i *n***blood –** sanguis, ĭnis *m***body–** corpus, ŏris *n***bone–** os, ossis *n***bony,osseous–** ossӗus, a, um **border, margin –** margo, gĭnis *f***brain –** cerӗbrum, i *n***branch –** ramus, i *m***broad –** latus, a, um**broadest, widest–**latissĭmus, a, um **C****canal***(some tubular structure)***–** canālis, is *m***capsule –** cаpsŭla, ae *f***cartilage–** cartilāgo, ĭnis *f***cave –** cavum, i *n***cavernous** –cavernōsus, a, um **cavity–** cavĭtas, ātis *f***,** cavum, i *n***cecum, blind gut–** caecum, i *n***central –**centrālis, e**cerebellum –** cerebellum, i *n***cerebral–**cerebrālis, e**cerebrum, brain–** cerӗbrum, i *n***G****gastric –** gastrĭcus, a, um**gland–** glandŭla, ae *f***gluteal***(relating to the buttocks)* –glutaeus, a, um**great toe–** hallux, ūcis *m***great,large–** magnus, a, um**greater, great, major –** major, jus**greater, larger, major –** major, jus **groove, sulcus –** sulcus, i *m***H****hand –** manus, us *f***hard medullary tunic**– dura mater**hard, solid**– durus, a, um**head–** caput, ĭtis *n*, capitŭlum, i *n***heart–** cor, cordis *n***heel bone, calcaneus**–calcanēus, i *m***hepatic–** hepatĭcus, a, um**hip, thigh –** femur, ŏris *n***hollow –** cavus, a, um**horizontal–** horizontālis, e**horn–** cornu, us *n* **humerus, shoulder bone–** humӗrus, i *m***hyoid** *(bone)* **–** hyoidӗus, a, um**I****index, forefinger–** index, ĭcis *m***inferior, below–** inferior, ius**internal–** internus, a, um**intestine–** intestīnum, i *n***ischiadic** *or* **sciatic–** ischiadĭcus, a, um**J****joint, articulation–** articulatĭo, ōnis *f***K****kidney –** ren, renis *m***knee –** genu, us *n***L****large, great–** magnus, a, um**larger,greater, major –** major, jus **largest, maximus–** maxĭmus, a, um**larynx–** larynx, yngis *m***lateral –** laterālis, e**layer,** coat; membrane **–**tunica, ae *f* **left–** sinister, tra, trum**lesser, minor –** minor, us**levātor muscle –**muscŭlus levātor (ōris *m*) **ligament–** ligamentum, i *n***limb, crus –** crus, cruris *n***,** membrum, i *n***line –**linӗa, ae *f***outgrowth, process –** processus, us *m* **P****palatal –** palatīnus, a, um **palate –** palātum, i *n***palatine, palatal–** palatīnus, a, um**pancreas** *–*pancrӗas, ātis *n* **parietal –**parietālis, e **part–** pars, partis *f* **partition, septum, dividing wall –** septum, i *n***passage, meatus–**meātus, us *m***pelvis–** pelvis, is *f***petrous –** petrōsus, a, um**phalanx** *(bone in a finger or toe)* **–** phalanx, ngis *f***pharynx***(throat)* **–** pharynx, ngis *m***pit –** fovӗa, ae *f***plate –** lamĭna, ae *f***plexus***(a network of veins or nerves)****–***plexus, us *m***posterior –** posterior, ius**process, outgrowth –** processus, us *m***profound, deep –** profundus, a, um**pterygoide** *(wing-shaped)* **–**pterygoidӗus, a,um**pulmonary –** pulmonālis, e **R****radius*(****radial bone)***–** radius, i *m***rectum–** rectum, i n **region –** regĭo, ōnis *f***renal pelvis –** pelvis renālis**rib –** costa, ae *f***ridge, crest–** crista, ae *f***right –** dexter, tra, trum**root –** radix, īcis *f***rotātor muscle –**muscŭlus rotātor (ōris *m*)**round***(in shape)* **–**teres, ӗtis **S** **sac –** bursa, ae *f***scale, squama –**squama, ae *f***scapula –** scapŭla, ae *f***sciatic***or* **ischiadic–**ischiadĭcus, a, um**septum, partition –** septum, i *n***shell –**concha, ae *f***short –** brevis, e**shoulder –**brachĭum, i *n***shoulder bone, humerus –** humӗrus, i *m***simple –**simplex, ĭcis **sinus; cavity –** sinus, us *m***skeleton** –skelěton, i *n***skull–** cranium, i *n***slanted, oblique –** oblīquus, a, um**V****vein** –vena, ae *f***venous** – venōsus, a, um**ventricle** *(of the heart, brain)* – ventricŭlus, i *m***vertebra** –vertӗbra, ae *f***vertebral**– vertebrālis, e**vessel** *(blood)*– vas, vasis *n***W****wall** – parĭes, ētis *m***white**– albus, a, um**wing**– ala, ae *f***wing-shaped, pterygoide** –pterygoidӗus, a, um**womb; uterus** –utӗrus, i *m***Z****zygomatic**–zygomatĭcus, a, um**Y****eyelid –** palpӗbra, ae *f***W****widest, broadest–**latissĭmus, a, um  | **cervical(***relating to neck***)–** cervicālis, e**chest, thorax –** thorax, ācis *m***cholic –** billiāris, e;fellӗus, a, um**circumflex –**сircumflexus, a, um**clavicle –** clavicŭla, ae *f***coat,** layer; membrane **–** tunica, ae *f* **column–** columna, ae *f***concha, shell–**concha, ae *f***conjunctive tunic–** conjunctiva, ae *f***constrictor muscle–**muscŭlus constrictor (ōris *m*)**costal –** costālis, e**cranial –** craniālis, e**crest, ridge–** crista, ae *f***cribriform, ethmoidal –** ethmoidālis, e**D****deep, profound–** profundus, a, um**dental** –dentālis, e **depressor muscle–**muscŭlus depressor (ōris *m*)**dividing wall, partition, septum –**septum, i *n***dorsal–** dorsālis, e**duct, canal–** ductus, us *m***duodenum–** duodenum, i *n***E****ear –** auris, is *f***entrance, orifice –**ostĭum, i *n* **ethmoidal, cribriform –** ethmoidālis, e**extensor muscle –** muscŭlus extensor (ōris*m*)**external –** externus, a, um**eye–** ocŭlus, i *m***F****face, surface–** facies, ēi *f***facial –**faciālis, e**fascĭa***(a band of fibrous tissue)* **–**fáscia, ae *f***fibrous –** fibrōsus, a, um**fibula –** fibula, ae *f***finger–** digĭtus, i *m***finger bone–** phalanx, ngis *f* **fissure –** fissūra, ae *f***flexor muscle –**muscŭlus flexor (ōris *m*)**fold –** plica, ae *f***foot –** pes, pedis *m***foramen, opening –** forāmen, ĭnis *n***forefinger, index –** index, ĭcis *m***forehead–** frons, frontis *f***frontal** *(referring to the forehead)* **–**frontālis, e**lingual –** linguālis, e**lip –** labium, i *n***liver –** hepar, ătis *n***lobe –** lobus, i *m* **long–** longus, a, um**longest–**longissĭmus, a, um **lower jaw, mandible –** mandibŭla, ae *f* **lumbar–**lumbālis, e**lung–** pulmo, ōnis *m***lymphatic –**lymphatĭcus, a, um**M****mandible, lower jaw–** mandibŭla, ae *f***mandibular** (relating to the lower jaw) **–** mandibulāris, e**margin, border, edge–** margo, gĭnis *f***mastoid; breast shaped–**mastoidӗus, a, um**mater –** mater, tris *f***maxilla, upper jaw–** maxilla, ae *f* **maxillary –** maxillāris, e**maximus, largest –** maxĭmus, a, um**medial –** mediālis, e**medullary tunic –**meninx, ngis *f***membrane;** coat,layer**–** tunica, ae *f* **middle –**medius, a, um; mediānus, a, um**minimus, smallest –** minor, us**minor, lesser –**minĭmus, a, um**mouth–** os, oris *n***muscle–** muscŭlus, i *m***muscular***(pertaining to muscle)***–**musculāris, e**N****nape, back of neck–** nucha, ae *f***nasal** *(relating to the nose)* **–** nasālis, e**neck–** collum, i *n*; cervix, īcis *f***nerve–** nervus, i *m***nervous –** nervōsus, a, um**network–** rete, is *n***node –** nodus, i *m***nose–** nasus, i *m***notch–** incisūra, ae *f***nucleus –** nucleus, i *m***O****oblique, slanted –** oblīquus, a, um**occipital –** occipitālis, e**occiput** *(back of the head)* **–** occĭput, ĭtis *n***opening, –** forāmen, inis *n***orbit *–***orbĭta, ae *f***orifice, entrance–** ostĭum, i *n***osseous, bony –** ossӗus, a, um **oval –**ovālis, e **small–**parvus, a, um **smallest, minimus –**minĭmus, a, um**soft medullary tunic**– pia mater**solid, hard**– durus, a, um**sphenoid –** sphenoidālis, e **sphincter muscle –** muscŭlus sphincter (ēris *m*)**spinal –**spinālis, e **spinal cord –** medulla spinālis**spine, thorn –** spina, ae *f***spinous, thorny –** spinōsus, a, um**spleen–** lien, lienis *m;* splen,ēnis *m (греч.)* **squama, scale –** squama, ae *f* **squamous** *(covered with scales)***–** squamōsus, a, um**stomach**– gaster, tris *f***straight**– rectus, a, um**sublingual** *(excepting nerve and bone)*– sublinguālis e**sublingual***(nerve)* **–** hypoglossus, a, um; **substance*–*** substantia, ae *f***sulcus, groove –** sulcus, i *m***superficial**– superficiālis, e **superior –**superior, ius **surface** – facies, ei *f*; superficies, ei *f***suture**– sutura, ae *f***system –** systēma, ătis *n***T****temple –** tempus, ŏris *n***temporal** *(relating to temple)* –temporālis, e **tensor muscle–** muscŭlus tensor (ōris *m*)**thigh, hip** – femur, ŏris *n***thoracic**– thoracĭcus, a, um**thorax; chest** – thorax, ācis*m***thorn, spine –** spina, ae *f***thorny, spinous** – spinōsus, a, um**thumb** – pollex, ĭcis *m***thyroid** –thyreoidĕus, a, um **tibia**– tibia, ae *f***toe bone** – phalanx, ngis *f* **tongue** –lingua, ae *f***tooth**– dens, dentis *m***transverse**– transversus, a, um**trench**– fossa, ae *f***trunk** – truncus, i *m***tuber** – tuber, ӗris *n***tubercle** – tubercŭlum, i *n***tympanal –**tympanĭcus, a, um**U****ulna** *(bone of the elbow)*– ulna, ae *f***upper jaw, maxilla –** maxilla, ae *f* **urinary –** urinarius, a, um**uterus; womb** – utӗrus, i *m* |