Ministry of Healthcare of the Russian Federation State Budget Educational Institution of Higher Professional Education Siberian State Medical University<br>Division of Latin and fundamentals of Medical Terminology

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# INDIVIDUAL WORK TEACHING AIDS 

## Subject: Latin language

For students of the 1 course
$2^{\text {nd }}$ revised and expanded edition

> Tomsk
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## Theme 1. Introduction to the discipline Latin alphabet. Rules of pronunciation

| Letter | Name | Pronunciation | Examples - Latin (English) |
| :---: | :---: | :---: | :---: |
| Aa | a | a | as in "under": cáput (head) |
| Bb | be | b | as in "bath": bráchium (shoulder) |
| Cc | tse | $\begin{gathered} \mathrm{ts} \\ \mathrm{k} \end{gathered}$ | as in "plants": cérvix (neck) <br> as in "coner": cósta (rib), crísta (crest) |
| Dd | de | d | as in "danger": déxter (right) |
| Ee | e | e | as in "met": vértebra |
| Ff | ef | f | as in "fast": fácies (surface, face) |
| Gg | ge | g | as in "get": gáster (stomach) |
| Hh | ha | $\begin{gathered} \hline \mathrm{h} \\ \text { (english like) } \end{gathered}$ | as in "hand": hómo (man) |
| Ii | I | i | as in "sit": vagína (vagina) |
| Jj | yot | (j) | as in "yes": májor (large) |
| Kk | ka | k | as in "key": skéleton |
| Ll | el | 1 | as in "life": lábium (lip) |
| Mm | em | m | as in "medical": meátus (passage) |
| Nn | en | n | as in "night": násus (nose) |
| Oo | 0 | O | as in "spot": córpus (body) |
| $\mathbf{P p}$ | pe | p | as in "palmer": pálpebra (eyelid) |
| Qq | ku | k | as in "quite": quádriceps (four-headed) |
| Rr | er | r | as in "rend": ren (kidney) |
| Ss | es | $\begin{aligned} & \mathrm{S} \\ & \mathrm{Z} \end{aligned}$ | as in "solve": solútio (solution) as in "nose": incisúra (slit or notch) |
| Tt | te | t | as in "ten": tráctus (tract) |


| $\mathbf{U u}$ | u | u | as in "put": púlmo (lung) |
| :---: | :---: | :---: | :--- |
| $\mathbf{V v}$ | ve | v | as in "van": válva (valve) |
| $\mathbf{X x}$ | iks | ks | as in "next": rádix (root) |
| $\mathbf{Y y}$ | ypsilon <br> (igrek) | i | as in "crystal": týmpanum (drum) |
| $\mathbf{Z z}$ | zeta | z | as in "zero": zygóma (check-bone) |

## Pronunciation of vowels and diphthongs

The Latin vowels are similar to the corresponding English vowels.
Diphthong is a combination of two vowel pronounced together in one syllable.
au is pronounced as in "down" : áuris (ear)
eu is pronounced [eu] : pléura (pleura)
ae/oe Representing the sound similar to the English /e/: vertebrae (vertebrae), oedema (swelling).peritonaeum
Attention! - Two dots placed over the letter e indicate that ae or oe are not digraphs and their letters denote different sounds: áër - air; díploë spongy substance.

## Pronunciation of consonants and digraphs

The Latin consonants are similar to the corresponding English consonants, except $\mathbf{c , g}, \mathbf{j}, \mathbf{l}, \mathbf{s}, \mathbf{x}$ and $\mathbf{z}$.
c Before $\underline{\mathrm{e}}, \underline{\mathrm{i}}, \underline{\mathrm{y}}$, ae, oe is pronounced like /ts/: cérvix - neck: cýstis - bladder; caécum - cecum.
c Before $\underline{a}, \underline{o}, \underline{u}$, before consonants and at the end of a word it is pronounced as /k/: cáput - head: cósta - rib; cutis - skin; crísta - crest; lac - milk.
g Is always pronounced as /g/ .
j Is pronounced as $/ \mathrm{j} /$.
l Is always palatalized and soft .
s Between two vowels or between a vowel and the voiced consonant $\underline{m}$ or $\underline{n}$ is pronounced as $/ \mathrm{z} /$, but before vowels, consonants and at the end of a word it is pronounced as /s/
$\mathbf{x}$ Is pronounced as /ks/larynx, but sometimes between vowels it is pronounced as /gz/.
z In Greek words is always pronounced as $/ \mathrm{z} /$, but in words of other origin such as Zíncum (zinc), influénza (grippe) it is pronounced as /ts/.
Hh - $|\gamma|$ homo
There are several consonant digraphs commonly used in Latin. They are pronounced as follows:
ch as /kh/: núcha neck
ph as /f/: ráphe - suture apophisis (апофиз, отросток)
rh as /r/: rhéxis - rupture
th as /t/: thórax - chest

## Pronunciation of letter combinations

These letter combinations are pronounced as follows:
ngu - as /ngv/ before vowels: língua - tongue, language;

- as /ngu/ before consonants: ángulus - angle
qu - as $/ \mathrm{kw} /$ áqua - water
su - as /sv/ before vowels a,e: suávis /svavis/ - pleasant;
- as /su/ in different syllables: súlcus - furrow or groove
ti - as /tsi/ before vowels: spátium - space; articulátio - joint;
- as /ti/ before consonants, after s.,t,x: tíbia /tibia/ - shinebone; óstium opening.
sch $-/ \mathrm{s} / \mathrm{h} /$ ischium


## Exercises:

## 1. Read the following words paying special attention to the vowels:

ála (wing), mínor (small), artéria (artery), lámina (plate), abdómen (belly), fóvea (pit), fibula (fibula; long, thin outer bone from knee to ankle), fémur (thigh-bone), línea áspera (rough line), pálma (palm), infundíbulum (funnel), régio (region), inférior (lower), antérior (situated in front of), membrána (membrane), manúbrium stérni (first or upper part of breast-bone), véna (vein), húmerus (bone of upper arm), gingíva (gum), úlna (medial bone of forearm), úvula (lingula), hépar (liver), hílus (hilus).

## 2. Read the following words paying special attention to the vowels $\boldsymbol{i}$ and $\boldsymbol{j}$ :

intestínum (intestine), iáter (physician, doctor), páries inférior (lower wall), ínsula (island), junctúra (junction), júgum (iúgum) (eminence, mound), juguláris (iuguláris) (jugular), canális palatínus májor (máior) (greater palatine canal), fóssa infratemporális (infratemporal fossa), tubérculum május (máius) (greater tubercle), jejúnum (ieiúnum) (jejunum), ilíacus (iliac).

## 3. Read the following words paying special attention to Latin vowel digraphs and diphthongs:

áuris (ear), autopsía (necropsy), Áurum (gold), pléura (pleura), neurológia (neurology), pneumonía (inflammation of the lungs), cóstae (ribs), oedéma (swelling), anaemía (anemia), gangraéna (gangrene), amoéba (ameba), áër (air), Áloë (aloe), aërophobía (morbid fear of drafts or of fresh air), vértebrae (vertebrae), caécus (cecal), oesóphagus (oesophagus), auriculáris (auricular), córpus vesícae félleae (body of gallbladder), aponeurósis (aponeurosis), pseudomembrána (false membrane), uropoëticus (urogegenus/ urinogenous), díploë (diploe), aurícula (auricle), haematopoëticus (hemopoietic), dýspnoë (dispnea), régio glutaéa (gluteal region), peronaéus (fibular), neurocránium (skull), caudális (caudal).

## 4. Read the following words paying particular attention to the consonants $\underline{c, s, l, x}$ and z:

fácies (surface), cérvix (neck), cérebrum (brain), cýstis (cyst), cytológia (cytology), cósta (rib), cáput (head), córpus (body), colúmna (pillar), cávum (cavity), cóllum (neck), crísta (crest), lac (milk), canális (canal), súlcus (furrow, groove), árcus (arch), córnu (horn), stérnum (breastbone), scápula (shoulder-blade), os (bone), spína (spine), násus (nose), básis (base), plásma (plasma), organísmus (organism), squamósus (scaly), tuberósitas (tuberosity), lóbus (lobe), látus (wide), músculus (muscle), lábium (lip), ángulus (angle), ánulus (ring), ápex (top, summit), rádix (root), déxter (right), thórax (chest), xiphoídeus (swordshaped), zóna (zone), zygóma (cheek-bone), horizontális (horizontal), cávitas (cavity), ócciput (back of the head), trúncus (trunk), caécus (cecal), claviculáris (clavicular), accessórius (additional), músculus (muscle), scéleton (skeleton), cruciátus (cruciform), ceméntum (cement), cávum cránii (cavity of skull), sáccus lacrimális (tear sac), cartilágo (cartilage), cóndylus (condyle), bíceps (two-headed), céllula (cell), córpus (body), súlci palatíni (palatine grooves), vértebrae cervicáles (cervical vertebrae), vértebrae sacráles (sacral vertebrae), os coccýgis (coccygeal bone), forámina sacrália dorsália (dorsal sacral openings), búcca (cheeck), búccae (cheeks).
5. Read the following words paying special attention to the letter combinations ch, ph, qu, rh, th, ngu and ti:
núcha (nape), chóle (bile), chórda (cord), chárta (paper), phálanx (fingerbone), diaphrágma (diaphragm), phárynx (pharynx), áqua (water), squamósus (scaly), quádriceps (four-headed), rhizóma (rhizome), rhéxis (rupture), rheumatísmus (rheumatism), thórax (chest), rhinorrhagía (bleeding from the nose), therapía (treatment), thrómbus (blood clot), língua (tongue, language), únguis (nail), sánguis (blood), unguéntum (ointment), ángulus (angle), linguláris (lingular), trianguláris (triangular), tíbia (shinebone), téstis (testis), tinctúra (tincture), óstium (opening), articulátio (joint), substántia (substance), spátium (space), solútio (solution), curátio (treatment), vítium (defect)

## 6. Read the following words paying particular attention to the consonant $\underline{s}$ :

 fóssa (cavity), húmerus (bone of upper arm), mesentérium (mesentery), impréssio (impression), sínus (holow curvature or cavity), sigmoídeus (sigmoid), séptum nási (nasal septum), canális hypoglossális (hyppoglossal canal), procéssus styloídeus (styloid process), básis cránii (base of skull), segméntum (segment), pars petrósa (petrosal part), chiásma (chiasm), fissúra (fissure (slit)), dens incisívus (incisor tooth), platýsma (subcutaneous neck muscle), mesogástrium (middle part of abdomen), mucósus (mucosal), nasolacrimális (nasolacrimal), súlcus sínus transvérsi (transversal hollow groove).
## 7. Read the following words paying particular attention to the pronunciation of qu and ngu: <br> squáma occipitális (occipital scale), lámina quadrigémina (quadrigeminal plate), quadrátus (square), vértebra quínta (the fifth vertebra), línea oblíqua (oblique line), língua (tongue, language), língula (small tongue), inguinális (inguinal), únguis (nail), squamósus (scale-like), os tríquetrum (trihedral bone), sublinguális (sublingual), ángulus (angle), sánguis (blood), sanguíneus (circulatory (bloody)).

## 8. Read the following words paying particular attention to the pronunciation of ti:

 addúctio (adduction), abdúctio (abduction), periodóntium (peridontium), supinátio (supination), articulátio (joint), eminéntia (eminence), tíbia (shinbone), óstium (mouth, aperture), spátia intercostália (intercostal space), digéstio (digestion), distántia trochantérica (trochanteric distance), substántia spongiósa (spongy substance), forámina nutrícia (nourishing openings), míxtio (mixture), masticátio (chewing).9. Read the following words paying particular attention to the pronunciation of digraphs and letter combinations:
núcha (nape of neck), thyreoídeus (thyroid), thórax (chest), línea núchae supérior (upper nachal line), tubérculum pharyngéum (pharyngeal tubercle), os sphenoidále (wedge-shaped bone), fóssa hypophysiális (hypophysial cavity), labyrínthus ethmoidális (cribriform labyrinth), kyphósis (hump back (arterior curvature)), hemisphérium (hemisphere), sectiónes hypothálami (sections of hypothalamus), splanchnológia (splanchnology), sphíncter (sphincter), brónchus (main branch of trachea), dúctus cholédochus (common bile duct), os scaphoídeum (boat-shaped bone), phalánges (bones of fingers or toes), sýmphysis (symphysis (adhesion)), synchondrósis (synchondrosis), ísthmus (isthmus), trúncus brachicephálicus (brachiocephalic trunk), artéria ophthálmica (ophthalmic artery), véna saphéna (saphenous vein), nódus lympháticus (lymphatic node), dúctus thorácicus (thoracic duct), spinothalámicus (spinothalamic), pars sympáthica (sympathetic part), cávum subarachnoidále (subarachnoidal cavity), os íschii (ischial bone), incisúra ischiádica májor (major ischiadic notch), aquaedúctus mesencéphali (aqueduct of midbrain).

VOCABULARY 1 (nouns of declension 1):

| ala, ae f | -wing |
| :--- | :--- |
| aorta, ae f | -aorta, main artery of body |
| apertura, ae f | -aperture, opening |
| arteria, ae f | -artery |
| bursa, ae f | -pouch, sac |
| chorda, ae f | -chord |
| clavicula, ae f | -drumstick |
| cochlea, ae f | -cochlea |
| columna, ae f | -column |
| concha, ae f | -concha |
| costa, ae f | -rib |
| crista, ae f | -crista |
| fascia, ae f | -fascia |
| fibula, ae f | -fibula, splint-bone |
| fissura, ae f | -fissure, narrow slit |
| fossa, ae f | -fosse, shallow depression or cavity |
| fovea, ae f | -small pit or depression |
| glandula, ae f | -gland |
| incisura, ae f | -incisure, slit or notch |
| junctura, ae f | -juncture |


| lamina, ae f | -lamina, plate |
| :---: | :---: |
| linea, ae f | -line |
| lingua, ae f | -tongue, language |
| mandibula, ae f | -lower jaw |
| maxilla, ae $f$ | -upper jaw |
| medulla, ae f | -medulla, marrow |
| membrana, ae f | -membrane |
| nucha, ae f | -nape of neck |
| palpebra, ae f | -eyelid |
| papilla, ae f | -papilla |
| patella, ae f | -patella |
| prostata, ae f | -prostate |
| pupilla, ae f | -pupil of the eye |
| scapula, ae f | -shoulder blade |
| spina, ae f | -spine |
| squama, ae f | -scale or flake |
| substantia, ae f | -substance |
| sutura, ae f | -suture; line of junction |
| tibia, ae f | -shine bone, larger of two bones of leg |
| tuba, ae f | -tube |
| tunica, ae f | -tunic |
| ulna, ae f | -elbow bone |
| urethra, ae f | -urethra, urinary tract |
| vagina, ae f | -sheath, vagina |
| valvula, ae f | -valve, valvule |
| vena, ae f | -vein (vena portae - portal vein) |
| vertebra, ae f | -vertebra, spinal bone |
| vesica, ae f | -bladder |

# Theme 2. Long and short vowels. Regulations setting accents. Long and short suffixes of nouns and adjectives 

## Accent rules, word stressing

## I. Division of words into syllables

To determine which syllable is stressed the word should be divided into syllables. Every Latin word has as many syllables as it has vowels or diphthongs. In Latin syllables are usually counted from the end of a word.

Examples:

| $\mathrm{Ar}-$ | te- | ri- | a |
| :---: | :---: | :---: | :---: |
| 4 | 3 | 2 | 1 | (artery)

## II. The main rules for the position of an accent in Latin.

1. The final syllable of a word is not stressed.
2. In disyllabic words (consisting of two syllables) the second syllable (from the end) is always stressed.
3. In polysyllabic words (consisting of more than two syllables) the second or the third syllable from the end of the word is stressed.

To stress correctly a Latin word you should:

1. divide a word into its syllables,
2. find the next to last syllable,
3. determine whether the next to last syllable is stressed (long) or not (short). If the next to last syllable is not stressed, the accent is shifted to the third syllable from the end of the word.

The basic rules when the next to last syllable is stressed (long) /not stressed (short):

|  | Rules | Examples |
| :---: | :---: | :---: |
| Next to last syllable is stressed | 1. if it contains a diphthong such as ae, oe: | $\begin{aligned} & \text { pe - ri - to - naé - um } \\ & \text { pe - ro - naé - us } \end{aligned}$ |
|  | 2. if a vowel of this syllable is followed by two or more consonants or letters «x»»; «Z»»: | $\begin{aligned} & \text { li- ga- mén-tum } \\ & \text { ref- lé- xus } \\ & \text { gly - cy - rrhý - za } \end{aligned}$ |
|  | 3. if it contains such suffixes as: <br> -al-, -ar-, -at-, -in-, -ur-, -os-, -iv- . | $\begin{aligned} & \text { me- di- á- lis } \\ & \text { di-gi- tá- tus } \\ & \text { fib- ró-sus } \end{aligned}$ |


| Next to last syllable is not stressed (accent is shifted to the third syllable from the end) | 1. if its vowel is followed by another vowel | $\begin{aligned} & \text { ar- té- ri-a } \\ & \text { su- pé- } \underline{\text { ri- or }} \end{aligned}$ |
| :---: | :---: | :---: |
|  | 2. if its vowel is followed by such letter combinations as: <br> br, pl, tr, | $\begin{aligned} & \text { vér- te- bra } \\ & \text { quá- dru- plex } \\ & \text { trí- que- trus } \end{aligned}$ |
|  | 3. if its vowel is followed by diagraphs $\mathbf{c h}, \mathbf{p h}, \mathbf{t h}, \mathbf{r h}$. | $\begin{aligned} & \text { cho - lé - do - chus } \\ & \text { stó - ma - chus } \end{aligned}$ |
|  | 4. if it contains such suffixes as: -ic-, -ol-, -ul-. |  |

## III. Graphically signed stress

If the word can't be read according to any stress rule you should consult a dictionary. Both stressed and unstressed syllables are graphically signed with the special marks. Stressed (long) syllables are graphically signed by a ( $)$ :

For example: pylōrus - pylórus.
Unstressed (short) syllables are indicated by a ( ${ }^{*}$ ) on the vowel.
For example: skelĕton - skéleton.

## Exercises:

## 1. Stress the following words observing the rules of Latin word-stressing:

 columna, processus, cerebrum, bursa, cavum, palpebra, profundus, transversus, atlas I, internus, bulbus, gangraena, refluxus, cauda, linea, barba, ampulla, collum, tibia, sinister, cornu, situs, xiphoiděus, facies, anatomia, ramus, coccygēus, caries, tabuletta, pterygoiděus, externus, maxilla, curatio, solutio, substantia, eminentia, Belladonna, ligamentum, vertebra, costa, apex, arcus, minor, manus, vomer, sternum, sella.
## 2. Stress the words:

apertura (opening), anulus (ring), angulus (angle), foveola (pit), incisura (notch, split), tuberculum (tubercle), spinosus (spinous), thoracicus (thoracic), articularis (articular), opticus (visual), basilaris (basic), cervicalis (cervical), musculus (muscle), fissura (cleft), lateralis (lateral), vertebralis (vertebral), lumbalis (lumbar), fossula (small depression or cavity), ventriculus (ventricle, stomach), glandula (gland), scapula (shoulder-blade), mandibula (lower jaw), clavicula (clavicle), fibula (fibula), maxillaris (maxillary), chronicus (chronic), gastricus (gastric), pelvinus (pelvic), fibrosus (fibrous), gelatinosus (gelatinous), venosus (venous), squamosus (scaly), spirituosus (spiritual), capitatus (capitate),
destillatus (destilled), auditivus (auditory), vegetativus (vegetative), incubativus (incubative), incisivus (incisive, cutting), junctura (junction), sutura (suture), temperatura (temperature).

## 3. Practise stressing the following Latin anatomical terms:

costa fluctuans (free rib), vertebra thoracica (thoracic vertebra), columna vertebralis (spinal column), processus articularis superior (higher joint appendix), tuberculum anterius (anterior tubercle), facies articularis anterior (anterior joint surface), sulcus arteriae vertebralis (vertebral furrow of artery), nucleus pulposus (pulpal nucleus), anulus fibrosus (fibrous ring of tissue about an opening), ligamentum longitudinale anterius (anterior longitudunal ligament), juncturae columnae vertebralis et cranii (junctions of spinal column and skull), articulatio atlantooccipitalis (joint between first cervical vertebra and occipital bone), canalis vertebralis (vertebral canal), sulcus costovertebralis minor (major) (small (large) costovertebral furrow), incisurae costales (costal slits), ligamentum capitis costae (ligament of the head of rib), articulatio capitis costae (joint of the head of rib), spatia intercostalia (intercostal spaces), apertura thorācis superior (inferior) (superior (inferior) thoracic apertura), angulus infrasternalis (angle, situated below or beneath sternum), fissura sterni (narrow slit of breast bone).

## 4. Practise stressing the following Latin anatomical terms:

medulla ossium (bone marrow), arcus vertebrae (vertebral arch), membrum inferius (leg), epigastrium (part of abdomen immediately over stomach), processus transversus (transverse process), substantia compacta (thick substance), palpebra superior (upper eyelid), corpus maxillae (body of upper jaw), quadruplex (fourfold), facies poplitea (popliteal surface), ductus choledochus (bile duct).

## 5. Practise stressing the following Latin anatomical terms:

digitatus (pertaining to finger or toe), hiatus sacralis (sacral opening), cribrosus (sieve-shaped), vertebralis (vertebral), incisura supraorbitalis (supraorbital notch), clavicularis (pertaining to collar-bone), fossa pterygopalatina (pterygopalatine cavity), processus zygomaticus (zygomatic process), hamulus pterygoiděus (wing-shaped hook), mentalis (pertaining to chin), sulcus pulmonalis (pulmonary furrow), forāmen spinosum (spinous opening), fossa glandulae lacrimalis (shallow depression of lacrimal gland), pubicus (pertaining to lower part of abdomen, covered with hair), pars squamosa (scaly (platelike) part), nodi pancreatici (pancreatic nodes), pelvinus (pelvic), foveolae granulares (small granular spit), glomerulus (small ball), incisura vertebralis (vertebral slit).

## 6. Practise stressing the following Latin anatomical terms:

alae voměris (wings of thin bone separating nostrils), pars superior duodēni (upper part of duodenum), cartilaginěus (pertaining to cartilage), articulatio sacrococcygēa (sacral-coccygeal joint), gingīva (gum), trachēa (windpipe), apertura thorācis inferior (lower opening of chest), orgănon gustus (taste organ), osteologia (science about bones), glossopharyngēus (pertaining to tongue and pharynx), myologia (science about muscles), orbǐta oculi (eye-pit), pylōrus (opening of stomach into duodenum), peritonēum (serous membrane lining abdominal cavity), metathalămus (part of brain behind visual tuber), minĭmus (smallest), musculus levator fornĭcis (muscle that raises fornix), os coccýgis (last bone of spinal column), peronēus (pertaining to fibular bone), carpēus (pertaining to wrist), glutēus (pertaining to buttocks), nervus trigemĭnus (trigeminal nerve), labyrinthus ethmoidalis (sieve-shaped labyrinth (ethmoidal bone)).

## 7. Practise stressing the following Latin anatomical terms:

laminna arcus vertebrae (plate of vertebral arch), forāmen rotundum (round opening), vagīna processus styloiděi (sheath of awl-shaped appendix), tuberositas pterygoiděa (pterygoid tuberosity), palātum osseum (bony palate), ligamentum popliteum oblīquum (oblique popliteal ligament), cavǐtas oris propria (proper oral cavity), atrium meātus medii (atrium middle meatus), cartilāgo thyroiděa (thyroid cartilage), vesīca urinaria (bladder), extremǐtas inferior (lower extremity).

## 8. Practise stressing the following Latin anatomical terms:

processus accessorius (additional appendix), arcus posterior atlāntis (posterior arch of first cervical vertebra), lineae transversae (transverse lines), eminentia cruciformis (cruciform eminence), facies anterior (anterior surface), os triquetrum (three-sided bone), basis patellae (base of kneecap), recessus sacciformis (sacciform recess), spatia interossea metacarpi (interosseous spaces of metacarpus), labium superius (upper lip), pancreas accessorium (additional pancreas), regio respiratoria (respiratory region), bifurcatio trachēae (bifurcation of trachea).

VOCABULARY 2 (nouns of declension 2):
masculinum
angulus, i m
anus, i m
bronchus, i m
bulbus, i m
calcaneus, i m
carpus, i m
condylus, i m
digitus, i m
(o)esophagus, i m
fundus, i m
humerus, i m
lobus, i m
musculus, i m
nasus, i m
nervus, i m
nodus, i m
nuclěus, i m
oculus, i m
pylorus, i m
radǐus, i
ramus, i m
sulcus, i m
thalamus, i m
thymus, im
truncus, i m
uterus, i m

- angle
- anus
- bronchus
- bulb (bulbus oculi - eyeball)
- calcaneus, heel
- wrist
- condyle
- finger; toe
- esophagus
- bottom
- humerus, shoulder
- lobe
- muscle
- nose
- nerve
- node
- spheroid body within a cell
- eye
- pylorus
- thicker and shorter bone of forearm
- branch
- furrow or groove
- thalamus
- thymus
- trunk
- uterus, womb
neutrum, the beginning
atrium (i n ) cordis $\quad$ - atrium of the heart
(atrium dextrum - right atrium; atrium sinistrum - left atrium)
brachĭum, i n - upper arm
caecum, in
capitŭlum, in
cavum, in
cerebellum, in
cerebrum, in
collum, in
colon, in
cranĭum, in
- blind gut
- small head
- cavity
- little brain
- brain
- neck
- colon
dorsum, in
duodenum, in
- skull
- back
- duodenum


## Theme 3-4. Introduction in anatomical terminology. Grammar. Noun and its grammatical categories. Structure of anatomical terms

I. The anatomical term is a word 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).

## 1. One-Word Terms

They consist of one noun in singular or plural: Costa (rib), costae (ribs)

## 2. Two- (and more) Word Terms <br> They may consist of:

1. nouns in singular or plural:
corpus vertěbrae (body of vertebra), corpŏra vertebrārum (bodies of vertebrae), ligamentum tubercŭli costae (ligament of tubercle of rib).
2. nouns with an adjective: vertěbra thorač̌a (thoracic vertebra) processus articulāris superior (superior articular process) sulcus nervi spinālis (furrow of the spinal nerve)

Facies temporālis alae minōris ossis sphenoidālis (temporal surface of the smaller wing of the sphenoid bone).

## II. Grammatical categories of a noun (nomen substantivum)

The grammatical categories of a noun are as follows:

1. Gender
2. Number
3. Case
4. Declension

## Gender

There are three genders in Latin: masculine (masculīnum), feminine (feminīnum) and neuter (neutrum). Latin nouns have grammatical gender. Their gender is determined by the ending of Nominative singular.

Thus, nouns ending in $-\mathbf{a}$ are feminine: scapŭla (shoulder blade), nouns ending in -us are masculine (usually): muscŭlus (muscle), nouns ending in -um are neuter.

The genders of a noun are indicated in the dictionaries with the letters:
m-masculine
$\mathbf{f}$ - feminine
$\mathbf{n}$ - neuter

## Number

In common with English there are two numbers in Latin - singular (singulāris) and plural (plurālis). In English the plural is formed by the endings -s or -es. 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. There are six cases in Latin, but only two cases are used in the anatomical terminology:

| English | Latin and abbreviation |
| :--- | :--- |
| Nominative | Nominatīvus (Nom.) |
| Genitive | Genetīvus (Gen.) |

Nominative indicates the subject and answers the questions who, what.
Genitive indicates the possession and answers the questions whose, of what.

## III. Dictionary form of a noun

The dictionary form of a noun consists of three components:

1. the full form of Nominative singular;
2. the Genitive singular ending;
3. the designation of gender (with the letters $\mathrm{m}, \mathrm{f}, \mathrm{n}$ ).
E.g.:
ala, ae f - wing; sternum, i n - breast bone; ductus, us m - duct.

## IV. Declension

There are five declensions in Latin; that is, five categories of nouns, each with its own endings. The declension is determined by the Genitive singular endings.

First declension
The nouns of feminine which end in -a are ascribed to the first declension. The Genitive form of the first declension nouns ends in -ae.
E.g.: costa, ae $\mathrm{f}-$ rib vertěbra, ae $\mathrm{f}-$ vertebra

## Second declension

To the second declension are referred masculines which end in -us and -er, and neuters which end in -um, -on. The Genitive form of the second declension nouns ends in -i.

$$
\begin{array}{ll}
\text { E.g.: } \quad \text { nasus, } \mathrm{i} \mathrm{~m}-\text { nose; } \\
& \text { collum, } \mathrm{i} \mathrm{n}-\text { neck; }
\end{array}
$$

olecrănon, i n - tip of the elbow;
cancer, cri m - cancer.
Attention! - In the anatomical terminology there are no nouns which end in -er. The ending -on have the following anatomical terms:
acromion, in - acromial process
colon, in - large intestine
encephălon, in - brain
ganglǐon, in - ganglion
olecrănon, in -tip of the elbow

## Third declension

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

## Fourth declension

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.

Attention! - In the anatomical terminology there are only two neuters of the $4^{\text {th }}$ declension which end in - $u$ : cornu, us n (horn), genu, us n (knee).

Attention! - In the anatomical terminology there is only a limited number of masculines of the fourth declension.
aqu(a)eductus, us $m$ aqueduct
arcus, us m arch
ductus, us $\mathrm{m} \quad$ duct
meātus, us m tract, passage
processus, us m process
sinus, us m
textus, us m
sinus; hollow
tissue

## Fifth declension

The fifth declension includes nouns of feminine which end in -es in Nominative singular and in -ei in Genitive singular.
E.g.: facies, ēi $\mathbf{f}$ - surface, face (this is the only noun of the fifth declension you meet in the exercises).

## Exercises:

## 1. Make up the dictionary form of nouns:

arcus (arch), bulbus (bulb; any rounded mass), concha (concha), incisūra (slit or notch), sulcus (furrow or groove), cornu (horn), nasus (nose), tubercŭlum (tubercle; small rounded swelling), scapŭla (shoulder blade), septum (dividing wall), ganglion (nerve node), collum (neck), fossa (shallow depression or cavity), encephălon (brain), colon (part of large intestine), olecrănon (elbow appendix), muscŭlus (muscle), ramus (branch), genu (knee), nodus (node), lingua (tongue; language), sinus IV(cavity, sinus), orgănon (organ).

## 2. Determine the declension of the nouns:

facies, ēi f (surface); ala, ae f (wing); nervus, i m (nerve); ramus, i m (branch); colon, i $n$ (part of large intestine); plexus, us $m$ (network, chiefly of veins or nerves); ligamentum, in (ligament); genu, us $n$ (knee).

## 3. Pay attention to the word order:

spina scapŭlae (spine of shoulder bone); skelěton membri (skeleton of a limb); fossa glandŭlae (cavity of gland); vena portae (portal vein); septum nasi (dividing wall of nose); crista tubercǔli (crest of tubercle); processus radii (appendix of radial bone); caput fibŭlae (head of fibular bone); corpus tibiae (body of shin bone); facies acromii (surface of acromion); linea nuchae (line of neck nape); sulcus sinus (furrow of sinus); basis cranii (base of skull); angŭlus mandibŭlae (angle of lower jaw).

## 4. Determine the gender of the nouns:

septum (dividing wall); substantia (substance, material); encephălon (brain); ocŭlus, i (eye); nasus, i (nose); scapǔla (shoulder blade); arcus, us (arch); acromion (acromion); lingua (tongue, language); mandibŭla (lower jaw); processus, us (appendix); cranium (skull); dorsum (back); incisūra (slit or notch); clavicŭla (collarbone); skelĕton (skeleton); cornu (horn); meātus, us (passage); palātum (palate); huměrus, i (humeral bone); cerebrum (brain); concha (concha); maxilla (upper jaw); ductus, us (duct); olecrănon (elbow appendix); tubercŭlum (tubercle); lamĭna (plate); ramus, i (branch); ganglion (nerve node); vertebra (vertebra; each segment of vertebral column); sinus, us (sinus).

## 5. Pay attention to the word order:

collum costae (scapǔlae) (neck of rib (shoulder blade)); corpus fibŭlae (huměri, maxillae, tibiae) (head of fibular bone (humeral bone, upper jaw, shin bone)); incisūra mandibŭlae (scapŭlae) (notch of lower jaw (shoulder blade)); angŭlus costae (mandibŭlae) (angle of rib (lower jaw)).

## VOCABULARY 3:

## declension 4

arcus, us m - arch
ductus, us m - duct
aquaeductus, us m - aqueduct
hiatus, us m
meatus, us m
plexus, us $m$
processus, us $m$
sinus, us $m$
manus, us $\mathbf{f}$
cornu, us n
genu, us $n$

- hiatus, gap
- tract, passage
- network; chiefly of veins and nerves
- process
- sinus; hollow
- hand
- horn; horn-shaped process
- knee
declension 5
facies, ei f - face, surface
declension 2 (the rest of neutrum,)
encephalon, in - brain
frenulum, in - frenulum
ganglion, i n -nervous node
jugum, in - eminence
labium, in - lip
ligamentum, in - ligament
membrum, in - member, extremity
olecranon, in - olecranon
organum (organon), in - organ
ostium, in
palatum, in -palate
periton(a)eum, in
retinaculum, in
sceleton, i n
peritonaeum
- retinaculum
septum, i n
sternum, i n
- skeleton
supercilium, in
tuberculum, in
- dividing wall
- sternum, breastbone
- eyebrow
- tubercle; small rounded swelling
- tympanum
- velum, veil
velum, in
- vestibule


## Theme 5. Endings of declension I-V nouns in Singular

1. The endings of Nominative and Genitive singular/ plural of all declensions:


## 2. Stem of nouns

To make a Genitive form from the Nominative form you should determine the stem of the noun. To determine the stem you should detach the ending from the noun:

> E.g.:

| Dictionary form | Genitive | Stem |
| :--- | :--- | :--- |
| crista, ae f | crist -ae | crist - |
| collum, in | coll - i | coll - |
| facies, èi f | faci - ēi | faci - |

Exercises:

## 1. Translate terms into Latin:

Model: artery of knee
arteria, aef | Nom Sg
genu, us $n \quad \mid$ Gen Sg
$\rightarrow$ arteria genus
eye-pit ; muscle of neck; capsule of nerve node; back of saddle; arch of aorta; notch of lower jaw; passage of nose; aperture of canaliculus of cohlea; canaliculus (small canal) of chorda of tympanum; ligament of tubercle of rib; plate of arch (of vertebra); aperture of aqueduct of vestibule; vestibule of nose; dividing wall of nose; small pit of process; surface of tubercle of rib; arch of vertebra, fossa of lower jaw, furrow of nerve, nerve of plexus, artery of knee, cavity of nose, skeleton of cavity of nose; process of spinal bone; furrow of sinus; line of nape( of neck); fossa of gland; aperture of aqueduct; brain tunic (=tunic of brain);

## 2. Translate into English. Determine the dictionary form of each word:

arcus vertebrae; lamina arcus vertebrae; angulus sterni; sutūra cranii, collum costae; crista colli costae; tuberculum costae; angulus costae; sulcus costae; spina scapulae; incisura scapulae; collum scapulae; capitulum humeri; fossa olecrani; collum radii; sulcus carpi; sulcus calcanei; manubrium sterni; trochlea humeri.

## Theme 6. Endings of the noun declensions I-V in Plural

## I. Noun endings in Nominative plural

The Latin nouns have Nominative plural endings as follows:

| Declension | 1 | 2 |  | 3 |  | 4 |  | 5 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Gender | f | m | n | m, f | n | m | n | f |
| Endings | -ae | -i | -a | -es | (-ia) | -us | -ŭa | -es |

## II. Formation of Nominative plural forms

In order to form the Nominative plural forms you should:

1) determine declension and gender of a noun,
2) find the stem and form the plural form by adding to the stem the appropriate Nominative plural ending of this declension.
E.g.:

|  | Declension, gender, group <br> and degree of comparison | Stem | Nominative <br> plural |
| :--- | :--- | :--- | :--- |
| Nouns | 1 declension, feminine | ven - | ven -ae |
| vena, ae f | 1 en |  |  |
| nervus, i m | 2 declension, masculine | nerv - | nerv -i |
| spatium, in | 2 declension, neuter | spati - | spati -a |
| sinus, us m | 4 declension, masculine | sin - | sin -us |
| cornu, us n | 4 declension, neuter | corn - | corn -ŭa |
| facies, ēi f | 5 declension, feminine | faci - | faci -es |

## III. Noun endings in Genitive plural

The Latin nouns have Genitive plural endings as follows:

| Declension | 1 | 2 | 3 | 4 | 5 |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Endings of Genitive plural | - ārum | - ōrum | $\begin{aligned} & \text { - um, } \\ & \text { - ium } \\ & \hline \end{aligned}$ | - ŭum | - ērum |

E.g.: vena, ae f - venārum; nervus, i m - nervōrum;
cornu, us n-cornŭum;
facies, eif - faciērum.

The endings of Nominative and Genitive singular/ plural of all declensions:

| Declension | I | II |  | III |  | IV |  | V |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Gender | f | m | n | m, f | n | m | n | f |
| Nominative singular endings | -a | $\begin{aligned} & \hline \text {-us } \\ & \text {-er } \end{aligned}$ | $\begin{aligned} & - \text {-um } \\ & \text {-on } \end{aligned}$ | different |  | -us | -u | -es |
| Genitive singular endings | -ae | -i |  | -is |  | -us |  | -ēi |
| Nominative plural endings | -ae | -i | $\underline{-a}$ | -es | - ${ }^{\text {, }-i a}$ | -us | $\underline{-u a}$ | -es |
| Genitive plural endings | -ārum | -ōrum |  | -um, -ium |  | -ǔum |  | -ērum |

Exercises:

1. Translate into English. Determine the dictionary form of each word: sutūrae cranii
2. Make up Nominative plural of following nouns:
ala, ae f sinus, us m
arteria, ae f
digǐtus, i m
septum, in
alveŏlus, i m
ligamentum, in
sinus, us m fundus, im arcus, us $m$ ductus, us $m$ cornu, us n facies, èi f
3. Determine the declension of each word, give the dictionary form:
capsulārum
angulōrum
arteriārum
palpebrārum
ligamentōrum
arcuum
faciêrum digitōrum plexuum cavōrum gingivārum processuum
4. Translate into Latin. Give the dictionary form of each noun, make up Genitive plural:
incisura trunk valve node
duct
back
palate
horn
neck
shoulder blade
tubercle
eye
layer
muscle

## 5. Translate into Latin. Make up plural form:

arch of spinal bone; fossa of mandible; surface of tubercle of the rib; furrow of nerve; nerve of plexus; artery of knee; cavity of nose; skeleton of nasal cavity (cavity of nose).
6. Translate into Latin with dictionary forms.
furrows of tongue, ligaments of shoulder blade, muscles of neck, branches of branches of nerves, ganglions of plexuses, facial arteries = arteries of face.

## 7. Translate into Latin with dictionary forms.

arteries of brain; nuclei of trunk of brain; veins of organs and plexuses; surface of processes; cheeks surface (= surface of cheeks) ; surface of muscle; surfaces of muscles; eye muscle (= muscle of eye) ; eyes muscles.

## Theme 7. The nouns of declension III

## I. Particularities of the third declension

The third declension includes nouns of all the three genders which have different endings in Nominative singular and -is in Genitive singular.
E.g.: canālis, is m - canal;
regĭo, ōnis f - region;
os, ossis n - bone.

## The endings of Nominative and Genitive singular

| Nominative singular | different |
| :--- | :---: |
| Genitive singular | is |

## Parisyllaba and imparisyllaba third declension nouns

The Latin nouns of the $3^{\text {rd }}$ declension can be divided into parisyllaba and imparisyllaba.

The first group includes a few feminine nouns that have equal number of syllables in Nominative singular and Genitive singular, such as:
auris, is $f$-ear
cutis, is $\mathrm{f}-$ skin
The nouns that have one more syllable in Genitive singular than in Nominative singular are called imparisyllaba, eg:
corpus, ŏris n - body
caput, itis n - head

## II. Stem of Latin third declension nouns

The stem determination of Latin third declension nouns is of great practical significance because the stem gives the clue to the formation of most of the other forms, for example of plural forms.

The stem of nouns of the $3^{\text {rd }}$ declension is determined by the Genitive singular form.
The stem of nouns of the $3^{\text {rd }}$ declension is obtained from the Genitive singular form by dropping the ending -is.

> E.g.:

| forāmen, ĭnis $\mathrm{n} \rightarrow$ | foramĭn-is | opening |
| :--- | :--- | :--- |
| caput, ítis $\mathrm{n} \rightarrow$ | cap̌̆t-is | head |
| parǐes, ētis $\mathrm{m} \rightarrow$ | pariēt-is | wall |

## III. Nominative plural endings:

| Declension | 1 | 2 |  | $\mathbf{3}$ |  | 4 |  | 5 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Gender | f | m | n | $\mathbf{m}, \mathbf{f}$ | $\mathbf{n}$ | m | n | f |
| Endings | -ae | -i | -a | -es | $\mathbf{- a}(-\mathrm{la})$ | -us | -u a | -es |

Attention! - Remember one neuter noun of the $3^{\text {rd }}$ declension which has the Nominative plural ending -ia: rete - retia (network - networks). Other neuter nouns of the $3^{\text {rd }}$ declension, which have the Nominative plural ending -ia, are not used in the anatomical terminology.

## IV. Formation of Nominative plural forms

Attention! - In order to form the Nominative plural form of the nouns of the $3^{\text {rd }}$ declension you should:

1) form the Genitive singular form (from dictionary form);
2) determine the stem (obtained from the Genitive form without its ending -is);
3) add the appropriate Nominative plural gender ending.
E.g.:
dens $\quad \rightarrow$ dent-is $\quad \rightarrow$ dent- $\quad+$-es $\rightarrow$ dentes
forāmen $\rightarrow$ foramĭn-is $\rightarrow$ foraminn- $+-\mathrm{a} \quad \rightarrow$ foramĭna

## V. Particularities of the Genetive plural formation in the 3rd declension

1) The following nouns of the $3^{\text {rd }}$ declension end by $-\mathbf{u m}$ :
the so-called imparisyllaba, i.e. the nouns that have unequal number of syllables in Nominative and Genitive, which stem is terminated by one consonant:
E.g.: forāmen, ĭnis n - foramĭnㅁum;
pulmo, ōnis m - pulmōn-um;
pes, pedis m - ped-um.
2) The following nouns of the $3^{\text {rd }}$ declension end by -ium:
a) the so-called imparisyllaba, i.e. the nouns that have unequal number of syllables in Nominative and Genitive, which stem is terminated by two consonants:
E.g: dens, dentis $m$ - dent-ium;
pars, partis f - part-ium;
os, ossis n - oss-ium.
b) the so-called parisyllaba, i.e the nouns that have equeal number of syllables in Nominative and Genitive. Remember the Genitive plural forms of the following nouns:
rete, is n - retium canālis, is m - canalium
Attention! - The noun of the $3^{\text {rd }}$ declension - vas, vasis $n$ (vessel) is declined in plural on the pattern of the $2^{\text {nd }}$ declension: Genitive plural - vasōrum.

## Exercises:

## 1. Determine the declension of the nouns:

facies, ēi f (surface); pars, partis f (part); ala, ae f (wing); magister, tri m (teacher); nervus, i m (nerve); ramus, i m (branch); sphincter, ēris m (sphincter); colon, i n (part of large intestine); plexus, us m (network, chiefly of veins or nerves); forāmen, ĭnis n (opening); ligamentum, i n (ligament); dens, dentis $m$ (tooth); tuber, ěris $n$ (thickend portion of underground stem; rounded swelling); tempus, ŏris $n$ (temple, time); genu, us n (knee); articulatio, ōnis f (joint); cartilāgo, ĭnis f (cartilage); meniscus, i m (meniscus); diaphragma, ătis n (septum between thorax and abdomen, diaphragm); canālis, is $m$ (canal); cervix, īcis $f$ (neck).

## 2. Give the dictionary form:

foraminnum; canalium; tendǐnum; vasorum; ossium.

## 3. Make up Genitive plural:

canalis, is m; margo, innis m; forāmen, ǐnis n; os, ossis n; paries, ētis m.

## 4. Translate into Latin with dictionary forms:

body of upper jaw; head of splint-bone; body of shine-bone; base of skull; base of kneecap; tuber of upper jaw; body of spinal bone; head of rib; root of tooth; wings of plowshare bone; bones of skull; crista of head of rib; ligament of the head of rib; joint of the head of rib; corners of the mouth.

## 5. Translate into Latin with dictionary forms:

A) Fissure of the lung; cavity of the mouth; tuber of the heel-bone; toes of foot; the veins of the heart; the walls of the stomach; the tops of the lungs.
B) area of the knee; bone of the coccyx; tuberosity of the rib; muscles of the larynx; areas (regions) of the head; bones of the chest; canals of nerves; cartilages of the dividing wall of the nose; tops and roots of the lungs; ligaments and joints of the larynx; bones of the toes of the foot; sheath of tendons of muscles; vessels of vessels.

## 6. Translate into English with dictionary forms:

Corpus vertebrae; fovea dentis; corpus sterni; corpus costae; caput costae; crista capitis costae; corpus humeri; tuberositas ulnae; corpus ulnae; caput ulnae; caput radii; tuberositas radii; corpus radii; ossa manus; basis phalangis; corpus phalangis; caput phalangis; os pubis; corpus ossis pubis; caput femoris; fovea capitis femoris; collum femoris; basis patellae; apex patellae; corpus tibiae; tuberositas tibiae; caput fibulae; apex capitis fibulae; corpus fibulae; ossa pedis; tuber caclcanei; ossa digitorum pedis; labia oris.

VOCABULARY № 4 (declension III, masculine):

1. apex, icis m - apex, top, tip
2. canalis, is $m$ - canal
3. coccyx, ygis $m$ - coccyx, coccygeal bone
4. cortex, icis m - cortex
5. dens, dentis $m \quad$ - tooth
6. fornix, icis m - fornix, roof
7. hallux, ucis m - hallux, great toe
8. index, icis $m \quad$ - index finger
9. larynx, ngis m - larynx
10.lien, lienis m - spleen
11.liquor, oris $m$ - liquor
12.margo, inis m - margin, edge
13.paries, etis m - wall
14.pes, pedis $m \quad$ foot
15.pharynx, ngis m - pharynx
16.pollex, icis m - thumb
17.pulmo, onis m - lung
18.ren, renis m - kidney
19.thorax, acis m - chest
20.tendo, inis m - tendon (vincula tendinum - ligaments of tendons)
21.ureter, eris m - ureter
22.vomer, eris m - vomer, plowshare bone: thin bone separating nostrils

## Theme 8-9. Adjective and its grammatical categories

Adjective is a word expressing a quality of a thing: major (large), longus (long), frontālis (frontal).

In all Latin terms the position of adjectives is after the noun with which it has grammatical agreement.

According to their endings all Latin adjectives can be divided into two groups: the first and the second group.

## I. The $1^{\text {ST }}$ group of adjectives

The adjectives of the $1^{\text {st }}$ group have different forms for every gender:

|  | Masculine | Feminine | Neuter | dictionary form |
| :--- | :--- | :--- | :--- | :--- |
| Nominative | longus | longa | longum | longus,a,um |
| Genitive | longㄹ | longae | longi |  |

These adjectives are declined on the pattern of the $1^{\text {st }}$ and $2^{\text {nd }}$ declensions. They have identical Nominative and Genitive forms with nouns: masculine -us (-i), feminine -a (-ae), neuter -um (-i).

Their dictionary form consists of three components:

1. adjective in the masculine form;
2. the feminine ending;
3. the neuter ending.
E.g.: transversus, a, um (transverse); internus, a, um (internal); profundus, a, um (profound).

The stem of the $1^{\text {st }}$ group adjectives is obtained from the Nominative form by removing the gender ending:
longus
stem: long-
transversum stem: transversexterna stem: extern-

The adjectives ending in -er fall also into this adjective group. In the anatomical terminology only some of them are used:

| Masculine | Feminine | Neuter | Dictionary Form | English |
| :--- | :--- | :--- | :--- | :--- |
| dexter | dextra | dextrum | dexter, tra, trum | right |
| sinister | sinistra | sinistrum | sinister, tra, trum | left |
| liber | liběra | liběrum | liber, ěra, ěrum | free |
| ruber | rubra | rubrum | ruber, bra, brum | red |

As for the stem of adjectives with the ending er in masculine it is obtained from the Nominative form by removing the feminine ending.

| Dictionary Form | Feminine | Stem |
| :--- | :--- | :--- |
| dexter, tra, trum | dextra | dextr- |
| sinister, tra, trum | sinistra | sinistr- |
| ruber, bra, brum | rubra | rubr- |
| liber, ĕra, ĕrum | libĕra | liber- |

## II. The $2^{\text {ND }}$ group of adjectives

Into this group fall adjectives of the $3^{\text {rd }}$ declension. The adjectives of the $2^{\text {nd }}$ group are the adjectives of the frontālis type:

|  | Masculine | Feminine | Neuter | dictionary form |
| :--- | :--- | :--- | :--- | :--- |
| Nominative | frontālis | frontālis | frontāle | frontālis,e |
| Genitive | frontāl﹎ㅗ |  |  |  |

As indicated in the table the adjectives of this group have identical Nominative masculine and feminine forms ending in -is and the neuter ending -e. The Genitive form is identical for all genders.

Their dictionary form consists of two components:

1. the common masculine and feminine Nominative form;
2. the neuter ending -e.
E.g.: frontālis, e (frontal); cervicālis, e (cervical).

The stem of the $2^{\text {nd }}$ group adjectives is obtained from the Nominative form by removing the gender ending:
vertebrālis
temporālis
stem: vertebrāl-
stem: temporāl-

## III. The $2^{\text {ND }}$ group adjectives of one form for all genders

In the anatomical terminology some adjectives of one form for all genders are used. In the dictionary form of such adjectives the Nominative form (common for all genders) is first indicated, and then the Genitive ending with the stem part.

Remember these adjectives:
simplex, ǐcis
multĭplex, ĭcis
teres, ětis
simple
multiple
round

The stem of such adjectives is obtained from the Genitive form singular by removing the ending.

| Dictionary form | Gen. Singular | Stem |
| :--- | :--- | :--- |
| simplex, ĭcis | simplǐcis | simplı̆c- |
| multĭplex, ǐcis | multipľ̆cis | multiplĭc- |
| teres, ětis | terětis | terět- |

## IV. Agreement of adjectives and nouns

To agree a noun and an adjective means to use them in the same Gender, Number and Case.

To agree a noun and an adjective you should:

- determine gender, number and case of the noun;
- determine group of the adjective by its dictionary form;
- agree the adjective and the noun by gender, number and case.

For example, you translate from English into Latin the following anatomical terms:
mastoid process,
Process - processus: gender - masculine, singular, Nominative.
Mastoid - mastoiděus, $a$, um: adjective of the $1^{\text {st }}$ group.
We agree the adjective mastoiděus in the masculine gender, singular number, Nominative case: processus mastoiděus.

## vertebral foramen.

Foramen - forāmen: neuter, singular, Nominative.
Vertebral - vertebrālis, e: adjective of the $2^{\text {nd }}$ group.
We agree the adjective vertebrālis in the neuter gender, singular number, Nominative case: forāmen vertebrāle.

## Exercises:

## 1. Make up Genitive forms of the following adjectives:

1. cervicālis, e
2. internus, a, um
3. sinister, tra, trum
4. simplex, ĭcis
5. osseus, a, um
6. lymphatĭcus, a, um
7. thoracǐcus, a, um
8. medius, a, um
9. lumbālis, e
10. laterālis, e
11. temporālis, e
12. vertebrālis, $e$
13. Make up grammatical agreement of the following adjectives with the given nouns. Then make up Genitive forms:

1 sulcus, i m transversus, a, um
ligamentum, in linea, ae f
2 sulcus, i m
palatīnus, a, um
os, ossis n
processus, us m
3 valvǔla, ae f
plexus, us $m$ venōsus, a, um
sinus, us $m$

4 muscŭlus, i m
fossa, ae f
5 arcus, us m
os, ossis $n$
6 facies, èi f internus, a, um
ganglion, in
7 processus, us $m$ facies, ēi f articulāris, e tubercŭlum, in

8 sutūra, ae f
frontālis, e angŭlus, i m tuber, ěris $n$
3. Translate the following terms into Latin and make up forms: Nom Sg, Gen Sg, Nom Pl, Gen Pl:
straight opening, left horn, left duct, the left crest, lateral duct, lateral opening.
4. Translate the following terms into Latin according to grammatical agreement: pharyngeal network (plexus); deep cervical lymphatic node; oval opening; thoracic fascia; transverse palatine suture; petrosal branch; internal capsule; middle temporal artery; spinous opening; parietal lobe; superficial vein.

## 5. Translate the following terms into Latin according to grammatical agreement:

 pulmonary surface; lateral ligament; right plate; palatine process; vertebral ganglion (nerve node); costal arch; frontal crest; occipital angle; medial head; sacral canal; superficial vein; simple joint; medial root; costal surface; spinal canal; mastoid part;palatine bone; mental foramen (opening); incisor tooth; lacrimal duct; zygomatic region; lateral surface; sacral horn; squamous border.

## 6. Translate the following terms into Latin according to grammatical agreement:

articular process of vertebra; bony septum of nose; palatine process of upper jaw; valve of coronary sinus; middle fossa of skull; left lumbar trunk; ligament of vertebral column; fibrous capsule of thyroid gland; furrow (groove) of occipital artery; aperture of frontal sinus.

## 7. Translate the following terms into Latin (with dictionary forms):

Mastoid (border, region, opening); artery of wedge-shaped canal; bottom of internal auditive passage; veins of vessels; apical foramen of the tooth = opening of the apex of the tooth; squamous parts; lateral muscular septum of the thigh; styloid process of the radius; nuclei of the cranial nerves; pulmonary lymph nodes; right longitudinal groove; aperture of the frontal sinuses; pharyngeal opening of the auditory tube; areas and parts of the body; medial and lateral plates of pterygoid canals; additional processes of the lumbar vertebras; cartilages of auditive passages; ulnar canal of wrist; venous plexuses of cochleas; horizontal hiatus of the left lung; free borders; fossa for lacrimal gland; cartilaginous part of the auditory tube; dental branches.

## 8. Translate into English with dictionary forms:

Vertebrae cervicales; vertebrae thoracicae, vertebrae coccygeae; foramen vertebrale; sulcus arteriae vertebralis; processus transversus; processus spinosus; processus accesorius; basis ossis sacri; apex ossis sacri; lineae transversae; pars lateralis; facies auricularis; tuberositas sacralis; crista sacralis lateralis, cornu sacrale; crista sacralis mediana; foramina sacralia dorsalia; hiatus sacralis; cristae sacrales intermediate; partes laterales; facies auriculares; canalis sacralis; tuberculum musculi scaleni; incisura jugularis; incisura clavicularis; incisurae costales; fovea costalis processus transversi; margo medialis; margo lateralis; angulus lateralis; sulcus nervi ulnaris; fossa radialis; processus styloideus; phalanx media; phalanx distalis; tuberositas iliaca; fossa trochanterica; linea aspera; labium mediale; tuberositas glutea; condyles lateralis; facies articularis capitis fibulae; margo interosseus.

Table «Adjectives endings of $1^{\text {ST }}$ and $2^{\text {ND }}$ groups»

| Group | $1^{\text {ST }}$ |  |  |
| :---: | :---: | :---: | :---: |
| Gender | m | f | n |
| Nom. sing. | -us, -er | -a | -um |
| Gen. sing. | -i | -ae | -i |
| Nom. plur. | -i | -ae | -a |
| Gen. plur. | -ōrum | -ārum | -ōrum |
| E.g. | longus dexter | longa dextra | longum dextrum |
| Group | $2^{\text {ND }}$ |  |  |
| type | 1 ending | 2 endings | 3 endings |
| Gender | $\mathbf{m , ~} \mathbf{f}$ ( ${ }^{\text {n }}$ | m, f |  |
| Nom. sing. | -ns, -s, -r, -x | -is -e | -er -is -e |
| Gen. sing. | -is | -is | -is |
| Nom. plur. | -es $\quad$-ia | -es $\quad$-ia | -es $\quad$-ia |
| Gen. plur. | -ium | -ium | -ium |
| e.g. | teres, etis - round simplex, icis - simple | brevis, $\mathrm{e}-$ short | acer, cris, cre <br> sharp |

VOCABULARY № 5 ( $1^{\text {st }}$ group adjectives):

1. acusticus, a, um
2. accessorius, a, um
3. auditivus, a, um tube )
4. caninus, a, um
5. cardiacus, a, um
6. cavus, a, um
7. choledochus, a, um
8. coronarius, a, um
9. cutaneus, a, um
10.dexter, tra, trum
11.externus, a, um
12.felleus, a, um
13.fibrosus, a, um
14.glut(a)eus, a, um
15.hyoideus, a, um
16.hypoglossus, a, um
17.iliacus, a, um

- acoustic
- additional
- auditory (with tube: tuba auditiva - auditory
- canine (dog), (dens caninus - cuspid tooth)
- cardiac, gastric
- caval, hollow
- biliary (common bile duct - ductus choledochus seu biliaris)
- coronary
- cutaneous, dermal
- right
- external
- gall (bladder)
- fibrous
- gluteal
- hyoid, sublingual (bone)
- hypoglossal, sublingual (nerve)
- iliac

| 18.incisivus, a, um | - incisive (dens incisivus -incisor, cutting tooth) |
| :--- | :--- |
| 19.internus, a, um | - internal |
| 20.ischiadicus, a, um | - sciatic |
| 21.latus, a, um | - wide |
| 22.laryngeus, a, um | - - laryngeal |
| 23.longus, a, um | - long |
| 24.lymphaticus, a, um | - lymphatic |
| 25.magnus, a, um | - large, great |
| 26.mastoideus, a, um | - mastoid, mammiform |
| 27.medianus, a, um | - median |
| 28.medius, a, um | - middle |
| 29.obliquus, a, um | - oblique |
| 30.ophthalmicus, a, um | - ophthalmic, eye |
| 31.osseus, a, um | - bony |
| 32.palatinus, a, um | - palatine |
| 33.parvus, a, um | - small |
| 34.petrosus, a, um | - petrous, stony |
| 35.profundus, a, um | - deep |
| 36.pterygoideus, a, um | - wing-shaped, pterygoid |
| 37.rectus, a, um | - straight |
| 38.sacer, cra, crum | - sacral (bone) |
| 39.sinister, tra, trum | - left |
| 40.styloideus, a, um | - styloid, styliform |
| 41.subcutaneus, a, um | - subcutaneous |
| 42.sympathicus, a, um | - sympathetic |
| 43.transersus, a, um | - transverse |
| 44.trapezoideus, a, um | - trapezoidal |
| 45.thoracicus, a, um | - thoracic, chest |
| 46.thyr(e)oideus, a, um | - thyroid |
| 47.urinarius, a, um | - urinary |
| 48.venosus, a, um | - venous |
| 49.zygomaticus, a, um | - zygomatic, jugal, malar |

## Theme 10. Degrees of comparison of adjectives

There are three degrees of comparison of adjectives in Latin:
I. Positive degree: The positive degree expresses a quality of thing for itself, without comparing to a similar quality of other things. It is the basic form of adjective, by which it is presented in the dictionaries: longus, a, um; frontālis, e.

## II. The comparative degree

The comparative degree expresses a higher quality of thing as compared with the same quality of other things. It is formed by adding the suffixes -ior for masculine \& feminine and -ĭus for neuter to the stem of adjectives (obtained from the genitive form without its ending).

The dictionary form of the adjectives has two components:

1. Nominative singular masculine \& feminine form with the suffix -ĭor;
2. Suffix -ǐus of the Nominative singular neuter form.
E.g.: anterĭor, ı̌us

The adjectives in comparative degree used in the anatomical terminology:

|  <br> feminine | Neuter | Genitive form | English | Dictionary form |
| :--- | :--- | :--- | :--- | :--- |
| anterior | anterius | anteriōris | front, anterior | anterior, ius |
| posterior | posterius | posteriōris | rear, back, <br> posterior | posterior, ius |
| superior | superius | superiōris | upper, superior | superior, ius |
| inferior | inferius | inferiōris | lower, inferior | inferior, ius |
| major | majus | majōris | great, greater, <br> major | major, jus |
| minor | minus | minōris | small, lesser, <br> minor | minor, us |

Examples of different English translations of the comparative degree:

1. Lat. Tubercŭlum majus (humĕri) -
2. Lat. Forāmen occipitāle magnum -
3. Lat. Nervus petrōsus major -
4. Lat. Nervus occipitālis major -
5. Lat. Nervus auriculāris magnus -

Eng. Greater tubercle of humeri
Eng. Great occipital foramen
Eng. Greater petrosal nerve
Eng. Greater occipital nerve
Eng. Great auricular nerve

The stem of the adjectives in the comparative degree coincides with the Nominative masculine \& feminine form terminated by -ior. The comparative degree is declined on the pattern of the $3^{\text {rd }}$ declension. The Genitive singular form in the comparative degree is formed by adding the ending -is to the stem.
E.g.: stem - superior + Genitive ending of the $3^{\text {rd }}$ declension $-\mathbf{i s}=$ superiōris for masculine \& feminine \& neuter.

Attention! The adjectives in the comparative degree are placed on the last position:
E.g.: inferior lateral cutaneous nerve of the arm - nervus cutaněus brachĭi laterālis inferĭor.

## III.The superlative degree

The superlative degree expresses a highest quality of thing as compared with the same quality of other things.

The adjectives in superlative degree used in the anatomical terminology:

Latissĭmus, a, um
Longissĭmus, a, um
Maxĭmus, a, um
Minĭmus, a, um
Suprēmus, a, um

The dictionary form of the adjectives in the superlative degree coincides with the dictionary form of the $1^{\text {st }}$ group adjectives and consists of three components:

- adjective in the masculine form;
- the feminine ending;
- the neuter ending.

The superlative degree is declined on the pattern of the $1^{\text {st }}$ and $2^{\text {nd }}$ declensions, i.e. the adjectives have the $m . \& n$. genitive ending $-\mathbf{i}$, and the feminine genitive ending $-\mathbf{a e}$.

## Exercises:

## 1. Make up the dictionary form of the adjectives:

brevior (shorter); longior (longer); minor (small, minor); major (great, greater, major); anterior (anterior); posterior (posterior); superior (upper, superior); inferior (lower, inferior); simplicior (simpler).
2. Translate into Latin and make up grammatical agreement of the following nouns:
lower (sinus, part, spine); small (tubercle, opening, fossa); anterior (sulcus, tubercle, crest, opening, ligament); posterior (arch, surface, ligament); higher (process, opening, slit); great (sulcus, wing, head); small and great horn.

## 3. Make up Genitive singular forms, find the stem:

major, jus (great, major); albior, ius (white); minor, us (small, minor); latior, ius (wider); inferior, ius (lower); simplicior, ius (simpler); superior, ius (upper, superior); longior, ius (longer); brevior, ius (shorter); posterior, ius (posterior); anterior, ius (anterior).

## 4. Make up Genitive singular forms:

tubercŭlum obturatorium posterius (posterior obturative tubercle); processus superior (superior process); incisūra ischiadǐca major (greater ischiadic slit); forāmen superius (superior opening); ramus superior (superior branch); arcus posterior (posterior arch); incisūra superior (superior slit); labium inferius (lower lip); facies posterior (posterior surface); cornu majus et minus (small and great horn); caput majus (greater head); ligamentum posterius (posterior ligament); sulcus major (greater sulcus), ala major (greater wing).

## 5. Make up grammatical agreement of following adjectives with nouns:

tubercŭlum thyr(e)oidě... superi... (superior thyroid tubercle); fissūra orbitā1... inferi... (lower orbital fissure); linea glutē... anteri... (anterior gluteal line); forāmen ethmoidā1... anter... (anterior ethmoidal opening); spīna tympanǐc... min... (small tympanic spine); processus articulār... inferi... (lower articular process); plexus hypogastrĭc.. superi... (superior hypogastric network); ligamentum longitudināl... anteri... (anterior longitudinal ligament).

## 6. Translate into Latin:

small tubercle; small horn; small pelvis anterior arch; anterior plate; anterior leg superior angle; superior surface; superior lip

## 7. Make up Genitive singular forms:

facies anterior (anterior surface); angǔlus inferior (lower angle); cornu majus (greater horn); ganglion superius (superior ganglion (nerve node)); pelvis minor (small pelvis); tubercŭlum majus (greater tubercle); arcus posterior (posterior arch); radix anterior (anterior root).

## 8. Translate into Latin and make up all forms (Gen Sg, Nom Pl, Gen Pl): longer plate (ligament)

9. Translate into English. Determine the case of each word and the part of speech: arcus anterior; tuberculum posterius; fovea articularis inferior; processus articulares superior et inferior; crista tuberculi majoris; spina iliaca anterior superior; incisura ischiadica major; linea glutea inferior; facies anterior partis petrōsae; linea temporālis superior; fovea articulāris processus articulāris superiōris; ala minor ossis sphenoidālis; arcus dentālis inferior; processus articulāris superior vertebrae lumbālis; ramus dexter venae portae; muscǔlus palpebrae superiōris; crista tubercŭli majōris; sulcus nervi petrōsi majōris; caput superius muscŭli pterygoiděi laterālis; tubercŭlum mediāle processus posteriōris tali; pars laterālis ossis occipitālis; hiātus canālis nervi petrōsi minōris; nervus cutaněus brachii laterālis inferior; processus maxillāris conchae nasālis inferiōris; ligamentum longitudināle anterius columnae vertebrālis.

## 10. Translate into Latin using comparative degree:

posterior ethmoid foramen, anterior longitudinal ligament, greater palatine groove, greater palatine foramen, anterior medial surface, superior cervical ganglion, anterior sacral foramen, inferior articular process, greater sciatic notch, inferior gluteal line.

## 11. Translate into Latin using superlative degree:

The biggest gluteal muscle; the longest muscle of neck; the highest line of nape (of neck); the longest muscle of chest; supreme nasal concha; smallest gluteal muscle; the widest muscle of back; pouch/sac of the widest muscle of back; smallest scalene muscle; little (the fifth) finger.

## 12. Translate into Latin:

Lower thoracic vein; articular fovea of the superior articular process; the upper head of the lateral pterygoid muscle; posterior ligament of head of fibula; the front and back/rear surfaces of the teeth; small palatal opening; furrow of lower petrosal sinus.

Table «Endings of Comparative and Superlative»

| gender | m, $\mathbf{f}$ | n |  |
| :---: | :---: | :---: | :---: |
| Nom. sing. | -ior | -ius |  |
| Gen. sing. | -ioris |  |  |
| Nom. plur. | -iores | -iora |  |
| Gen. plur. | -iorum |  |  |
| e.g. | superior, ius - higher, upper |  |  |

## VOCABULARY <br> 6:

Adjectives. Comparative degree
anterior, ius anterior, fron
posterior, ius
superior, ius
inferior, ius
major, majus
minor, minus
back
higher, upper
lower
greater (larger, bigger)
small (smaller, lesser)
Superlative degree
maximus, a, um largest
minimus, a, um smallest
supremus, a, um
highest

## VOCABULARY $6-2^{\text {ND }}$ GROUP OF ADJECTIVES:

brevis, e
communis, e
ethmoidalis, e longitudinalis, e lumbalis, e maxillaris, e mollis, e pulmonalis, e simplex, icis sphenoidalis, e teres, etis
short
general
sieve-shaped
longitudinal, lengthwise
lumbar
maxillary
soft
pulmonary
simple
wedge-shaped, sphenoid
o-shaped, round

Theme 11-12. Anatomical terms with muscle names. III declension nouns. Masculine gender

## I. Endings of Latin third declension nouns (m)

Most nouns ending by -o,-os, -or, -er, -es, -ex (imparisyllaba) are masculine:

|  | Endings |  | Examples | exceptions |
| :---: | :---: | :---: | :---: | :---: |
|  | Nom. | Genitive with a part of the stem |  |  |
| 1. | - 0 | - ōnis <br> - ìnis | pulmo, pulmōnis m-lung homo, homĭnis m - man |  |
| 2. | - OS | - ōris | flos, floris m-flower | os, ossis $\boldsymbol{n}$ - bone os, oris $\boldsymbol{n}$ - mouth |
| 3. | - or | - ōris | constrictor, constrictōris m | cor, cordis $\boldsymbol{n}$ - heart |
| 4. | - er | - ris <br> - èris | venter, ventris m - belly of a muscle trochanter, trochantēris m | tuber, eris $n$ mater, tris $\boldsymbol{f}$ gaster, tris $\boldsymbol{f}$ - stomach |
| 5. | - es | - ědis <br> - ètis | pes, pedis m-foot paries, pariētis m - wall |  |
| 6. | - ex | - ǐcis | apex, icis $m$ cortex, cortǐcis m |  |

II. Exceptions to the rule of the masculine third declension nouns endings

The following nouns having masculine endings are feminine:
arbor, ōris f - tree (arbor vitae cerebelli - medullary body of vermis)
mater, tris $\mathbf{f}$ - cerebral coat
pia mater - pia mater of brain
dura mater - dura mater of brain;
gaster, tris f(Greek) - stomach
Attention! - In these terms the noun «mater» follows an adjective.
The following nouns having masculine endings are neuter:
cor, cordis n - heart;
os, ossis n - bone;
os, oris n - mouth;
tuber, ĕris n -tuber.

## III. Latin muscle names

The Latin muscle names are composed of two elements:

1. the first element is the noun «muscle» - «muscŭlus»;
2. the second element is a masculine noun ending in -or (-ōris) or -er (-ēris).
E.g.: flexor muscle - muscŭlus flexor

In the Latin Anatomical Nomenclature all the muscle names are masculine third declension nouns ending in:

- or, ōris m (e.g.: rotātor, ōris m);
- er, ēris m (e.g.: massēter, ēris m).

The Latin muscle names are usually translated into English without a word "muscle", $c f$.:
muscŭlus massēter - chewer;
muscŭlus levātor - elevator etc.
Most of the muscle names are not translated but transliterated, i.e. reproduced with the Latin letters:
E.g.: muscŭlus pronātor - pronator.

## IV. Word order in the Latin muscle names:

- word muscŭlus in Nominative;
- name of the muscle - a masculine noun in Nominative ending in -or (-ōris) or -er (-ēris).
- any other noun is in Genitive;
- adjectives are placed at the end of the term.
E.g.:

| 1 | 2 | 3 | Final position |
| :--- | :--- | :--- | :--- |
| Muscŭlus <br> Muscŭlus | constrictor <br> tensor | pharyngis <br> fasciae | medius <br> latae |

## Exercises:

1. Make up grammatical agreement of the adjectives with the given nouns. Then make up all forms Sg and Pl:
1) tuber (frontālis, e; parietālis, e; major, jus; minor, us)
2) pulmo (dexter, tra, trum; sinister, tra, trum)
3) mater (pius, a, um; durus, a, um)
4) venter (posterior, ius; frontālis, e)
5) os (nasālis, e; hyoiděus, a, um; frontālis, e; parietālis, e)
6) paries (laterālis, e; jugulāris, e; anterior, ius; tympanĭcus, a, um)

## 2. Translate into Latin:

cortex of cerebellum, cortex of brain, cortex of lymphatic node, small (great) trochanter, heart apex, left (right) lung, sublingual bone, first chamber of the heart (atrium), dura mater of brain, frontal tuber, sulcus of vomer, medial surface of lung, wedge-shaped bone, membranous wall of trachea, frontal wall of stomach, small horn of sublingual bone, zygomatic process of temporal bone, ethmoidal sulcus of nasal bone, notch of heart apex.

## 3. Translate into Latin:

tensor muscle of tympanic membrane; elevator muscle of scapula; rotator muscle of neck; elevator muscle of thyroid gland; abductor muscle of thumb; elevator muscle of the corner of mouth; flexor muscle of fingers; tendons of the extensor muscles of the fingers; long flexor muscle of toes (of foot); inferior constrictor muscle of pharynx; greater deep adductor muscle of thigh; depressor muscle of lower lip; synovial sheath of tendons of the extensor muscles of the toes (of foot); extensor muscle of the thumb; long elevator muscles of the ribs; sheath of tendons of the long adductor muscles.

## 4. Translate into Latin:

the openings of the smallest veins; dividing wall of the sphenoid sinus; sheath of tendons of the lower extremity; upper retinaculum of extensor muscles; superficial flexor muscle of the fingers; common sheath of flexor muscles; the mouth (opening) of the pulmonary veins; yellow/ red marrow.

## 5. Translate into Latin:

depressor muscle of lip; sphincter muscle of urethra; sphincter muscle of pupil; elevator of prostate; flexor of wrist; elevator muscle of wing of nose; iris dilator muscle $=$ dilator muscle of pupil; depressor muscle of brow; depressor muscle of septum of nose; elevator muscles of the ribs; rotator muscles of chest; depressor muscle of (small) head of eyebrow ; tensor muscle of fascia of thigh; extensor muscle of index finger; abductor muscle of thumb; constrictor muscle of pharynx; extensor muscle of great toe; tensor muscle of tympanic membrane; levator muscle of scapula; currugator muscle of eyebrow.

## VOCABULARY:

1. m . abductor, oris m
2. m . adductor, oris m
3. m. constrictor, oris $m$
4. m. corrugator, oris $m$ - (to shrink)
5. m. depressor, oris $m$ - (let down )
6. m . dilatator, oris $\mathrm{m}-$ (to expand)
7. m. extensor, oris $m$ - (to unbend)
8. m. flexor, oris $\mathrm{m}-$ (to bend)
9. m. levator, oris $m$ - (to lift up)
10. m. rotator, oris m - (to rotate)
11. m. sphincter, eris $m$
12. m. tensor, oris $\mathrm{m}-$ (to strain)

## Theme 13-14. $3^{\text {rd }}$ declension nouns. <br> Feminine and neuter gender

## I. Endings of feminine third declension

Most nouns ending by -io, -as, -is, -s, -x (imparisyllaba), -is (parisyllaba) are feminine:

|  | Endings |  | Examples |
| :---: | :---: | :---: | :---: |
|  | Nominative | Genitive (with a part of the stem) |  |
| 1. | $\begin{array}{\|l} \hline- \text { do, -go } \\ \text { - io } \\ \hline \end{array}$ | - înis <br> - ōnis | cartilāgo, cartilagĭnis f - cartilage articulatīo, articulatiōnis $\mathrm{f}-$ joint |
| 2. | - is <br> (imparisyllaba) | - ǐdis | pyrămis, pyramĭdis f - pyramid |
| 3. | - as | - ātis | cavĭtas, cavitātis f - cavity |
| 4. | - S | - tis | pars, partis f - part |
| 5. | - X | $\begin{aligned} & - \text { cis } \\ & -\mathrm{gis} \end{aligned}$ | radix, radīcis f - root meninx, meningis $\mathrm{f}-$ meninx |
| 6. | - is <br> (parisyllaba) | - is | auris, auris f - ear |

## II. Exceptions to the rule of the feminine third declension nouns endings

The following nouns having feminine endings are masculine (according to 6 endings in the foregoing table):

| 1 | atlas, ntis m | atlas |
| :--- | :--- | :--- |
| 2 | pulvis, ěris m | powder |
|  | sanguis, ĭnis m | blood |
| 3 | axis, is m | axis |
|  | canālis, is m | canal |
|  | unguis, is m | nail |
| 4 | dens, dentis m | tooth |
| 5 | fornix, ĭcis m | arch |
|  | larynx, ngis m | larynx |
|  | pharynx, ngis m | pharynx |
|  | coccyx, ýgis m | tailbone |
| 6 | thorax, ācis m | chest |
|  | margo, ĭnis m | sinew |
|  |  | edge |

The following nouns having feminine endings are neuter:
pancrěas, ătis n - pancreas
vas, vasis n - vessel

## III. Endings of neuter third declension nouns

|  | Endings |  | Examples |
| :---: | :---: | :---: | :---: |
|  | Nominative | Genitive (with a part of the stem) |  |
| 1 | - en | - innis | abdōmen, abdomĭnis n - abdomen |
| 2 | - ma | - ătis | zygōma, zygomătis n - cheek-bone |
| 3 | - ar | - ătis | hepar, hepătis n - liver |
| 4 | - ut | - ǐtis | caput, capitis n - head |
| 5 | - ur | - ŏris | femur, femŏris n - thigh |
| 6 | - US | - ěris <br> - ŏris <br> - uris | glomus, gloměris n - glome pectus, pectŏris $\mathrm{n}-$ chest crus, cruris n - shank |
| 7 | $\begin{aligned} & -\mathbf{e} \\ & \text { (parisyllaba) } \end{aligned}$ | - tis | rete, retis n - network |

## IV. Exceptions to the rule of the neuter third declension nouns endings

The following nouns having neuter endings are masculine:

1. ren, renis m - kidney
2. lien, liēnis $m$ - spleen

The neuter third declension nouns ending in -ma should be distinguished from feminine first declension nouns ending in $-\mathbf{a}$ :
E.g.: diaphragma, ătis $\mathbf{n}$ - diaphragm;
chiasma, ătis $\mathbf{n}$ - chiasm;
stroma, ătis $\mathbf{n}$ - stroma;
systēma, ătis $\mathbf{n}$ - system;
zygōma, ătis $\mathbf{n}$ - cheek-bone.
But $\quad 1^{\text {st }}$ decl. $\quad$ squama, ae $\mathbf{f}$-scales; $\quad$ struma, ae $\mathbf{f}$-crop.

## Exercises:

1. Make up grammatical agreement of adjectives with the given nouns:
1) cavǐtas (pleurālis, e; articulāris, e; medullāris, e)
2) margo (anterior, ius; frontālis, e; dexter, tra, trum)
3) auris (internus, a, um; externus, a, um; medius, a, um)
4) cartilāgo (costālis, e; alāris, e; articulāris, e; major, jus)
5) pars (ossěus, a, um; laterālis, e; anterior, ius; dexter, tra, trum)
6) vas (lymphatĭcus, a, um; sanguiněus, a, um; capillāris, e)

## 2. Translate into English:

cavĭtas medullāris, basis cranii externa, cartilāgo thyroiděa, cartilāgo alāris major, margo inferior pulmōnis sinistri, auris externa, basis pyramǐdis renālis, margo utěri dexter, axis bulbi externus, pancreas accessorium, pars liběra gingīvae, cartilāgo septi nasi, labyrinthus ossěus auris internae, vas lymphatĭcum superficiāle, canālis palatīnus major, caput pancreătis, regio thorācis posterior, sanguis venōsus et arteriōsus.

## 3. Translate into Latin:

dura mater of brain, pyloric canal, fornix of stomach, canal of great stony nerve, angle of stomach, fornix of pharynx, ring-shaped part of fibrous vagina, sholder joint, capsule of pancreas, tympanic cavity of middle ear, greater palatine canal, cartilage of septum of nose, inferior constrictor of pharynx.

## 4. Make up grammatical agreement of the adjectives with the given nouns:

1) forāmen (occipitālis,e; mentālis, e; incisīvus, a, um; mastoiděus, a, um; major, jus)
2) systēma (centrālis, e; nervōsus, a, um; lymphatĭcus, a, um)
3) caput (longus, a, um; transversus, a, um; laterālis, e; brevis, e)
4) ren (dexter, tra, trum; mobĭlis, e; sinister, tra, trum)
5) crus (sinister, tra, trum; laterālis, e; brevis, e; simplex, ǐcis; anterior, ius)
6) hepar (mobĭlis, e; major, jus)

## 5. Translate into Latin:

superficial lymphatic vessel, posterior nucleus of trapezoid body, internal carotid artery, base of heart, apex of heart, root of lung, cavity of womb, renal pelvis, thyroid cartilage, pylorus part, left lobe of lung, ventricle of larynx, superior constrictor of larynx, external oblique muscle of stomach, mucous membrane of mouth, spinal muscle of neck, the longest muscle of head, canal of neck of womb, frontal region of face, external base of skull, wing of vomer, membranous wall of trachea.

## 6. Translate into Latin:

crest of (small) head of rib; pit of the tooth; body of the bone; notch of cardiac apex; neck of the tooth; foramen of the transverse process; muscles of the foot; apex of the lung; notch of the cartilage; cavity of the larynx; (small) head of the thigh; canal of the root of the tooth; veins of vessels; areas and parts of the body; cavities of teeth; regions of roof of the skull; legs of fornix; chiasm of tendons; ligaments of vertebral arches; bones and joints of the upper jaw; systems of nerves; muscles and nerves of the eyes and nose; ligaments of bases of bones; foramens of apexes of teeth; bases of phalanges of toes.

## 7. Translate into Latin:

base of the skull; area of the knee; bone of the coccyx; tuberosity of the rib; muscles of the larynx; cartilages of the dividing wall of the nose; apexes and roots of the lungs; areas (regions) of the head; bones of the chest; canals of nerves; ligaments and joints of the larynx; bones of the toes; sheath of tendons of muscles; tendons of flexor muscles of the fingers; vessels of vessels.

## Teaching supplies and utilities

## VOCABULARY:

articulatioo, ōnis f
basis, is $f$
cartilāgo, ĭnis $f$
cavitas, ātis f
cervix, icis f
gaster, tris f
mater, tris f
dura mater
pia mater
meninx, ngis f
pars, partis f
regǐo, ōnis f
radix, icis f
symphysis, is f
abdōmen, ǐnis n
caput, itis n
cor, cordis n
corpus, oris n
chiasma, atis n
crus, cruris n
diaphragma, atis n
femur, oris n
foramen, inis n
hepar, ătis n
os, oris n
os, ossis n
pancrěas, ătis n

- joint
- base
- cartilage
- cavity
- neck
- stomach
- membrane of brain or spinal cord
- dural membrane (hard),
- pial membrane (soft)
- brain tunic
- part
- region, area
- root
- symfisis
- belly
- head
- heart
- body
- chiasm, crossing
- leg, crus
- diaphragm
- thigh
- foramen, opening
- liver
- mouth
- bone
- pancreas
systema, atis $n$
tuber, eris n
vas, vasis $n$
- system
- tuber
- vessel

Table «Endings of III declension feminine nouns»

| ending | example | exception |
| :---: | :---: | :---: |
| -do | longitudo, inis $f$ - length | tendo, inis $m$ - tendon |
| -go | cartilāgo, înis $f$ - cartilage | margo, inis $m$ - border |
| -io | articulatǐo, ōnis $f$-joint |  |
| -is | pelvis, is $f$-pelvis | axis, is $m$-axis canalis, is $m$-canal |
| -as | cavĭtas, ātis $f$ - cavity | vas, vasis $n$-vessel pancrěas, ătis $n-$ pancreas |
| -rs | pars, rtis $f$-part |  |
| -ns | frons, ntis $f$-forehead | dens, ntis $m$ - tooth |
| -ix | cervix, icis $f$-neck | $\begin{aligned} & \text { fornix, ĭcis } m-\text { vault } \\ & \text { coccyx, ygis } m- \\ & \text { tailbone } \end{aligned}$ |
| -ax |  | thorax, acis $m$-chest |

Table «Endings of III declension neuter nouns»

| ending | example | exception |
| :---: | :--- | :--- |
| -ma | zygoma, atis $n-$ cheek-bone |  |
| -en | foramen, inis $n-$ foramen, <br> opening | ren, is $m-$ kidney <br> lien, ēnis $m-$ spleen |
| -us | corpus, oris $n-$ body |  |
| -ur | femur, oris $n-$ thigh |  |
| -ut | caput, itis $n-$ head |  |
| -e | rete, is $n-$ net |  |
| -ar | calcar, aris $n-$ spur |  |

## Theme 15. Participles in anatomical terminology. Dictionary form. Agreement and declension of participles

In Latin there are only active present participl annd the passive past participle. Most of the participles have the function of definition. Therefore participles are approximately equal to the adjectives.

## Passive past participles

They are closed to $1^{\text {st }}$ group of adjectives (with 3 endings).
$\begin{array}{ccc}\text { e.g. compositus,a,um } & \text { compactus,a,um, } & \text { perforatus,a,um } \\ \text { complex } & \text { dense, compact } & \text { perforated }\end{array}$
These participles are declined on the pattern of the $1^{\text {st }}$ and $2^{\text {nd }}$ declensions.

## Active present participle

e.g. efferens, ntis - efferent

Dictionary form of these participles the Nominative form (common for all genders) is first indicated, and then the Genitive ending with the stem part.

These participles are declined on the pattern of the $3^{\text {rd }}$ declension.

Table «Endings of active participles in nominative and genetive singular/plural»

| gender | m, f | n |
| :---: | :---: | :---: |
| Nom. sing. | finale -ns |  |
| Gen. sing. | -ntis |  |
| Nom. plur. | -ntes | -ntia |
| Gen. plur. | -ntium |  |
| example | perforans, ntis - perforating |  |

## Exercises:

## 1. Translate the following terms into Latin:

ascending cervical artery; abducens nerve; perforating branches; compound joint; compact substance; perforated substance; recurrent artery; descentig colon; efferent lymphatic vessel; descenting part of aorta; medial circumflex artery of thigh; anterior perforated substance of the brain; opposer muscle of litlle finger.

## 2. Translate the following terms into Latin:

cranial nerve nuclei = nuclei of cranial nerves; septum of the sphenoid sinuses; sheath of tendons of the lower limb; upper retinaculum of tendons of extensor muscles; superficial flexor of the fingers; common sheath of flexors; the mouths of the pulmonary veins; yellow marrow; fibrous sheaths of tendons of toes; external carotid veins; anterior superior alveolar arteries; vessels of the inner ear; occipital lymphatic nodes; synovial joints of the free upper limb; the apexes and roots of the lungs; the horizontal plate of palatine bone; walls of the stomach; bones of coccyx; hard and soft palate; lower articular surface of the tibia / splint bone;

## 3. Translate into Latin:

nerves of the tensor muscles of the velum; front and back internal vertebral plexuses; front and back surfaces of the teeth; ligaments of bases of bones; tear trough (=lacrimal groove) of frontal process of the upper jaw; process of the lower nasal concha; skeleton of the upper limb; sacral horn; sheath of styloid process; temporal surface of greater wing; upper articular process of the lumbar process; regions of the head; median sacral crest; scale of occipital bone; trapezoidal line of the collarbone; bony septum of nase; short elevator muscles of the ribs.

## 4. Translate into Latin:

Sides (walls) of descenting arteries of knee; front and rear branches of returning tibial artery; tensor muscle of broad fascia of thigh; temporal surface of greater wing of sphenoid bone; rear and front internal vertebral venous plexuses; perforating branches of the deep vein of thigh; ascending branch of the deep circumflex artery of iliac bone; right branch of accompanying vein of hypoglossal nerve; pharyngeal branches of the vagus nerves; pharyngeal branches of tympanic plexus; rear surface of the perforating arteries of the thigh; sulcus of tendon of long flexor of the big toe; muscular plate of the mucosa (tunic) of stomach; temporal surface of the scale of the frontal bone;
tendon of upper straight muscle of eye; upper sacral ganglion of the sympathetic trunk; upper, middle and lower part of the large adductor muscle of the thigh; deept part of the external sphincter of the anus; medial and lateral plates of pterygoid processes; gap of the canals of the greater and smaller stony nerves; lingual surface of the incisors and premolars; perforating and connecting branches of peroneal artery; rear and front branch of the ulnar returning artery.

## Teaching supplies and utilities

## VOCABULARY:

abducens, ntis

- abduct
afferens, ntis
ascendens, ntis
descendens, ntis
efferens, ntis
opponens, ntis
perforans, ntis
recurrens, ntis
circumflexus, a, um
compactus, a, um
compositus, a, um
- afferent
- ascending
- descenting
- efferent
- opposer
- perforant
- reccurent, returning
- circumflex
- dense, compact
- composite, compound, complex


## Clinical terminology

## Theme 1-2. Word formation for constructing clinical terms. <br> The names of organs and body parts. Suffixes -itis, -oma, -ema, -iasis, -ismus, -osis

Greek and Latin medical terms can be broken down into one or more word parts. For simplicity in explanation, let's say that there are four possible word parts, and any given medical term may contain one, some, or all of these parts:

1. root terminological elements (a shorthand notation "root"). The initial and final terminological elements.
2. suffixes
3. prefixes
4. combining vowels

| Clinical terms |  |  |  |
| :--- | :--- | :--- | :--- |
| 1-word |  |  | multiword |
| simple |  |  | complicated |
| non-derivative | derivative |  |  |
| polypus | transplantatio | histologia |  |

The initial and final TE

|  | histo- | -logia |
| :--- | :---: | :---: |
|  | cardio- | -pathia |
|  |  | -algia |
| tachy- | -cardia |  |

## combining vowel O : gastroenterologia

When you look at a medical term and attempt to decipher its meaning you begin with the suffix, move to the prefix (if it is present) and then to the root word.

For example: When trying to understand the word pericarditis you would identify itis (meaning inflammation), then peri (meaning around) and then card (meaning heart). Therefore, this word means inflammation around the heart.
Let's try another one: for example: leukocytopenia - penia (meaning decrease), then leuk/o (meaning white) and finally cyt/o (meaning cell). Therefore, this word means a decrease in white cells.

## Suffixes

| SUFFIX | MEANING | EXAMPLE |
| :---: | :---: | :---: |
| -ītis, idis f | inflammation | Dermatītis <br> ! myositis <br> ! pneumonia |
| -ōma, omatis n | tumor; swelling | angiōma |
| -ismus, i m -ia, ae f | phenomenon, property | daltonismus tachycardia |
| -iasis, is f <br> -ōsis, is f | abnormal condition; <br> functional disease or condition (of <br> some organ); <br> abnormal condition caused by smth | psoriasis arthrosis toxicosis |
| -ōsis | increase in number (for cells or tumors) | leucocytosis fibromatosis |

NB: Sarcoma - a type of malignant tumor of the bone, cartilage, fat, muscle, blood vessels, or other connective or supportive tissue. Carcinoma - an invasive malignant tumor derived from epithelial tissue.

## Exercises:

1. Build up clinical terms with the given roots and suffixes, explain their meaning:
E.g.: When you join the root gastr(o)- with the suffix -itis you get the term gastritis which means "inflammation of the stomach".
-itis (colp-; nephr-; proct-; cholecyst-; kerat-; pyel-; dermat-; cheil-; stomat-; rhin-;
encephal-; mast-; spondyl-, appendic-, oophor-, typhl-);
-oma (fibr-, my-, kerat-, carcin-, lip-, sarc-, oste-);
-(omat)osis (carcin-, chondr-, fibr-, lip-);
-(cyt)osis (leuk-, erythr-, thromb-, lymph-);
-osis (dermat-, hepat-, arthr-, aden-).

## 2. Translate terms. Explain the meaning of suffixes:

tracheobronchitis; arthrosis; spondylitis; hepatitis; lymphoma; odontoma; stomatitis; pleuritis; acidosis; adenomatosis; adenomyomatosis; bacteriosis; lipomatosis; lymphocytosis; lymphomatosis; meningiomatosis; myelomatosis; parasitosis; salmonellosis; spondylosis; myocarditis; rhinopharyngitis; thrombophlebitis; salpingitis; myositis; pyomyositis; typhlocolitis; helminthiasis, rheumatismus.

## 3. Form the Greek \& Latin clinical terms according to the meaning:

1) inflammation of: brain; brain and spinal cord; meninges and brain; meninges; meninges and spinal cord; skin; pharynx; larynx; nose and pharynx; tongue; ear; eye; eyelid; trachea; nose; cornea; mouth; larynx and trachea; larynx and pharynx; vessel; artery; vein; bone; lymphatic vessels; gall bladder;
2) tumor (of): vessels of muscles; including components derived from glands and muscle; containing both glandular and fat tissue; epithelial; bone; bone and cartilage; bone and connective tissue; lymph vessels; lymph glands; meninges; nerve; skin; ganglion; a malignant bone tumor; a malignant tumor of the lymphatic (tissue);
3) multiple malignant tumors (of connective tissue); multiple cancer tumors; multiple lymph tumors; multiple tumors of vessels, multiple fat tumors, multiple tumors of immature connective tissue;
4) degenerative / dystrophic disease of: liver; skin; joints; liver and kidney; bone and cartilage; vertebral joints;
5) non-inflammatory disease caused by a buildup of dust in the lungs (gr. conia); of toxic substances (gr. toxicon - poison); of parasite Ascaris,idis f;
6) temporary increase in number of: leukocytes (leuco-), erythrocytes, lymphocytes, platelets, granulocytes.

## 4. Form the Greek \& Latin clinical terms according to the meaning:

inflammation of the lacrimal sac; inflammation of the umbilical veins; inflammation of the nerve; inflammation of the muscles; inflammation of the pharynx; inflammation of the lungs; malignant cartilage-based tumor; glandular-adipose (fatty) tumor; the widespread presence of cancer tumors; degenerative disease of liver and kidneys; degenerative disease of bones and cartilages.

## 5. Form the Greek \& Latin clinical terms according to the meaning:

Combined inflammation of the renal pelvis and bladder; a benign cartilaginous tumor; combined inflammation of the larynx and pharynx; inflammation of (blood) vessels; inflammation of the breast; inflammation of the lacrimal glands (the tearproducing glands); inflammation of the heart muscle; inflammation of the eyelid; combined inflammation of the small and large intestines; inflammation of the cecum; combined inflammation of the brain and spinal cord; combined inflammation of the larynx and trachea; inflammation of the lymph nodes (=glands); combined inflammation of the urethra and bladder; combined inflammation of the meninges and brain; an inflammatory condition of the lung; inflammation of the gallbladder; inflammation of the pharynx; inflammation of the vagina; inflammation of the bone; inflammation of bone marrow; cutaneous condition (qualitative changes of skin);
non-inflammatory disease of kidneys (qualitative changes of the kidney); any functional disorder of the liver; condition characterised by many benign tumors derived from cells of the vascular vessel walls; the presence of multiple benign tumours of fibrous connective tissue; an abnormally large amount of red blood cells; formation of a blood clot inside a blood vessel; illness due to poisoning.

## Lexical minimum:

English-Latin

| dy | -som(at)- | limb | -acr- | $\text { belly } \quad \text {-lapar }$ |
| :---: | :---: | :---: | :---: | :---: |
| ead | -cephal- | ar | -cheir | navel (umbilic) -omphal- |
| brain | -encephal- | foot, leg | -pod- | viscera (internal organs) - |
| face | -prosop- | knee | -gon- | -splanchn- |
| nose | -rhin- | finger | -dactyl- | lung;air, gas -pneum(on)- |
| mouth | -stom(at)- | nail | -onych- | stomach -gastr- |
| tonque | -gloss- |  |  | bowel, intestine -enter- |
| tooth | -odont- | chest | -steth- | colon -col- |
| palate | -uran- | spine | -rhachi- | cecum -typhl- |
| gum | -ul- | bone marrow | -myel- | rectum, anus -proct- |
| cheek | -mel- | menin | -mening- | kidney -nephr- |
| upper jaw | aw -gnath- | verteb | -spondyl- | renal pelvis -pyel- |
| lower ja | w -genia | joint | -arthr- | spleen -spleen- |
| lip | -cheil- | bone | -oste- | liver -hepat- |
| ear | -o | cartilag | -chondr- | common bile duct |
| eye | -ophthalm- | muscle | -my(os)- | -choledoch |
| eyelid | -blephar- | tendon | -ten- | bile ducts -cholangi- |
| lacrim | sac (tear-bag) -dacryocyst- | ligament | -desm- | bladder, bag, -cystgall bladder -cholecyst- |
| crystal | e lens - phac- | tissue | -hist- | womb (layers) -metr- |
| cornea | (or keratin)- kerat- | connective tiss | sue -fibr- | womb (body) -hyster- |
| hair | -trich- | skin | -derm(at)- | ovary -oophor- |
|  |  | fat | -lip- | oviduct -salping- |
| blood | -(h)aem(at)- | $n$ | -neur- | cervix -trachel- |
| bile | -chol(e) | gland | aden- | vagina -colp |
| lymph/8 | astric juice - chyl- | cell | -cyt- | male gonads -orchi(d)- |
| sweat | -hidr- | blood clot; plat | atelet |  |
| urine | -ur- |  | -thromb- | breast, mammary gland - |
| tear | -dacry- | heart | -cardi- | -mast-/-mamm- |
| pus | -py- | vessel | -angi- |  |
| mисия | -blenn- | vein | -phleb- |  |
| milk | -galact- |  |  |  |

From anatomical terminology:

| tonsil | -tonsill- | peritoneum | - periton(e)- | prostate | -prostat- |
| :--- | :---: | :--- | :--- | :--- | :--- |
| windpipe | -trache- | pylorus | -pylor- | ureter | -ureter- |
| bronchus | -bronch- | pancreas | -pancreat- | urethra | -urethr- |
| pharynx | -pharyng- |  |  |  |  |
| larynx, throat | -laryng- |  |  |  |  |
| duodenum | -duoden- |  |  |  |  |
| esophagus | -oesophag- | loin | -lumb- |  |  |
| pleura | -pleur- | appendix | -append(ic)- | skull | -crani- |

## Theme 3. Prefixes

| Greek and Latin prefixes | Meaning | Examples of medical terms |
| :--- | :--- | :--- |
| a-; an- | no; not; without | anhidrosis |
| dys- | malfunction; difficulty | dyshidrosis |
| hyper- | above; excessive | hyperhidrosis |
| hypo- | below; deficient | hypohidrosis |
| endo- | within; inside | endometrītis |
| exo-/ecto- | outside | exogenus |
| pro- | earlier; in front of | progenia, prognathia |
| retro- | back or backward; behind; <br> in the opposite direction. | retrognathia |
| syn- / sym- | with, together; <br> concomitant | syndesmologia <br> symbiosis |
| para- | beside, near, alongside <br> abnormal, incorrect <br> resembling | parametritis <br> paramnesia |
| around or surrounding |  |  |
| (outer) layer; coat; near |  |  |, perinephrītis | peri- |
| :--- |
| middle |

## Exercises:

1. Build up clinical terms with the given roots and prefixes, explain their meaning: a(n)- (-cheilia, -blepharia, -rhinia, -podia, -dactylia, -cheiria, -encephalia; -hidrosis, uria);
dys- (-enteria, -hidrosis, -uria, -bacteriosis, -odontiasis);
hyper- (-hidrosis, -aemia, -mastia);
endo- (-genus, -metritis, -cardium, -carditis, -phlebitis, -angiitis, -salpingitis);
para- (-metritis, -nephritis, -proctitis, -odontitis);
peri- (-nephritis, -hepatitis, -carditis, -proctitis, -chondritis, -ostitis, -odontitis, neuritis),
pan- (-carditis, -ophthalmitis, -otitis, -arthritis, -encephalitis, -gastritis; -myelosis); poly- (-arthritits, -arteritits, -angitits, -neuritits; -mastia, -dactylia, -odontia; -uria; sialia);
olig- (-arthritis; -dactylia, -odontia; -uria, -aemia).

## 2. Add prefixes:

...phonia, ae f - a loss of voice
...genus, a, um - occurring within the body
...nephritis, itidis f - inflammation of the kidney tissue (around)
...metritis, itidis $f-$ inflammation of the serous lining of the uterus
...dactylia, ae $\mathrm{f}-$ fusion of the fingers, junction
...hidrosis, is f - decreased sweating
...tonsillitis, itidis f - inflammation of the tissue around the tonsils
...phagia, ae f - difficulty swallowing
...tresia, ae f - congenital absence of hole
...thermia, ae f - overheating of the body
...odontitis, itidis f - inflammation of the tissues around the tooth
...chlorhydria, ae $\mathrm{f}-$ low acidity of gastric juice
...genus, a, um - caused by external causes

## 3. Translate the terms. Explain the meaning of prefixes:

hyperoxia; mesometritis; perihepatitis; syncheilia; endomyocarditis; areflexia; symblepharia; endophlebitis; perichondritis; asplenia; parodontitis; progeria; dysbacteriosis; retrognathia, acheiria; hypothermia; endarteritis; endocarditis; panarthritis; polyarteritis; panotitis; oligoarthritis; oligodontia.

## 4. Write in Latin. Translate the terms:

Adactyly; dysentery; ectoparasitism.

## 5. Form the Greek \& Latin clinical terms according to the meaning:

1. A loss of nervous control of the stomach. 2. Congenital absence of the nose. 3. The condition of having a low quantity of blood. 4. Inflammation that only affects a few joints. 5. An excessive flow of saliva. 6. The presence of many teeth. 7. Inflammation of the entire stomach lining. Inflammation of all the structures of a joint (or of all the joints). 8. The inflammation of all coats of the eye. 9. Inflammation of the outer layer of the veins. 10. Inflammation of the inner layer of the veins. 11. Inflammation (of tissue) around the pancreas. 12. Inflammation of the middle layer of the aortic coat. 13. Inflammation of the inner layer artery coat. 14. Inflammation of the peritoneal coat of the stomach. 15. Inflammation of the coat of the gall bladder. 16. Inflammation of tissue near the kidney. 17. Inflammation of the tissue surrounding the bladder. 18. Mid-brain inflammation. 19. Inflammation of the middle part of the pharynx. 20. Inflammation of the serous membrane (coat) of the liver. 21. Inflammation of the tissue around the tonsils. 22. Inflammation of tissue around the colon. 23. Inflammation of tissue around the urethra. 24. Inflammation of the tissue around the ureter. 25. Inflammation of all three layers of the heart. 26.Excess of blood in a body part. 27. A condition in which the kidneys do not produce urine. 28. A congenital absence of lips. 29. The absence of six or more teeth.

## Theme 4-5. «Diagnostic procedures. Pathological conditions»

Treatment. Science. Methods of diagnostic examination

| Greek and Latin roots | Meaning | Examples of medical terms |
| :---: | :---: | :---: |
| 1. logo--lalia | speech, speech disorder | logopaedia paralalia |
| 2. -logia | science; study | endocrinologia gastroenterologia |
| 3. -logus | physician; scientist | dermatologus ophthalmologus |
| 4. -iatria | treatment of someone; science about treatment | phthisiatria, geriatria, phoniatria, psychiatria, odontiatria |
| 5. -iater | physician | paediater, geriater, phthisiater |
| 6. -therapia | treatment with anything | phytotherapia, hydrotherapia |
| 7. -paedia | methods, correction | logopaedia, orthopaedia |
| 8. -scopia | instrumental examination | cystoscopia, endoscopia |
| 9. -metria | measurement | craniometria, audiometria |
| 10. -graphia | recording; imaging; X-ray examina | encephalographia |
| 11. -rheographia | examination of electrical resistance of body part | ophthalmorheographia |
| 12. -gramma | record; image; X-ray film | cardiogramma, haemogramma fluorogramma |
| 13. -opsia | vision, view; | biopsia, autopsia |
| 14. -gnosis gnosia | knowledge, recognition, the ability to learn | prognosis, diagnosis prosopagnosia |
| 15. -genesis | birth, origin, development | osteogenesis, hist(i)ogenesis |
| 16. -genus | conditioned, caused, originating, causing, producing; relating to -genesis | endogenus, exogenus cancerogenus chondrogenus |

## Suffering. Disease. Pain

| Greek and Latin <br> roots | Meaning | Examples of medical terms |
| :--- | :--- | :--- |
| 1. noso- | disease | nosologia |
| 2. -pathia | - any disease; disease process <br> - therapy | cardiopathia, nephropathia <br> apathia, antipathia, sympathia, <br> homeopathia |
| 3. -odynia | pain | cheilodynia, spondylodynia, |
| 4. -algia | pain | myalgia |
| 5. -algesia | sensitivity to pain | hyperalgesia, hypalgesia, <br> analgesia |

## Exercises:

1. Build up clinical terms with the given roots, explain their meaning:

- cardi(o)- (-graphia; -gramma; -pathia; -logia; -logus; -algia; genus);
- angi(o)- (-pathia; -graphia; -logia; -gramma; -genesis);
- cholecyst(o)- (-pathia; -graphia; -gramma);
- mast(o)-; mamm(o)- (-graphia; -gramma; -odynia, -logus);
- cyst(o)- (-graphia; -gramma; -scopia);
- encephal(o)- (-pathia; -gramma; -graphia; -algia);
- -(o)scopia (gastr-; cholecyst-; colp-; cyst-; stomat-; rhin-; cyt-; proct-);
- -(o)pathia (rhin-; spondyl-; nephr-; oste-; cholecyst-; encephal-; angi-; mast-; cardi-).


## 2. Explain the meaning of the following terms:

Angiogramma, angiologia, angiopathia, angiographia, angiocardiographia; cystogramma, cystographia; cytologia, cytogramma; pneumonia, pneumologia; nephritis, nephrosis, nephroma, nephrocarcinoma, nephrologia, nephrologus, nephropathia, nephralgia, nephrogenus, nephrographia, nephroscopia; myositis, myocardiogenesis, myofibroma, myopathia; arthrochondritis, arthrosis, arthropathia, arthrogenus, arthrologia, arthrogramma, arthrometria, arthroscopia; epigastralgia, lumbalgia, neuralgia, nephralgia; dacryoadenalgia; nictalgia; trichalgia; analgesia, hypoalgesia, hyperalgesia $=$ hyperalgia .

## 3. Give the Latin spelling of the terms; explain their meaning:

Dermatology, syndesmology, toxicology, herniology, osteology, somatology, stomatology, otorhinolaryngology, gastroenterology, etiology, otoneurology, ophthalmology, gynecology, andrology, gerontology, morphology, anthropology, physiology, histology, myologist, cytologist, serologist, phlebologist, angiologist, biologist, cardiologist; psychiatry, pediatrician, geriatrician/ geriatrics; somatoscopy, rhinoscopy, otoscopy, endoscopy, rectoscopy, cystoscopy, colposcopy, laryngoscopy, dactyloscopy; stethometry; thoracometry; anthropometry, somatometry, odontometry; craniometry, cephalometry, audiometry, spirometry, tonometry; biopsy, autopsy; spondylography, encephalography, urethrography, vasography/ angiography, mammography, cystography; cholecystography; angiogram, encephalogram, cardiogram, cytogram, mammogram, cholecystogram; osteogenesis, histogenesis, chondrogenesis, oncogenesis, carcinogenesis; endogenous, blennogenous, odontogenic, iatrogenic, pathogenic; myelopathy, logopathy, osteoarthropathy, enteropathy, mastopathy, acropathy, splenopathy, oligoarthropathy.

## 4. Form the Greek \& Latin clinical terms according to the meaning:

A) 1. Science of natural vital processes in the human body. 2. The branch of medicine concerned with tumors. 3. The study of (internal) glands that secrete hormones. 4.The scientific study of the viscera. 5. A physician who specializes in the study of the digestive system (intestine and stomach). 6 . The branch of science that deals with the problems of aged people. 7. The branch of medicine that focuses on the diseases of the elderly (old $=$ ger(ont)-). 8. The branch of medicine that deals with the treatment of children. 9. The treatment and study of tuberculosis. 10. One who studies the medical research and treatment of organs involved with speech (sound) production. 11. The use of plant extracts for medical purposes. 12. The use of hormons for medical purposes. 13. The study, and correction, of speech and language defects. 14.The instrumental examination of the esophagus, stomach and duodenum. 15. The examination of the bile ducts ( by means instrument). 16. Measurement of the visual acuity and refractive power of the eyes. 17. The graphic recording of the movement, or other function of the heart. 18. An (X-ray) image of the brain. 19. A procedure used to visualize the urinary bladder by means of X-rays. 20. An image (produced by radiation) of the gallbladder. 21. Examination of a sample of tissue, cells, or bodily fluid from a living body. 22. The inability to recognize objects. 23. Difficulty (inability) with face recognition. 24. The development of malignant tumors from normal epithelial tissue. 25. The formation and development of bone. 26. The formation and development of the tissues of an organism from embryonic cells. 27.Relating to the formation and development of cartilage. 28. Of a natural process, or
caused by factors within the body.
B) 1. The systematic investigation or classification of disease. 2. Any disease of small intestine. 3. Any disease of breast. 4. Any disease of the bile ducts. 5. A disease of the fingernails or toenails. 6. Any glandular disease. 7. Any disease or disorder of the blood or the hemopoietic system. 8. Any disease specific to the extremities. 9. Any joint disease of the vertebral column. 10. Able to cause (harmful) disease. 11.Headache. 12. Pain in the knee. 13. Pain in the heel. 14. Pain in the tongue. 15.Pain in the mouth. 16. An increased sensitivity to pain. 17. A decreased sensitivity to painful stimuli. 18. The absence of the sense of pain while remaining conscious.

## Terms with -odynia:

1. cheilodynia - pain in the lip;
2. ulodynia - pain in the gum;
3. palatodynia - pain in the palate;
4. gnathodynia - pain in the jaw;
5. oesophagodynia - pain in the esophagus;
6. pancreatodynia - pain in the pancreas;
7. spondylodynia - pain in the spine;
8. coccygodynia - pain in the coccyx;
9. sacrodynia - pain in the sacrum;
10.gonodynia - pain in the knee;
11.calcaneodynia - pain in the heel;
12.urodynia - pain during urination.

## Basic treatments with -therapia:

1. physiotherapia - physical therapy;
2. phytotherapia - medicinal plants treatment;
3. heliotherapia - sunlight treatment;
4. hydrotherapia - water procedures treatment;
5.oxygenotherapia - treatment with oxygen;
5. kinesitherapia - treatment with movement;
6. pharmacotherapia - drug treatment;
7. haemotherapia - treatment with blood transfusion;
8. autohaemotherapia - treatment with own blood transfusion;
10.serotherapia - treatment with blood serum;
11.chimiotherapia - treatment with chemical agents that selectively inhibit the growth of tumor cells (for cancer);
12.balneotherapia - treatment with baths;
13.naphthalanotherapia - treatment with medical oil;
14.hirudotherapia - treatment with leeches;
15.somnotherapia - treatment wih sleep;
16.hypnotherapia - treatment wih hypnosis;
17.hormonotherapia - hormone treatment;
18.diaitotherapia - health food; nutritional treatment;
19.apitherapia - treatment with bee products;
20.cryotherapia - cold treatment;
9. urinotherapia - treatment with urine;
22.lithotherapia - a form of homeopathy that uses small quantities of minerals;
23.thalassotherapia - treatment with seawater, sea products, and shore climate;
24.fangotherapia $=$ pelotherapia - treatment with mud, or clay

## Theme 6 -7. Surgery and pathological states

## Pathological changes in organs and tissues

| Greek and Latin roots | Meaning | Examples of medical terms |
| :---: | :---: | :---: |
| 1. -ectasia | dilatation (expansion) of the of a canal or other organ | gastrectasia |
| 2. -stenosis | an abnormal narrowing or stricture in a tubular organ | angiostenosis |
| 3. -malacia | abnormal softening of the tissues | osteomalacia |
| 4. -sclerosis | the abnormal hardening of body tissues | myosclerosis |
| 5. -lysis1 | decomposition or breakdown, dissolving (of cells or tissue) | hydrolysis |
| 6. -rrhexis | rupture | angiorrhexis |
| 7. -schisis | separation, cleft | onychoschisis |
| 8. -ptosis | the prolapse (a moving out of place) of a bodily organ, drooping | nephroptosis |
| 9. -spasmus | spasm, cramp | angiospasmus |
| 10. -plegia, -paralysis | paralysis; palsy | ophthalmoplegia |
| 11. -paresis | a paralysis which is incomplete or which occurs in isolated areas | hemiparesis |
| 12. -megalia | enlargement | splenomegalia |
| 13. -privus | due to the absence or removal of organ | renoprivus |
| 14. -lithiasis <br> 15. -lithus | the process of forming stone-like deposits in an internal organ <br> a stone, calculus | cholelithiasis phlebolithus |
| 16. -mycosis | an infection caused by a fungus | stomatomycosis |
| 17. -necrosis | the localized death of cells or tissues | odontonecrosis |
| 18. -fibrosis | the formation of (excess) fibrous connective tissue in an organ | myocardiofibrosis |
| 19. -rrhoea | flowing, discharge | diarrhoea |
| 20. -rrhagia | bleeding; excessive discharge or haemorrhage from an organ | haemorrhagia, metrorrhagia |
| 21. -cele | cyst, hernia, protrusion | oophorocele |
| 22. hernio- | hernia (a disorder in which a part of the body protrudes abnormally through a tear or opening) | herniotomia |
| 23. onco- | pertaining to tumors | oncologia |
| 24. strumo- | goiter, an enlarged thyroid gland | strumectomia |

## Surgical interventions and manipulations

| Greek and Latin <br> roots | Meaning | Examples <br> of medical terms |
| :--- | :--- | :--- |
| 1. -lysis 2 | the operation by which any organ <br> disintegrates; <br> the freeing any organ from its adhesions | pleurolysis |
| 2. tom- <br> -tomia | sections <br> cutting; incision; dissection | tomographia <br> phlebotomia |
| 3. -lithotomia | a surgical method for removal of calculi <br> (stone) | nephrolithotomia |
| 4. -ectomia | surgical removal of; excision | hysterectomia |
| 5. -stomia | a surgical procedure forming <br> 1) an opening, used for access, nutrition, or <br> waste elimination; <br> or 2) connecting passage between 2 organs | laryngostomia |
| gastroduodenostomia |  |  |$|$| cystostoma |
| :---: |
| 6. -stoma |
| a surgically constructed opening |

## Exercises:

## 1. Build up clinical terms with the given roots, explain their meaning:

-lysis (cyt-, hist-, lip-, lith-, onc-, thromb-, spasm-, aut-);
-lysis (arthr-, cardi-, ten-, ureter-, gastr-);
-schisis (gastr-, palat-, cheil-, onych-);
-ptosis (blephar-, nephr-, gastr-);
-plegia (blephar-, cardi-, cyst-, gloss-, laryng-, log-, nephr-, ophthalm-);
-lithiasis (ur-, chol-, ureter-, bronch-, enter-, cholecyst-);
-mycosis (dermat-, trich-, onych-);
-necrosis (chondr-, my-, oste-, derm-);
-fibrosis (arthr-, hepat-, aden-, hyper-);
-rrhagia (colp-, encephal-, enter-, hepat-, metr-, ot-, phleb-, pneum-, rhin-, urethr-);
-cele (colp-, arthr-, myelomening-, omphal-, hyster-, proct-, pneumat-).

## 2. Explain the meaning of the following terms:

1) angioplastica
angiectasia angiotomia angiostomia angiorrhexis angiorrhaphia angiosclerosis
angiostenosis
angiopathia
angiomatosis
angiitis
2) pyelographia
pyelocystitis
pyelitis
pyelonephritis
pyelotomia
pyelectasia
pyeloplastica
pyelolithotomy
3) gastrectasia
gastromalacia
gastrolysis
gastroptosis
gastrospasmus
gastromegalia
gastrorrhoea
gastrorrhaphia
gastrorrhagia
gastrotomia
gastrectomia
gastrostomia
gastropexia
gastrorrhaphia
gastroplastica
4) nephrorrhaphia nephrectomia nephromegalia nephroptosis nephropexia nephroplegia nephrosclerosis nephrotomia nephrolithiasis nephrolithotomia nephrostomia
5) dermatitis dermatologia
dermatoma
dermatosis
dermatosclerosis
dermatolysis
dermatomycosis
dermatoplastica
6) osteosclerosis osteomalacia osteoectomia osteolysis osteonecrosis osteotomia osteectomia osteoclasia osteoplastica osteopathia periostitis osteoma osteochondrosis osteodynia osteodysplasia

## 3. Explain the meaning of the following terms:

Gastrectasia; bronchostenosis, angiostenosis, typhlostenosis; osteomalacia, myelomalacia, encephalomalacia; osteosclerosis, angiosclerosis, cardiosclerosis, myosclerosis; cardiorrhexis; strumitis; arthrodesis, spondylodesis; colpoeurysis; laparocentesis.

## 4. Give the Latin spelling of the terms; explain their meaning:

A) blepharospasm; myospasm; angiospasm; cardiospasm; enterospasm; gastrospasm; colpospasm; esophagospasm; acromegaly, lymphadenomegaly, dactylomegaly, hepatomegaly, trichomegaly; phlebolith, ureterolith; blennorrhea, bronchorrhea, dacryorrhea, diarrhea, dysmenorrhea, amenorrhea, sialorrhea, logorrhea, otorrhea, pyorrhea, blennorrhea, rhinorrhea; oncology, oncologist;
B) blepharotomy, cephalotomy, cheilotomy, colostomy, glossotomy, herniotomy, hysterotomy, keratotomy, laparotomy, lobotomy, omphalotomy, pericardiotomy, phlebotomy, rachiotomy, rhinotomy, salpingotomy, thoracotomy, typhlotomy; sialolithotomy, nephrolithotomy, cholelithotomy; onychectomy, oophorectomy, typhlectomy, mastectomy, spondylectomy, pancreatoduodenectomy, gastroenterectomy; angiostomy, tracheostomy, urethrostomy, urostomy, laparostomy; gastroenterostomy, choledochocholedochostomy, colocolostomy; hysteropexy, cholecystopexy, nephropexy, enteropexy, typhlopexy; cheilorrhaphy, colporrhaphy, cystorrhaphy, herniorrhaphy, myorrhaphy, nephrorrhaphy, tenorrhaphy, trachelorrhaphy; mammoplasty, palatoplasty, meloplasty, pyeloplasty, rhinoplasty, osteoclasis.

## 5. Form the Greek \& Latin clinical terms according to the meaning:

1. Dilation of the stomach. 2. Extension of the cecum. 3. The abnormal contraction of a bronchus. 4. The narrowing of a blood vessel. 5. A softening of the muscular walls of the heart. 6. The softening of the spinal cord. 7. Abnormal softening of the teeth. 8.A softening of adult bones. 9. The hardening of a gland. 10. The hardening of the tissues of the labyrinth and middle ear. 11. Hardening, narrowing or loss of elasticity in arteries. 12. Breakdown of bodily tissues. 13. Breakdown of the cells. 14. Rupture of the heart wall. 15. Rupture of a blood vessel. 16. Ligament rupture. 17. Cleft jaw. 18. The drooping of the upper eyelid. 19. An abnormal condition in which the kidney drops down into the pelvis when the patient stands up. 20. An abnormal downward displacement of the stomach. 21. A spasm of the esophagus. 22. A sudden, involuntary spasmodic contraction of a muscle. 23. A painful muscular contraction of the vagina. 24. Paralysis of the bladder. 25. Paralysis of the tongue. 26. A complete paralysis of the extraocular muscles which are responsible for eye movements. 27. A partial paralysis of the extraocular muscles. 28. An enlargement of the spleen. 28.The
presence of enlarged digits. 29. Enlargement of the lymph nodes. 30. A chronic disease marked by enlargement of the bones of the extremities, face, and jaw. 31.The presence of a gallstone specifically in the gall bladder; presence of calculi (stones) in the urinary tract. 32. A condition where a calcified mass (stones) forms within a salivary gland. 33. A calculus (stone) that forms in the nasal cavity. 34. A gallstone in the biliary duct of the liver. 35. Any of various skin diseases caused by fungi. 36.Fungal infection of the cornea. 37. A fungal infection in the outer canal of the ear. 38. Fungal infection of the nail. 39. The localized death of cartilage. 40. The localized death of muscular tissue. 41. The formation of excessive fibrous connective tissue in an organ. 42. The formation of (excess) fibrous connective tissue in a liver. 43.Drooling (the flow of excess saliva from the mouth). 44. A persistent discharge of watery mucus from the nose. 45 . Absence of menstrual discharge. 46. A discharge of pus. 47. Hemorrhage of the lungs. 48. Brain haemorrhage. 49. Intestinal hemorrhage. 50. A doctor or scientist who specializes in the branch of medicine concerned with tumors. 51. A hernia of the navel. 52. A protrusion of the meninges and the brain through a defect in the cranium. 53. A cystic tumor containing milk or a milky substance. 54. Inflammation of the thyroid gland.

## 6. Form the Greek \& Latin clinical terms according to the meaning:

1. The freeing the heart from its adhesions to the sternal periosteum. 2. The restoration of mobility in stiff, ankylosed joints by disrupting articular adhesions. 3.The separation and removal of intestinal adhesions. 4. Imaging by sections or sectioning. 5. Any operation which involves the incision of the urethra. 6. The surgical procedure of making an incision into the chest. 7. The dissection of the viscera. 8. Incision into the spinal canal. 9. A surgical procedure in which an incision is made into the trachea, through the neck. 10. The surgical procedure of making an incision in the uterus. 11. Removal of a gallstone. 12. Excision of a calculus in the salivary ducts. 13. The surgical removal of a kidney. 14. The surgical procedure for the removal of the vermiform appendix. 15. Removal of a fallopian tube (oviduct) and an ovary. 16. The surgical removal of a part of the lacrimal sac. 17. The surgical opening of the peritoneum to expose the abdominal contents. 18. Creation of an artificial opening into the pharynx. 19. The surgical procedure for making a connection between the stomach and the jejunum (intestine). 20. Suspension or fixation of the kidney. 21. Fixation of the spleen. 22. Fixation of the bladder to the abdominal wall. 23. The fusion of a joint between two or more bones so that the joint can no longer move (creation of joint immobility). 24. Suture of a tendon. 25. The suturing of severed nerves. 26. Suture of a muscle. 27. Repair of a hernia by means of sutures. 28. A suture of the lip. 29. The surgical fracture of a bone in order to correct
a deformity. 30. Plastic surgery of a breast. 31. The operation of restoring a cheek. 32. The surgical reconstruction of the renal pelvis. 33. A type of plastic surgery that is used to improve the function (reconstructive surgery) or appearance (cosmetic surgery) of a person's nose. 34. Plastic surgery on the eyelid.

## Latin dublets in clinical terminology:

1. ruptura, ae $f$-rupture
2. descensus, us $m$ - ptosis
3. dilatatio, onis $f$-surgical expansion of canal or body
4. amputatio, onis $f$ - removal of limb or organ
5. resectio, onis $f$ - partial removal of organ and joining of other parts
6. exstirpatio, onis $f$ - complete removal of tissue or organ
7. sectio, onis $f-$ section, dissection
8. trepanatio, onis $f$-dissection of bony cavity
9. transplantatio, onis $f$ - transplantation of tissue or organs
10.implantatio, onis $f$-implantation (of foreign materials)
11.replantatio, onis $f$ - replantation

## Theme 8. Functional physiological and pathological

 processes and states| Greek and Latin roots | Meaning | Examples |
| :--- | :--- | :--- |
| 1. -tropia <br> 2. -tropus | turning, affecting (noun) <br> affecting (adjective) | heterotropia <br> psychotropus |
| 3. -poësis | production, creation or <br> formation (urine, blood) <br> creative, formative | haemopoësis, uropoësis <br> haemopoëticus |
| 5. -poëticus | Growth or formation, <br> development <br> (tissues, cells, organs); <br> NB! used with prefixes | aplasia, hypoplasia, |
| 6. -trophia | nutrition <br> growth, development | osteodystrophia, <br> atrophia, |
| 7. -topia | location, localization | dystopia, ectopia |
| 8. -asthenia (astheno-) | weakness; loss of strength | neurasthenia |
| 9. -dynamia | strength, physical abilities | hypodynamia |
| 10. -kinesia | motion sickness | akinesia, dyskinesia |
| 11. -tonia | tonicity (muscles, blood vessels, <br> the walls of hollow organs) | hypotonia, amyotonia <br> 12. -tensio <br> hydrostatic pressure (fluid <br> within the vessel or hollow <br> organ) <br> 13. -ergia /-urgia <br> (ergo-) <br> work, activity, reactivityhypertensio, hypotensio <br> shnergia, allergia, <br> chirurgia, desmurgia, |
| 14. -stasis | stagnation; stopping, slowing <br> dorgometria <br> level maintenance of a static | cholestasis, hypostasis |
| 15. -thermia | heat, temperature | hyperthermia, <br> hypothermia |
| 16. -sphygmia | pulse, pulsation | microsphygmia |
| 17. -rrhythmia | rhythm, heartbeating | arrhythmia |
| 18. -pnoë | breathing, respiration | dyspnoë, orthopnoë |
| 19. -phonia | sound, phonation | aphonia, dysphonia |
| 20. -phagia (phago-) | eating in a specified manner, <br> normal or abnormal; swallow | dysphagia, odynophagia, |
| 21. -opia/-opsia | vision, visual perception | polyopia |
| 22. -acusia | hearing | hyperacusia |


| 23. -osmia | smell | hyperosmia |
| :---: | :---: | :---: |
| 24. -geusia | taste | hypergeusia |
| 25. -pepsia | digestion | dyspepsia |
| 26. -orexia | appetite | anorexia |
| 27. -aesthesia | the ability to perceive sensations. | anaesthesia |
| 28. -philia | abnormal liking or tendency (for something) | haemophilia, spasmophilia |
| 29. -phobia | fear of a specific thing | cardiophobia |
| 30. -mania | obsession, painful pathological attraction; delusion | toxicomania, megalomania |
| 31. -phrenia (phreno-) | - mental disorder; <br> - relating to the diaphragm | schisophrenia; phrenicotomia |
| 32. -mnesia | memory | paramnesia |
| 33. -crinia | release, secretion | dyscrinia |
| 34. -penia | Decrease in the number (of cells in the blood) | erythrocytopenia |
| 35. -aemia | state or condition of the blood. | cholaemia, lipaemia |
| 36. -uria | relating to urine | haematuria, dysuria |
| 37. -cholia | bile secretion | hypocholia |
| 38. -chylia | 1) a digestive fluid containing fatty droplets (gastric juice); <br> 2) lymph | achylia |
| 39. -galactia | milk | hypogalactia |
| 40. -sialia | saliva | oligosialia |
| 41. -oxia | concentration of oxygen in the tissues | hypoxia |
| 42. -hidrosis | the formation and excretion of sweat; perspiration. | anhidrosis |
| 43. blenn- | mucus | blennorrhoea |
| 44. py- | of or relating to pus | pyorrhoea |

## Exercises:

## 1. Explain the meaning of the following terms:

achondroplasia, alymphoplasia, amyoplasia, dysplasia, hyperplasia, hypoplasia; dystopia, ectopia; neurasthenia, myasthenia, logasthenia, asthenospermia; adynamia; akinesia, dyskinesia; hypertonia, atonia, typhlatonia; chirurgia; coprostatis, haemostasis, lipostasis, phlebostasis, thermostasis, hypostasis; odynophagia; apnoea;
asthenopia; hyperopia; hypothermia, hyperthermia; aphonia, dysphonia; arrhythmia, arrhythmogenesis; hypergeusia, ageusia, dysgeusia; anorexia; anosmia, hyposmia, hyperosmia, dysosmia; anaesthesia, hyperaesthesia; thrombophilia, spasmophilia, haemophilia; hyperphilia, lithophilia, ergophilia, mycophilia; iatrophobia, cardiophobia, pathophobia, odynophobia, acrophobia, claustrophobia; ergomania, metromania, nosomania, kleptomania, toxicomania, narcomania; oligophrenia; amnesia; hypoxia, hyperoxia; acidaemia, alcoholaemia, anoxaemia, hydraemia, anaemia, aglykaemia, hyperglykaemia, hypoglykaemia, uraemia; haematuria, glycosuria, dysuria, choluria, chyluria, anuria, pyuria, pneumaturia; acholia; achylia, hypochylia; agalactia; asialia; anhidrosis.

## 2. Give the Latin spelling of the terms; explain their meaning:

cardiotropic, somatotropic, pneumotropic, ergotropic; erythropoiesis, thrombopoiesis, hemopoiesis, hemopoietic; kinesitherapy; hypertension, hypotension; amyotrophy, dystrophy, dystrophy, atrophy; ergometry, synergy; dysphagy, oligophagy, aphagy; aerophagy; dyspnea, hypopnea, hyperpnea; hyperacusis, hypoacusis, anacusis; anesthesiology, anaesthetician; sphygmography, sphygmometry; arrhythmogenic; thermometry; laryngophony, bronchophony; schizophrenia; endocrinology, endocrinologist; agalactorrhea; hypoxemia.

## 3. Build up clinical terms with the given roots and prefixes, explain their meaning:

hyper- (-plasia; -; -trophia, -tonia, - tension, -aesthesia, -thermia, -opia, -acusia, osmia, -geusia, -aemia, -oxia, -hydrosis);
hypo- (-plasia; -trophia; -tonia, -tensio, -stasis, -thermia, -osmia, -oxia);
dys- (-trophia; -plasia; -phagia; -pnoe, -topia, -phonia, -osmia, -geusia, -hidrosis);
a-; an- (-trophia; -plasia; -aemia, -dynamia, -pnoe, -phobia, -mnesia, -aesthesia, rrhythmia, -phonia, -chylia, -galactia, -orexia, -hidrosis).

## 4. Form the Greek \& Latin clinical terms according to the meaning:

A) 1. Having an affinity for, or moving towards blood vessels. 2. Attracted by, or affecting the intestine. 3. That stimulates body growth. 4. Formation of new cellular components of the blood. 5. Pertaining to hemopoiesis (adjective). 6. The production of red blood cells/ white blood cells. 7. A wasting of body tissues due to inadequate (dys-) or defective nutrition. 8. A degeneration (hypo-) in the functioning of an organ due to the loss of cells. 9 . A reduction (a) in the functionality of an organ caused by disease, injury or lack of use. 10. An increase in the size of an organ due to swelling of the individual cells (due to nutrition). 11. An increase in the size (devolepment) of a tissue or organ due to increased number of cells. 12. A congenital
condition in which there is a lack of muscle development. 13. Abnormal development of cells or tissue. 14. Underdevelopment or incomplete development of a tissue or organ.
B) 1. Abnormal weakness of the muscles. 2. Loss or reduction in the strength or energy of sperm cells. Lack or loss of strength, usually due to a disease. 3. The treatment of disease by muscular movements. 4. Lack of normal muscular tension or tonus. 5. An abnormal increase in tightness of muscle tone. 6. The disease or disorder of abnormally low blood pressure. 7. Measurement of the work done by muscles. 8.The cooperation of two or more nerves, muscles, organs. 9. The condition such that an organ or other body part has an abnormal position.
C) 1. A slowing of the flow of blood through the veins. 2. The process of keeping blood inside a damaged vessel to stop bleeding. 3. The suppression of the flow of bile. 4. The cessation of breathing. 5. Difficult or labored respiration; shortness of breath. 6. Difficulty in swallowing. 7. The swallowing of air. 8. Severe pain in the mouth or esophagus when attempting to swallow. 9. An irregular heartbeat. 10. Measurement (recording) of the pulse. 11. The condition of having an abnormally high body temperature. 12. Loss of voice; the inability to speak. 13. The medical research and treatment of organs involved with speech production. 14. A difficulty in producing vocal sounds. 15. The study of the senses and of sensations. 16. Partial loss of tactile sensation. 17. A method of preventing sensation. 18. Loss of appetite. 19. A taste disorder where the sense of taste is abnormally heightened. 20.Partial deafness. 21. Hypersensitivity of the sense of smell.
D) 1. Pleasure from experiencing pain. 2. The love of work or exercise. 3. Any of several hereditary illnesses that impair the body's ability to control bleeding. 4. The tendency to develop blood clots. 5. An inordinate fear of heart disease. 6.Fearlessness, a lack of fear. 7. Fear of heights. 8. A pathological aversion or sensitivity to air or the movement of air. 9. An abnormal or irrational fear of doctors or going to the doctor. 10. Fear of blood. 11. An insane desire for poisonous or intoxicating substance. 12. An irrational fear of or aversion to work. 13. An obsession with exercise or work. 14. A morbid belief that one is suffering from an unusual disease. 15. Loss of memory. 16. Deficiency of the memory.
E) 1. A medical condition in which the capacity of the blood to transport oxygen to the tissues is reduced, either because of too few red blood cells, or because of too little hemoglobin. 2. An abnormally low concentration of oxygen in the blood. 3.Excess of blood in a body part. 4. A too low level of blood glucose. 5. Blood poisoning resulting from the retention of waste products usually excreted as urine. 6.The presence of blood in the urine. 7. A condition in which glucose is discharged in the urine. 8 . A condition in which the kidneys do not produce urine. 9. Condition of
experiencing pain while discharging urine, or (rarely) of having difficulty doing so. 10. The presence of red blood cells in the urine. 11. The excretion of a greatly increased amount of watery urine. 12. The presence of pus in the urine. 13. A decrease in the number of erythrocytes. 14. An abnormally low number of platelets in the blood. 15. A condition in which tissues are deprived of an adequate supply of oxygen. 16. A condition caused by an excess of oxygen in tissues and organs. 17. The study of the various glands that secrete hormones of the human body. 18. Deficiency or absence of bile. 19. The lack or reduced production of gastric juices in any part of the digestive tract. 20. The failure of a mother to produce sufficient milk following birth. 21 . The reduced ability or inability to sweat.

## Theme 9. Qualitative and quantitative characteristics

Qualitative and quantitative characteristics
of pathological changes in organs and body parts

| Greek and Latin <br> roots | Meaning | Examples |
| :--- | :--- | :--- |
| 1. bio- | life, life processes | biopsia |
| 2. spir- | breath, respiration | spirometria |
| 3. psych- (-psychia) | relating to the soul, the mind, |  |
| mental properties | psychogenus |  |
| 4. morph- | type, form, structure | morphologia |
| 5. gyn(aec)- | female | gynaecologia |
| 6. andr- | human; man, male | andrologia |
| 7. paed- | child | paediaria |
| 8. ger(ont)- | old man | gerontologia; geriatria |
| 9. necr- | related to death or dead tissue | necrectomia |
| 10. glyk-; <br> gluc(os)-- | glyc-; <br> glykaemia <br> glucosuria |  |
| 11. cry- | cold, low temperature | cryotherapia |
| 12. pyr- | fever, burning sensation; fire, heat | pyrosis |
| 13.therm-(-thermia) | heat, temperature | thermometria |
| 14. xero- | dry | xerostomia |
| 15. bar(y)- | weight or pressure | barycenter |
| 16. bathy- | deep | bathycardia |
| 17. tele- | remote (in space and time); the <br> distal part | teleangioectasia <br> telealgia |
| 18. brachy- | short | brachydactylia |
| 19. dolich- | long, extended | dolichospondylia |
| 20. lept- | soft, thin, weak, narrow, delicate | leptomeningitis |
| 21. pachy- | thick, compacted | pachymeningitis <br> pachyderma |
| 22. tachy- | fast, frequent | bradycardia |
| 23. brady- | slow | microcephalia |
| microgenia |  |  |
| 24. micr- | small | megroglocardia |
| cardiomegalia |  |  |
| 25.macr- | big | 26. megal- |
| (-megalia) | large, increased |  |


| 27. orth- | straight, right, proper,vertical direction | orthopaedia orthopnoë |
| :---: | :---: | :---: |
| 28. platy- | flat, wide | platypnoë |
| 29. erythr- | red; related to red blood cells | erythema, erytropenia |
| 30. leuc- | white; relating to leukocytes | leucoderma, leukopoësis |
| 31. xanth- | yellow | xanthoma |
| 32. cyan- | dark blue, cyanotic; related to hydrocyanic acid | cyanosis |
| 33. melan- | dark, black; containing melanin | melanoma |
| 34. chlor- | green; containing chlorine | chloropsia |
| 35. polio- | gray; relating to the gray matter | polioencephalomalacia |
| $\begin{aligned} & \text { 36. chrom(at)-, } \\ & \text {-chromia } \end{aligned}$ | color, coloring | achromia achromatopsia |
| 37. mono- | one | monoplegia |
| 38. di-, bi- | two | diplegia |
| 39. tri- | three | triplegia |
| 40. tetra-quadro/i- | four | tetraplegia |
| 41. hemi- | half, sided | hemiplegia |
| 42. pan(to)- | the whole | panotitis |
| 43. poly- | a lot of; above the norm | polydactylia |
| 44. olig- | several; small, poor, insignificant | oliguria |
| 45.para- | - beside, near, alongside <br> - abnormal, incorrect <br> - pair | parodontitis paramnesia paraplegia |
| 46. pseud- | false | pseudaesthesia |
| 47. hom- / home- | same, uniform; identity | homeotransplantatio |
| 48. heter- | other, different | heterotransplantation |
| 49. xen- | foreign, strange | =xenotransplantation |
| 50. all- | another, different, unusual, modified | allotransplantatio |
| 51. aut- | itself, own, the same | autotransplantatio |
| 52. neo- | the new, re-designed or re-emerged | neoplasia |
| 53. eu- | good, well; true, genuine | eupnoë euosmia |

## Exercises:

## 1. Build up clinical terms with the given roots and prefixes, explain their meaning:

mono- (-arthritis, - arthralgia, -plegia, -pathia, -phobia, -mania); hemi- (-paresis, -dystonia, -atrophia, -aplasia, -hyperplasia, -hypertrophia, hypaesthesia, -anaesthesia, -anopsia, -corporectomia, -arthroplastica); pan- (-carditis, -colitis, -gastritis, -ophthalmitis, -otitis; -necrosis, -sclerosis, hidrosis, -cytopenia, -atrophia, -phobia; -hysterectomia, -proctocolectomia); poly- (-opia, -pnoë, -uria, -galactia, -sialia, -menorrhea; -mastia, -dactylia; adenitis, -adenopathia, -arthritis, -arthralgia, -arteritis, -myositis, -myalgia); olig- (-uria, -dactylia, -sialia; -phrenia; -odontia; -arthritis); para-(-mnesia, -geusia, -acusia, -osmia, -uria, -philia, -algesia; -plegia,anaesthesia);
heter- (-chromia, -tropia,- phobia);
-megalia (chir-, dactyl-, enter-, gastr-, hepat-, nephr-, splen-, trich-, dermat-, cyt-, cardi-, acr-, aden-);
tachy- (-cardia, -kinesia, -phagia, -phrenia, -pnoë, -lalia);
brady- (-cardia, -kinesia, -phagia, -phrenia, -pnoë, -lalia, -uria).

## 2. Explain the meaning of the following terms:

| 1) psychologia | 2) necromania | 3) brachydactylia |
| :--- | :--- | :--- |
| psychiatria | necrophobia | brachytelephalangia |
| psychiater | necrosis | brachymesophalangia |
| psychogenus | necrectomia | brachyonychia |
| psychopathia | necrogenus | brachycephalia |
| psychotherapia | necrologia | brachymetropia |
| psychosis |  |  |

4) cryoanesthesia
cryoneurolysis /
cryoanalgesia
cryocardioplegia
cryogenus
cryopathia
cryolysis
cryostasis
cryotherapia
5) xerosis
xerophobia
xerostomia
xerodermia
xerocheilia
xerophthalmia
6) erythrocytosis
erythr(cyt)openia erythropoësis erythromyelogenus erythruria
erythrodermia erythrophobia

## 3. Explain the meanings of the following terms:

gyn(aec)ophilia, gynecophobia; androphobia; gerontophobia, gerontophilia, progeria; glycolysis, glucosuria, pyrosis, glossopyrosis, pyromania, pyrophobia; bathycardia; telealgia; dolichocolon, dolichoectasia; pachyderma, pachyonychia, pachymeningitis; leptomeningitis; bradytachycardia; macroglossia, macromastia, macrophthalmia; acromicria, acromegalia; megalodontia, megalourethra, mega(lo)ureter, megalocardia, megalomania; orthostasis, orthopnoë; platypnoë, platyspondylia; leukopenia, leukaemia, leukomalacia; xanthosis (for tissue), xanthoma, xanthomatosis, xanthoderma, xanthopathia $=$ xanthochromia (cerebrospinal fluid), xanthopsia; cyanosis, acrocyanosis, cyanopatia, cyanuria, cyanopsia; amelanosis, melanoma, melanosarcoma, melanoderma, melanonychia, melanuria; chlorosis, chloropsia; achromia, achromoderma, achromotrichia, chromhidrosis, achromaturia achromatopia $=$ monochromatismus; dichromatismus (bi-), tpishtomarismus; monoplegia, diplegia, triplegia, hemiplegia, paraplegia, quadriplegia $=$ tetraplegia, panplegia; pseudaesthesia, pseudoappendicitis, pseudarthrosis $=$ nearthrosis; homeostasis; heterochromia; xenophthalmia (inflammation), xenoma, xenomania, xenophobia; autolysis; neoplasia, neoangiogenesis, eumenorrhea, euplasia, eupnoë, eurrhythmia, euosmia

## 4. Give the Greek \& Latin variants and explain the meaning of the following terms:

 spirometry; psychogenic, psychopathogenic, psychotropic, psychopathy, neuropsychophysiology, psychiatry, psychogerontology, psychotherapy; gynecologist, gynaecomasty; androgyny, andrology; paediatry / paediatrics; geriatrics, gerontology; hypoglycemia; pyrogenous; thermopathology, thermoanesthesia; bathyesthesia; dolichospondyly; microangiopathy; microangiography, microgeny; macrocephaly, macrencephaly, macrodactyly, macrohematuria; hepatosplenomegaly, lymphadenomegaly; orthokeratology, orthopedics; poliodystrophy; chromocystoscopy; pseudoallergy; autotransplantation $=$ autoplasty, homeotransplantation $=$ homeoplasty; heteroplasty, heterotransplantation; xenotransplantation; allotransplantation, alloplasty, allergy, autoallergy; allopathy, homeopathy; xenogeneic; eutrophy.
## 5. Form the Greek \& Latin clinical terms according to the following meanings:

A) 1. The measurement of the volume of air that a person can move into and out of the lungs. 2. The treatment of people diagnosed with mental and emotional disorders using a variety of psychological techniques. 3. Originating from or caused by state of mind. 4. Able to cause a psychological disorder. 5. The branch of medicine that subjectively diagnoses, treats, and studies mental illness and behavioural conditions. 6.The love of women. 7. Fear or hatred of women. 8. The condition of a man
developing breasts of a size and functionality of a woman's. 9. A physician who specialises in diseases of the female reproductive system. 10. Fear of or aversion to men. 11. The branch of medicine concerned with male diseases, especially those affecting the male reproductive system. 12. The branch of medicine that deals with the treatment of children. 13. The branch of medicine that focuses on health promotion and the prevention and treatment of disease and disability in later life. 14. The study of the elderly, and of the aging process itself. 15. An extremely rare genetic condition wherein symptoms resembling aspects of aging are manifested at an early age. 16. Abnormal and persistent fear of aging or growing old. 17. The removal of necrosed tissue. 18. Causing necrosis. 19. The study of death or the dead. 20. Obsession with death. 21. An abnormal fear of death or corpses. 22. The localized death of cells or tissues.
B) 1. The cellular degradation of the simple sugar glucose. 2. A condition in which glucose is discharged in the urine. 3. A too low level of blood glucose. 4. Pain relief by the temporary freezing of a nerve. 5. Using coldness to paralyze the heart. 6. Any morbid condition caused by coldness. 7. The use of low temperatures in medical therapy. 8.Insensibility resulting from cold. 9. A compulsive disorder characterised by obsession with fire or uncontrollable urges to start fires. 10. A burning sensation in the chest due to reflux of stomach contents in the esophagus. 11. A burning sensation of the tongue. 12.An inordinate fear of or hatred of fire or flames. 13. Producing fever. 14. Loss of the ability to distinguish heat or cold by touch. 15. The branch of pathology that focuses on the effects of the temperature change. 16. Dryness. 17. A fear of dryness. 18. A condition (due to a deficiency of vitamin A) where the conjunctiva and cornea (=eye) become dry. 19. Abnormal dryness of the mouth / of the lips. 20. Any of various skin diseases characterised by dry hard scaly skin. 21 . A condition in which the heart occupies a lower position than normal. 22. Any sensation that arises from below the skin. 23. Referred pain.
C) 1. Unusually short length of the distal phalanges. 2 . The condition of having a short middle phalanx. 3. Abnormal shortness of the fingers or toes. 4. A congenital condition wherein the skull is flattened front-to-back, so that the head is short and broad. 5.Lengthening of the vertebrae. 6. An abnormally long large intestine (colon). 7.Elongation and distension of an artery. 8. Inflammation of the pia / dura mater of the brain. 9. Abnormal thickening of the nails / of the skin. 10. A rapid resting heart rate. 11. Speeded-up movement. 12. Excessively rapid eating or bolting of food. 13. The state of breathing faster or deeper than necessary. 14. Slowness of movement. 15.Unusual slowness in eating. 16. The slowness of thought common to many disorders of the brain. 17. A slow breathing rate, rhythm, or tidal volume. 18. Unusually slow urination. 19. An abnormally small tongue / stomach / chin / upper jaw / head / colon. 20. A psychopathological condition characterized by delusional fantasies of wealth,
power, or omnipotence. 21. The branch of medicine which deals with the prevention and correction of deformities in bodies; orthopedics. 22. Shortness of breath when lying flat, causing the person to have to sleep propped up in bed or sitting in a chair. 23. Shortness of breath that occurs when the patient is upright, that is, sufficient breathing only when lying flat. 24. Short, wide vertebrae.
D) 1. The production of red blood cells. 2. Relating to the production of erythrocytes in bone marrow. 3. An abnormally low count of white blood cells in the blood. 4. A visual defect, in which everything appears yellow. 5. A yellow coloration of the skin. 6. A small, yellow nodule (tumor), rich in cholesterol and other lipids, that occurs in the skin. 7. A yellowish discolouration of tissues undergoing degeneration. 8. A blue discolouration of the skin due to the circulation of blood low in oxygen. 9. The passing of bluish-coloured urine. 10. A disorder of the vision causing all objects to appear blue. 11. A lack of melanin pigmentation. 12. An unusual darkening of the skin. 13. A darkpigmented, usually malignant tumor occurring most commonly in the skin. 14. A black or brown pigmentation of the nail plate. 15. The excretion of urine of an abnormally dark colour. 16. An anaemia, due to deficiency of iron, characterized by a yellow-green colouration of the skin (greensickness). 17. A visual defect in which objects appear to have a greenish tinge. 18. Absence of pigmentation, especially in the skin or blood. 19. A lack of pigmentation in the skin. 20. The absence (or loss) of pigmentation in the hair. 21. A rare condition characterized by the secretion of coloured sweat. 22. Defective ability to see colours.
E) 1. Inflammation of one joint at a time. 2. Surgical removal of the entire colon, rectum and anal canal. 3. Complete thickening and hardening of the interstitial tissue of a part. 4. A reduction in the numbers of red blood cells, white blood cells and platelets in the blood. 5. The inflammation of all coats of the eye. 6. Inflammation of the entire stomach lining. 7. The possession of more than the normal number of digits. 8. The excessive secretion of milk by the breasts. 9 . A condition in which multiple images of a single object are formed on the retina; multiple vision. 10. Deep and rapid breathing; panting. 11. An inflammatory disease affecting multiple muscles. 12. Inflammation of multiple arteries. 13. Pain that affects multiple joints. 14. A disease that affects multiple lymph nodes. 15. The absence of six or more teeth. 16. A condition in which only a relatively small amount of urine. 17. The inability to feel sensations from touch on one side of the body. 18. Blindness in one half of the field of vision of either or both eyes. 19. The failure of formation of an organ on one side. 20. A distorted sense of smell. 21. An inability to distinguish between real memories and dreams or fantasies. 22.Transplantation of tissue from one individual to another of the same species. 23. A scientist who studies the medicine of allergies. 24. The destruction of an organism's cells by enzymes produced by the organism itself. 25 . Healthy nutrition.

## Theme 10. Names of accumulations in clinical terminology

Hydrops/ dropsy; edema - a condition characterized by an excess of watery fluid collecting in the cavities or tissues of the body.

Model with meaning "Accumulation (of some substance in the cavity of any organ)", "internal hemorrhage" "hydrops"

Initial TE
(What is collecting? - substance)

## Stem

## Nom.

(chylo--lympho-, pneumo-, bilio-, pyo-, hydro-, haem(at)o-), liquo-)

Final TE
(Where is collecting? - cavity)
name of the cavity or the organ in
(-thorax, -metra,-salpinx) the ending changes into -ia/-osis:
(-ophthalmia; -myelia;
-nephrosis, -arthrosis)
E.g: pneumothorax; haemarthrosis

## Exercises:

## 1. Explain the meanings of the following terms:

Hydrophthalmus, hydrocephalia, hydrureter, hydrorhachis, hydrarthrosis, hydromphalus; pyometra, pyosalpinx, pyonephrosis, pyoperitoneum ; pneumoperitoneum, pneumothorax; chylopneumothorax, chylothorax; haemocysta, haemopericardium, haemomyelia, haemocolpos, haemoperitoneum.

## 2. Form the Greek \& Latin clinical terms according to the following meanings:

1. An effusion of watery liquid into the cavity of a joint. 2. A usually congenital condition in which an abnormal accumulation of fluid in the cerebral ventricles causes enlargement of the skull. 3. An infection of the renal collecting system, in which pus collects in the renal pelvis and causes distension of the kidney. 4. The accumulation of pus and air (or other gas) in the pleural cavity. 5. A distally blocked Fallopian tube filled with pus. 6. An accumulation of chyle in the pleural cavity. 7.The presence of chyle in the serous membrane that surrounds the heart. 8. Blood in the pericardial sac.

## Exercises for revision:

## 1. Build up clinical terms with the given roots and prefixes, explain their meaning:

 hyper- (-mastia; -nephroma; -plasia; -trichosis; -trophia); hypo- (-plasia; -trophia; -gastrium; -thyreosis); dys- (-enteria; -trophia; -plasia; -keratosis;);> a-; an- (-trophia; -plasia; -ophthalmia; -trichia; -dentia; -cheilia).

## 2. Explain the meaning of the following terms:

1) otorrhoea
otorrhagia
otoscopia
otogenus
otitis
otalgia
2) trichopathia
trichalgia
trichorrhoea
trichosis
atrichia
3) phlebotomia
phlebectomia
pleborrhaphia
phlebographia
phlebogramma
phlebitis
4) ophthalmologia
ophthalmorrhagia
endophthalmitis
ophthalmoscopia
anophthalmia
5) proctalgia, odontalgia, trichalgia, gastralgia

## 3. Explain the meanings of the following terms:

Endometritis, endocarditis, keratosis, keratoma, nephroma, spondylitis, angiitis, spondylosis, osteoma, perinephritis, endometritis, osteogenesis, leptomeningitis, polioencephalitis, leykomyelitis, hyperhidrosis, dyshidrosis, anhidrosis, orthostasis, dyscrinia, neoplasia, morphogenesis, dysmnesia, aphonia, progeria, necrophobia, macropodia, macrosplenia, micromastia, micrognathia, dolichocrania, leptotrichosis, pachymeningitis, platycrania, megaloglossia, brachyphalangia, acrocyanosis, tachysphygmia, tachyphagia, bradycardia, xerosis, xerostomia, xerophthalmia, glossopyrosis, glycosuria, hypoxia, oligodactylia, oligokinesia, oligoarthritis, phthisiatria, hypoplasia, hyperkeratosis, adentia, enteropexia, proctalgia, aplasia, cheilorrhagia, phlebitis, trichalgia, otitis, endophthalmitis, odontalgia, dysplasia, otorrhagia, stomatitis, proctorrhagia, gastrorrhagia, acheilia, atrichia, gastritis, enterorrhagia, odontoma.

## 4. Give the Greek \& Latin variants and explain the meaning of the following terms:

 Nephrology, endogenous, nephropyelography, colposcopy, metrography, angiocardiogram, osteopathy, stomatology, stomatoscopy, endoscopy, gastrogenic, dermatology, rhinopathy, spondylogram, dermatoscopy, dermatology, nephrogenic, nephropathy, nephrogram, pyelography, proctoscopy, gastroscopy, spondylopathy, osteopathology, osteology, encephalopathy, coprostasia, endocrinology, spirometry, psychology, psychiatry, psychotherapy, psychotropic, psychogenic, schizophrenia, phoniatrics, gynecology, gynecomastia, gynecophobia, andrology, gerontology, geriatrics, brachycephaly, baryesthesia, barotherapy, orthopedics, cryosurgery, heatstroke, thermanesthesia, pyrogenic, glycemia, hypoxemia, oxygen therapy, trichopathy, phlebotomy, pediatrician, otogenic, ophthalmology, otoscopy, dystrophy, phlebography, atrophy, rhinoscopy, enterorrhaphy, otorrhea, hysterorrhaphy, rhinorrhea, phlebogram, psychopathy, hypotrophy, phlebotomy, dystrophy; hypertrophy; phlebography, trichorrhea, mastopathy, angiocardiography, enteropathy, hypotrophy, ophthalmoscopy, encephalogram, cholecystotomy, nephropathy, phthisiatrist, dysentery.
## 5. Form the Greek \& Latin clinical terms according to the following meanings:

A) 1. Inflammation of the tissue surrounding the heart. 2. Instrumental examination of the nose. 3. Fixation of the kidney. 4. The surgical removal of a bone. Inflammation of uterus mucous. 5. The study of the skin. 6. The surgical procedure of making an incision in the uterus. 7. Removal of the anus. 8. Inflammation of renal pelvis and urinary bladder. 9. Any disease of the bones. 10. Abnormal condition of skin. 11. Inflammation of the lips. 12. Fixation of the rectum. 13. Removal of the kidney. 14. Disease of the uterus. 15. Inflammation of the vertebrae. 16. Instrumental examination of oral cavity. 17. Inflammation of the nose. 18. Tumor of the kidney. 19. Instrumental examination of the eye. 20. The treatment of people diagnosed with mental and emotional disorders using a variety of psychological techniques. 21.Pancreatic disease. 22. Bladder pain. 23. Pain in the lip. 24. Treatment with medicinal plants. 25. Measurement (of circumference) of the chest. 26. Corneal disease. 27. A specialist in diseases of the ear, nose, throat. 28. Doctor on treatment of tuberculosis. 29. The congenital absence of one or both eyes. 30. The absence of hair. 31. Degenerative bone disease. 32. Inflammation of the serous lining of the womb. 33. Inflammation of the (fibrous) capsule of the kidney. 34. Extension of the cecum. 35. Tissue destruction. 36. Cell destruction. 37. Layered x-ray of body. 38.Removal of a tooth. 39. Kidney removal. 40. Fallopian tube (oviduct) removal. 41. Creation of joint immobility. 42. The creation of immobility of tendon. 43. The restoration of mobility in joints by disrupting articular adhesions.
B) 1. The presence of bile in the blood. 2. Reduced secretion of bile. 3. Discharge of pus. 4. Stagnation of milk. 5. Causing the abscess (pus). 6. Excessive daily urine. 7.Presence of fat in the urine. 8. Formation of new cellular components of the blood. 9. Tumor of adipose (fat) tissue. 10. Hypofunction of mammary glands during lactation. 11. Tumor of sweat glands. 12. Air swallowing. 13. Lack of salivation. 14.Dysregulation of sweating. 15. Excessive sweating of the entire body. 16. Limbs sweating. 17. The formation of lymphatic cells. 18. Inflammation of the lacrimal gland. 19. Narrowing of the lacrimal duct. 20. Urinary calculus. Stone in the bladder.
C) 1. Fear of loneliness. 2. The possession of more than the normal number of digits. 3. One-sided paralysis of the body. 4. Loss of sensation in one side of the body. 5.Surgical removal of half of the liver. 6. Paralysis of one half of the language. 7.Inflammation of one joint. 8. Inflammation of all sacs (layers) of the heart. 9.Inflammation of many muscles. 10. The presence of an incomplete number of teeth. 11. Stiffness (lack of moving). 12. The total reduced number of blood cells. 13.Plastic surgery with the use of its own tissues or organs of the patient. 14. Treatment with transfusion of own blood. 15. The constancy of the internal environment. 16. Plactic surgery with using a different human tissues. 17. Modified reaction. 18. Joint dissection. 19. Plastic surgery to correct defects of the lips. 20. Dissection of lip. 21.Excision of necrotic tissue. 22. Dissection of the gum. 23. Removal of the lacrimal sac. 24. Ligament rupture. 25. Joining the liver with gall bladder. 26. Fixation of the womb. 27. Jaw splitting. 28. Inflammation of the eyelid. 29. Hair disease. 30.Headache. 31. Removal of the salivary gland. 32. Tooth extraction. 33. Removal of the tonsils.
D) 1. Study and treatment of tuberculosis. 2. Incomplete development of an organ or tissue. 3. Bleeding from the ear. 4. Toothache (pain). 5. Inflammation of a vein. 6.Physician who treats children. 7. Abnormal development. 8. The branch of medicine that treats mental illness. 9. Study of eye disorders. 10. Bleeding from the tooth. 11. Instrumenal examination of the ear. 12. Disease of hair. 13. Abnormal increase of breast in size. 14. Cutting of the vein. 15. Developing from the tooth. 16.The presence of pus in the urine. 17. A (raised level of) urea in the blood. 18.Deficiency of glucose in the bloodstream. 19. Temporary cessation of breathing. 20. Deficiency of platelets in the blood. 21. A process which causes bleeding to stop. 22. Abnormally high blood pressure. 23. Inability to relax voluntary muscle (spasm). 24. A condition causing weakness of certain muscles. 25 . Loss of the power of voluntary movement. 26. A loss of memory.
E) 1. A tumor of melanin-forming cells. 2. Production of abnormally large volumes of urine. 3. The production of abnormally small amounts of urine. 4. Blurred (weak) vision. 5. The destruction of cells or tissues by their own enzymes. 6. The use of
extreme cold in medical treatment. 7. Paralysis of one side of the body. 8. Blue discoloration of the limbs. 9. Disappearece of dermatic colour (= white skin). 10.Producing heat. 11. Dry mouth. 12. Nonsensibility in one side of the body. 13.Vision problems (disturbance). 14. Voice problems. 15. Disturbance of sensetivity to pain. 16. A condition in which the head is abnormally large (nails; ears; low jaw). 17. The presence of an abnormally small tongue (/upper jaw). 18. The condition of having a low quantity of blood. 19. A decreased production in the volume of urine. 20. Renal stone. 21. Abnormally fast heart rate. 22. Slowness in eating. 23. The accumulation of fluid in the pericardium. 24. Branch of medicine that treats diseases of the genital tract in women. 25. Dark pigment excreted in the urine. 26. Study of tumors. 27. Decreased number of erythrocytes. 28. Paralysis of the bladder. 29.Abnormally slow heart action (pulse). 30. Use of water in the treatment of disease. 31. Dark pigment in the skin. 32. Paralysis of one extremity.
F) 1. Malignant tumor of connective and lymphatic tissue. 2. The science of hernias. 3. Measuring of the size of the foot. 4. Split of the vertebrae. 5. Adhesion of eye-lids. 6. Consolidation (hardening) of the lungs. 7. Pain in the sacrum. 8. Premature ageing. 9. Inflammation of the middle layer of the vessel wall. 10. Surgery for corneal dissection. 11. Rupture of the eye. 12. Inpairment of the ability to recognize objects.

## Pharmaceutical terminology

## Theme 1. Nomenclature of drug names

## Main pharmaceutical terms

Pharmaceutical form (drug form) - form of the drug suitable for a definite method of administration. These forms are divided into:

- liquids (solutions, infusions, decoctions, tinctures, extracts, mucilages, emulsions, suspensions, mixtures and liniments),
- semisolids (ointments, pastes, suppositories, plasters) and
- solids (tablets, dragee, powders).

Drug is any material or substance, whether natural or synthetic, that can be used to treat an illness, relieve a symptom or modify a chemical process in the body for a specific purpose. The names of drugs can be officinal or magistral:
Officinal (from Latin. officina - drugstore) drugs are drugs which are manufactured by the pharmaceutical industry and which have a standard contents indicated in pharmacopeias. For example: tabulettae Cefalexini, unguentum "Lorindenum". Such drugs can have international nonpatent names and trade names:

- International nonpatent names are given by the WHO (World Health Organisation). These are mostly the chemical names of drugs. Under these names the drugs can be used in any country.
- Trade name (proprietary or brand name) is the copyrighted name assigned by the drug company making the drug and is followed by the symbol ${ }^{\circledR}$.
Magistral drugs are called the drugs which are made at the direction of a physician. Medicinal substance is a chemical compound used as a drug. Medicinal substances are produced by chemical means.
Drug preparation is a drug prepared in a definite pharmaceutical form.

| drug preparation |  |  |  |
| :---: | :---: | :---: | :---: |
| pharmaceutical form | medicine |  | medicinal raw materials (crude drugs) |
|  | medicinal substance | a mixture of medicinal substances |  |
| tablets | of analgin | of theobromine 0,25 and of dibazol 0,02 |  |
| solution | of furacilin |  |  |
| eye film | with atropine sulfate |  |  |
| infusion |  |  | of nettle leaves = |
| dry extract |  |  | of leaves of nettle of hawthorn |

## One-word terms

All Latin drug names are neuter nouns of the $\mathbf{2}^{\text {nd }}$ declension ending by -um.
They are written with the first capital letter as the names of chemical elements, medicinal plants: Tetracyclīum, in

A few exceptions to this rule are drug names by -a:
No-spa, Do-pa (1 ${ }^{\text {st }}$ declension).

## Exercise:

## 1. Write the drug names in Latin. Find the elements carrying information about pharmaceutical characteristics, give their meaning:

A) Hypnogen, Somnol, Dormicum, Barbitalum, Barbiphen, Sedonal, Bromisovalum, Valocordin, Tranxene, Trankvezipam, Atarax, Nitrazepamum, Venlafaxine, Duloxetine, Mianserin, Morphine, Narcotan, Dolgit, Panadol, Algezir, Pentalgin, Celecoxib, Anaesthesinum, Novocainum, Benzocainum, Antiasthmocrinum, Emetisan, Laxatin, Sennalax, Histalong, Hemostabil, Antithrombinum, Acenocoumarolum, Syncumar, Leucogen, Erythropoetin, Coraxan, Digophton, Apressin, Vasostenon, Captopril, Losartan, Metoprolol, Atorvastatin, Sildenafil, Clopidogrel, Agalsidasum, Unienzym, Lydase, Pancreatinum, Gastenorm, Thyrozol, Antistrumin, Cortisonum, Ftorocort, Hexoestrolum, Gestodenum, Gynepriston, Gynestril, Mesterolonum, Anandron, Testosteronum, Nesiritide, Latanoprost, Montelukastum, Aevitum, Sulfacylum-natrium, Pantocidum, Streptocidum, Pantosept, Fungolon, Mycogal, Mycosolon, Fluconazole, Phtizopyramum, Phlogenzym, Amoxycillinum, Doxycyclinum, Benemycin, Laevomycetinum, Cefazolin, Levofloxacin, Acyclovir, Duronavir.
B) Enterofuryl, Gastal, Hepatosan, Tanacechol, Uregyt, Dexlansoprazolum, Allergoval; Blinatumomabum, Cetuximabum, Atezolizumabum; Iobitridolum, Trazograph, Urografin, Cholevid, Bilitrastum; Bromhexinum, Chlorhexidinum, Ferretab, Phosphomycinum, Ftorocort, Enfluranum, Thioctacid, Hydrocortisonum, Methyluracil, Benzonal, Phenazepamum, Nitroglycerinum, Naphthyzin, Phthalazolum, Xeroform, Acetazolamidum, Ketorol, Aceclophenacum, Ibuprophenum, Furacilin; Phytolysin, Aminophyllinum, Theophyllinum, Ichthyol, Apisarthron, Viprosal, Theophedrin, Papaverinum; Panangin, Euphyllin, Synthomycin,Desloratadinum, Polyoxidonium, Dimethylsulfoxydum, Trimethazidinum, Tetracyclinum, Pentoxyphyllinum, Chlorhexidinum, Octolipen, Nonoxinolum, Undevit, Hendevit.

## Frequence segments ( $\mathbf{P h T}$ ) in drug names

## I. Drugs affecting the central nervous system

1. Somnolent (hypnotics, sleeping drag)
al-, -somn-, -dorm-, -hypn-, -nyc(t)-
-barb- -barbiturates, a central nervous system depressants
2. Psychotropic
-sed-, -val- sedatives
-tranqu-, -stres(s), -atarax- anxiolytics, tranquilizers
-azepam
-psych-
-axin dopamine and serotonin-norepinephrine reuptake inhibitor
-oxetin antidepressant related to fluoxetine
-anserin serotonin receptor antagonists
3. Anodyne, analgetic drug
-morph-, -narc- total anaesthetics
-dol- , -alg-
analgesics; nonsteroidal anti-inflammatory drugs (NSAIDs)
-coxib COX-2 inhibitors, a type of anti-inflammatory drugs

## II. Drugs affecting the peripheral nervous system

-(an)aesth(es)-
-cain
-asthm-
-emet-, -vom(it)-
-lax-, -pur-
-hist-
anesthetic drugs
local anesthetic agents; class I antiarrhythmics
antiasthmatic drugs
antiemetic
lapactic, purgative
antihistaminic

## III. Drugs affecting the cardiovascular system

-card-,-cor-, -digit-, -git-
-vas-, -ang(i)-
-pres(s)-, -ten(s)-
-thromb-, -coum-,-cum(ar)-, -arol-,
-haem(at)-, -aem-, -cyt-, -leuc-, erythr- and blood-formation
-pril
-sartan
cardiotonic drug
vasodilating drug
antihypertensive
affecting blood clotting ability angiotensin converting enzyme (ACE) inhibitor angiotensin receptor antagonists
-vastatin $\quad H M G-C o A$ reductase inhibitor, a group of cholesterol lowering agents - afil I Inhibitor of PDE5 (an enzyme) with vasodilator action
-lys-, -lyt- destructive, release

## IV. Drugs to regulate metabolic processes

```
-as-, -zym-, -zyn-
-thyr-
-cort-, -cortic-
-oestr-, -gyn-, -gest-
-andr-, -test-, -ster-, -sten-
-(ana)bol-
-tid
enzymatic
thyrostatic
corticosteroids, adrenocortical hormone
female sex hormone agents
male sex hormone agents
anabolic steroids
peptides and glycopeptides
-prost- prostaglandin analogue (physiologically active lipid compounds)
-lukast Leukotriene receptor antagonists (inhibiting the immune system)
-vit-
vitaminic
```


## V. Drugs for the treatment of infectious diseases

-sulfa-
-cid-
-strept-
-sept-
-myc-, -fung- , -nazol-
-phthi(s)-
-helm(int), -verm-
-phlog-, -flog-
-pyr-
-cillin-
-cyclin-
-mycin-, -mycet-
-ceph-, -cef-, -keph-
-oxacin
-bio-
-vir
-navir
sulfonamide antibacterial
antimicrobials
antibacterial
antiseptic
antifungal
antituberculous
anthelmintics
anti-inflammatory
antifebrile
Penicillin derivated antibiotics
antibiotics - tetracyclines
antibiotics produced by strains of the fungus radiant
antibiotics - cephalosporins
Quinolone-derived antibacterial drugs
antibiotics, biostimulants
antiviral drug
antiretroviral protease inhibitors

## VI. Drugs affecting the function of the digestive and genitourinary system

-enter-, -gastr-
-orex-
-chol-, -bil-
-hepat-, -hepar-
-nephr, -pyel-
-ur-
-prazol
gastric
lowering appetite
cholagogue
hepatotropic
affecting the function of the kidney
diuretics
Proton-pump inhibitor (reduction of stomach acid production)

## VII. Drugs affecting the immune processes

-aller(g)-
-mab
-ximab
-zumab
antiallergic
monoclonal antibodies
chimeric antibody that responds to more than one antigen
humanized antibody

## VIII. Diagnostic (diacritical) drugs

-chol-, -bil-,
-spect-, -vid-, -trast-, -gnost-, -graph-, -graf-, io-
IX. The chemical composition
-brom- bromine
-chlor- chlorine
-fer(r)- iron
-oxy- oxygen, oxidation processes, sharp
-phosph(or)- phosphorus
-phth(or)-, flu(or)- fluorine
-thi(o)- sulfur, thiosalts, thioacid
-zol-, -zon-, -zin-, -zid-, -az-, -zepam- nitrogen
-hydr- water, hydrogen, the hydroxyl group
-aeth- ethyl, ethol group
-meth- methyl, methyl group
-amin-, -amid- amino group
-benz- benzole group
-phen- (-fen-) phenyl, a phenyl group
-nitr(o)- nitric, nitrous group
-naphth(a)-, -phtha- medicinal oil, naphthalene derivative
-form- formic acid
-ac(et)-, ket- acetic acid (nonsteroidal anti-inflammatory drugs $=$ NSAIDs)

| - pro-(phen) /(fen) | propionic acid derivatives, NSAIDs |
| :--- | :--- |
| -yl- | radical, residue |
| -fur- | nitrofuran derivative |
| -camph- | camphor |
| -cyan- | hydrocyanic acid derivative |
| -phthal- | a derivative of phthalic acid |
| -in | chemical substance (or alkaloid) |

## X. Natural products

-theobrom-
-phys-
-phyt-
-phyll-
-anth-
-rhiz(a)-
-ichthy-
-api(s)-
-vip(e)r-
-glyc(er)-, -gluc-
-the(o)-
-be(ll)-
-ergo-
-chin-, -quin-
-(pa)paver-
-(e)phedr-

## XI. Prefixes

a (an)-
anti-, contra-
dys-
eu-
pan(t)-
syn-, sym-, synth-
des-
oligo-
hyper-
hypo-
poly-
alkaloid of cocoa
nature
plant
leaf
flower
root
preparations obtained from shale
products of bee venom and other apiarian
products of snake venom
related to sugar, glucose
tea, alkaloids cocoa seeds or tea leaves
belladonna drug
ergot alkaloid
alkaloid of cinchona bark
opium alkaloid
alkaloid of ephedra
absence
anti
disorder, abnormality
improved quality medication
all, whole
together, synthesis, synthetic medicines
elimination, abolition
some, few
above normal
below normal
many

## XII. Numbers

| mono- | 1 | $\operatorname{hex}(a)-$ | 6 |
| :--- | :--- | :--- | :---: |
| bi-, di- | 2 | $\operatorname{hept(a)-}$ | 7 |
| tri- | 3 | $\operatorname{oct}(o)-$ | 8 |
| tetra-, quadri- | 4 | non-, ennea- | 9 |
| pent(a)- | 5 | deca- | 10 |
|  |  | unde-, hende- | 11 |

2. The peculiarities of writing certain kinds of medicines:

Vinylinum, Nystatinum, Laevomycetinum, Trypsinum, Furacilinum, Lydasum, Tanninum, Naphthyzinum, Aspirinum, Prednisolonum, Coffeinum.

## Theme 2. Nomenclature of medicines. Structure of multiword pharmaceutical terms

1) If the drug preparation name includes a pharmaceutical form it is on the first place: solutĭo, unguentum, tinctūra etc. Usually in Nominative.
2) The drug name (or name of a plant) is placed after the pharmaceutical form and begins with the capital letter:
E.g.:
solutĭo Streptocīdi - solution of streptocid
unguentum Tetracyclīni - ointment of tetracycline
tinctūra Menthae - tincture of mint
3) translation algorithm: decoction of leaves of sage
a) write dictionary forms: decoctum, in; folium, in; Salvia, ae $f$.
b) define cases and numbers:
decoction (Nom.Sg)
of leaves (Gen.Pl)
of sage (Gen.Sg)
c) define kind of declension and then - endings, which you need:
decoctum, in - II d. - -um
folium, in -II d. - -orum
Salvia, aef -Id.- -ae
d) add the endings to the stems, and you get:
decoctum foliorum Salviae
4) name of pharmaceutical form + combined name of the medicine
$=$ pharm.form + "name of medicin" in Nom.Sg.
tablets "Urosal" - tabulettae "Urosalum"

## 5) Adjectives

They are written at the end of the prescription line: oil solution of synoestrol - Soluť̌o Synoestrōli oleōsa or are placed after a noun: peppermint - Mentha piperīta coated tablets of tetracycline - tabulettae Tetracyclini obductae. coated glutaminic acid tablets - Tabulettae Acǐdi glutaminĭci obductae

## Exercises:

## 1. Write the drug names in Latin. Find the elements carrying information about pharmaceutical characteristics, give their meaning:

Phenobarbitalum, Nitrazepamum, Dolac, Analgin, Etoricoxibum, Novocainamidum, Emetron, Norgalax, Histaglobin, Haemodes, Thrombophob, Leucomax, Aurocard, Corglycon, Digitoxinum, Vazaprostan, Lisinopril, Valsartan, Atenolol, Rivaroxaban, Tadalafil, Ticagrelor, Fabrazyme, Hyaluronidasum, Pancreasim, Levothyroxinum, Hydrocortisonum, Aethinyloestradiolum, Dienogestum, Methyltestosteronum, Andriol, Silabolinum, Octreotide, Unoprostone, Multivitum, Sulfacetamidum, Pyocidum, Streptomycin, Faringosept, Fungoterbine, Mycozoral, Oxiconazolum, Phtizoethamum, Ampicillinum, Metacyclinum, Rifamycinum, Cefadroxilum, Enterosgel, Alugastrin, Hepafor, Choludexan, Uriflorin, Lansoprazolum, Daratumumabum, Rituximabum, Alemtuzumabum, Ioversolum, Bromocriptinum, Chlorophyllipt, Ferrohematogen, Phosphalugel, Phthorothanum, Isofluranum, Brinzolamidum, Thioridazinum, Methyldopa, Phenybutum, Nitrosorbide, Naphtaderm, Phthalylsulfathiazolum, Ketanov, Acemethacinum, Dexketoprophenum, Nitrofuralum, Pentoxyphyllinum, Ichthammolum, Apilac, Ephedrinum, Pantovigar, Euthyrox, Dezal, Dioxydin, Trimethoprimum, Pentovitum, Hexoral.

## 2. Translate from Latin into English:

Folium Farfărae, tabulettae olei Menthae, solutio Strophanthini, tabulettae Prednisoloni, granŭla Orasi, tabulettae Octoestroli, tabulettae Pantocrini, suspensio «Cindolum», unguentum «Psoriasinum», species antiasthmatǐcae, emplastrum Epilini, tabulettae «Baralginum», suppositoria vaginalia «Osarbonum», tabulettae Mycoheptini, unguentum Tetracyclini ophthalmǐcum, linimentum «Sanĭtas», tabulettae «Praegoestrolum», flores Calendŭlae, solutio Glucosi, tabulettae
«Panhexavitum», dragée «Aëvitum», cortex Frangŭlae, tabulettae Barbamyli, extractum Leonūri fluĭdum, suppositoria «Anaesthesolum», tabulettae «Bellaesthesinum», infūsum Digitālis.

## 3. Translate from English into Latin:

Ointment of tetracycline, solution of novocain, tablets of octoestrol, solution of glucose, ointment of heparin, tablets of myelosan, tincture of valerian, tincture of motherwort, herb of valerian, extract of motherwort, tablets of theophyllin, flowers of camomile (matricaria), tablets of baralgin, liniment of streptocid, ophthalmic ointment of dibiomycin, antiasthmatic species, tincture of valerian root, extract of buckthorn, tincture of oak cortex.

## MAIN PHARMACEUTICAL FORMS

| Liquids |  |  |
| :---: | :---: | :---: |
| 1. | solutio, ōnis f | solution |
| 2. | mucilāgo, ı̆nis f | mucilage |
| 3. | emulsum, i n | emulsion |
| 4. | suspensǐo, ōnis f | suspension |
| 5. | infūsum, i n | infusion |
| 6. | decoctum, i n | decoction |
| 7. | tinctūra, ae f | tincture |
| 8. | extractum, i n (fluĭdum) | extract |
| 9. | mixtūra, ae f | mixture |
| 10. | linimentum, i n | liniment |
| 11. | gutta, ae f | drop |
| 12. | sirŭpus, 1 m | syrup |
| 13. | olěum, i n | oil |
| 14. | elixir, iris n | elixir |
| Semisolids |  |  |
| 15. | unguentum, i n | ointment |
| 16. | pasta, ae f | paste |
| 17. | A suppositorǐum, i n <br> A suppositorǐum rectāle (vagināle) | 曰suppository rectal (vaginal) suppository |
| 18. | emplastrum, i n | plaster |
| Solids |  |  |
| 19. | tabuletta, ae f | tablet |
| 20. | dragée | dragée |
| 21. | pulvis, ěris m | powder |
| 22. | granŭlum, i n | granule |
| 23. | pilŭla, ae f | pill |
| 24. | speč̌es, ērum (plural) f | species, tea |


| Other drug forms |  |  |
| :---: | :--- | :--- |
| 25. | capsŭla, ae f | capsule |
| Capsule is a drug in powdered or pellet form that has been enclosed in a soluble <br> gelatin-like capsule. |  |  |
| 26. | aërosōlum, i n | aerosol |
| 27. | briketum, i n | briquette |
| 28. | butȳrum, i n | butter |
| 29. | ampulla, ae f | ampoule |
| 30. | membranŭla (ae f) ophthalmĭca (us, a, um) <br> (lamella ophthalmĭca) | ophthalmic film |
| Ophthalmic films are absorbable gelatin films containing drug substances |  |  |


| Components of medicinal plants |  | Names of medicinal plants |  |
| :--- | :--- | :--- | :--- |
| cortex, ĭcis m | cortex | Calendŭla, ae f | calendula |
| bacca, ae f | berry | Chamomilla, ae f | camomile |
| flos, floris m | flower | Crataegus, i f | hawthorn |
| folĭum, i n | leaf | Digitālis, is f | foxglove |
| fructus, us m | fruit | Farfăra, ae f | coltsfoot |
| gemma, ae f | bud | Frangŭla, ae f | buckthorn |
| herba, ae f | herb | Leonūrus, i m | motherwort |
| radix, īcis f | root | Mentha, ae f | mint |
| rhizōma, ătis n | rhizome | Quercus, us f | oak |
| semen, inis n | seed | Valeriāna, ae f | valerian |
| stigma, atis n | stigma |  |  |
| succus, i m | juice |  |  |

## Theme 3. Structure of pharmaceutical term. Names of oils

Non-agreed attributive (substantive attributive) in the pharmaceutical terminology only used in Sg., while the determined word may be in Sg., and in Pl .:

Birch buds - gemmae Betulae
Non-agreed attributive (substantive attributive) remains unchanged in form, regardless of case of the defined word (Genetive):

Nom.Sg. flos Camomillae
Nom.Pl. flores Camomillae
In terms with prepositions after the main word must be first of all attribute (adjective or substantive) and then prepositional phrase:
vaginal suppositories with nystatin - suppositoria vaginalia cum Nystatino.
NB! Sometimes non-agreed (substantive) attribute may be in Plural:
pill mass= pilular mass=mass of pills - massa pilularum
Also, the plural form is characteristic of oil names of the drupes (stone-fruit):
peach oil - oleum Persicorum
olive oil $=$ oil d'olive - oleum Olivarum
oil of almonds - oleum Amygdalarum

## Conventional names of oil or butter

| oleum Rič̌ni | castor oil |
| :--- | :--- |
| oleum Terebinthĭnae | turpentine oil |
| butyrum (i, n) Cacao | butter of cocoa |

## Exercises:

## 1. Translate from English into Latin:

1. Oil solution of nitroglycerin; 2. drops of tincture of strychnine tree; 3. virgin/ rectificat olive oil; 4. liquid extract of leaves of foxglove; 5 . infusion of nettle leaves; 6. aromatic tea (Nom. and Gen.); 7. powdery/ powdered ginseng roots; 8. spirituous solution of furcilin; 9. ophthalmic ointment of tetracycline; 10. liquid extract of the herb wormwood; 11. decoction of bearberry/foxberry leaves; 12. glycerin solution of ichtiol; 13. rhubarb bitters =bitter tincture of rhubarb; 14. decoction of dried oak
bark; 15. purified water; 16. purified turpentine oil; 17. oil of bitter almonds; 18.liquid liniment of naphthalan; 19. medical bile concentrated; 20. vitamin tea (Nom. and Gen.); 21. dried fruits of raspberry. wormwood - Absinthium, i, n
bearberry /foxberry - Uva ursi (uva, ae f-ear; ursus, i, m-bear)
dill - Anethum, i, $n$
raspberry - Rubus (i, m) idaeus

## 2. Translate from English into Latin:

1. Solution of papaverin; 2. tincture of mint; 3. granules of amidopyrin; 4.ointment of xeroform; 5 . tablets of sulfadimezin; 6 . oil of eucalyptus; 7. motherwort herb tincture; 8. foxglove leaves powder; 9. tablets of dibazol; 10. fluid extract of hawthorn; 11. oitment of ichthyol; 12. solution of procainamide; 13. tablets of phenobarbital; 14. sage leaves tincture; 15. decoction of oak cortex; 16. mint leaves tincture; 17. emulsion of castor oil; 18. tablet of novocainamid; 19. liquid ammonia; 20. oil of peppermint; 21. eucalyptus leaves tincture; 22. tincture of calendula; 23.leaf of common plantain; 24. solution of salvin; 25. camomile leaves; 26. granule of plantaglucid; 27. drops of eucatol; 28. solution of aminophylline; 29. coltsfoot leaf granules.

Plantāgo, ǐnis $f$ - common (greated) plantain

## 3. Write the drug names in Latin. Find the elements carrying information about pharmaceutical characteristics, give their meaning:

Temazepamum, Dolomine, Rofecoxibum, Articainum, Emeset, Guttalax, Hemofer, Viatromb, Corglycard, Ronidase, Mezym, Bagothyrox, Triacortum, Synoestrol, Dydrogesteronum, Dutasteridum, Androgel, Retabolil, Lantreotidum, Vazaprostan, Sulfazinum, Strepsulfatum, Myfungar, Mycoflucan, Isoconazolum, Phthizoactiv, Puricillin, Oxytetracyclinum, Neomycinum, Kefzol, Cefazolinum, Broncholytin, Enterol, Gastracid, Heptor, Cholos, Uractone, Omeprazolum, Ipilimumabum, Bevacizumabum, Iopromidum, Bromopridum, Chloroformium, Biofer, Tetrofosminum, Fluconazolum, Flucinar, Dorzolamidum, Thiodazine, Phenylephrinum, Trinitrolongum, Naphazolinum, Diclophenacum, Ketoprophenum, Furadonin, Dimexid, Trimedat, Pentamin, Hexicon.

# Theme 4. Using of prepositions in pharmaceutical terminology. Endings of Accusative and Ablative. Professional phrases with prepositions 

## I. Prepositions of Accusative

ad (to, when, for) - ad usum externum (for external use), contra (anti...) - contra tussim (anti-coughing),
per ( through, by) - per chartam (through paper).

## II. Prepositions of Ablative

cum (with) - cum extracto (with extract), pro (for)- pro inhalatione (for inhalation), ex ( made of) - ex foliis ( of leaves), in (in) - in tabulettis (in tablets, in tablen form).
III. Using prepositions with double meanings
a) Prepositions in (in) and sub (under) manage Accusative and Ablative. Choice of the case depends on the meaning (direction or place):
Direction=> Acc. - in a bottle (vial) - in vitrum
Place => Abl. -

- in vitro
б) Features of some prepositions



In professional terms is preferable to use preposition pro, but in construction "for internal / external use" we can use both of them:
pro usu externo / ad usum externum;
and the same for prepositions $\boldsymbol{a d}$ and $\boldsymbol{i n}$ (meaning - in): in professional terms are more common constructions with preposition in, but in consruction "in the vial (dark /yellow)' it is possible to use preposition ad: in vitro nigro / ad vitrum nigrum.

There are not hard rules for using these prepositions. But you shold remember some of them.
IV. System of case endings

| Number | Case | decl, gender | I | II |  | III |  | IV |  | $\frac{\mathbf{V}}{\mathbf{f}}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | f | m | n | mf | n | m, f | n |  |
| Sing. | Nom. | -a |  | $\begin{aligned} & \text {-us, } \\ & \text {-er } \end{aligned}$ | $\begin{aligned} & \hline \text {-um, } \\ & \text {-on } \end{aligned}$ | different |  | -us | -u | -es |
|  | Gen. | -ae |  | -i |  | -is |  | -us |  | -ēi |
|  | Acc. | -am |  | -um |  | $\begin{aligned} & \text {-em } \\ & (-\mathrm{im}) \end{aligned}$ | Nom. | -um | -u | -em |
|  | Abl. | -ā |  | -0̄ |  | -e (-i) |  | -u |  | -e |
| Plur. | Case | decl, gender | I | II |  | III |  | IV |  | V |
|  |  |  | f | m | n | $\mathbf{m , f}$ | n | $\mathbf{m , f}$ | n | f |
|  | Nom. | -ae |  | -i | -a | -es | -a (-ia) | -us | -ua | -es |
|  | Gen. | -ārum |  | -ōrum |  | -um (-ium) |  | -uum |  | -ērum |
|  | Acc. | -as |  | -os | -a | -es | -a (-ia) | -us | -ua | -es |
|  | Abl. | -is |  | -is |  | -ǐbus (-is) |  | -ǐbus |  | -ebus |

a) Accusative. There is special rule for neuter: Accusative is the same as Nominative, in Singular and Plural form (in Pl - always ending - a).
Masculine and feminine in Acc.Sg have endings with common final letter - $\boldsymbol{m}$, and in Acc.Pl. - with common final letter -s,
after some vowels in depending on kind of declension.
b) Ablative is case corresponding to two Russian cases: Insterumental (5) and Prepositional (6) (where, with what?)
c) Features of III declension:

1) Parisyllabic nouns with ending -is (e.g. tussis, is f) have ending - im in Acc.Sg.
2) Adjectives of $2^{\text {nd }}$ group and parisyllabic nouns (e.g. tussis, is f) have ending - $\boldsymbol{i}$ in $\mathbf{A b l . S g}$.
3) Adjectives of neuter of $2^{\text {nd }}$ group have ending -ia in Nom.Pl. and Acc.Pl.
4) Adjectives of $2^{\text {nd }}$ group and some words of III declension have ending -ium in Gen.Pl.
5) Neuter nouns with ending -ma, origin Greek (e.g. rhizoma, atis n), have ending -is in Abl.Pl.

## Exercises:

## 1. Translate from English into Latin:

1. castor oil in the pure state; 2. Cacao butter in suppositories and small balls; 3.gelatinous capsules (made) of powder and granules; 4. absorbent (activated) carbon in tablets; 5. anesthesin and extract of belladonna in tablets; 6 . oil of sea buckthorn for inhalations; 7. tincture of rhizome with roots of valerian; 8. solution of ampicillin for suspension; 9. syrup of aloe with iron; 10. tincture of valerian with camphora.

## 2. Translate from English into Latin:

1. Decoction of buckthorn cortex for injections; 2. apomorphin in ampoules; 3. leaf of common plantain; 4. solution of furacilin for external use; 5. castor oil in capsules; 6.emulsion of castor oil; 7. aevit in capsules; 8. tablets of amidopyrin and phenacetin of each 0,$25 ; 9$. powder of ampicillin for suspensions. 10. liniment of synthomycin; 11. solution of strophantin in ampoules; 12. tincture of camomile flowers; 13. oily solution of nitroglycerin; 14. spirituous solution of furacilin;15. decoction of hawthorn cortex; 16. pectoral tea; 17. rhubarb syrup; 18. fluid extract of backthorn; 19. powder of foxglove leaves; 20. decoction of oak cortex, 21. dry extract of belladonna; 22. diuretic tea; 23. aether for narcosis; 24. pepper mint leaves.
2. Write the drug names in Latin. Find the elements carrying information about pharmaceutical characteristics, give their meaning:
Flunitrazepamum, Parecoxibum, Oxybuprocainum, Emend, Forlax, Haemiton, Trombogel, Cormagnesin, Panzim, Laronidasum, L-Thyroxin, Benacort, Desogoestrelum, Medroxyprogesteronum, Prosterid, Androcur, Enzaprost, Urosulfanum, Endostrep, Mycosyst, Ketoconazolum, Phenoxymethylpenicillinum, Tetracyclinum, Azithromycinum, Cefamezin, Ulgastran, Heptral, Bronchipret, Cholosas, Uroflux, Pantoprazolum, Secukinumabum, Elotuzumabum, Iopamidolum, Bromazepamum, Sorbifer, Flumazenilum, Thioril, Fenoterolum, Mononit, Ketalginum, Nepafenacum, Flurbiprophenum, Nitrofurantoinum, Trimeperidinum, Pentoxylum.

## Traditional set phrases with prepositions:

- ex tempore - as require/ need
- in ampullis - in ampoules
- in capsulis (gelatinosis) - in capsules (gelatinous)
- in charta (cerāta) - in paper (waxed)
- in spritz-tubulis - in unit-dose syringes
- in tabulettis (obductis) - in tablets (coated)
- in vitro (nigro) - in the vial / fial (dark)
- in vivo - in vivo (alive)
- per inhalationem - by inhalation
- per os - through the mouth
- per rectum - through the rectum
- per se - unformulated, in the pure state
- pro auctore (pro me) - for the author (for me) is used instead of the name of the physician, if he writes a prescription for yourself
- pro die - daily dose
- pro dosi - single dose
- pro gargarismatis - for gargle
- pro infantibus - for children
- pro inhalatione - for inhalation
- pro injectionibus - for injections
- pro narcosi - or anesthesia
- pro roentgeno - for X-ray


## Theme 5. Latin verb in Imperative and Subjunctive. The verb in prescription. Professional phrases with verbs

In the Latin part of a prescription some verb forms are used which indicate orders and instructions. They are required in order to give to a pharmacist the instructions how to make up and dispense drugs. You should learn these verb forms as standard prescription phrases. The meaning "order, instruction, direction" is expressed in the Latin part of a prescription by "imperative mood" and "subjunctive mood" of a Latin verb.

We only use verbs in prescription in Present tense (active and passive). We can change Latin verbs, change person, number, tense, modality. There are 4 groups (conjunctions) with specific last vowels of stem:

| I $-\overline{\boldsymbol{a}}-$ (long) | steriliso, $-\bar{a} r e$ |
| :--- | :--- |
| II $-\overline{\boldsymbol{e}}$ - (long) | misceo, -ēre |
| III $-\breve{\boldsymbol{e}}$-(short) or consonant | recipio, -ёre |
| IV $-\overline{\boldsymbol{i}}$ - (long) | audio, -īre |

Infinitive is a root form of verb. A mark of infinitive is ending -re.
NB! -ĕ- (short) of $3^{\text {rd }}$ group verb is connecting vowel between a stem and an ending. We define stem of verb by dissociation of ending -re from verbs I, II and IV groups and - ěre from verbs of III group.

## 1. Imperative mood

From all imperative forms only the $2^{\text {nd }}$ person singular form is used in prescriptions. If we need to create imperative, we have to dissociate ending -re (for all groups of verb):
You can memorize standard prescription phrases in the imperative mood as follows:

| Recǐpe | Take, receive |
| :--- | :--- |
| Da | Give |
| Signa | Write on a label |
| Misce | Mix |
| Steriľsa! (with the exclamation mark) | Sterilize! disinfect |
| Adde | Add |
| Dilue. | Dilute. |
| Da tales doses | Give of such doses |

## 2. Subjunctive mood

The Latin subjunctive mood has many meanings. Only one meaning "order, instruction, direction" is used in prescriptions. These forms are translated from Latin into English with the word-combination "let it be". It has meaning of motivation, but in softer form. Compare: Sterilize! - Let it be sterilized.

We create Latin subjunctive by adding ending to stem of verb. Moreover, we have to change stem:
I group -a- $\rightarrow$ in -e-
II-IV - stem + - $\mathbf{a}$ -
e.g.

Steriliso, are I stem sterilisa- stem of subjunctive - sterilise-
Misceo, ere 2 stem misce- stem of subjunctive - miscea-
We only use Latin verbs in form of $3^{\text {rd }}$ person (he, they) in prescription.

|  | Singularis | Pluralis |
| :--- | :--- | :--- |
| Activum | - t | - nt |
| Passivum | - tur | - ntur |

## 3. The most common wordings with verbs in prescription

You will have to memorize standard prescription phrases in the conjunctive mode as follows:

| Detur | Let it be given |
| :--- | :--- |
| Signētur | Let it be labeled |
| Misceātur | Let it be mixed |
| Sterilisētur! (with the exclamation mark) | Let it be sterilized! |
| Repetātur | Let it be repeated |
| Dentur tales doses | Let it be given of such doses |

Attention! - Prescription phrases in imperative and subjunctive moods have the same meaning: order, instruction, direction, therefore they are completely equal and interchangeable.

| Misce. | Mix. | Misceātur. | Let it be mixed |
| :--- | :--- | :--- | :--- |
| Signa. | Write on a label | Signētur. | Let it be labeled |
| Sterilisa! | Sterilize! | Sterilisētur! | Let it be sterilized! |
| Repete. | Repeat. | Repetātur. | Let it be repeated |
| Da. | Give. | Detur. | Let it be given. |
| Da tales doses. | Give of such doses | Dentur tales doses. | Let it be given of <br> such doses |

## 4. Verb fio, fieri

If you need to prescribe some ingrediens, wich have to have certain pharmaceutical form, use standart wording "mix for get (powder, ointment,..) " In Latin we use an irregular verb fio, fieri "to get, to be obtained". In has passive meaning, but active form (endings). We get subjunctive by adding suffix -a- to stem fi-:
$3^{\text {rd }}$ person Sing. fiat
$3^{\text {rd }}$ person Pl. fiant.
We use these forms in final clause of purpose with conjunction $\boldsymbol{u t}$ (for / so as to / in order to), starting with verb Misce:

Model:

## Misce, (ut) fiat + pharmaceutical form in Nominative singular

## Note: Conjunction ut is usually omitted

E.g.:

Misce, fiat pulvis.
Misce, fiat unguentum.
Misce, fiat linimentum.
Mix to make a powder
Mix to make an ointment
Mix to make a liniment

BUT ! For obtaining herbal teas we use this wording in Plural (because "species" in plural)

Misce, fiant species. Mix to make species

## Exercises:

## 1. Translate from English into Latin, using the given vocabulary:

1. Give 10 ml of epinephrin solution. 2. Take 200 ml of valerian root tincture. 3. Add 5 ml of castor oil. 4. Give 10 ml of menthol oil. 5. Take 30,0 of xeroform ointment. 6. Mix 5 ml of mint tincture and 10 ml of motherwort tincture. 7. Add 3 ml of peppermint oil. 8 . Sterilize 20 ml of castor oil. 9 . Take 5,0 of boromenthol ointment. 10. Give 25,0 of synthomycin liniment. 11. Mix 10 ml of lily of the valley tincture and 15 ml of valerian tincture. 12. Give 25 ml of motherwort extract. 13. Take 20,0 of castor oil emulsion. 14. Sterilize 200 ml of novocaine solution.
2. Write the drug names in Latin. Find the elements carrying information about pharmaceutical characteristics, give their meaning:

Flurazepamum, Lidocainum, Regulax, Hemapaxan, Corglycon, Idursulfasum, Panzinorm, Acortine, Levonorgoestrelum, Progesteronum, Finasteridum, Liraglutidum, Alprostan, Sulfacarbamidum, Ampistrep, Oronazol, Flucloxacillinum, Minocyclinum, Kanamycinum, Ceftriaxonum, Gasterin, Geptrong, Cholemax, Pilosuryl, Rabeprazolum, Ramucirumabum, Emicizumabum, Iomeprolum, Ferroplex, Fluoxetinum, Propylthiouracilum, Phenotropil, Gluconite, Nitrocor, Ketorolacum, Fenoprofenum, Furazolidonum, Trimebutinum, Pentaxim, Chloxylum, Oxaphenamidum, Phenacetinum, Polyphepanum, Chlorophthalmum, Aminophyllinum, Aether, Sarcolysinum.

## Theme 6. Prescription. Structure of prescription

A prescription traditionally is composed of four parts: a "superscription", "inscription", "subscription" and "signature".

1. The "superscription" section contains the date of the prescription and patient information (name, address, age, etc).
2. The word "Recipe:" (in English prescriptions "Rx") is addressed to the pharmacist and separates the superscription from the "inscriptions" section. This is literally an abbreviation for an exhortation to the patient to "take to" what is described in the inscription section. The inscription section defines what is the medication.
3. The "subscription" section contains dispensing directions to the pharmacist. This may be compounding instructions or quantities.
4. The "signature" section contains directions to the patient.

## Requirements to the Latin part of a prescription

The Latin part of a prescription begins with "Recipe", this is a form of address of a physician to a pharmacist: Reč̆pe: = Take: Abbreviation is $R p$.
This is Imperative of verb recipere. Than this part includes drug names and quantities.

Latin part of prescription is created according to the rules of Latin grammar.


Every prescription line, as well as all drug names and names of plants begins with the capital letter.

Every drug name is written in a separate prescription line. In doing so a blank space is left after "Recĭpe" (the pharmacist indicates a price of a drug here). If there is not enough space for a drug name in one line it is carried over to the next line with the left indent:

| Recipe: | Phenyľii salicylātis 3,0 |
| :---: | :---: |
|  | Spirǐtus aethylǐci quantum satis ad solutiōnem |
|  | Vaselīni ad 30,0 |
|  | Misce, fiat unguentum |
|  | Da. Signa: Apply to the skin of the face |

2. The drug names after "Recipe" are affected by doses and used in Genitive.
3. After the drug name its quantity is indicated. The doses of drugs are indicated in the decimal numeration system:
Gram amounts - the abbreviation «gr» is not indicated, the quantity is indicated with decimal points $-10,0(10 \mathrm{gr}$ ); $0,25(0.25 \mathrm{gr})$ etc.
Milliliter amounts - $10 \mathrm{ml}, 0,2 \mathrm{ml}$;
Units of activity - ED: 100000 ED (100000 units of activity).

$$
\begin{array}{ll}
\text { E.g: } \quad \text { Recipe: } & \text { Kalĭi chlorīdi 3,0 } \\
& \text { Insulīni } 25 \text { ED } \\
& \text { Solutiōnis Glucōsi } 10 \%-1000 \mathrm{ml} \\
& \text { Misceātur. Sterilisētur! } \\
& \text { Detur. Signētur: For intravenous infusions. }
\end{array}
$$

Drops amounts (are used seldom) - the number of drops is indicated with Roman figures - singular guttam (one drop - guttam I), plural guttas ( 5 drops - guttas $\mathbf{V}$ ).

Sometimes a physician does not indicate the dosage but affords to a pharmacist an opportunity to determine the quantity of a drug on his own (in sufficient amount); in that case quantum satis is written in the prescription.

If several drugs are prescribed in the same amount, so the dose is indicated only after the latter one and the abbreviation ana (of each) is written:
E.g: Recipe: Cupri citrātis

Lanolīni
Vaselīni ana 5,0

Take: Coper citrate
Lanoline
Vaseline of each 5.0

After word Signa (Signetur), a physician has to write in native language of patient how to take medicine:
Signa: 15 drops twice a day for 30 minutes before a meal.

## Exercises:

## 1. Translate the following prescriptions from English into Latin:

1) Take: Tincture of lily of the valley Tincture of valerian of each 10 ml Solution of nitroglycerin $1 \%-1 \mathrm{ml}$ Validol 2 ml Let it be mixed. Let it be given.
Let it be labeled:
2) Take: Liquid hawthorn extract 25 ml Let it be given.
Let it be labeled:
3) Take: Solution of glucose $5 \%-500 \mathrm{ml}$ Let it be sterilized!
Give.
Write on a label:
4)Take: Powder of rhubarb root 0.06

Give of such doses number 50
Write on a label:
5) Take: Emulsion of castor oil 30.0-200 ml

Give.
Write on a label:
6) Take: Phenobarbital 0.05

Sugar 0.2
Mix to make a powder
Give of such doses number 10
Write on a label:
7) Take: Cerebrolysin 1 ml

Give of such doses number 10 in ampoules
Write on a label:
8) Take: Anaesthesin 2.5

Talc 15.0
Vaseline up to 50.0
Mix to make a liniment
Give.
Write on a label:
9) Take: Solution of aminophyllin 24\%-1 ml Give of such doses number 6 in ampoules Write on a label:
10) Take: Fluid extract of buckthorn 4.0 Powder of rhubarb root 3.0
Dry extract of belladonna 0.7
Mix. Give.

Write on a label:
2. Write the drug names in Latin. Find the elements carrying information about pharmaceutical characteristics, give their meaning:

Oxazepam, Tetracainum, Laxygal, Haemoctin, Opacorden, Enzystal, Ribonucleasum, Decortin, Lynoestrenolum, Megestrolum, Alprostadilum, Sulfadimezinum, Streptolin, Cloxacillin, Tigecyclinum, Dirithromycinum, Cefezole, Panitumumabum, Natalizumabum, Iodixanolum, Aktiferrin, Fluomizin, Thiamazolum, Nitromint, Etodolacum, Furazidinum; Hexathidum, Isapheninum, Kanacidinum, Mechloralum, Neocidum, Pentamethonum, Sedalginum, Synthacortum, Sulfurenum, Sulfathiazolum, Aethimizolum, Anaesthocainum, Antistenocardinum, Aseptilexum, Aethylbarbitalum.

## 3. Translate from English into Latin:

1. solution of glucose; 2. tablets of analgin; 3 . liquid extract of aloe; 4. coated tablets of tetracyclin; 5. tincture of camomile flowers; 6 . decoction of oak cortex; 7. liniment of synthomycin; 8. ointment of oxolin; 9. syrup of althea; 10. granules of furazolidon; 11. dragee of phenoxymethylpenicillin; 12. solution of furacilin for external use; 13.oily solution of phenobolin; 14. tablets of pyrocetam; powder of ampicillin for suspensions; coated tablets of valerian extract; rhizomes with valerian roots; mucilages of flax seeds; tincture of eucalyptus; infusion of pepper mint leaves; leaf of aloe; leaves of sage; simple syrup; complex plaster; solution of corglycon; oily solution of nitroglycerin; soluble saluzid; powder and tablets of phthivazid; tablets for cough.
mucilage - mucilāgo, ı̌nisf

## Teaching supplies and utilities

## Additional writings in prescriptions

If in is nessesary to make medicine promtly, there is writing Cito! or Statim! (immediatly!) in the upper right of a form (underlined and exclamation mark).
For prolongation of treatment, a phisician can to write in the upper right corner:

Repete! - repeat!
Repete bis! - repeat twice!
Repete ter! - repeat three times!
Non repetatur! - don't repeat!

Adverbs for prescription

| ana | equally |
| :--- | :--- |
| quantum satis | as you need; in sufficient amount |
| cito | fast |
| citissime | urgently |
| optime | best |
| statim | immediately |

## Theme 7. Prescription regulations for tablets, suppositories and ophthalmic films

The prescription regulations for tablets, suppositories, aerosols and ophthalmic films are different from other pharmaceutical forms (if a dose is standard dose, or tablets known as trade drug names in Nominative and is in inverted commas). The names of these pharmaceutical forms in prescriptions after "Recipe" are used not in Genitive but in Accusative form.


The same thing is tablets and suppositories with one ingredient (dose is indicated):
Recipe: Tabulettas Barbamyli 0,1 numero 10
This is a short mode of prescription. The words "Tablets" and "Suppositories" are used in Acc.Pl. form.

Sometimes it may be in Acc.Sg., but then we have to use phrase Da tales doses numero ... (Give such doses number...).

## Recipe: $\quad$ Suppositorium cum Ichthyolo 0,2

Da tales doses numero 10
If there are only a drug name (with no pharmaceutical form) and single dose in a prescription line, then we use phrase
Da (Dentur) tales doses numero ... in tabulettis

- Give (let in given) such doses number... in tablets (in tablet form)
\(\left.$$
\begin{array}{l}\text { Recipe: } \quad \begin{array}{l}\text { Digitoxini } 0,0001 \\
\text { Da tales doses numero } 10 \text { in tabulettis }\end{array}
$$ <br>
Compare: <br>
I^{st} prescription form: <br>
Recipe: Paracetamōli 0,3 <br>
Da tales doses numěro 6 in tabulettis <br>

Signa: 1 tablet in case of headache\end{array}\right\}\)| $2^{\text {nd }}$ prescription form: |
| :--- |
| Recipe: Tabulettam Paracetamōli 0,3 |
| Da tales doses numěro 6 |
| Signa: 1 tablet in case of headache |

Moreover there is derailed mode of prescription. It includes enumeration of ingrediens and their quantities.

| Recipe: | Xeroformii 1,0 |
| :--- | :--- |
|  | Zinci oxydi 5,0 |
|  | Lanolini |
|  | Vaselini ana 10,0 |
|  | Misce, fiat unguentum. |
|  | Da. |
|  | Signa: |

## Exercises:

1. Write the drug names in Latin. Find the elements carrying information about pharmaceutical characteristics, give their meaning:
A) Diazepam, Dicain, Hemofil, Collagenase, Micrasim, Pulmicort, Estradurin, Dinoprostonum, Sulfapyridazinum, Diplostrep, Benzylpenicillinum, Streptomycinum, Cefmetazolum, Esomeprazolum, Ofatumumabum, Obinutuzumabum, Iodamidum, Thiopentalum Natrium, Nitrong, Sulindacum, Furasol, Aethamidum, Aethyotrastum, Thepaphyllinum, Dichlothiazidum, Methisazonum, Azopirin, Azafhen, Salazopiridazin, Salazodimethoxinum, Oxaphenamidum, Oxidevitum, Cortisid, Diiodthyrosinum, Lysoformiun, Hydrolysinum, Phthoracizinum, Finalgon, Befunginum, Camphomenum, Ketotiphenum.
B) Write in Latin, find component elements, give their meanings. ethazol, ethacridine, ethizine, ethylmorphine, ethimizol; ethinyl estradiol; theophylline, theophedrin, theobromine, tebrofen, thiacetazone, thiopental, pyrithioxine, sulfathiazole, methionine, methicillin, sulfamonomethoxine, sulfadimethoxine, pyridoxine, oxytetracycline, oxacillin, pentoxifylline, deoxycorticosterone, hydrocortisone, levothyroxine, chloroform, xeroform, iodoform, phytin, hyposterol, galantamine, locacorten.

## 2. Translate into Latin with dictionary forms:

1. activated charbon in tablets; 2 . benzocaine and extract of belladonna in tablets; 3 . aromatic tea (Nom and Gen); 3. valerian tincture with camphor; 5. carminative (antiflatulent) tea (Nom and Gen); 6. vitamin P (made) of rosehip (of rose fruits); 7. vitamin tea (Nom and Gen); 8. dried fruits of raspberries; 9. the fruits of raspberries for breast elixir; 10. eye ointment made of streptotcid and yellow vaseline; 11. eye
ointment of tetracycline; 12. glycerine suppositories with synthomycine; 13. glycerine solution of ichthyol; 14. bitters tincture of rhubarb; 15. pectoral tea (Nom and Gen); 16. diethyl ether for anesthesia; 17. gelatinous capsules made of the powder and granules; 18. oil of bitter almonds; 19. cocoa butter in suppositories and small balls; 20. powdered chamomile flowers.

## 3. Translate prescriptions into Latin:

1) Take:
Ethyl alcohol 95\% 20 ml
Water for injection 100 ml
Mix. Give. Write on a label:
2) Take: Dicain 2.0

Peach oil 25 ml
Mix. Give. Write on a label:
3) Take: Oil solution of dihydrotachysterol $0.1 \% 50 \mathrm{ml}$

Give. Write on a label:
4) Take: $\quad$ Spirituis solution of chlorophyllipt $\quad 1 \% 20 \mathrm{ml}$ Give. Write on a label:
5) Take: Ointment of methyluracil $10 \% 25.0$

Give. Write on a label:
6) Take: Purified ethyl alcohol $96 \% 100.0$

Glucose solution $40 \% 50 \mathrm{ml}$
Mix. Sterilize. Give.

Write on a label:
7) Take: Suppositories with extract of belladonna number 6

Give. Write on a label:
8) Take: Tablets of menthol number 20

Give in vial (phial/ bottle)
Write on a label:
9) Take: Tablets of tetracycline with nystatin coated 100000 ED number 25
Give. Write on a label:
10) Take: Ointment of xeroform $10 \%$ - 30.0Give. Write on a label:
11) Take: Euphyllin 0.2Cocoa butter 2.0
Mix to make a suppositoryGive of such doses number 6
Write on a label:
4. Translate the following prescriptions from English into Latin:

1) Take: Powder of foxglove leaves 0.05
Sacchar 0.3
Mix to make a powder.
Let it be given of such doses number 12
Let it be labeled:
2) Take: Cortex of hawthorn ..... 30.0
Leaves of nettle
Herb of milfoil 10.0
Mix to make species
Let it be given
Let it be labeled:
3) Take: Powder of ampicillin for suspensions 60.0Give in a dark phialWrite on a label:
4) Take: Suppositories with diprophyllin 0.5 number 10
Give
Write on a label:
5) Take: Tablets of microiodine with phenobarbital number 40Give in a dark phial
Write on a label:
6) Take: Ophthalmic tetracycline ointment ..... 10.0
Give
Write on a label:
7) Take: Sulfadimezin
Streptocid
Synthomycin of each 1.0
Mix to make a powder

Give
Write on a label:
8) Take: Tetracycline 100000 ED

Give of such doses number 24 in a tablet form
Write on a label:
9) Take: Ichthyol 3.0

Vaseline up to 30.0
Mix to make an ointment
Give
Write on a label:
10) Take: Ointment of furacilin $0,2 \%-30.0$

Give
Write on a label:
11) Take: Methyloestradiol 0.00002

Give of such doses number 20 in a tablet form
Write on a label:
12) Take: Liquid extract of aloe 1 ml

Give of such doses number 10 in ampoules
Write on a label:
13) Take: Synthomycin 0.2

Castor oil 20 ml
Mix to make a liniment
Give. Write on a label:
14) Take: Tablets of valerian extract coated 0.02 number 50

Give
Write on a label:
15) Take: Tablet of furacilin 0.02

Give of such doses number 10
Write on a label:
16) Take: Ophthalmic films with florenal number 30

Give
Write on a label:
17) Take: Tablets of sulfadimezin 0.5 number 12

Give
Write on a label:

## Task:

## 1. Translate into Latin with dictionary forms:

1. castor oil in gelatinous capsules; 2. spiritous solution of iodine in a black vial; 3 . anti-cough mixture for children; 3. peach oil for inhalation; 4. water for injections in ampoules; 5. rectal suppositories with ichthyol; 6. cholagogue herbal tea (Nom., Gen.)

## 2. Translate prescriptions into Latin:

Take: Chloroform 2 ml
Tincture of valerian
Ethyl alcohol 95\% each of 10 m
Mix. Give.

Write on a label:

Take: Ophthalmic films with dicain 0.2 number 10
Give. Write on a label:
3. Write in Latin. Find component elements. Give their meanings.

Proxymetacainum, Haemostimulinum, Oestradiolum, Prostin, Carbenicillin, Gentamycinum, Cefoxitinum, Demeprazol, Obinutuzumabum, Iohexolum.

## Theme 8. Latin names of chemical elements

Some chemical compounds are drugs. Writing a prescription the patient, the doctor indicates not the chemical formula of compound, but its Latin name. Therefore it is necessary to know the names of the main compounds as well as the principles of these names. Even the smallest errors in naming chemical compounds by prescribing are unacceptable, because this may have tragic consequences. For example it can occur if the patient takes barium sulphide instead of barium sulfate.

Thus, professionals must know exactly systematic chemical compound names in Latin, as well as the basic principles of such names.

All Latin names of chemical elements are neuter nouns of the $2^{\text {nd }}$ declension:
E.g.: Bromum, in; Iodum, in; Bismŭthum, in

There are two exceptions to this rule:

- sulfur - Sulfur, ŭris n (3rd declension)
- phosphorus - Phosphŏrus, im (masculine)

Special attention must be given to the spelling of the following chemical elements:

| Chemical element | Latin | English |
| :---: | :--- | :--- |
| $\mathbf{B i}$ | Bismŭthum, i n | bismuth |
| $\mathbf{F}$ | Fluōrum, i n or Phthorum, i n | fluorine |
| $\mathbf{F e}$ | Ferrum, i n | iron |
| $\mathbf{H}$ | Hydrogenĭum, in | hydrogen |
| $\mathbf{H g}$ | Hydrargy̆rum, in | mercury |
| $\mathbf{K}$ | Kalĭum, i n | potassium |
| $\mathbf{M g}$ | Magnesŭum, i n or Magnı̆um, i n | magnesium |
| $\mathbf{N a}$ | Natřum, i n | sodium |
| $\mathbf{O}$ | Oxygeň̆um, i n | oxygen |
| $\mathbf{P b}$ | Plumbum, in | lead |
| $\mathbf{S}$ | Sulfur, ŭris n | sulfur |

## Exercise:

## Translate from English into Latin:

precipitated sulfur, mercury ointment, zinc paste,white sedimentary mercury, complex lead patch, spirituos solution of iodine, bright (refined) sulfur, ointment of white sedimentary mercury, iodine tincture, lead water.

## Latin names of chemical elements

Latin
Aluminium, ii n
Argentum, in
Arsenicum, in
Aurum, in
Bromum, in
Barium, in
Bismuthum, in
Carboneum, in
Calcium, in
Chlorum, in
Cuprum, in
Fluorum, in (lat.) seu Phthorum (gr.) fluorine
Ferrum, in
Hydrogenium, in
Hydrargyrum, in
Iodum, in
Kalium, in
Lithium, in
Magnesium, in seu Magnium, in
Manganum, in
Nitrogenium, in
Natrium, in
Oxygenium, in
Plumbum, in
Phosphorus, im
Silicium, in
Sulfur, uris n
Zincum, in

English
aluminium
silver
arsenic
gold
bromine
barium
bismuth
carbon
calcium
chlorine
copper
iron
hydrogen
mercury
iodine
potassium
lithium
magnesium
manganese
nitrogen
natrium, sodium
oxygen
lead
phosphorus
silicon
sulfur
zinc

## Theme 9. Latin names of acids and oxides

## I. Latin names of acids

The Latin names of acids consist of the noun "ač̌dum" (acǐdum, i n - acid) and the concordant adjective of the $1^{\text {st }}$ group:

```
acidum + stem of the chemical element name + -ǐc/ōs- + -um
```

a) Latin adjectives with the suffix -ic- and the ending -um correspond to English adjectives ending by -ic. - Acids with a maximum degree of oxidation arsenic acid - Acǐdum arsenicǐcum (Arsenĭcum, i $\mathrm{n} \rightarrow \underline{\text { arsenic }+\check{\iota c}+u m \text { ); }}$ sulphuric acid - Acĭdum sulfurǐcum (Sulfur, ŭris $\mathrm{n} \rightarrow$ sulfur $+\check{l} c+u m$ );

b) Latin adjectives with the suffix - $\overline{\mathbf{o} s}$ and the ending -um correspond to English adjectives ending by -ous. - Acids with a low degree of oxidation. nitrous acid - Acǐdum nitrōsum (Nitrogenı̆um, i $\mathrm{n} \rightarrow \underline{\text { nitr }+\bar{o} s+u m}$ ); sulphurous acid - Acĭdum sulfurōsum (Sulfur, ŭris $\mathrm{n} \rightarrow$ sulfur $+\bar{o} s+u m$ ); arsenicous acid - Acǐdum arsenicōsum (Arsenǐcum, i $\mathrm{n} \rightarrow \underline{\text { arsenic }+\bar{o} s+u m}$ ).
c) Latin acid names with the prefix hydro- ending by -ǐcum correspond to English acid names with the prefix hydro- ending by -ic (Acĭdum hydrochlorǐcum hydrochloric acid).

The names of many acids are not formed from the names of the chemical elements, so it is best to remember.

Acidum ascorbinicum ascorbicic acid
Acidum acetylsalicylicum
Acidum formicicum
acetylsalicylic acid formic acid

There are some exceptions: Nitrogenium (nitrogen)
But: Acidum nitricum Acidum nitrosum
Attention! - Acid names used as drugs after pharmaceutical forms are written with the first capital letter:

Tabulettae Acǐdi folǐci - tablets of folic acid
Dragée Acĭdi ascorbinĭci - dragée of ascorbic acid

## I. Latin names of oxides, peroxides, hydroxides

There are two different ways to construct names oxides and salts in pharmacopoeia of various countries. One of them is conventionally called international, although not adopted all the national pharmacopoeias.

Latin names of oxides, peroxides and hydroxides consist of two words:

First one: name of a chemical element in Genitive
Second one: word "oxy̆dum" (oxide), "peroxy̆dum" (peroxide) or "hydroxy̆dum" (hydroxide) in Nominative (if this word is main word).

| Zinci oxy̆dum | -zinc oxide |
| :--- | :--- |
| Ferri oxy̆dum | - ferric oxide |
| Hydrogenǐ peroxy̆dum | - hydrogen peroxide |
| Calcui hydroxy̆dum | - calcium hydroxide |
|  |  |
| Zinci oxydum flavum | - yellow zinc oxide |
| Hydrogenii peroxydum dilutum | - dilute hydrogen peroxide |

Attention! - Names of oxides, peroxides and hydroxides are written after pharmaceutical forms with the first capital letter:
Solutǐo Hydrogenĭi peroxy̆di dilūta - diluted solution of hydrogen peroxide Unguentum cum Hydrargyri oxydo flavo - ointment with yellow mercuric oxide

Another method is conventionally called the "old". NB! Remember that regardless of the method of forming, in the first place is always the name of the cation.

Compare:
structure of international way for translation of oxide names

| Name of cation <br> (Gen. Sing.) | name of anion <br> (main word) | $+\quad$potential adjectives <br> flavum; dilutum |
| :--- | :--- | :--- |
| E.g. $\quad$ Zinci | oxydum |  |
| Hydrogenii | peroxydum <br> Aluminii | hydroxydum |

## structure of «old» way

| Name of cation |
| :--- |
| (main word, noun) |$\quad+\quad$| name of anion |
| :---: |
| (adjective) |$\quad+\quad$ potential adjectives

## E.g.: Zincum oxydatum

NB! We only use the «old way» for building names of protoxids
Ferrum oxydulatum - iron oxid = iron protoxid
pulvis Ferri oxydulati - powder of iron protoxid.
Nitrogenium oxydulatum - nitrogen oxid

## Exercises:

## 1. Translate from English into Latin:

A) sulfuric acid, sulfurous acid, hydrosulfuric acid, nitric acid in pure form, nitrous acid, anhydrous arsenic acid, hydrobromic acid, boric acid solution, permanganic acid, boric acid;
$\boldsymbol{B})$ magnesium oxide with an extract of belladonna, iron protoxide powder, yellow mercury oxide, ointment with yellow mercury oxide, magnesium peroxide, copper hydroxide powder, white lead oxide, concentrated hydrogen peroxide solution, nitrous oxide (nitrogen oxide);
C) Spirituous solution of iodine for external use; solution of nicotinic acid; diluted hydrochloric acid; boric acid; tablets of lipoic acid; dragée of ascorbic acid, zinc ointment; clear sulfur, acetylsalicylic acid in tablets, diluted solution of hydrogen peroxide; hydrosulfuric acid; nicotinic acid in tablets; acetic acid; phosphoric acid; magnesium peroxide; zinc oxide; calcium hydroxide, hydrogen peroxide; benzoic acid; oily solution of camphora for external use; chloroform for narcosis; liniment of synthomycin with novocain; solution of prednisolon for injections; glyceric solution of ichthyol; solution of novocain in ampoules, mucilage of althea root, tablets of amidopyrin and phenacetin of each 0,25 ; phenoxymethylpenicillin for suspension; oily solution of synoestrol in ampoules, powder for suspensions; suppositories with dimedrol for children.

## 2. Translate the following prescriptions from English into Latin:

1) Take: Folic acid 0.0008

Ascorbic acid 0.1
Give of such doses number 30 in tablet form
Write on a label:
2) Take: White mercurial ointment $5 \%-25.0$

Let it be given
Let it be labeled:
3) Take: Spirituous solution of salicylic acid $1 \%-40 \mathrm{ml}$ Give Write on a label:
4) Take: Acetylsalicylic acid

Phenacetin of each 0.25
Caffeine 0.05
Give of such doses number 12 in a tablet form
Write on a label:
5) Take Dragée of ascorbic acid 0.05 number 50

Give
Write on a label:
6) Take: Salicylic acid 5.0

Zinc oxide 0.5
Talc 50.0
Mix to make a powder
Let it be given
Let it be labeled:
7) Take: Yellow mercury oxide 0.6

Ichthyol 0.80
Zinc ointment 20.0
Mix to make an ointment
Let it be given
Let it be labeled:
8) Take: Chloroform

Ethyl alcohol 95\%-20 ml
Ethyl ether 10 ml
Liquid ammonia 5 drops
Mix. Give.

Write on a label:
9) Take: Clear sulfur

Magnesium oxide
Sacchar of each 10.0
Mix to make a powder
Give
Write on a label:
10) Take: Coated tablets of glutaminic acid 0.25 number 100

Give
Write on a label:
11) Take: Ichthyol 1.25

Zinc oxide
Wheat starch of each 12.5
Vaseline up to 50.0
Mix to make a paste
Give. Write on a label:
12) Take: Phenobarbital 0.03

Dimedrol 0.05
Analgin
Amidopyrin
Acetylsalicylic acid of each 0.15
Mix to make a powder
Give of such doses number 20.
Write on a label:
13) Take: Salicylic acid

Menthol
Synthomycin of each 2.5
Ethyl alcohol 70\%-50 ml
Mix. Give.

Write on a label:
14) Take: Diluted solution of hydrogen peroxide $10 \%-30 \mathrm{ml}$ Give. Write on a label.
15) Take: Menthol 0.1

Zinc oxide
Boric acid of each 0.5
Vaseline 10.0
Mix to make an ointment
Give. Write on a label:
16) Take: Benzoic acid 0.6

Salicylic acid 0.3
Vaseline 10.0
Mix to make an ointment
Give. Write on a label:
17) Take: Boric acid 0.1

Chinosol 0.03
Tannin 0.06
Cocoa butter 2.0
Mix to make a vaginal suppository
Give of such doses number 10
Write on a label:
18) Take: Boric acid 5.0

Zinc oxide
Wheat starch of each 25.0
Ointment of naphthalan 45.0
Mix to make a paste
Give
Write on a label:
3. Write the drug names in Latin. Find the elements carrying information about pharmaceutical characteristics, give their meaning:
Azetidin, Trichazol, Acetosal, Aethacridinum, Myarsenolum, Apisarhtronum, Allergival, Tetrasteronum, Lydasum, Acenocumarol, Cephaloridinum, Cholenzimum, Phytinum, Hydrocortisonum, Haematogenum, Corglyconum, Ferramidum, Iodolipolum, Amycazolum, Parathyreoidinum, Papaverinum, Oxytetracyclinum, Dimoestrolum, Insulincridesum, Acetolax, Phtorocort, Pressoton, Phosphamidum, Levomycetinum, Antipyrinum, Progesteronum, Vasodilatol, Thiodipinum, Choletrast, Liothyroninum, Theophyllinum, Septrin, Thrombolytinum, Norsulfazolum, Univerm, Hexavitum, Methylandrostendiol, Vipraxinum, Methacyclinum, Mercuropin, Euphyllinum, Bisalum, Trimecainum, Dinoprostum, Cefpiramidum, Nivolumabum, Ocrelizumabum.

## Names of acids

| Acidum ascorbinicum | ascorbic acid |
| :--- | :--- |
| Acidum glutaminicum | glutamic acid |
| Acidum aceticum | acetic acid |
| Acidum acetylsalicylicum | acetylsalicylic acid |
| Acidum carbonicum | carbonic acid |
| Acidum citricum | citric acid |
| Acidum formicicum | formic acid |
| Acidum lacticum | lactic acid |
| Acidum nicotinicum | nicotinic acidum |
| Acidum nitricum | nitric acidum |
| Acidum nitrosum | nitrous acid |
| Acidum nucleinicum | nucleic acid |
| Acidum pantothenicum | pantothenic acid |
| Acidum tartaricum | tartaric acid |
| Acidum undecylenicum | undecenoic acid |

## Theme 10. Latin names of salts

The salts names in Latin consist of two nouns:

- the name of cation comes first in Genitive,
- the name of anion occupies the second place and is in Nominative
E.g:
- aluminium nitrate - Aluminĭi nitras
- adrenalin hydrochloride
- sodium nitrite
- Adrenalīni hydrochlorīdum
- Natrĭi nitris

It is important to keep in mind that cation names in Latin are always written with the first capital letter and anion names are always written with the first small letter.
e.g: solutǐo Natrǐi tetraborātis glycerinōsa

## Latin names of anions

All Latin suffixes and endings of anion names in Nominative and Genitive are listed in the table:

| English |  | Latin |  | Dictionary form |
| :--- | :--- | :--- | :--- | :--- |
| Nominative |  | Genitive |  |  |
| nitrate | ate | as | -ātis | nitras, ātis m |
| nitrite | ite | is | -ītis | nitris, $\overline{1}$ isis m |
| chloride | ide | idum | -īdi | chloridum, i n |

Explanatory notes to the table:

- Anion names with the suffixes -as, -is are Latin nouns of the $3^{\text {rd }}$ declension. The letter -s- in Latin names accords with the letter -t- in English names:
- citras - citrate
- phosphas - phosphate
- nitris - nitrite
- Genitive forms of anion names with suffixes -as-, -is- are formed by analogy with the nouns of the $3^{\text {rd }}$ declension:

Compare: citras, ātis $m$-tuberosĭtas, ātis $f$

- Anion names with the suffixe -id- are Latin nouns of the $2^{\text {nd }}$ declension:
- chlorīdum, in - chloride
- bromīdum, i $n$-bromide
aluminium nitrate - Aluminĭi nitras (Gen. - Aluminii nitrātis)
aluminium nitrite - Aluminĭi nitris (Gen. - Aluminii nitrītis)
sodium chloride - Natrii chlorīdum (Gen. - Natrii chlorīdi)
suppositories with papaverine hydrochloride suppositoria cum Papaverini (Gen. Sing.) hydrochlorido (Abl. Sing.).

Possible adjectives have grammatical agreement with anions names and are inclined with them simultaneously.
E.g.: burnt iron sulfate - Ferri sulfas ustus

NB! The names of the basic salts are used with the prefix sub-, which is attached to the name of the anion, such as: basic lead acetate (or plumbous subacetate) - Plumbi subacetas (Gen. Plumbi subacetatis).

## Names of hydrocarbon radicals

1. The names of the hydrocarbon radicals formed with the suffix -yl-, they are usually part of the compound word - the name of the drug,
eg .: Benzylpenicillinum, Aethylmorphinum, Acidum acetylsalicylicum.
2. Very rarely, radicals names are used as the independent words. NB! The names of radicals (in English terms ending in -yl - benzyl, amyl, methyl, etc.), get in Latin in Nom. Sing. ending -ium, in the form Gen. Sing. - double-i,
e.g.: benzyl benzoate

Benzyl - Benzylium, ii n,
benzoate - benzoas, atis $m$.
-->Benzylii benzoas.
Also: methyl salicylate - Methylii salicylas; phenyl salicylate - Phenylii salicylas ; amyl nitrite (isoamyl ester of nitrous acid) - Amylii nitris .

## Two-component names of potassium and sodium salts

Two-component names of potassium and sodium are written with a hyphen and the both parts have the same grammatical case:
E.g: sulphacyl sodium

Nominative: Sulfacylum-natrǐum
Genitive: Sulfacyli-natrii

## Exercises:

## 1. Translate from English into Latin:

A) basic lead acetate, sodium tetraborate, potassium iodide, suppositories with papaverine hydrochloride, sodium arsenate solution, manganese hyposulfite, burnt iron sulfate, sodium bicarbonate, calcium glycerophosphate;
B) Levorinum sodium salt; solution of sulphacyl sodium; theobromine sodium with sodium salicylate; oxacillin sodium tablets; barbital sodium; ethazol sodium solution; metamizole sodium; benzylpenicillin potassium; thiopental sodium; heparin sodium

## 2. Translate from English into Latin:

Complex liniment of salicylate, isotonic solution of sodium chloride, tablets of calcium gluconate, coated tablets of tetracyclin hydrochloride, diluted solution of hydrogen peroxide, basic acetate of lead, powder of oxytetracyclin, camomile flowers for internal use, sodium hydrocitrate for injections, basic bismuth nitrate with belladonna extract, phenoxymethylpenicillin for injections, oily solution of synoestrol in ampoules, tincture of plantain leaves, milfoil herb, solution of mercury cyanide, tincture of camomile flowers, solution of sulfacyl-sodium in ampoules, solution of thiamin bromide, aloe syrup with iron, chloroform for narcosis; powder of foxglove leaves, granules of furazolidon, powder and tablets of phthivazid, oily solution of anaesthesin.

## 3. Translate the following prescriptions from English into Latin:

1) Take: Blue methylen 0.5

Solution of glucose 25\%-50 ml
Give of such doses number 3 in ampoules
Write on a label:
2) Take: Tincture of spring adonis herb 180 ml

Amidopyrin 2.0
Sodium bromide 4.0
Codeine phosphate 0.2
Mix. Give.

Write on a label:
3) Take: Tincture of althea root 180 ml

Sodium hydrocarbonate
Sodium benzoate of each 5.0
Simple syrup 20.0
Mix. Give.

Write on a label:
4) Take: Tablets of tetracycline hydrochloride 0.1 number 30

Give. Write on a label:
5) Take: Suspension of hydrocortisone acetate $2.5 \%-2 \mathrm{ml}$ Give of such doses number 5 Write on a label:
6) Take Dimedrol 0.01

Ephedrin hydrochloride 0.1
Peach oil 10 ml
Mint oil I drop
Mix. Give. Write on a label:
8) Take: Coated tablets of oleandomycin phosphate 0.125 number 25 Give. Write on a label:
9) Take: Iodine 0.03

Potassium iodide 1.3
Glycerin 30.0
Peppermint oil III drops
Mix. Give.

Write on a label:
10) Take: Ascorbic acid

Nicotinic acid of each 0.05
Riboflavin
Thiamine bromide of each 0.01
Sacchar 0.3
Mix to make a powder
Give of such doses number 30
Write on a label:
11) Take: Analgin

Amidopyrin
Phenacetin of each 0.2
Coffeine sodium benzoate 0.02
Codeine phosphate 0.015
Give of such doses number 10 in a tablet form Write on a label:
12) Take: Menthol 0.1

Phenyl salicylate 0.3
Vaseline oil up to 10 ml
Mix. Give. Write on a label:
13) Take: Extract of belladonna 0.01

Basic bismuth nitrate
Phenyl salicylate of each 0.25
Mix to make a powder
Give of such doses number 10 :
Write on a label:
14) Take: Chloroform

Sunflower(-seed) oil
Methyl salicylate of each 15 ml
Mix to make a liniment
Give
Write on a label:
15) Take: Magnesium carbonate 4.0

Potassium carbonate 5.0
Sodium hydrocarbonate 1.0
Glycerin in sufficient amount
Mix to make a paste
Give
Write on a label:
16) Take: Streptocid

Norsulfazol of each 3.0
Benzylpenicillin sodium 50000 ED
Ephedrin hydrochloride
Acetylsalicylic acid of each 0.15
Mix to make a powder
Give
Write on a label:
17) Take: Solution of dicain $0.5 \%-5 \mathrm{ml}$

Solution of adrenalin hydrochloride $0.1 \%$ - III drops Mix .Give Write on a label:
18) Take: Oily solution of testosteron propionate $1 \%-1 \mathrm{ml}$ Give of such doses number 6 in ampoules Write on a label.
4. Write the drug names in Latin. Find the elements carrying information about pharmaceutical characteristics, give their meaning:

Bicillinum, Apressinum, Nicovitum, Pyramidonum, Polyoestradiolum, Hydrolysinum, Boromentholum, Diprophyllinum, Laevomycetinum, Decamevitum, Cerebrolysinum, Brulamycinum, Olivomycinum, Bruneomycinum, Theophyllinum, Synoestrolum, Pentavitum, Urosulfanum, Histamine, Pyrogenal, Cholinesterase, Thiamine, Cocarboxylase, Ferroplex, Oxytetracycline, Haematogenum, Olaratumabum, Furagin, Bupivacainum, Misoprostolum, Cefpodoximum, Trastuzumabum.

## Theme 11. Reductions in prescriptions. The structure of the pharmaceutical term

## Latin in Prescriptions in Some English-speaking Countries:

The only part of a prescription where Latin appears today, however, is in the directions for taking the drug. This use has become a kind of medical shorthand. Some of these abbreviated terms have the potential to cause medication errors because they look so similar in handwriting, so their use is on the decline.
E.g.:

| ante cibum | ac | before meals |
| :--- | :---: | :---: |
| pro re nata | prn | as needed |
| quaque 3 hora | q 3 h | every 3 hours |
| ter in die | tid | 3 times a day |

Moreover there are some reductions of frequency words.
E.g. Solutio - Sol.

Some professional set phrases have abbreviations.
E.g. Da tale doses - D.t.d.

## Exercises:

## 1. Translate from English into Latin:

1. amyl nitrite in ampoules; 2. barbital sodium in tablets; 3 . anhydrous arsenic acid; 4. white mercury ointment; 5. benzyl nicotinate; 6. thiamine bromide in dragee ; 7 . hexyl salicylate; 8. hematogen with ascorbic acid; 9. metacycline hydrochloride in capsules; 10. ophthalmic film with pilocarpine hydrochloride. 11. ophthalmic film with neomycin sulfate; 12. granules of oleandomycin glycerophosphate; 13. burnt mercuric oxide; 14. burnt iron sulfate; 15. liquid amyl nitrite; 16. nitrous (prot)oxide for anesthesia; 17 drops of amyl nitrite; 18. concentrated hydrogen peroxide solution; 19. Caffeine sodium benzoate; 20. crystalline carbolic acid.

## 2. Translate the following prescriptions from English into Latin:

| Take: White streptocid <br> Norsulfazol 1.5 <br> Benzylpenicillin sodium 25,000 ED <br> Ephedrine hydrochloride 0.05 <br> Mix to make a powder. <br> Let it be given. <br> Let it be labeled: | Take: Riboflavin 0.005 <br> Thiamine bromide <br> Nicotinic acid <br> Ascorbic acid of each 0.005 <br> Sugar <br> Mix to make a powder. <br> Give such doses number 30 . <br> Write on a label: |
| :---: | :---: |
| Take: Castor oil 20.0 <br> Xeroform 1.2 <br> Vinylin 1.5 <br> Mix, to make a liniment. <br> Give. <br> Write on a label: | Take: Silver nitrate 5.0 <br> Liquid Ammonia 25\% 11 ml <br> Distilled water 3 ml <br> Let it be mixed. <br> Let it be given. <br> Let it be labeled: |
| Take: Refined turpentine 10.0 <br> Salicylic acid 2.0 <br> Vaseline to 30.0 <br> Mix to make a paste. <br> Let it be given. <br> Let it be labeled: | Take: Zinc oxide 66.0 <br> Zinc sulphate 24.0 <br> White clay 10.0 <br> Mix.Give. <br> Write on a label: |

## 3. Translate prescriptions into English

Rp.: Sol. Kalii chlorĭdi $4 \%-50 \mathrm{ml}$
D. t. d. N. 10 in amp.
S.: For intravenous drip infusion

Rp.: Liq. Kalii acetātis 20.0
Aq. destill. ad 200 ml
M. D. S.: At 1 tablespoon 3 times a day after meals

## 4. Write the drug names in Latin. Find the elements carrying information about pharmaceutical characteristics, give their meaning:

Benzonalum, Dipheninum, Normotensum, Pyrimethaninum, Acetylcysteinum, Sulfalenum, Penicillaminum, Erythromycinum, Sulfathiazolum, Sulfamethoxazolum, Vancomycinum, Diphenhydraminum, Cyclosporinum, Methyluracilum, Hydrolysinum, Nitroglycerinum, Benzobarbitalum, Methindionum, Mycoseptinum, Chlorochininum, Cyclophosphamidum, Cyanocobalaminum, Cerebrolysinum, Latanoprost, Extencilline, Lincomycinum, Cefoperazonum, Catumaxomabum, Pembrolizumabum.

# Theme 12-13. <br> Definition of frequency segments in the names of drugs. Arrangement of material "Pharmaceutical Terminology" 

## Exercises:

## 1. Translate from English into Latin:

1. crystalline potassium chloride; 2 . ointment of white sedimentary mercury; 3 . ointment of benzyl benzoate; 4. ointment of tetracycline hydrochloride; 5. ointment of yellow mercuric oxide; 6 . ointment (made) of salicylic acid; 7. oily solution of medrotestron propionate; 8. liquid ammonia; 9. nystatin sodium; 10. theobromine nitrate with sodium salicylate; 11. basic lead acetate; 12. basic bismuth gallate; 13. basic lithium carbonate; 14. basic magnesium carbonate; 15. basic iron lactate; 16. basic bismuth nitrate; 17. paste of zinc oxide; 18. powder of calcium glutamate; 19. powder of iron oxide; 20. dilute solution of hydrogen peroxide; 21. diluted hydrochloric acid in a dark vial; 22. diluted hydrochloric acid; 23. boric acid solution; 24. barium sulfide solution; 25. sodium chloride solution; 26. ethazol sodium solution in ampoules; 27. gray mercurial ointment; 28. aloe syrup with iron; 29. complex liniment of methyl salicylate; 30. complex liniment of phenyl salitsilate; 31 . spirituos solution of hydrogen peroxide; 32 . sulphate of iron protoxide; 33 tablets of acetylsalicylic acid; 34. potassium bromide tablets; 35. tablets of ethylmorphine hydrochloride with sugar; 36. tablets of iron protoxide; 37. tablets of potassium orotate; 38. theobromine sodium with sodium salicylate; 39. thiopental sodium with sodium carbonate; 40 . codeine phosphate in tablets; 41. cotarnin chloride for injections; 42. zinc paste; 43. pure sulfuric acid; 44. ethyl nitrite; 45. ethyl chloride; 46. brilliant green, 47. oily retinol acetate solution for children, 48. flowers of camomile in powder (form); 49. thick extract of belladonna; 50. peppermint leaves; 51. herb of motherwort; 52. castor oil in gelatin capsules.

## 2. Translate the following prescriptions from English into Latin:

1) Take: Thymol 0.1

Zinc oxide 10.0
Glycerol (glycerin) as needed
Mix to make a paste.
Give.
Write on a label:
2) Take: Crystalline chymotrypsin 0.002

Norsulfazol 0.2
Laevomycetin 0.01
Isotonic sodium chloride solution 2 ml
White clay as needed
Mix to make the paste.
Give. Write on a label:
3) Take: Tricresol 10.0

Glycerol 4.0
Ttrioxymethylene 20.0
Zinc oxide 66.0
Mix to make a paste
Give. Write on a label:
4) Take: Crystalline lysozyme 0,001

Oily solution of retinol acetate $1 \% 3.44 \mathrm{ml}$
Zinc oxide 1.0
Mix to make a paste.
Give.
Write on a label:
5) Take: Methylene blue 2.0

Distilled water 100 ml
Let in be mixed.
Let it be given.
Let it be labeled:
6) Take: Neomycin sulfate 0.1

Hydrocortisone 0.01
White clay 0.5
Peach oil as needed
Mix to make a paste.
Give.
Write on a label:
7) Take: Mefenamin sodium 0.1

Calcium phosphate
Barium sulphate of each 1.0
Zinc oxide 3.0
Eugenol as needed
Mix. Give.

Write on a label:
8) Take: Coated tablets of neomycin sulfate 0.135 number 25
Give. Write on a label:
9) Take: Sodium tetraborate

Sodium bicarbonate of each 10.0
Mix to make a powder
Give. Write on a label:
10) Take: Nicotinic acid 0.1

Sugar 0.3
Mix to make a powder.
Let it be given such doses number 30 .
Let it be labeled:
11) Take: Paraformaldehyde 2.0

Dicain 6.0
Disodium ethylene diamine tetraacetate 0.1
Liquefied pure phenol 0.4
Mix to make a paste.
Give.
Write on a label:
12) Take: Coated tablets of glutamic acid 0.95 number 100
Give.
Write on a label:
13) Take: Thymol 1.25

Ethyl alcohol 95\% 1 ml
Medical ether 2 ml
Mix. Give.

Write on a label:
14) Take: Coated tablets of oleandomycin
phosphate 0.25 number 10
Give.
Write on a label:
15) Take: Solution of cocaine hydrochloride $2 \% 5 \mathrm{ml}$

Adrenalin hydrochloride solution $0.1 \% 3$ drops
Let in be mixed.
Let it be given.
Let it be labeled:
3. Write in Latin. Find component elements carrying information about pharmaceutical characteristics of the drug names, give their meaning:
decamevit, aminophenazone, olemorphocyclinum, sulfamethoxypyridazine, benalgin, gentamicin, lysoform, panadol, syncaine, hydrocortisone, biocillin, eulevomycetin, sulfamonomethoxine, nitrofungin, neospect, trioxazine, sedatin, anaesthalgin, panhexavitum, sterandryl, benzonalum, dipheninum, pyrimethamine, erythromycin, sulfathiazole, sulfamethoxazole, vancomycin, diphenhydramine, cyclosporine, cyanocobalamin, methyluracil, hydrolysin, nitroglycerin, benzobarbital, methindion, mycoseptin, prostenongel, standacillin, benzamycin, cefepime, pertuzumab, furosemide.

## Lexical minimum for Anatomical Terminology

| latin | english | latin | english |
| :---: | :---: | :---: | :---: |
| Nouns. ${ }^{\text {st }}$ declension |  |  |  |
| ala, ae f ampulla, ae f aorta, ae f apertura, ae f arteria, ae f bursa, ae f capsula, ae f cellula, ae f chorda, ae f clavicula, ae f cochlea, ae f columna, ae f concha, ae f coxa, ae f costa, ae f crista, ae f fascia, ae f fibula, ae f fissura, ae f fossa, ae f fovea, ae f foveola, ae f gingiva, ae f glandula, ae f incisura, ae f junctura, ae f lamina, ae f linea, ae f lingua, ae f mamma, ae f mandibula, ae f maxilla, ae f medulla, ae f membrana, ae f nucha, ae f orbita, ae f palpebra, ae f papilla, ae f patella, ae f plica, ae f | wing <br> bottle <br> aorta, main artery of body <br> aperture, opening <br> artery <br> pouch, sac, bag <br> capsule <br> cell <br> chord <br> drumstick <br> cochlea <br> column <br> concha <br> hip-bone <br> rib <br> crista, crest <br> fascia <br> fibula, splint-bone <br> fissure, narrow slit <br> fosse, shallow depression <br> small pit or depression <br> foveola, small fovea <br> gum <br> gland <br> incisure, notch <br> juncture <br> lamina, plate <br> line <br> tongue, language <br> mammary gland <br> lower jaw <br> upper jaw <br> medulla, marrow <br> membrane <br> nape of neck <br> eye-socket <br> eyelid <br> papilla <br> patella <br> fold | porta, ae f protuberantia, ae f prostata, ae f pupilla, ae f $r(h)$ aphe, es $f$ scapula, ae f sella, ae f spina, ae f squama, ae f substantia, ae f sutura, ae f <br> tibia, ae f trachea, ae ft trochlea, ae f tuba, ae f tunica, ae f ulna, ae f urethra, ae f vagina, ae f valvula, ae f vena, ae f vertebra, ae f vesica, ae f <br> Nouns. $2^{\text {nd }}$ <br> declension angulus, im anus, i m alveolus, i m bronchus, i m bulbus, i m canaliculus, i m calcaneus, i m carpus, i m condylus, i m digitus, i m (o)esophagus, i m fundus, i m gyrus, i m | entry <br> protuberance <br> prostate <br> pupil of the eye <br> raphe <br> shoulder blade <br> saddle <br> spine <br> scale, flake <br> substance <br> suture; line of junction shine bone trachea trochlea tube tunic elbow bone urethra, urinary tract sheath, vagina valve, valvule vein vertebra, spinal bone bladder <br> angle, corner anus <br> alveole <br> bronchus bulb small canal heel bone wrist condyle finger; toe esophagus bottom gyre |


| latin | english | latin | english |
| :---: | :---: | :---: | :---: |
| humerus, i m labyrinthus, i m lobus, i m lumbus, i m musculus, i m nasus, i m nervus, i m nodus, i m nucleus, i m oculus, i m pylorus, i m radius, i m ramus, i m sulcus, i m thymus, im truncus, i m uterus, i m <br> brachium, in capitŭlum, in cavum, in cerebellum, in cerebrum, in collum, in colon, in cranium, in dorsum, in duodenum, in encephalon, in frenulum, in ganglion, in intestinum, in jugum, in labium, in ligamentum, in manubrium, in membrum, in olecranon, in ostium, in palatum, in periton(a)eum, in retinaculum, in sceleton, in septum, in | humerus, shoulder <br> labyrinth <br> lobe <br> loin <br> muscle <br> nose <br> nerve <br> node <br> nucleus <br> eye <br> pylorus <br> thicker and shorter bone <br> of forearm <br> branch <br> furrow, groove, <br> thymus <br> trunk <br> uterus, womb <br> upper arm <br> small head <br> cavity <br> little brain <br> brain <br> neck <br> colon <br> skull <br> back <br> duodenum <br> brain <br> frenulum <br> ganglion, nerve knot <br> intestine <br> eminence <br> lip <br> ligament <br> handle <br> member, extremity <br> olecranon <br> opening, mouth <br> palate <br> peritonaeum <br> retinaculum <br> skeleton <br> partition, dividing wall | sternum, in <br> supercilium, in <br> tuberculum, in <br> tympanum, in <br> velum, in <br> vestibulum, in <br> Nouns. $3^{\text {rd }}$ <br> declension <br> apex, icis m <br> canalis, is m coccyx, ygis m <br> cortex, icis m dens, dentis $m$ fornix, icis m hallux, ucis m index, icis m larynx, ngis m lien, lienis m liquor, oris m margo, inis m <br> m.abductor, oris m m.adductor, oris m m.buccinator, oris m m.constrictor, oris m m.corrugator, oris m m.cremaster, eris m m.depressor, oris $m$ m.dilatator, oris m m.erector, oris $m$ m.extensor, oris m m.flexor, oris m m.levator, oris m m.masseter, eris m m.pronator, oris $m$ m.rotator, oris m m.sphincter, eris m m.supinator, oris $m$ m.tensor, oris m | sternum, breastbone eyebrow <br> tubercle <br> tympanum <br> velum, veil <br> vestibule $\qquad$ <br> apex, top, tip <br> canal <br> coccygeal bone, tailbone <br> cortex <br> tooth <br> fornix, roof <br> hallux, great toe <br> index finger <br> larynx <br> spleen <br> liquor <br> margin, border, edge <br> abductor <br> adductor <br> muscle buccal <br> constrictor <br> corrugator <br> cremaster <br> depressor <br> dilator <br> erector <br> extensor <br> flexor <br> elevator <br> masseter <br> pronator <br> rotator <br> sphincter <br> supinator <br> tensor |


| latin | english | latin | english |
| :---: | :---: | :---: | :---: |
| Nouns. $3{ }^{\text {rd }}$ declension |  |  |  |
| paries, etis $m$ pes, pedis m pharynx, ngis m pollex, icis $m$ pulmo, onis m ren, renis m stapes, edis m thorax, acis m trochanter, eris m tendo, inis m ureter, eris m vomer, eris m <br> articulatio, onis f auris, is f basis, is f cartilago, inis f cavitas, atis f cervix, icis f cuspis, idis f gaster, tris f mater, tris $f$ <br> meninx, ngis f pars, partis $f$ pelvis, is $f$ phalanx, ngis $f$ pubes, is f regio, onis $f$ radix, icis f symphysis, is f tuberositas, ātis f <br> abdomen, inis $n$ caput, itis n cor, cordis $n$ corpus, oris $n$ chiasma, atis $n$ crus, cruris $n$ diaphragma, atis $n$ femur, oris $n$ foramen, inis $n$ hepar, atis n | ```wall foot pharynx thumb lung kidney stapes chest; ribcage trochanter tendon ureter plowshare bone: thin bone separating nostrils joint ear base cartilage cavity neck spear, pointed end stomach membrane of brain or spinal cord meninges part pelvis phalanx pubis region, area root, radix symphysis tuberosity abdomen head heart body chiasm, crossing leg, shin, crus diaphragm thigh opening liver``` | os, oris n os, ossis n pancreas, atis $n$ systema, atis n tegmen, inis, $n$ tuber, eris n <br> vas, vasis n <br> aquaeductus, us $m$ arcus, us $m$ ductus, us $m$ hiatus, us m meatus, us $m$ manus, us f plexus, us $m$ processus, us $m$ sinus, us m cornu, us n genu, us $n$ <br> Nouns. 5 declension <br> facies, ei f | mouth <br> bone <br> pancreas <br> system <br> roof <br> large rounded <br> swelling <br> vessel <br> water duct, aqueduct arch <br> duct <br> hiatus, gap <br> tract, passage <br> hand <br> network of veins and <br> nerves <br> process; appendix <br> sinus; hollow <br> curvature or cavity <br> horn; horn-shaped <br> process <br> knee <br> face, surface |


| latin | english | latin | english |
| :---: | :---: | :---: | :---: |
| $1{ }^{\text {st }}$ group of adjectives |  |  |  |
| albus, a, um acusticus, a, um accessorius, a, um asper, era, erum auditivus, a, um calcaneus, a, um caninus, a, um cardiacus, a, um cartilagineus, a, um cavernosus, a, um cavus, a, um choledochus, a, um coronarius, a, um cutaneus, a, um dexter, tra, trum durus, a, um externus, a, um felleus, a, um fibrosus, a, um flavus, a, um gastricus, a, um glut(a)eus, a, um hepaticus, a, um hyoideus, a, um hypoglossus, a, um iliacus, a, um incisivus, a, um internus, a, um interosseus, a, um ischiadicus, a, um latus, a, um laryngeus, a, um liber, era, erum longus, a, um lymphaticus, a, um magnus, a, um mastoideus, a, um maximus, a, um medianus, a, um medius, a, um minimus, a, um obliquus, a, um ophthalmicus, a, um | white <br> acoustic <br> additional, <br> rough <br> auditive, auditory (tube) <br> calcaneal <br> canine, cuspid tooth <br> cardiac, gastric <br> cartilagineus <br> cavernous <br> caval, hollow <br> biliary <br> coronary <br> cutaneous, dermal <br> right <br> hard, solid <br> external <br> gall (bladder) <br> fibrous <br> yellow <br> gastric <br> gluteal <br> hepatic <br> sublingual <br> hypoglossal <br> iliac <br> incisive, cutting, sharp <br> internal <br> unterosseous | opticus, a, um osseus, a, um palatinus, a, um parvus, a, um petrosus, a, um pharyngeus, a, um profundus, a, um pterygoideus, a, um rectus, a, um rotundus, a, um ruber, bra, brum sacer, cra, crum scalenus, a, um sinister, tra, trum squamosus, a, um styloideus, a, um subcutaneus, a, um supremus, a, um sympathicus, a, um transversus, a, um trapezoideus, a, umvenosus, a, um zygomaticus, a, um thoracicus, a, um thyr(e)oideus, a, um tympanicus, a, um urinarius, a, um | bony <br> palatine <br> small <br> stony <br> pharyngeal <br> deep <br> wing-shaped, <br> pterygoid <br> straight <br> round <br> red <br> sacral (sacrum) <br> stairs-shaped <br> left <br> scaly, covered, <br> squamous, styloid, styliform subcutaneous highest sympathetic transverse trapezoidalvenous zygomatic thoracic thyroid tympanic urinary |
|  | sciatic <br> wide | $\begin{array}{r} \hline 2^{\text {nd }} \text { group of } \\ \text { adjectives } \end{array}$ |  |
|  | laryngeal <br> free <br> long <br> lymphatic <br> large, great <br> mammiform <br> largest <br> median <br> middle <br> smallest <br> oblique <br> ophthalmic, eye | abdominalis, e alveolaris, e articularis, e auricularis, e brevis, e centralis, e cerebralis, e cerebrospinalis, e cervicalis, e communis, e costalis, e dentalis, e | abdominal <br> alveolar <br> articular <br> auricular <br> short <br> central <br> cerebral <br> cerebrospinal <br> cervical <br> general <br> costal <br> dental |


| latin | english | latin | english |
| :---: | :---: | :---: | :---: |
| dorsalis, e ethmoidalis, e fibularis, e frontalis, e horizontalis, e infraorbitalis, e intercostalis, e interlobalis, e intermuscularis, e interspinalis, e jugularis, e lacrimalis, e lateralis, e lingualis, e longitudinalis, e lumbalis, e mandibularis, e maxillaris, e medialis, e mentalis, e molaris, e mollis, e muscularis, e nasalis, e occipitalis, e orbitalis, e parietalis, e pulmonalis, e radialis, e sacralis, e synovialis, e simplex, icis sphenoidalis, e spinalis, e sublingualis, e superficialis, e temporalis, e teres, etis tibialis, e ulnaris, e vaginalis, e ventralis, e vertebralis, e | dorsal <br> sieve-shaped <br> fibular <br> frontal <br> horizontal <br> infraorbital <br> intercostal <br> interlobar <br> intramuscular <br> interspinalis <br> jugular <br> lacrimal <br> lateral <br> lingual <br> longitudinal <br> lumbar <br> mandibular <br> maxillary <br> medial <br> mental <br> molar <br> soft <br> muscular <br> nasal <br> occipital <br> orbital <br> parietal <br> pulmonary <br> radial <br> sacral <br> synovial <br> simple <br> wedge-shaped <br> spinal <br> sublingual <br> superficial <br> temporal <br> o-shaped, round <br> tibial <br> ulnar <br> vaginal <br> ventralis <br> vertebral | Adjectives. <br> Comparative degree <br> anterior, ius posterior, ius superior, ius inferior, ius major, majus minor, minus <br> Participles <br> abducens, ntis afferens, ntis ascendens, ntis comitans, ntis communicans, ntis descendens, ntis efferens, ntis fluctuans, ntis limitans, ntis opponens, ntis perforans, ntis permanens, ntis prominens, ntis <br> recurrens, ntis circumflexus, a, um compactus, a, um compositus, a, um perforatus, a, um | anterior, front back higher, upper lower large small $\qquad$ $\qquad$ <br> abducent, deferent bringing riding, ascending accompanying, sciatic connecting down, descending emphasizes, efferent swinging, hesitating, limiting opposing perforating permanent prominent <br> recurrent, returnable circumflex compact compound perforated |


| latin | english | latin | english |
| :---: | :---: | :---: | :---: |
| Set phrases |  |  |  |
| atrium cordis atrium dextrum atrium sinistrum bulbus oculi dens caninus dens incisivus dens molaris digitus minimus ductus choledochus dura mater pia mater intestinum crassum intestinum tenue medulla ossium flava medulla ossium rubra tuba auditiva vena portae vincula tendinum | atrium of the heart right atrium left atrium eyeball canine, cuspid tooth incisor tooth molar tooth little finger bile duct dura mater pia mater intestine small intestine yellow bone marrow red bone marrow auditory tube current gate bonds (of) tendons |  |  |

## Lexical minimum for Pharmaceutical Terminology

| $1^{\text {st }}$ declension Plants Althaea, ae f | althaea/ marshmallow plant | $1{ }^{\text {st }}$ declension Nouns ampulla, ae f aqua, ae f | ampoule water |
| :---: | :---: | :---: | :---: |
| Amygdăla, ae f | almonds (fruit) | bacca, ae f | berry |
| Belladonna, ae f | belladonna | Camphora, ae f | camphora |
| Calendula, ae f | calendula/ marigold | capsula, ae f | capsule |
| Chamomilla, ae f | camomile | charta, ae f | paper |
| Convallaria, ae f | lily of the valley | gemma, ae f | bud |
| Ephĕdra, ae f | ephedra/ joint-pine tussilago | gutta, ae f herba, ae f | drop |
| Farfăra, ae f | farfara/ coltsfoot | lamella (membranula), ae f | ophthalmic film |
| Frangŭla, ae f | buckthorn | ophthalmica |  |
| Mentha, ae f piperita | peppermint | mixtura, ae f | mixture |
| Oliva, ae f | olive (fruit) | pasta, ae f | paste |
| Rosa, ae f | rose | pilŭla, ae f |  |
| Salvia, ae f | sage | scatǔla, ae f | small box |
| Terebinthina, ae f | turpentine | tabuletta, ae f | tablet |
| Urtīca, ae f | nettle | tinctura, ae f | tincture |
| Valeriana, ae f $\mathbf{1}^{\text {st }}$ Greek declension | valerian | $1^{\text {st }}$ Greek declension |  |
| Aloë, ës f Hippophaë, ës f | aloe sea buckthorn / sand thorn | chole, es f | bile |
| $2{ }^{\text {nd }}$ declension | anise/ aniseed hawthorn/ thornapple eucalyptus sunflower sweet-amber/ tutsan motherwort flax/ linseed yarrow/milfoil peach (fruit) rhubarb castor bean strophanthus strychnine tree, poison nut thyme wheat | acidum, in aërosolum, in amylum, in briketum, in butyrum, in decoctum, in emplastrum, in emulsum, in extractum, in folium, in globulus, im Glucosum, in granulum, in infusum, in linimentum, in numerus, i m oleum, in oxydum, in | acid <br> aerosol <br> starch <br> briquette <br> butter <br> decoction <br> plaster, patch <br> emulsion <br> extract <br> leaf <br> small ball <br> glucose <br> granule <br> infusion <br> liniment <br> number <br> oil <br> oxide |
| Anīsum, in |  |  |  |
| Eucalyptus, if |  |  |  |
| Helianthus, i m |  |  |  |
| Hypericum, in |  |  |  |
| Leonurus, i m |  |  |  |
| Linum, in |  |  |  |
| Millefolium, in |  |  |  |
| Persǐcum, in Rheum, in |  |  |  |
| Rheum, in <br> Ricinnus, i m |  |  |  |
| Strophanthus, i m |  |  |  |
| Strychnos, im nux- |  |  |  |
| vomica |  |  |  |
| Thymus, im Tritīcum, in |  |  |  |
| Triticum, 1 n |  |  |  |
|  |  |  |  |



| concisus, a, um crystallisatus, a, um destillatus, a, um dilūtus, a, um exsiccatus, a, um externus, a, um flavus, a, um fluidus, a, um liquidus, a, um gelatinosus, a, um glycerinosus, a, um internus, a, um isotonicus, a, um niger, gra, grum obductus, a, um oleosus, a, um ophthalmicus, a, um praecipitatus, a, um pulveratus, a, um purus, a, um purificatus, a, um <br> rectificatus, a, um <br> depuratus, a, um <br> siccus, a, um spirituosus, a, um spissus, a, um tritus, a, um ustus, a, um | cuted (sliced), <br> crystal <br> distilled <br> diluted <br> dried <br> external <br> yellow <br> liquid (with extracts) <br> liquid (with others) <br> gelatinous <br> glyceric <br> inner, internal <br> isotonic <br> black, dark <br> coated <br> oily, oil <br> ophthalmic <br> sedimentary <br> powdery <br> pure <br> refined (water, <br> vaccines, serum, <br> toxoids) <br> rectificat (alcohol, <br> turpentine) <br> rectificat (with <br> others), bright <br> dry <br> spirituous, alcoholic <br> thick (soft extract) <br> grated <br> burnt | Names of teas <br> species amarae <br> species antiasthmaticae species aromaticae species cholagogae species diaphoreticae species diureticae <br> species expectorantes species laxantes species pectorales species pro balneo species sedativae species stomachicae species vitaminosae <br> III. Verbs <br> dāre <br> signāre <br> sterilisāre <br> miscēre <br> dividĕre <br> vertĕre <br> recipĕre <br> repetěre | bitter tea (for appetite) anti-asthmatic tea aromatic tea cholagogic tea diaphoretic tea diuretic (urinative ) tea expectorant tea laxative tea pectoral tea for bath sedative tea gastric tea vitaminic tea <br> give <br> label, write on a <br> label <br> Sterilize <br> mix <br> divide <br> turn <br> take, receive <br> repeat |
| :---: | :---: | :---: | :---: |
| Set expressions masa pilularum oleum Ricǐni oleum Terebinthĭnae Methylenum coeruleum Liquor Ammonii anisatus Solutio Ammonii caustici Viride nitens (Viridis nitentis) | pilular mass <br> castor oil turpentine oil Methylene blue ammonia-anise drops liquid ammonia <br> Brilliant green | Coffeinum(i)-natrii benzoas(atis) quantum satis <br> dosis letalis dosis maxima dosis minima dosis media seu therapeutica <br> dosis toxica | Caffeine sodium benzoate in sufficient amount (as needed) fatal dose the highest dose the least dose middle or curative dose toxic dose |

## CONTENT

Theme 1. Introduction to the discipline. Latin alphabet. Rules of pronunciation ..... 3
Theme 2. Long and short vowels. Regulations setting accents. Long and short suffixes of nouns and adjectives ..... 10
Theme 3-4. Introduction in anatomical terminology. Grammar. Noun and its grammatical categories. Structure of anatomical terms ..... 15
Theme 5. Endings of declension I-V nouns in Singular ..... 20
Theme 6. Endings of the noun declensions I-V in Plural ..... 22
Theme 7. The nouns of declension III ..... 25
Theme 8-9. Adjective and its grammatical categories ..... 29
Theme 10. Degrees of comparison of adjectives ..... 36
Theme 11-12. Anatomical terms with muscle names. $3^{\text {rd }}$ declension nouns. Masculine gender ..... 41
Theme 13-14. $3^{\text {rd }}$ declension nouns. Feminine and neuter gender ..... 45
Theme 15. Participles in anatomical terminology. Dictionary form. Agreement and declension of participles ..... 50
Clinical terminology ..... 53
Theme $1-2$.Word formation for constructing clinical terms. The names of organs and body parts. Suffixes ..... 53
Theme 3. Prefixes ..... 57
Theme 4-5. Diagnostic procedures. Pathological conditions ..... 60
Theme 6-7. Surgery and pathological states ..... 65
Theme 8. Functional physiological and pathological processes and states ..... 71
Theme 9. Qualitative and quantitative characteristics ..... 76
Theme 10. Names of accumulations in clinical terminology ..... 82
Pharmaceutical terminology ..... 87
Theme 1. Nomenclature of drug names ..... 87
Theme 2. Nomenclature of medicines. Multiword pharmaceutical terms ..... 93
Theme 3. Structure of pharmaceutical term. Names of oils ..... 97
Theme 4. Using of prepositions in pharmaceutical terminology Endings of Accusative and Ablative. Professional phrases with prepositions ..... 99
Theme 5. Latin verb in Imperative and Subjunctive. The verb in prescription. Professional phrases with verbs ..... 103
Theme 6. Prescription. Structure of prescription ..... 107
Theme 7. Prescription regulations for tablets, suppositories and ophthalmic films. ..... 112
Theme 8. Latin names of chemical elements ..... 118
Theme 9. Latin names of acids and oxides ..... 120
Theme 10. Latin names of salts ..... 127
Theme 11. Reductions in prescriptions. The structure of the pharmaceutical term. ..... 133
Theme 12-13. Definition of frequency segments in the names of drugs. Arrangement of material "Pharmaceutical Terminology" ..... 135
Lexical minimum for Anatomical Terminology ..... 139
Lexical minimum for Pharmaceutical Terminology ..... 145

