Basic medical terminology

AUTUMN 2015

Study materials

- Prucklová, R. – Severová, M.: *Introduction to Latin and Greek Terminology in Medicine*. Praha: KLP, 2012 (Unit 1-7)

- Teachers' own materials (e.g. hand-outs, presentations, activity cards) which are going to be periodically uploaded on the IS in Study materials of your subject.

- "Drill" on the IS (https://is.muni.cz/auth/dril/?lang=en)

Testing

- Two partial exams
  - each successfully written partial test (over 70 %) means that you get bonus 5 % for your final exam)
- Credit test
  - 70% required if you were not successful in any of the partial tests
  - 65% required if you were successful in ONE of the partial tests
  - 60% required if you were successful in BOTH partial tests

Testing

- All students are sitting all their tests **in his/her group only**.

- During the "Dissections week" (November 21-25, 2016), there is NO Latin lesson

- Students can sit the **credit test** in the 14th week (December 19-23, 2016) or during the 15th week of the semester (January 2-6, 2017), there are no exceptions to this whatsoever.

- **Resits of the credit test** will take place **only during the exam period**, i. e. January, 9 – February 17, 2017.

- The number of possible credit test **resits** is **two**.

- **The dates and number of resits** set by the teacher before the exam period is **final**, it means **no other dates will be added** during the exam period or later.

Testing

- Results of the tests will be available to students in the Notebook on the IS.

- The student's results will be given in percentage together with the pass mark.

- The student will have the access to his/her tests during his/her teacher's office hours or by prior e-mail arrangement.

Attendance

- **Absences** are going to be **electronically registered in the IS**. In order to be sure you have been registered as present in the class, be punctual, the attendance is always checked immediately after the beginning of the class.

- We can tolerate **ONE** unexcused absence only; all further absences have to be properly **excused by the Study Department**.

- **Unexcused absences** are regularly recorded in the Notebook on the IS, and students having these records **cannot sit the credit test**.

- The student may **substitute a class** in another group **two times per semester**; the substitution is possible **only in the same week** when he/she missed a class in his/her own group.

- The **substitution** is **not possible** in the week for which **a partial test** or **the credit test** has been planned.

- **The teacher** at whom the student substitutes a class **notes** the information about the student's **substitution in the Notebook on the IS**.
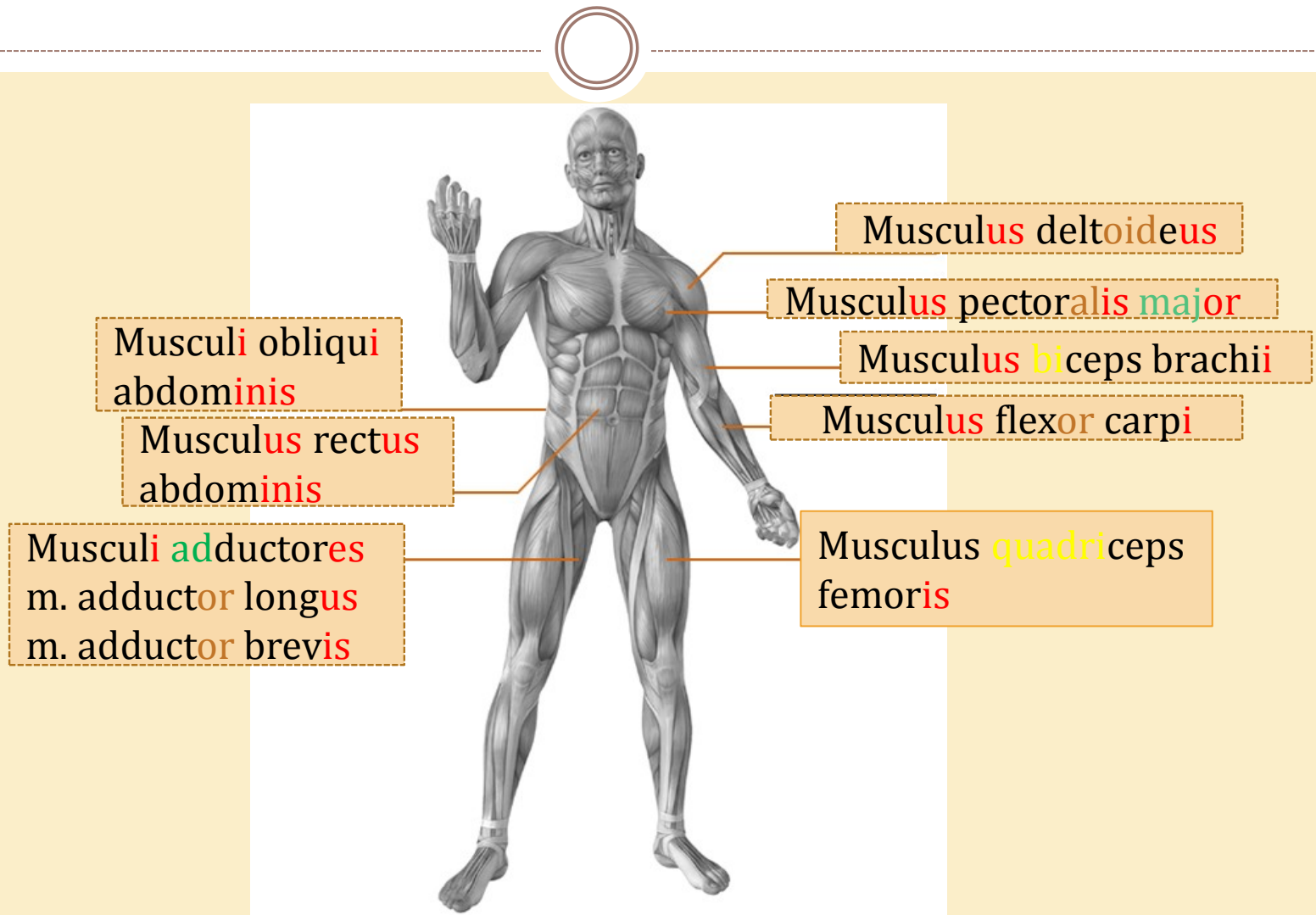
Course objectives

- To familiarize with basic medical terminology

- To understand rules of creating Latin terms and to understand meaning of particular terms based on:

  - Morphological analysis

  - Syntactical analysis

- To create correct Latin terms (both from anatomical and clinical terminology)

- To understand basics of pharmacological Latin

- To master the vocabulary in a systematic way

Latin in medical terminology

- Definite set of terms that name the parts and structures of the human body

- First worldwide official standard terminology appeared 1895 (*Basiliensia Nomina Anatomica*) since then it was periodically updated and changed to implement new findings and/or understanding of the anatomical structures

- Current terminology is approved by FCAT (Federative Committee on Anatomical Terminology) and published in 1998 as TERMINOLOGIA ANATOMICA

    (cf. http://www.unifr.ch)

Anatomical structures

Musculus deltoideus

Musculus pectoralis major

Musculus biceps brachii

Musculus flexor carpi

Musculi obliqui abdominis

Musculus rectus abdominis

Musculi adductores
m. adductor longus
m. adductor brevis

Musculus quadriceps femoris

Latin in the clinical terminology

- Non-definite set of terms that names diseases, health conditions or causes of death

- First authoritative list of diseases and causes of death 1868 (*Nomenclature of diseases*), 1893 Bertillon's classification of diseases

- Current terminology ICD-10 (*International Classification of Diseases*) is approved by WHO and published every ± 10 years (www.who.int/classifications/icd/en/)

- Widely used in medical documentation e.g. medical reports, surgical and hospital reports, pathological reports (central Europe, Russia and former republics of USSR, partly Western Europe - Germany, Austria)

Diagnose

```
Dg: T068 Polytrauma
    W1731    Pád s padákem
    S4220    Fractura humeri proximalis l. sin comminutiva luxans
    S3250    Fr. rami sup. et inferioris ossis pubis l. dx
    S3250    Fr. ramus sup. ossis pubis l. sin
    S3210    Fr. sacri l. dx
    S2210    Fr. corporis vertebrae thoraciceae VII et VIII.
    S3200    fr. procesus transversi vertebrae lumbalis II.-IV.
    S3700    Contusio renis l. dx cum hematoma perirenale
    S134     Distensio ligg. col. vert. partis cervicalis
    S202     Contusio thoracis l. sin
    S2730    Contusio pulm. l. sin
    S2710    Hemothorax postraumaticum l. sin
    S4210    Fr. proc. coracoideus scapulae l. sin
    I269     Embolia pulmonum susp.
```

ICD http://apps.who.int/classifications/icd10 ➡ S20.2 = Contusion of thorax

Latin in the pharmacologic terminology

- Definite set of terms used in European Pharmacopoea (current version is 8th ed.) to name:
  - essential medicines (*acidum phosphoricum*)
  - classes of medicines (*antipyretica*, *spasmolytica*)
  - forms of medicines (*solutio*, *injectio*, *tabuletta*)
  - drugs (*calendula officinalis*)
- Prescriptions
  - main part of the prescription including name and quantity of the medicine as well as the way of its administration is usually written in Latin, using system of routine abbreviations

INSCRIPTIO

PERSONALIA AEGROTI

INVOCATIO

ORDINATIO
a) PRAESCRIPTIO (COMPOSITIO)
b) SUBSCRIPTIO
c) SIGNATURA

DATUM

SIGILLUM ET NOMEN MEDICI

MAGISTRALITER

SPECIALITAS

VZOR

| Kód pojišťovny | **RECEPT** | | poř. č. | |

Údaje platné pro celý recept (výpis, pohotovost, repetatur s počtem opakování, nutná a neodkladná péče, atd.)

Příjmení a jméno

Číslo pojištěnce | | f.

Bydliště (adresa)

| Popl. | Diagnóza*) | Sk. | Kód | Započ.dopl. | Úhrada |

Rp.

Kalii jodidi — 1,0
Ephedrini hydrochloridi — 0,2
Thymi sirupi comp. — 20,0
Aquae purif. — ad 100,0
M. f. liquid.
D. ad lag.
D. S. 3x denně 1 lžíci

| Popl. | Diagnóza*) | Sk. | Kód | Započ.dopl. | Úhrada |

Rp.
Frontin 0,5 mg
Exp. orig. No. III (tres)
D. S. 1 tbl. ráno, 1 tbl. večer

Dne:

razítko poskytovatele,
jmenovka, podpis a telefon lékaře

| Připravil: | Vydal: |

*) Vyplňuje se povinně v případě zvýšené úhrady.

At the end of the course, you will be able to:

➤ understand the system in the terminology of anatomical structures (= easier memorizing of the terms)

➤ understand the principles of forming more complex terms

➤ understand a clinical diagnose

➤ write your own clinical diagnose

➤ write a medical prescription

Latin medical terminology

- Many ancient terms are based on metaphors and similes, i.e. they are formed from words of nonmedical origin:
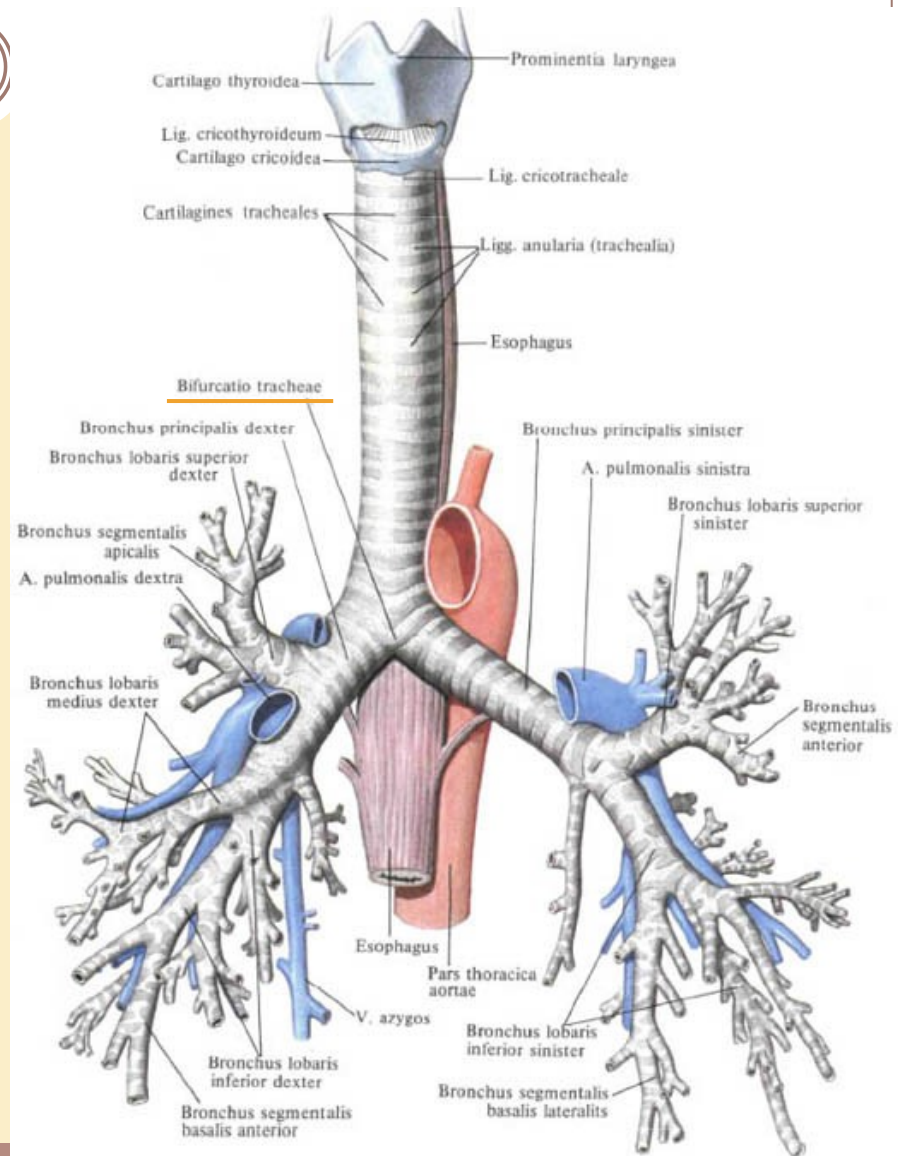
Animals , Letters of alphabet,
Musical instruments, Household utensils,
Military objects, Agricultural tools/products....

- Eg.: bifurcatio = bifurcation

1. a division into two branches.
2. the point at which division into two branches occurs.
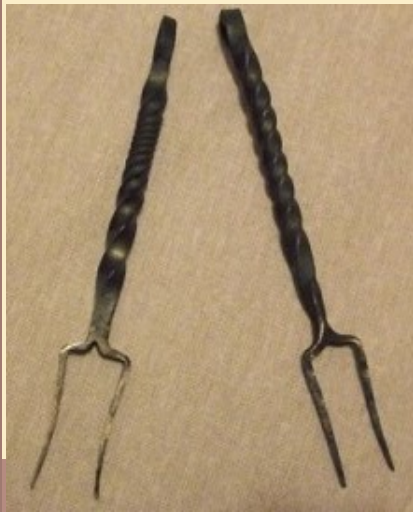
Furca = a two-pronged fork

bifurcatio tracheae

Latin pronunciation

Vowels

A Ā B C D E Ē F G H I Ī K L M N
O Ō P Q R S T U Ū V X Y Ÿ Z

Vowels

Long	Short
Ā (f**a**ther) fr**ā**ct**ū**ra **A** (c**u**t) lingu**a**	
Ē (s**a**d) art**ē**ria	**E** (m**e**t) v**e**rt**e**bra
Ī (intr**i**gue) sp**ī**na **I** (**i**ntrigue) d**i**gitus	
	I (**y**es) > **J**
Ō (d**oo**r) sens**ō**rius	**O** (**o**n) skelet**o**n
Ū (b**oo**m) rupt**ū**ra **U** (p**u**t) **u**ter**u**s	
Y (anal**y**sis) h**y**pophysis	**Y** (lad**y**) t**y**mpanum

Diphtongs

AE=Ē (c**a**re) an**ae**mia

OE=Ē (c**a**re) lag**oe**na

Greek words

OE (o-e) dyspn**oe**

EU (e-u) **eu**thanasia

Read aloud

- hypnosis
- ala
- olla
- eupnoe
- ileus
- mucus
- haematoma
- iliacus
- ossa
- diploe
- cubitus
- venae
- diameter
- sacralis
- ulcus
- iris
- sutura
- sigmoideus
- depressor
- area
- oesophagus
- melior
- meatus
- leucocytus

Consonants

A Ā B C D E Ē F G H I Ī K L M N

O Ō P Q R S T U Ū V X Y Ŷ Z

Consonant/group of consonants	Pronunciation	Example
1: c + a, o, u, consonants	[k] medi**c**al	camera, costa, cultivatio, cranium
c + ae, oe, e, i, y	[ts] **ts**ar	caecus, coeliacia, centrum, circulatio, cynismus
2: ch	[x] lo**ch**	chirurgia, cholera

Consonants II

Consonant/group of consonants	Pronunciation	Example
3: g gu + vowel	[g] ground [gv]	gramma, gastritis lingua, sanguis
4: h	[h] house	herba, haematologia
5: j + vowel	[y] yes	iniectio/injectio, maior/major
6: p p + h	[p] present [f] physiology	pneumonia, pulmo phantasia, pharmacia
7: qu+ vowel	[kv]	aqua, quadriceps
8: r r+h	[r] rupture [r]	vertebra, ruptura rheuma, rhinitis

Consonants III

Consonant/group of consonants	Pronunciation	Example
9: s/ss **s** *between two vowels and following after l, r, n*	[s] **s**ome [z]	serum, fossa nasus, incisura, pulsus, tonsilla, inversus, suspensio
10: t **ti** *+ vowel* **s/t/x + ti** *+ vowel* **t+h**	[t] **t**ongue [tsi] [ty] [t]	trauma, tactus operatio, substantia tibia, ostium, mixtio therapia, thermometrum
11: z	[z] **z**one	zoologia

Read aloud

- cancer, medicamentum, lingua
- thorax, pulsus, contusio
- corpus, exitus, functio
- hemispherium, angulus, fractura
- intestinum, aqua, pharmacon
- oedema, musculus, defectus
- medicus, operatio, infarctus
- homo, bronchus, duodenum
- angina, haemorrhagia, spasmus

- encephalon, bacterium, acne
- migraena, pharynx, dysenteria
- inflammatio, leucaemia, virus
- laparoscopia, typhus, organismus
- therapia, digitus, gingiva
- gangraena, diagnosis, tonsilla
- injectio, lympha, oxygenium
- vademecum, insufficientia, chirurgia

Grammatical categories

What will you find in the dictionary?

- English words are presented in one single form
- !!!Latin words are presented in three forms!!!
- E.g.:

MUSCULUS, I, M. = MUSCLE

Main form (full nominative)

Genitive ending/or even full Genitive form

Gender abbreviation

English translation

OS, OSSIS, N. = BONE
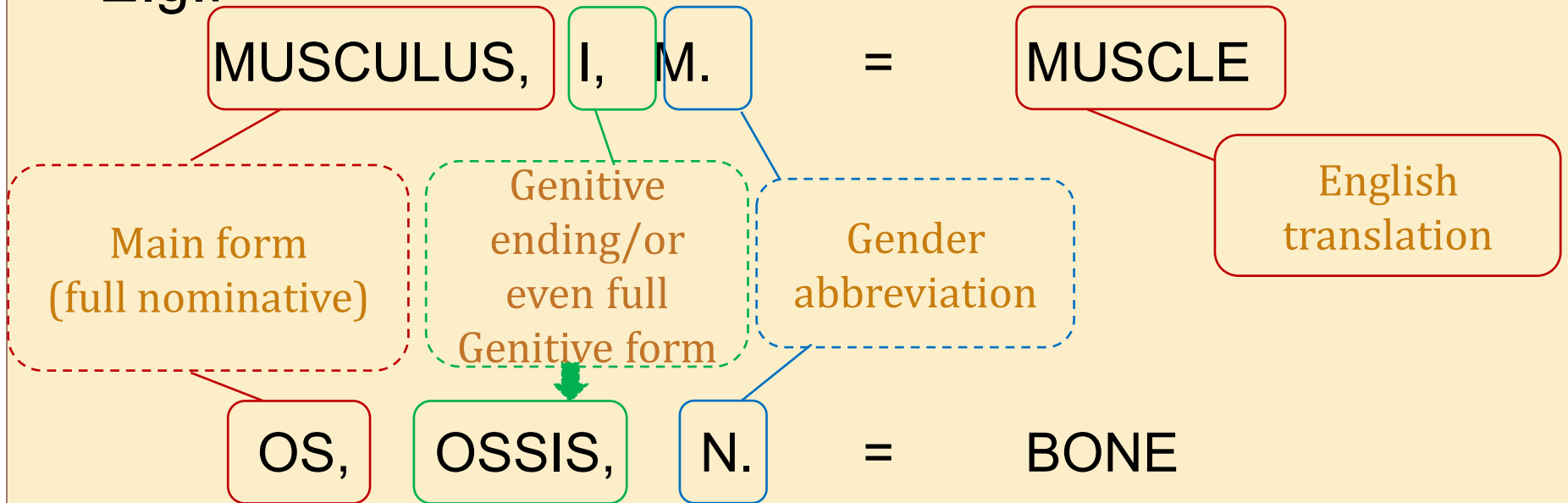
!CAUTION! ALL THREE FORMS are EQUALLY important for the future ability to use the noun in the context.

Gender

- There are three genders in Latin
  - Masculine (e.g. nervus)
  - Feminine (e.g. vena)
  - Neutral   (e. g. cerebrum)

- There is nothing, which could indicate the gender to you

  ➡ YOU HAVE TO LEARN IT BY HEART

Genitive ending => Declension

- Declensions are groups of nouns (or adjectives) using the same set of suffixes (=endings)
- There are 5 declensions in Latin

DECLENSION	1st	2nd	3rd	4th	5th
GENITIVE ENDING	-ae (-es)	-i	-(?)-is	-us	-ei
EXAMPLE	coxa, ae, f.	humerus, i, m. cranium, ii, n.	coccyx, gis, f. dens, dentis, m. femur, oris, n. pelvis, is, f.	arcus, us, m. genu, us, n.	facies, ei, f.

LATIN AND GREEK DECLENSIONS

Declens.		I.			II.				III.					IV.		V.
Paradigm		vena	*systole*	*diabetes*	nervus	septum	*nephros*	*colon*	dolor	corpus	pelvis	*dosis* febris	rete	ductus	genu	facies
Gender		**f.**	**f.**	**m.**	**m.**	**n.**	**m.**	**n.**	**m. + f.**	**n.**	**m. + f.**	**m. + f.**	**n.**	**m.**	**n.**	**f.**
S i n g u l a r	1.	-a	-e	-es	-us/-er	-um	-os	-on	?	?	-is/-es	-(s)is/ -xis/-osis	-ar/-e/ -al	-us	-u	-es
	2.	-ae	-es	-ae	-i	-i	-i	-i	-is	-is	-is	-is/-eos	-is	-us	-us	-ei
	4.	-am	-en	-am	-um	**1**	-um	**1**	-em	**1**	-em	-im/-in	**1**	-um	**1**	-em
	6.	-a	-e	-a	-o	-o	-o	-o	-e	-e	-e / (-i)	-i	-i	-u	-u	-e
P l u r a l	1.	-ae	-ae	-ae	-i	-a	-i	-a	-es	-a	-es	-es	-ia	-us	-ua	-es
	2.	-arum	-arum	-arum	-orum	-orum	-orum	-orum	-um	-um	-ium	-ium	-ium	-uum	-uum	-erum
	4.	-as	-as	-as	-os	**1**	-os	**1**	-es	**1**	-es	-es	**1**	-us	**1**	-es
	6.	-is	-is	-is	-is	-is	-is	-is	-ibus	-ibus	-ibus	-ibus	-ibus	-ibus	-ibus	-ebus
		+ Adj. of 1st decl. F			+ Adj. of 2nd decl. M	+ Adj. of 2nd decl. N			+Compa -rative forms of adj. M+F	+ Com- parative forms of adj. N	+ Adj. of 3rd decl. M + F		+ Adj. of 3rd decl. N			

Genitive ending = stem of a word

- **A stem** is a form to which affixes (endings) can be attached
- In some declensions (1st, 4th, 5th, and in majority of cases also 2nd) the nominative and genitive forms of the word have identical stem
- In some declensions (3rd, partially 2nd) word's stem can greatly different
- **In Latin we need to remove the genitive ending in order to gain the genitive stem**

ven-a
ven-ae

humer-us
humer-i

dol-or
dolor-is

corp-us
corpor-is

de-ns
dent-is

arc-us
arc-us

faci-es
faci-ei

gen-u
gen-us

diamet-er
diametr-i

Decide what is the stem of the noun

ex: **caput, capit-is**
- skeleton, skeleti
- os, ossis
- cranium, cranii
- orbita, orbitae
- collum, colli
- cervix, cervicis
- thorax, thoracis
- costa, costae
- discus, disci
- processus, processus
- vertebra, vertebrae
- pelvis, pelvis
- coxa, coxae

- ilia, ilium
- coccyx, coccygis
- ischium, ischii
- pubes, pubis
- symphysis, symphysis
- nasus, nasi
- dens, dents
- mandibula, mandibulae
- clavicula, claviculae
- scapula, scapulae
- sternum, sterni
- humerus, humeri
- arcus, arcus
- radius, radii

- ulna, ulnae
- metacarpus, metacarpi
- carpus, carpi
- phalanx, phalangis
- femur, femoris
- patella, patellae
- tibia, tibiae
- fibula, fibulae
- metatarsus, metatarsi

Read and write down the number of declension

0. **corpus, oris, n.**	**3**
cutis, is, f.	**3**
1. **caput, itis, n.**	**3**
	2
3. **facies, ei, f.**	**5**
4. **os, oris, n.**	**3**
lingua, ae, f.	**1**
5. **mentum, i, n.**	**2**
6. **axilla, ae, f.**	**1**
7. **brachium, ii, n.**	**2**
8. **cubitus, i, m.**	**2**
9. **antebrachium, ii, n.**	**2**
10. **carpus, i, m.**	**2**
11. **pollex, icis, m.**	**3**
12. **palma, ae, f.**	**1**

13.,18. **digitus, i, m.**	**2**
14. **sulcus, i, m.**	**2**
15.,28. **penis, is m.**	**3**
16. **femur, oris, n.**	**3**
17. **genu, us, n.**	**4**
19. **frons, frontis, f.**	**3**
20. **oculus, i, m.**	**2**
21. **nasus, i, m.**	**2**
22. **auris, is, f.**	**3**
23. **bucca, ae, f.**	**1**
24. **collum, i, n.**	**2**
cervix, icis, f.	**3**
25. **pectus, oris, n.**	**3**
26. **abdomen, inis, n.**	**3**

27. **hypogastrium, ii, n.**	**2**
29. **truncus, i, m.**	**2**
30. **manus, us, f.**	**4**
31. **crus, cruris, n.**	**3**
32. **tarsus, i, m.**	**2**
talus, i, m.	**2**
33. **pes, pedis, m.**	**3**
34. **hallux, ucis, m.**	**3**