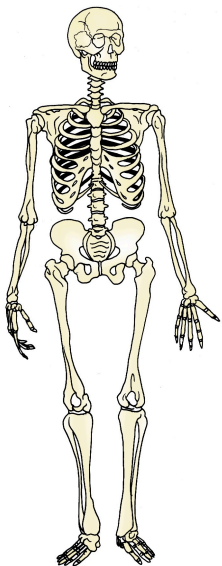


Anatomia

Esqueleto e articulações

APARELHO LOCOMOTOR



SISTEMA ESQUELÉTICO

SISTEMA ARTICULAR

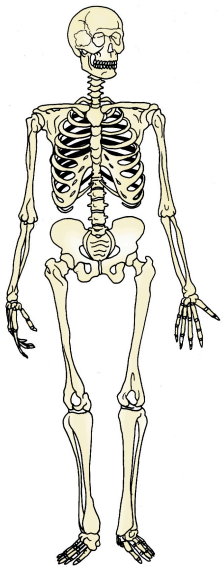
SISTEMA MUSCULAR

PASSIVO

UNIÃO

ATIVO





APARELHO LOCOMOTOR



SISTEMA ESQUELÉTICO

SISTEMA ARTICULAR

SISTEMA MUSCULAR

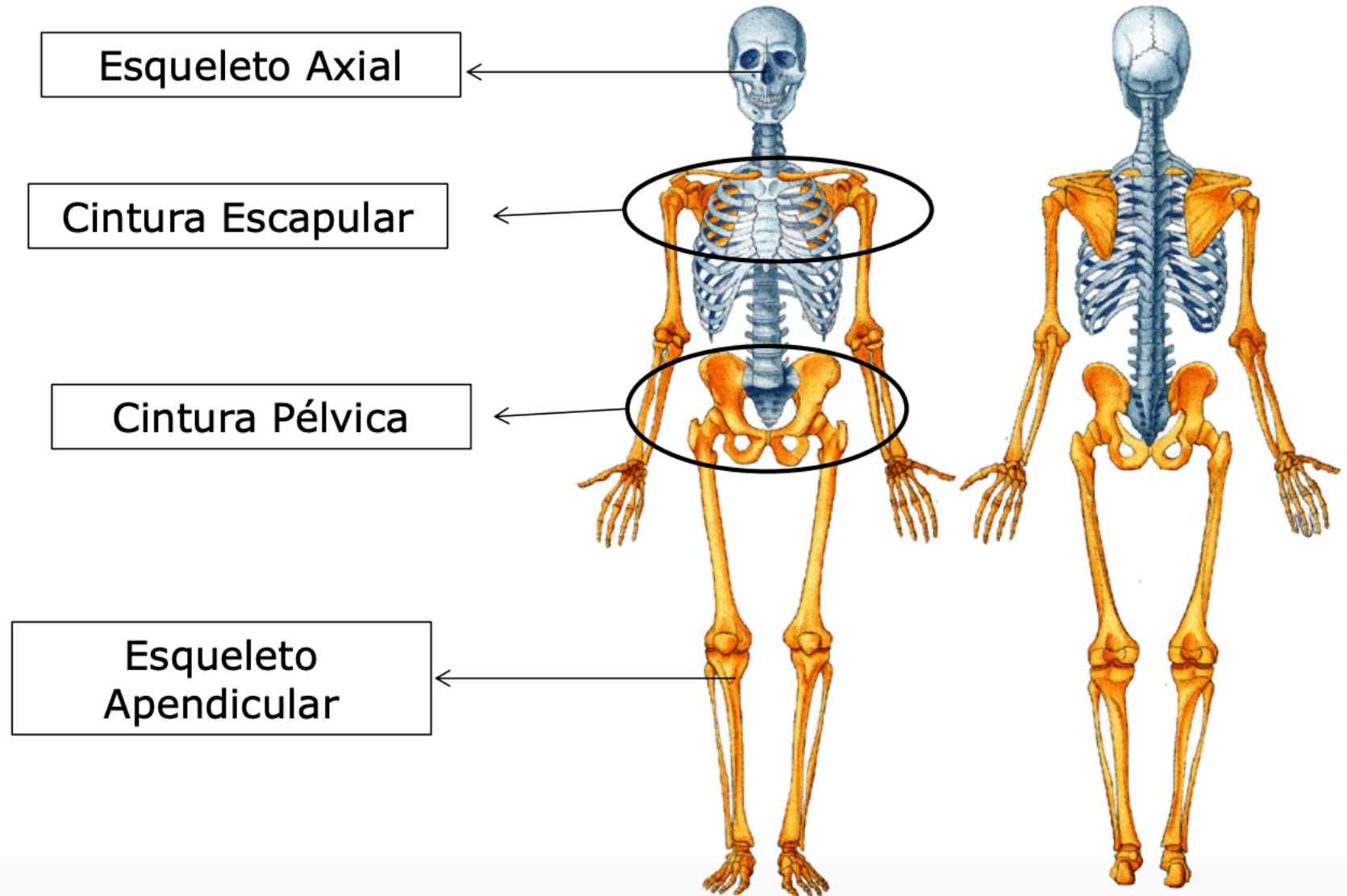
PASSIVO

UNIÃO

ATIVO



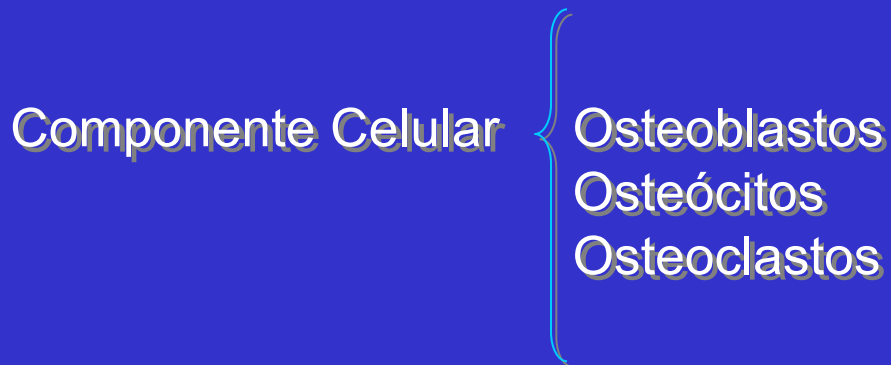
Divisões dos sistema esquelético



Funções do esqueleto

- Sustentação;
 - Proteção;
 - Movimento;
 - Homeostase mineral;
 - Produção de células sanguíneas;
 - Armazenamento de triglicerídeos.
-

Formação do Tecido Ósseo



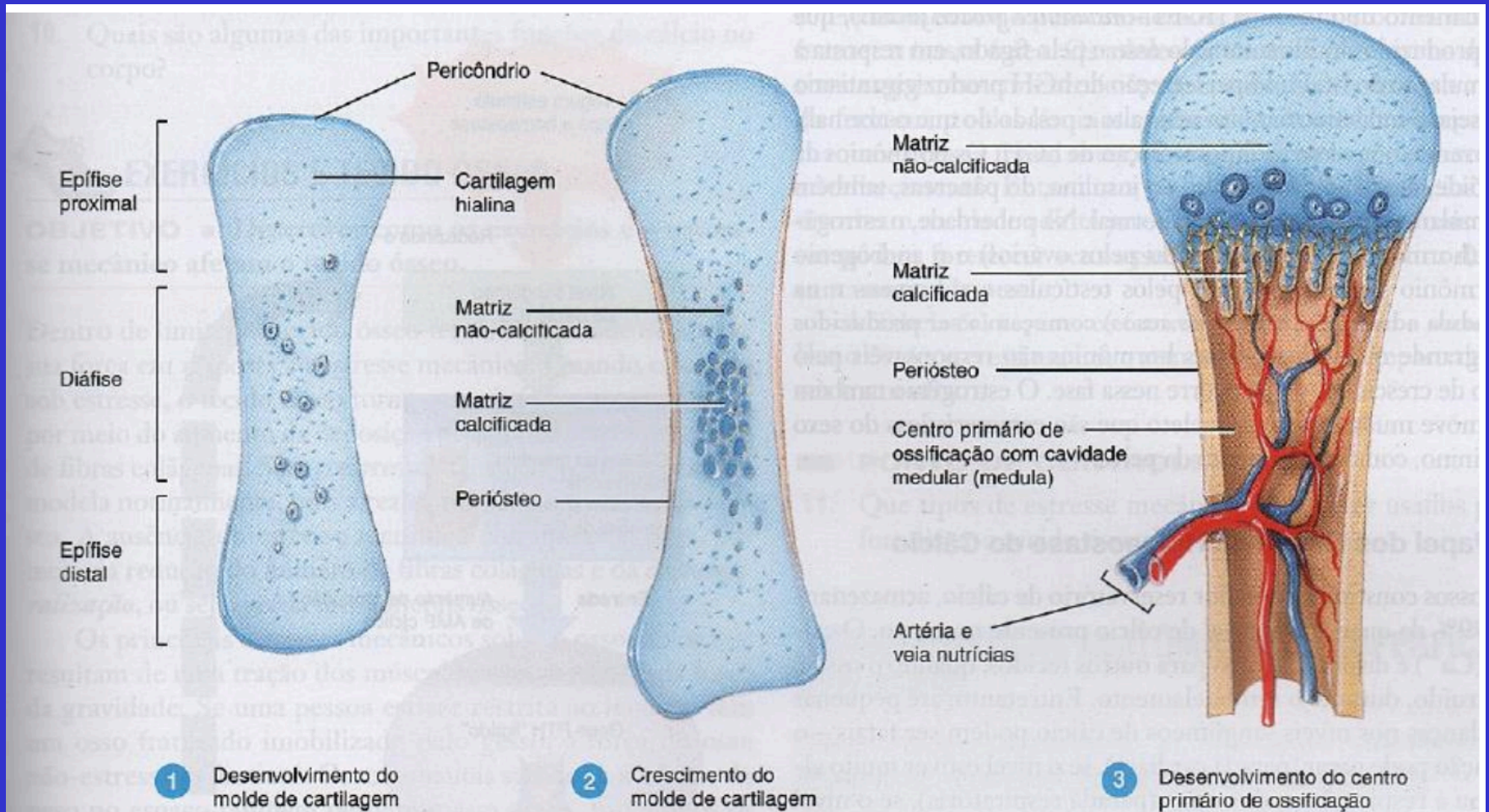
As Superfícies Ósseas

• Superfície Externa:

- Perioste - camada externa (fibrosa)
- Superfície articular - cartilagem hialina

Superfície Interna:

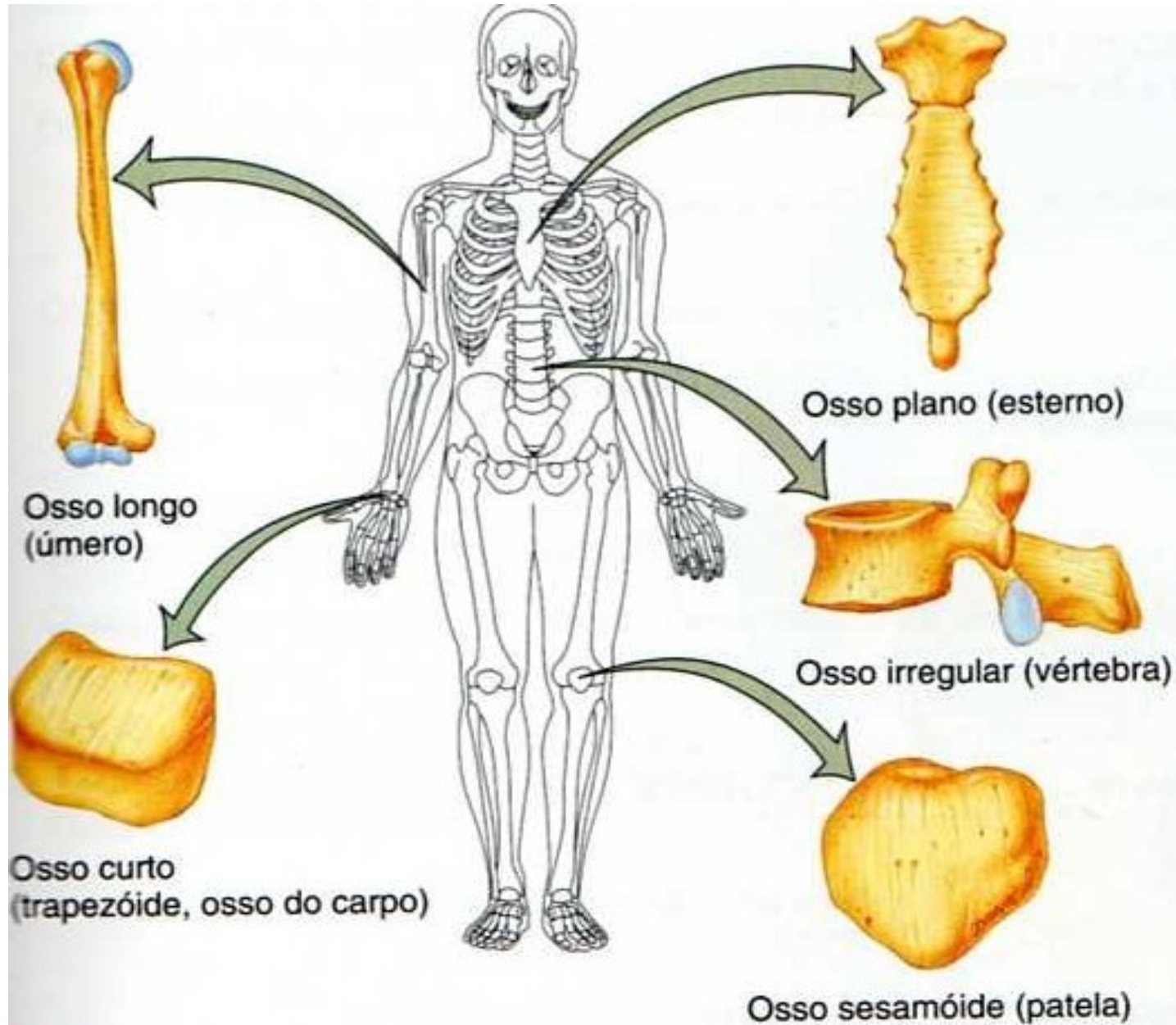
- Endoste - delgada camada celular (osteogênica)



Classificação morfológica dos ossos

- Longos
- Curtos
- Laminares (“plano”)
- Irregulares
- Pneumáticos
- Sesamóides

Classificação Morfológica dos ossos



Ossos Longos

- Comprimento predomina sobre a largura e a espessura. ($C > L/E$)
- Estão localizados principalmente no esqueleto apendicular.

Membros inferiores

- Fêmur
- Tíbia
- Fíbula
- Metatarso
- Falanges

Membros Superiores

- Úmero
- Ulna
- Rádio
- Metacarpo
- Falanges

(extremidades)

OSSOS LONGOS

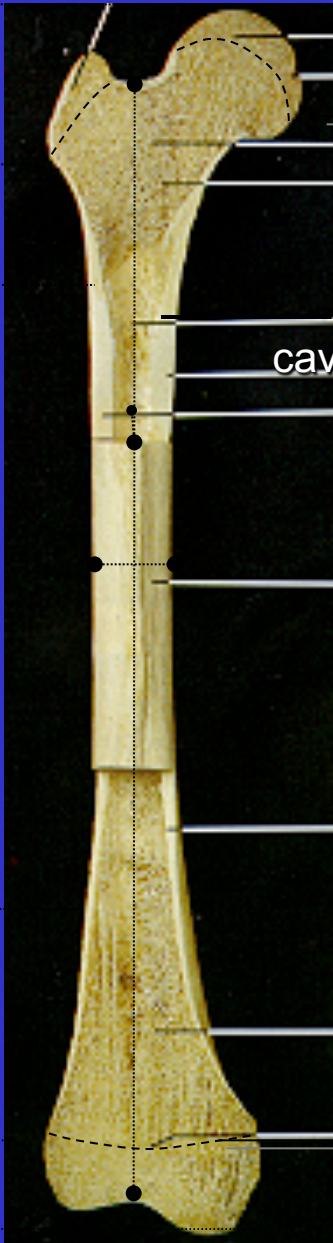
Epífise Proximal

Metáfise

Diáfise (corpo)

Metáfise

Epífise Distal



Placa de crescimento calcificada (Linha epifisária*)

canal ou cavidade medular

Placa de crescimento calcificada

* Cartilagem epifisária

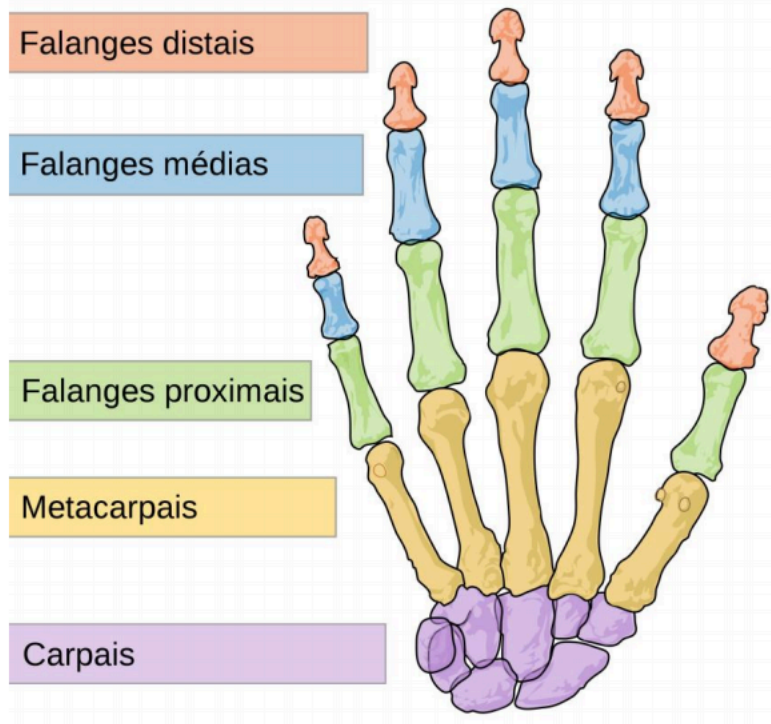


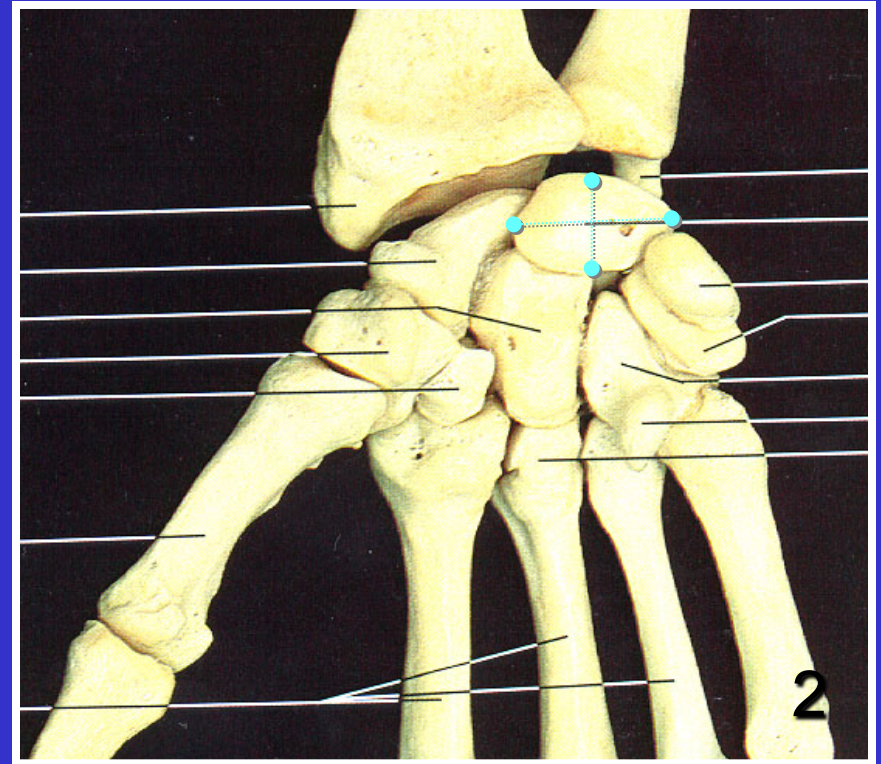
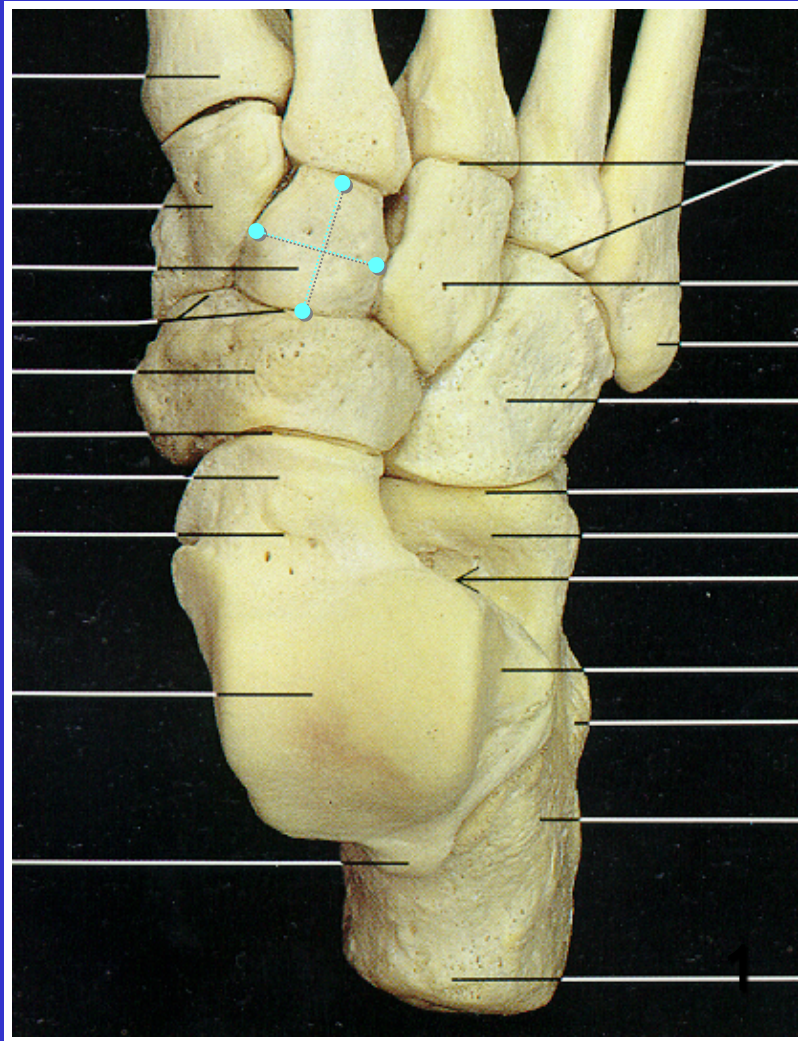
Fêmur de adulto: Secção coronal das epífises proximal e distal

Ossos curtos

- As três dimensões são semelhantes. (C=L=E)

- Carpos e tarsos

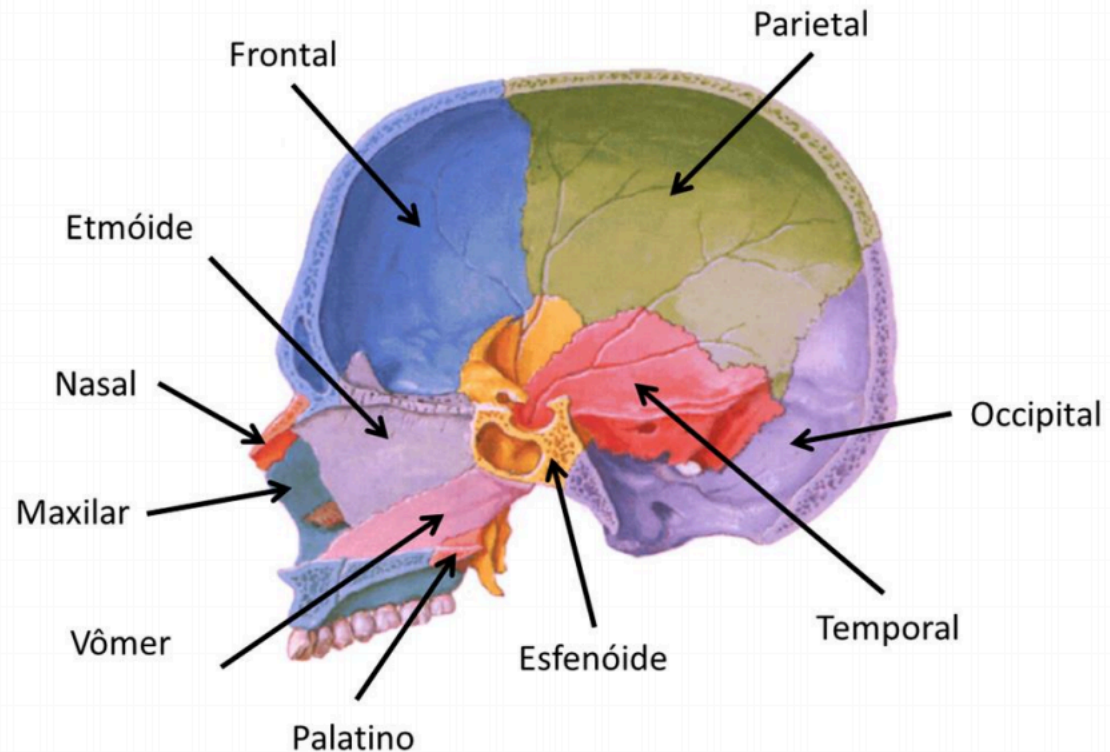




- (1) Vista dorsal dos ossos do tarso do pé direito.
(2) Vista palmar dos ossos do carpo da mão direita.

Ossos Laminares

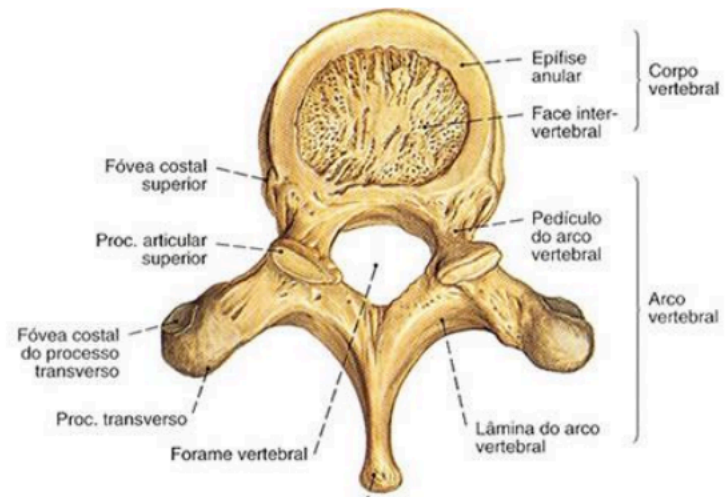
- Comprimento e largura semelhantes, predominam sobre a espessura. ($C=L>E$)
- Frontal
- Occipital
- Parietal
- Escápula
- Osso do quadril



Ossos irregulares

- Forma geométrica mal definida. Não pode ser classificado como longo, laminar ou curto.

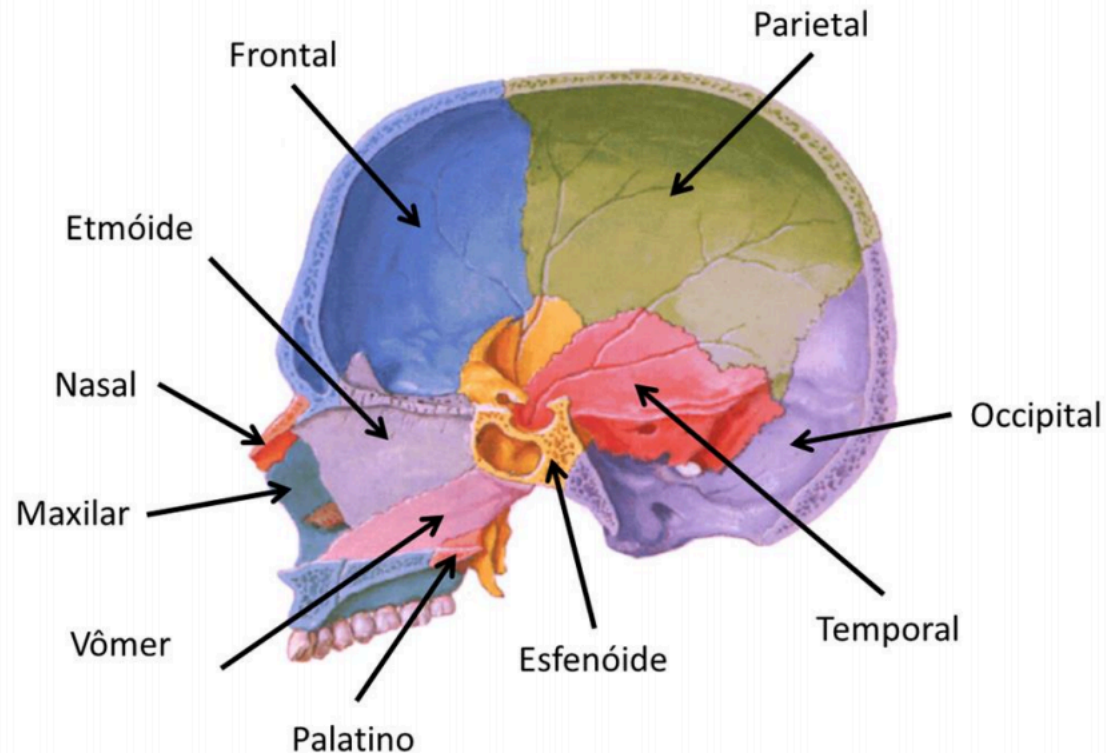
- Vértebras
- Osso temporal



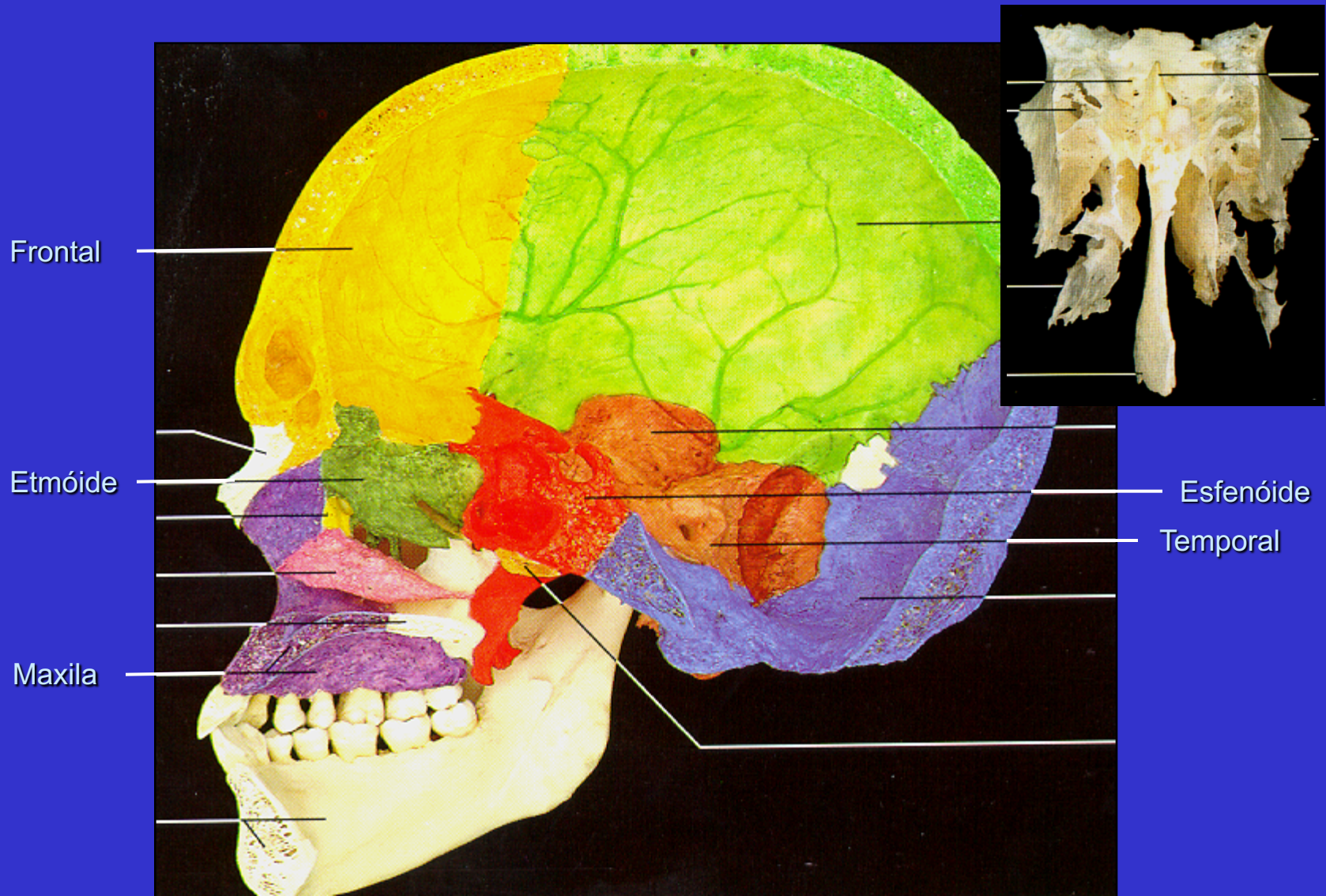
Ossos pneumáticos

- Apresentam uma ou mais cavidades, revestidas por mucosa e repletas de ar (seios).

- Esfenóide;
- Frontal;
- Etmóide;
- Temporal;
- Maxilar.



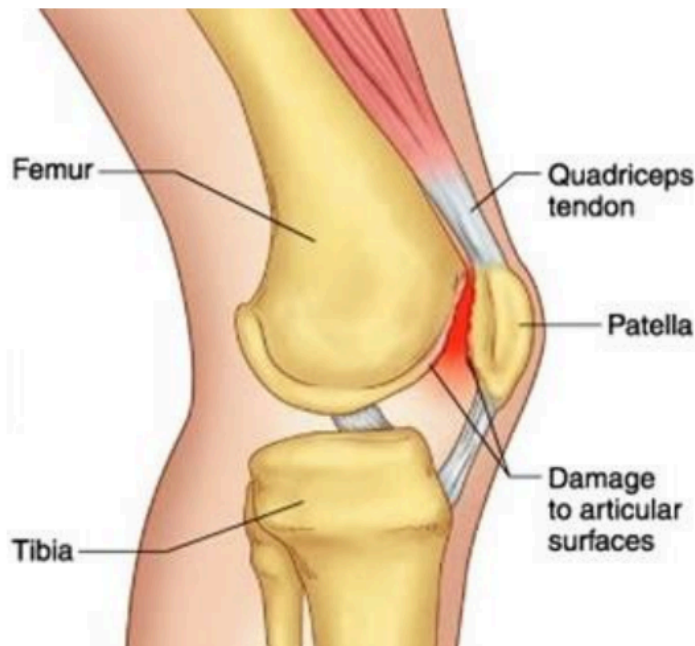
OSSOS PNEUMÁTICOS



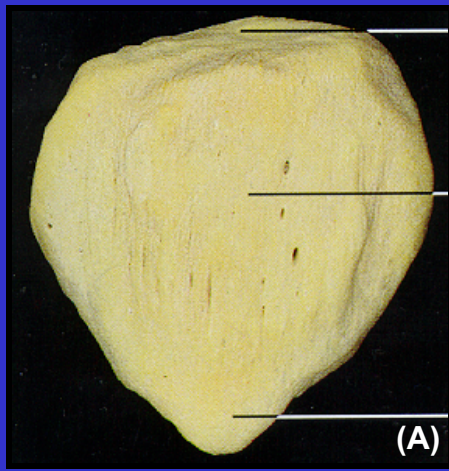
Ossos Sesamóides

- Estão localizados no interior de tendões (intratendíneos) ou da cápsula fibrosa de algumas articulações (intracapsulares).

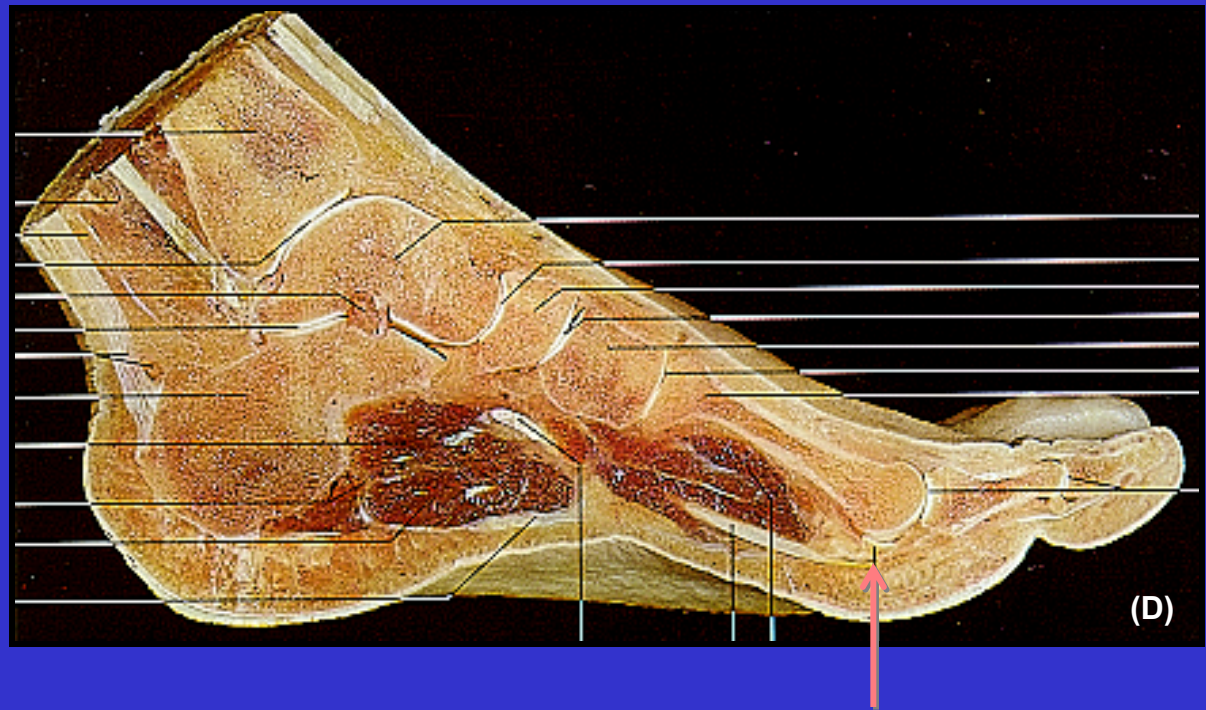
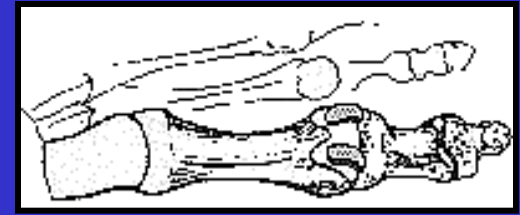
- Patela



OSSOS SESAMÓIDES



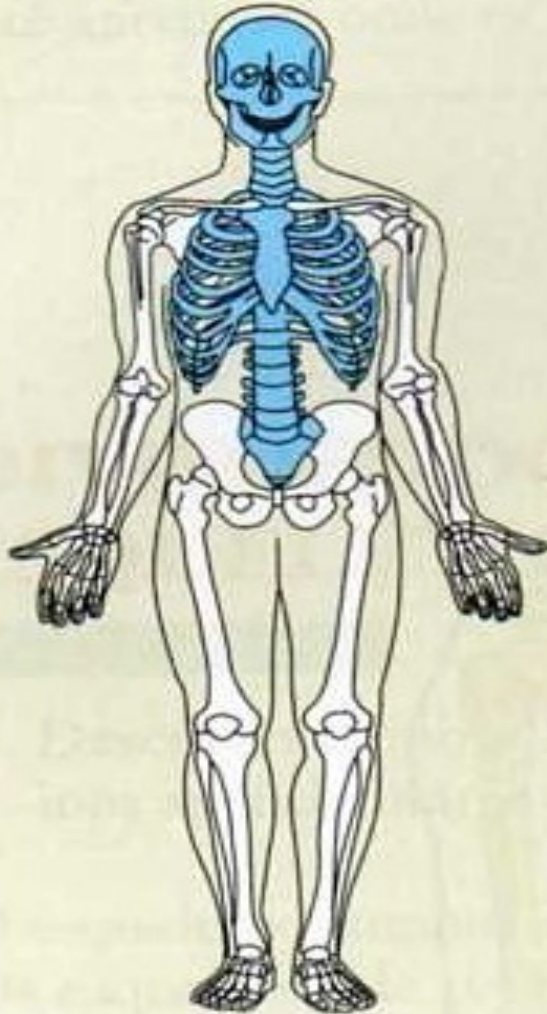
-Intratendíneos
-Periarticulares



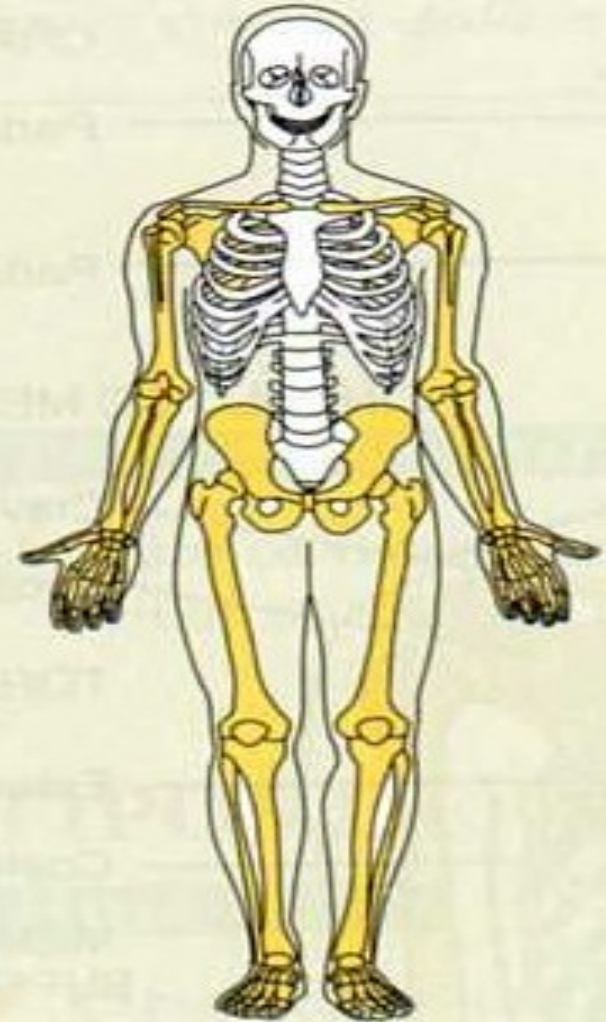
(A) Vista anterior da patela direita. (B) Corte sagital da articulação do joelho.
(C) Ossos sesamóides do pé. (D) Corte longitudinal do pé esquerdo, pelo eixo do hálux.

DIVISÃO DO ESQUELETO

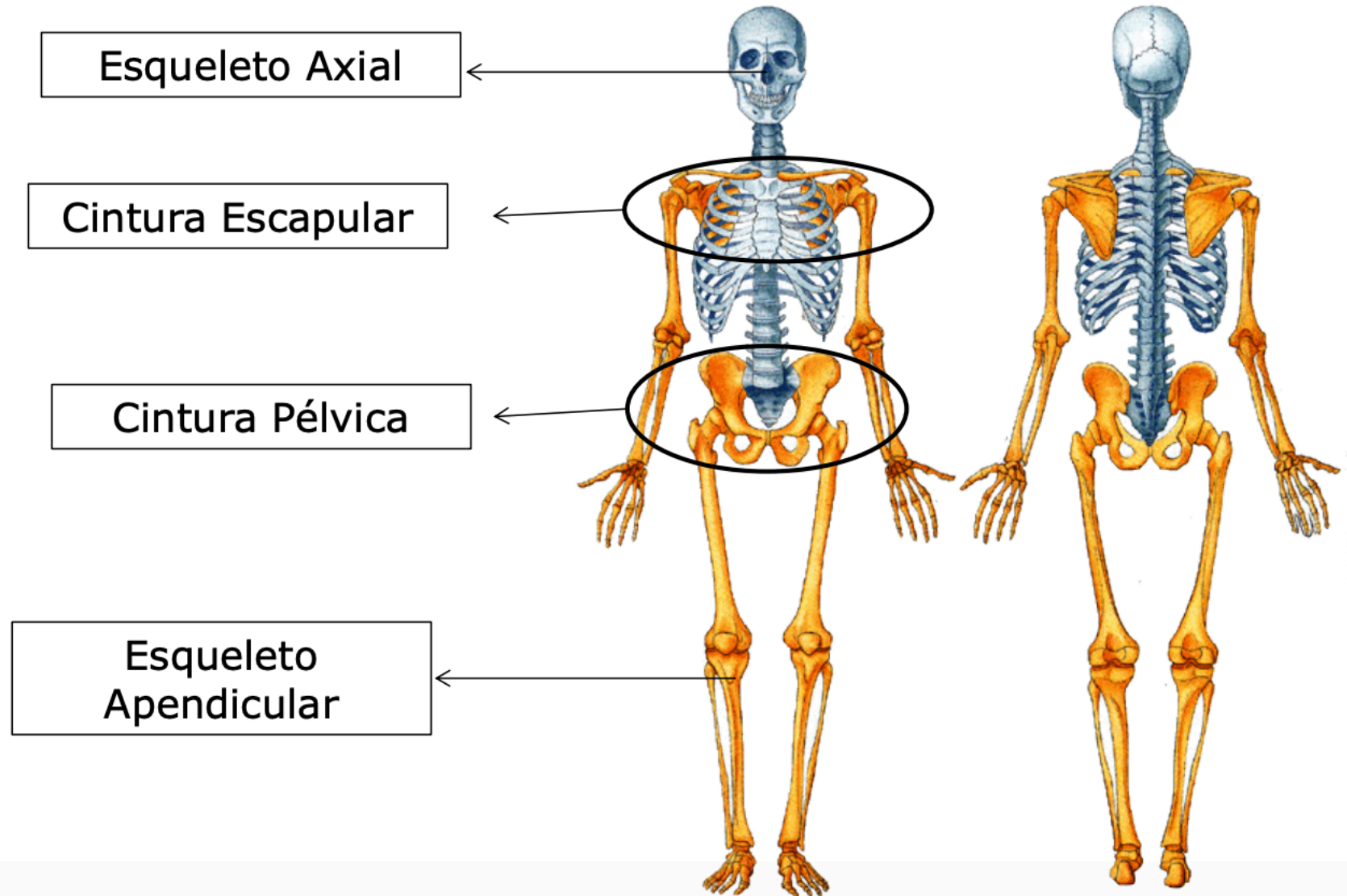
Esqueleto Axial



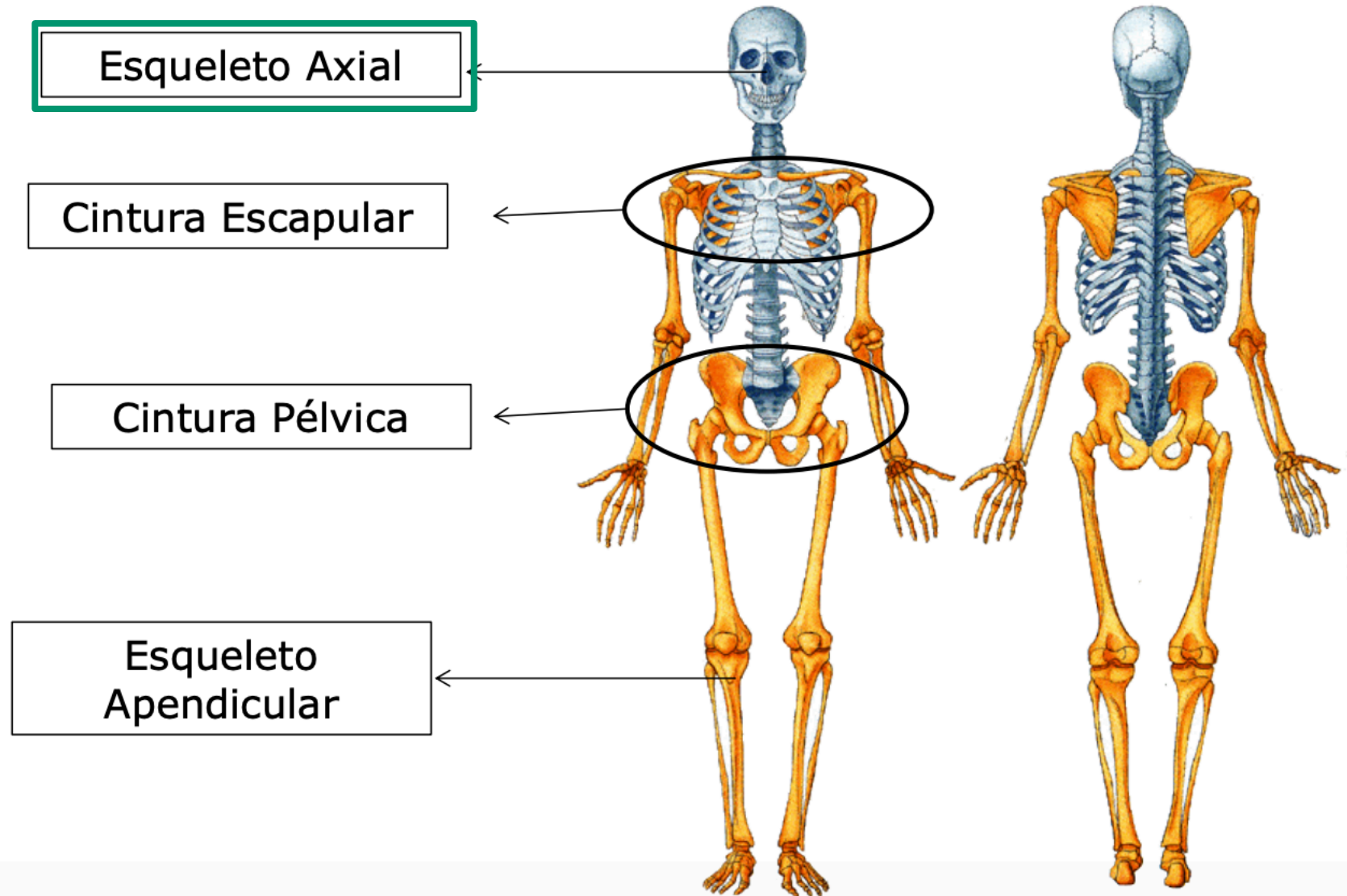
Esqueleto Apendicular



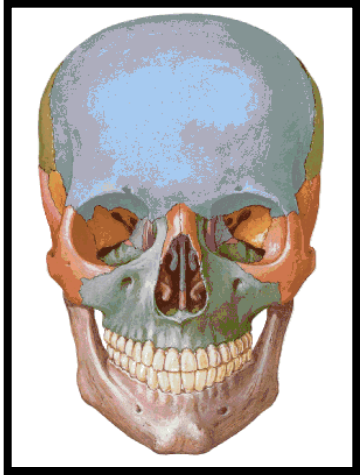
Divisões dos sistema esquelético



Divisões dos sistema esquelético



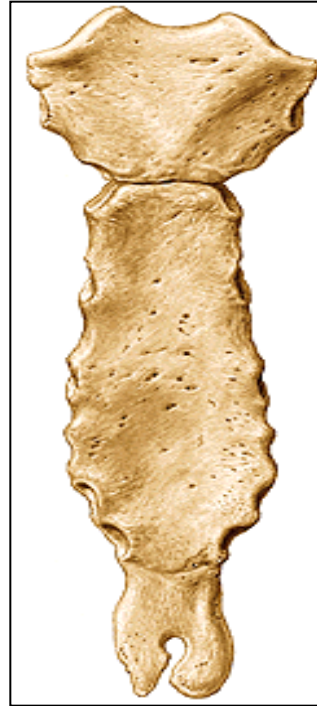
ESQUELETO AXIAL



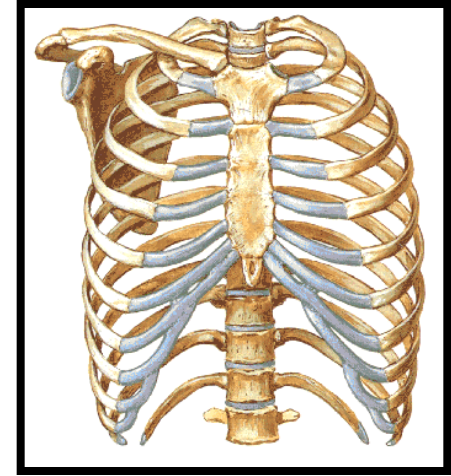
Cranio e
Face



Coluna
Vertebral



Esterno



Costelas

ESQUELETO AXIAL CRÂNIO / FACE

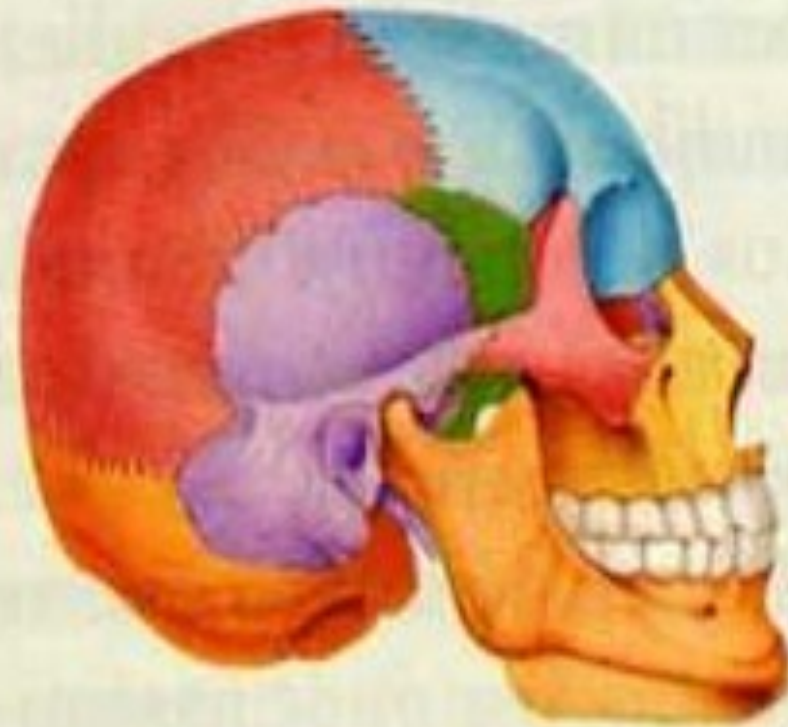
CRÂNIO

FACE

22

Frontal (1)
Parietal (2)
Temporal (2)
Occipital (1)
Esfenóide (1)
Etmóide (1)
Conchas nasais inferiores (2)
Vômer (1)

Nasal (2)
Maxila (2)
Zigomático (2)
Mandíbula (1)
Lacrimal (2)
Palatino (2)

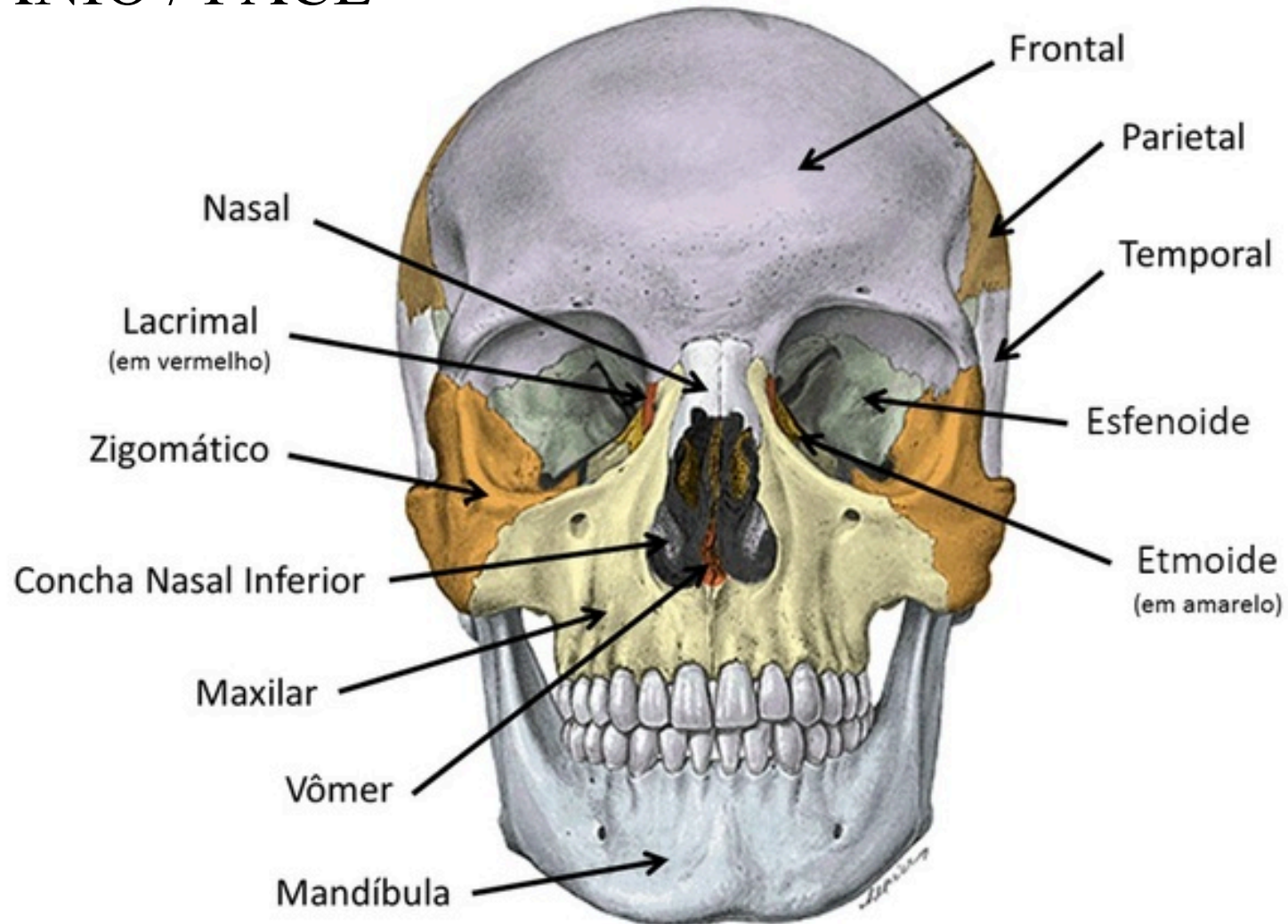


A

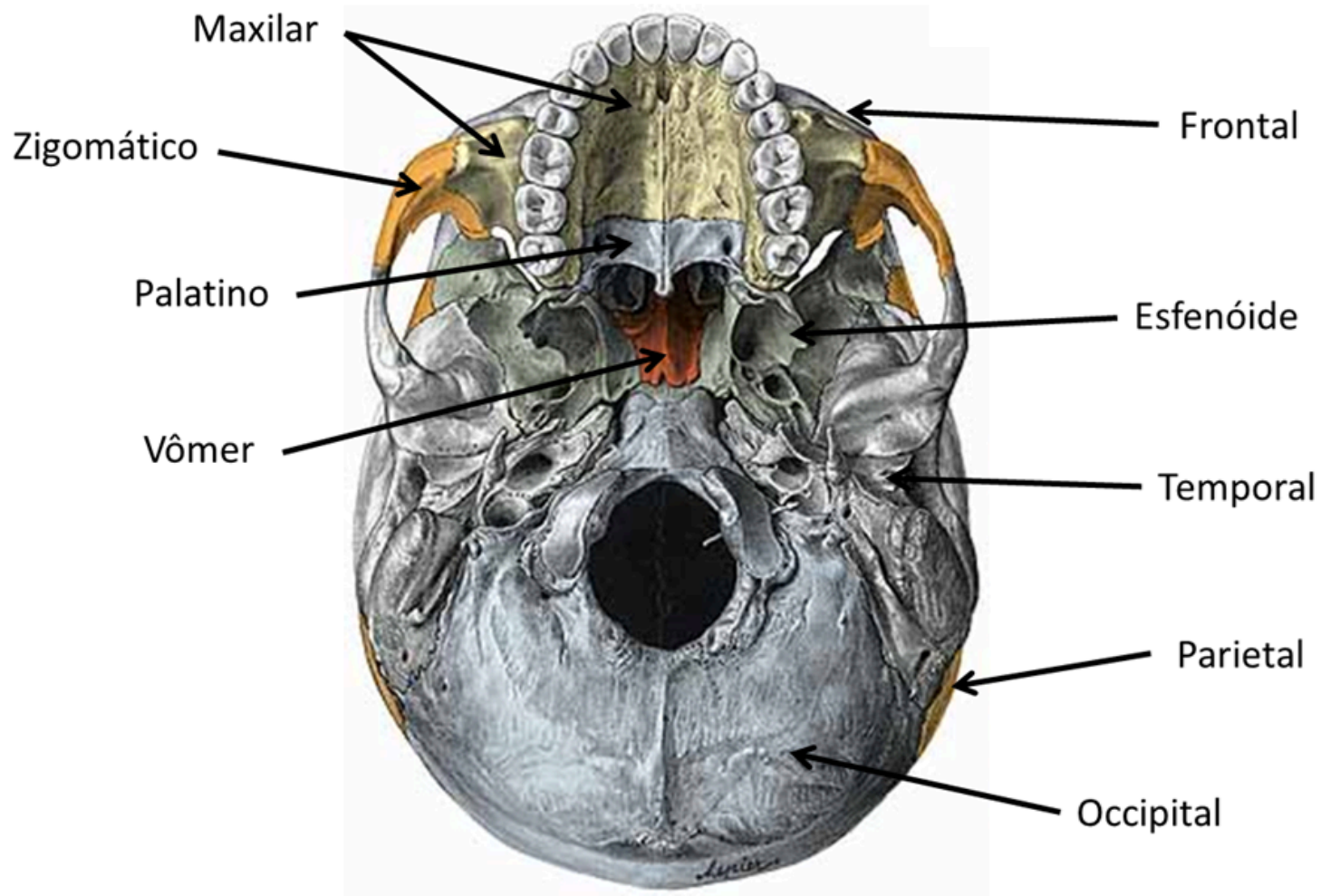


ESQUELETO AXIAL

CRÂNIO / FACE

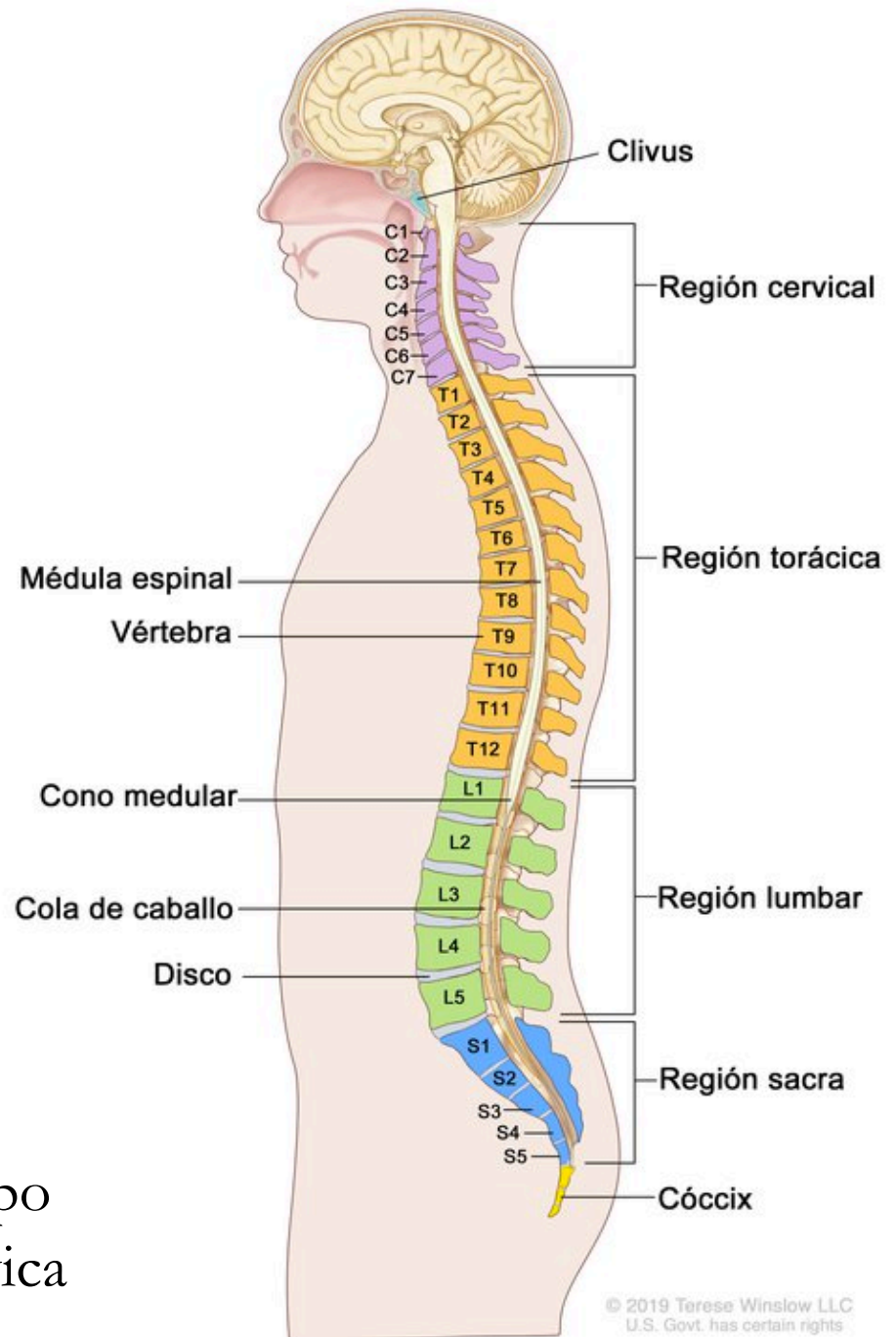
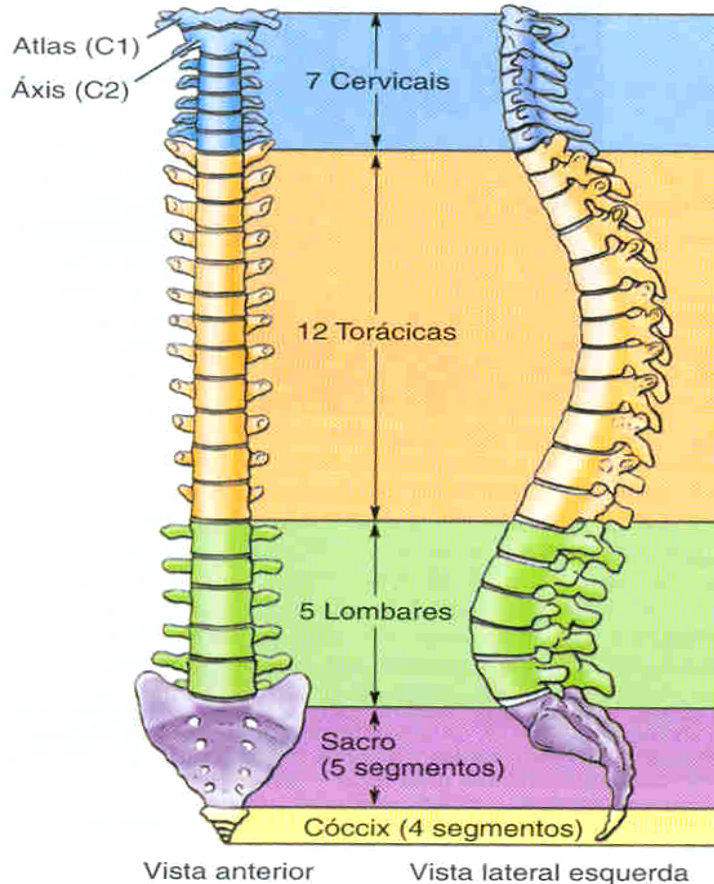


ESQUELETO AXIAL CRÂNIO / FACE

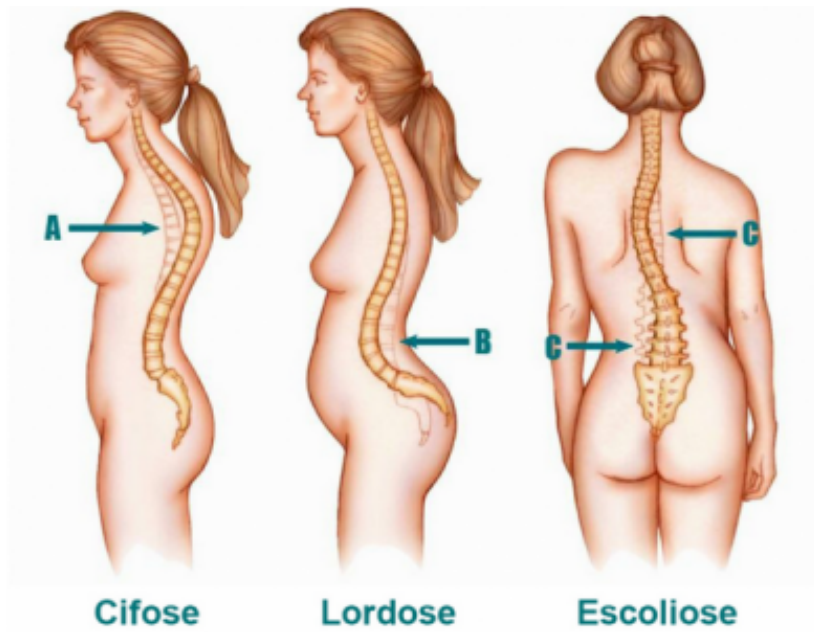


ESQUELETO AXIAL

COLUNA VERTEBRAL



Principal eixo de suporte do corpo
Fixa: cabeça, tórax e cintura pélvica



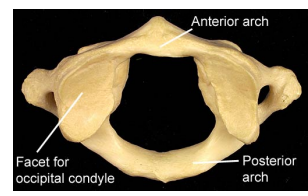
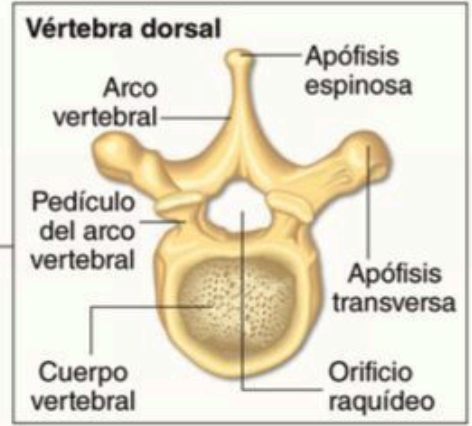
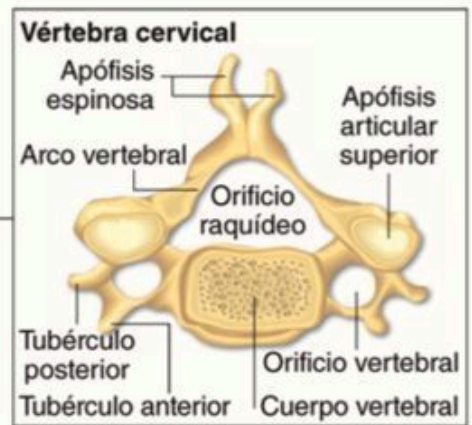
ESQUELETO AXIAL COLUNA CERVICAL



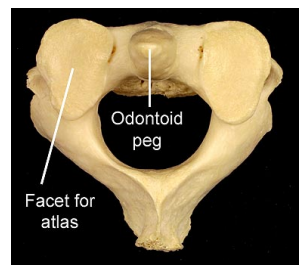
Vértebras cervicales

Vértebras dorsales

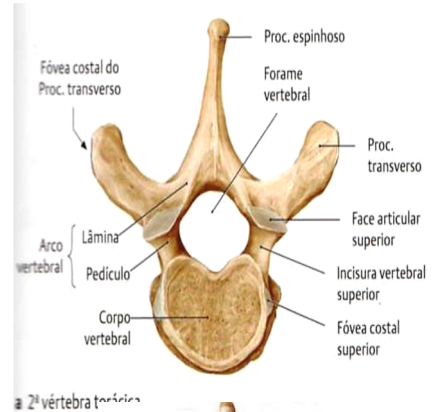
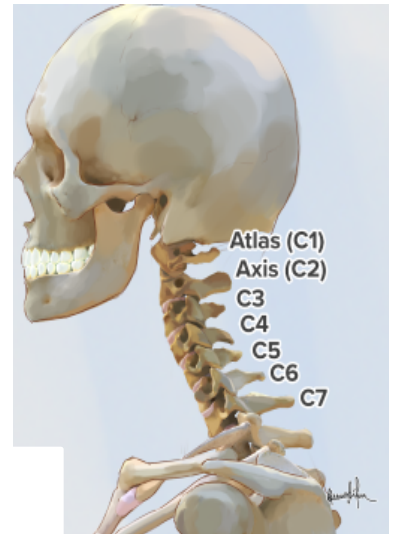
Vértebras lumbares



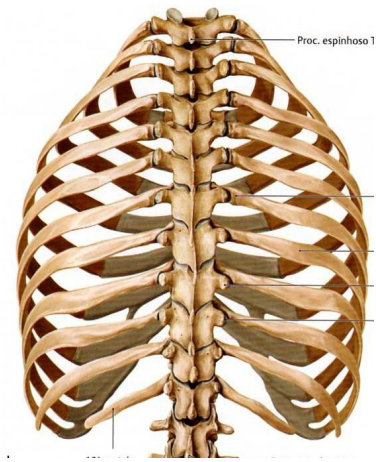
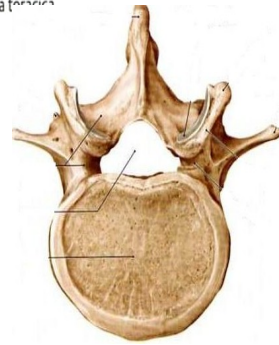
C1 – Atlas - Atípica



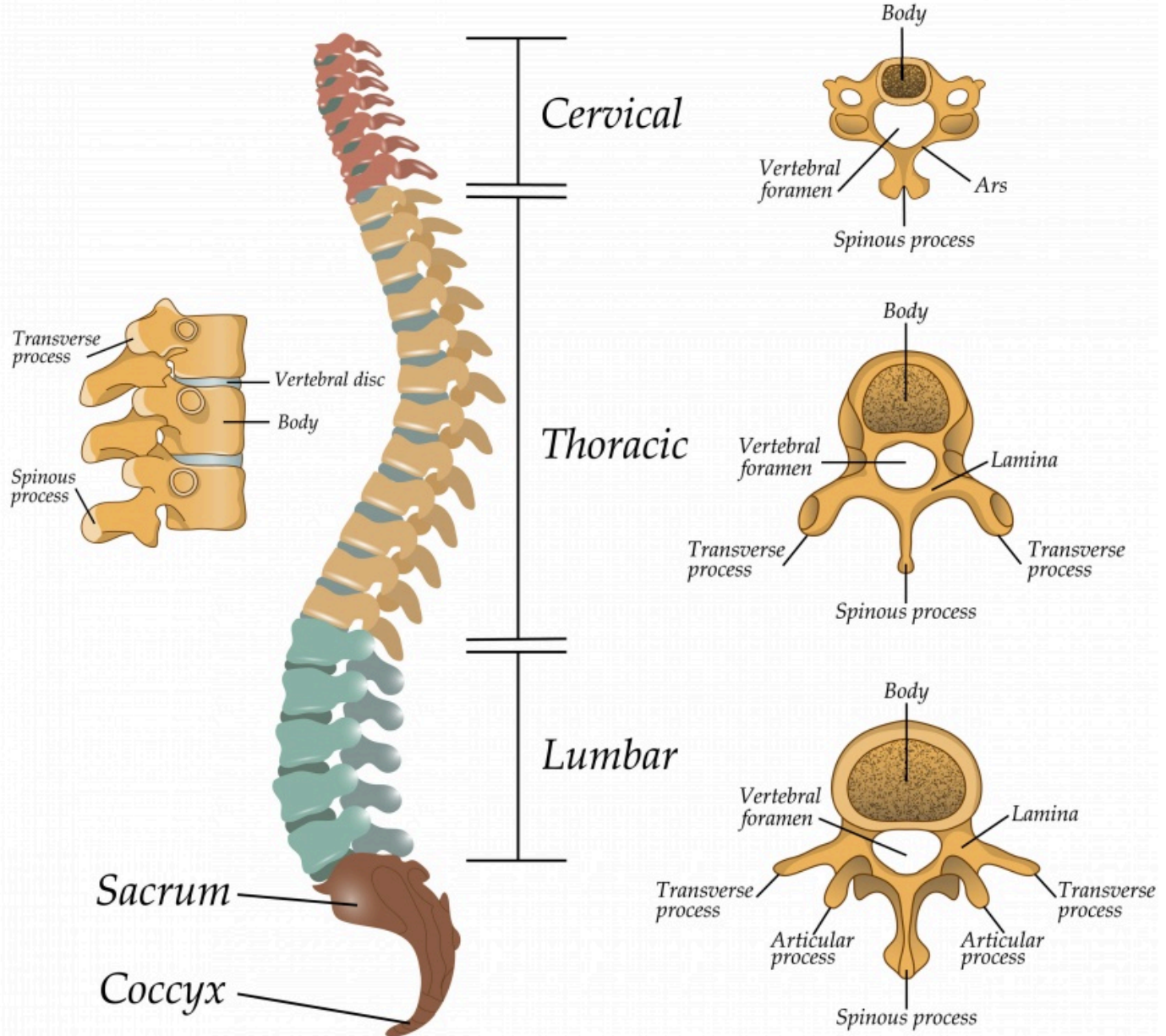
C2 – Áxis - Atípica



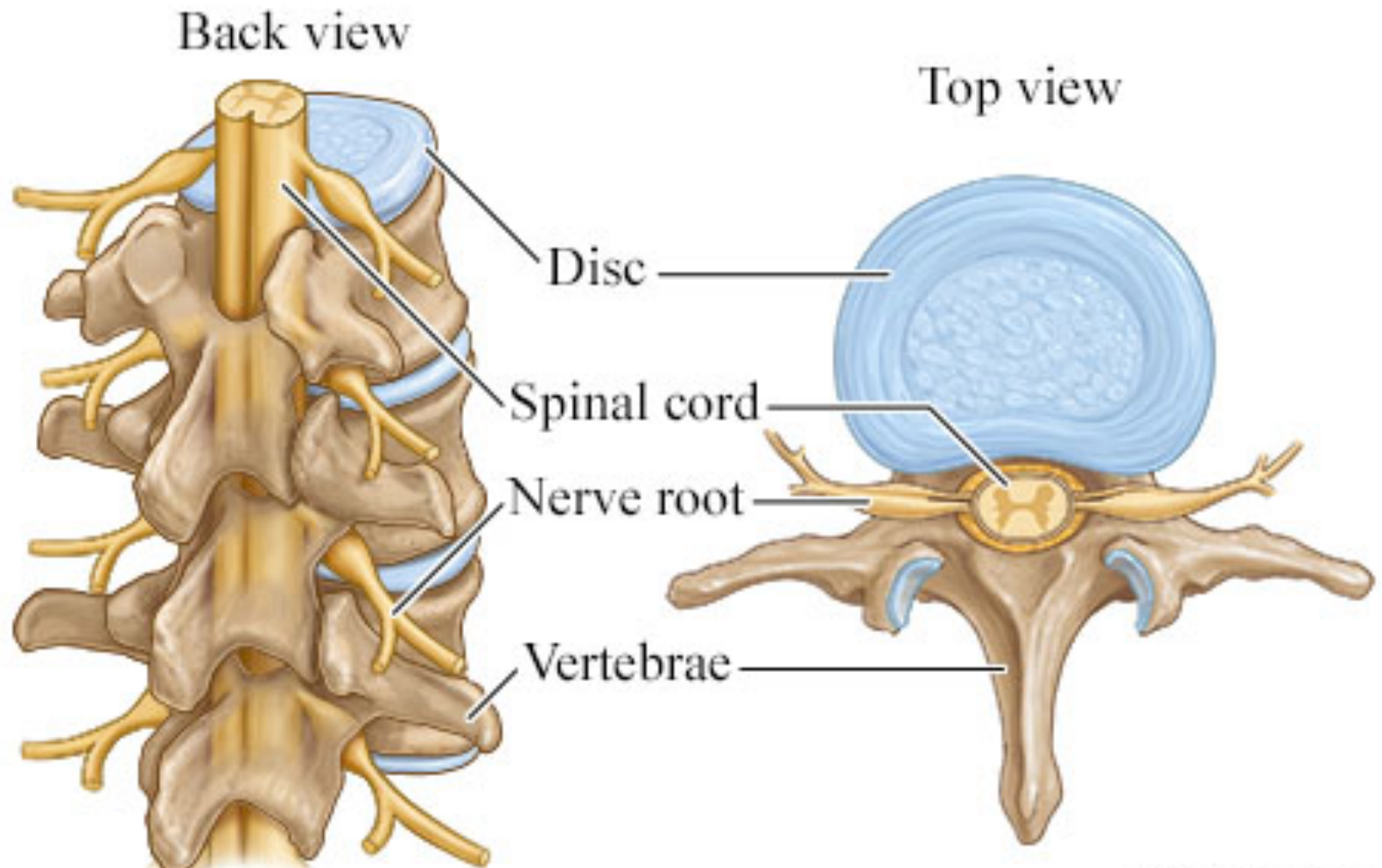
2ª vértebra torácica



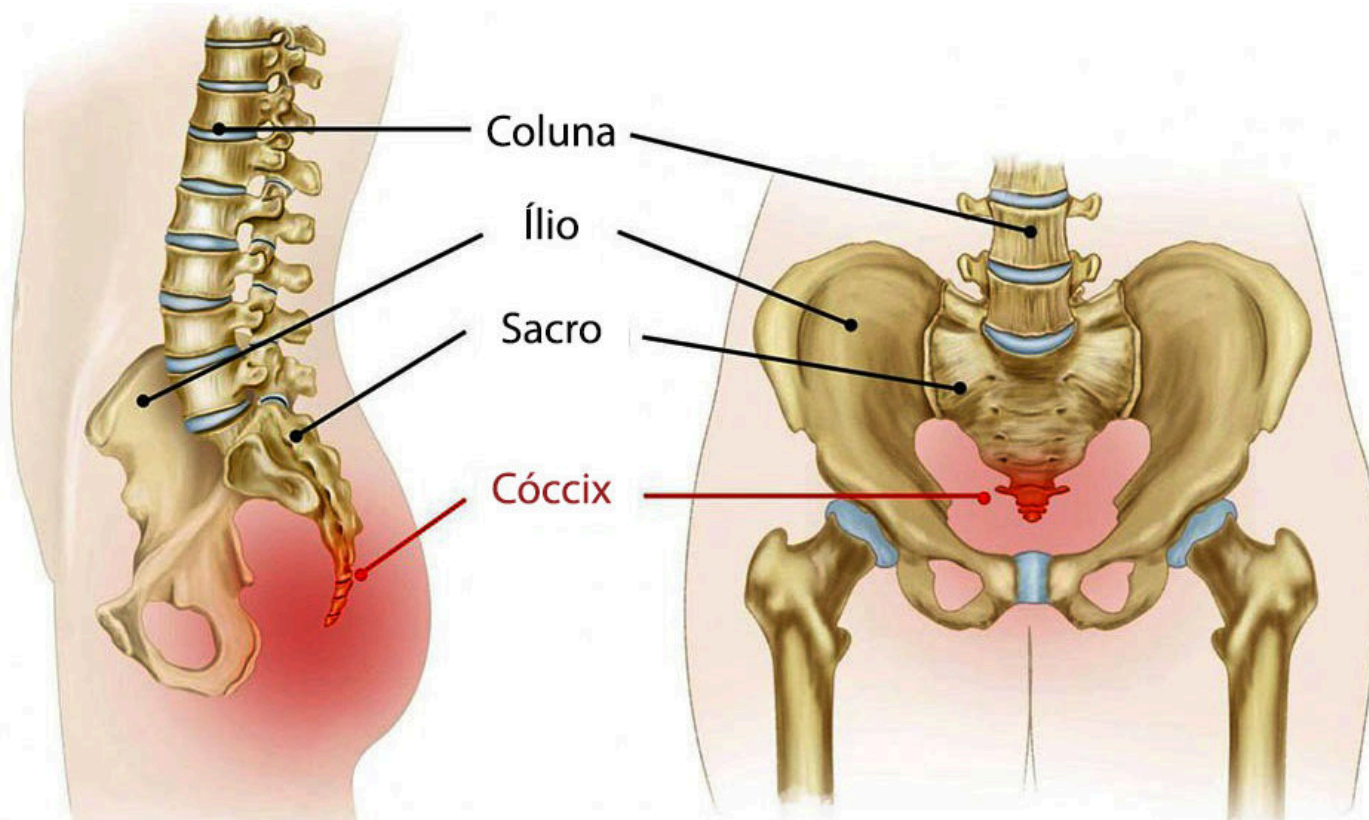
The structure of the segments of the spine



ESQUELETO AXIAL COLUNA CERVICAL



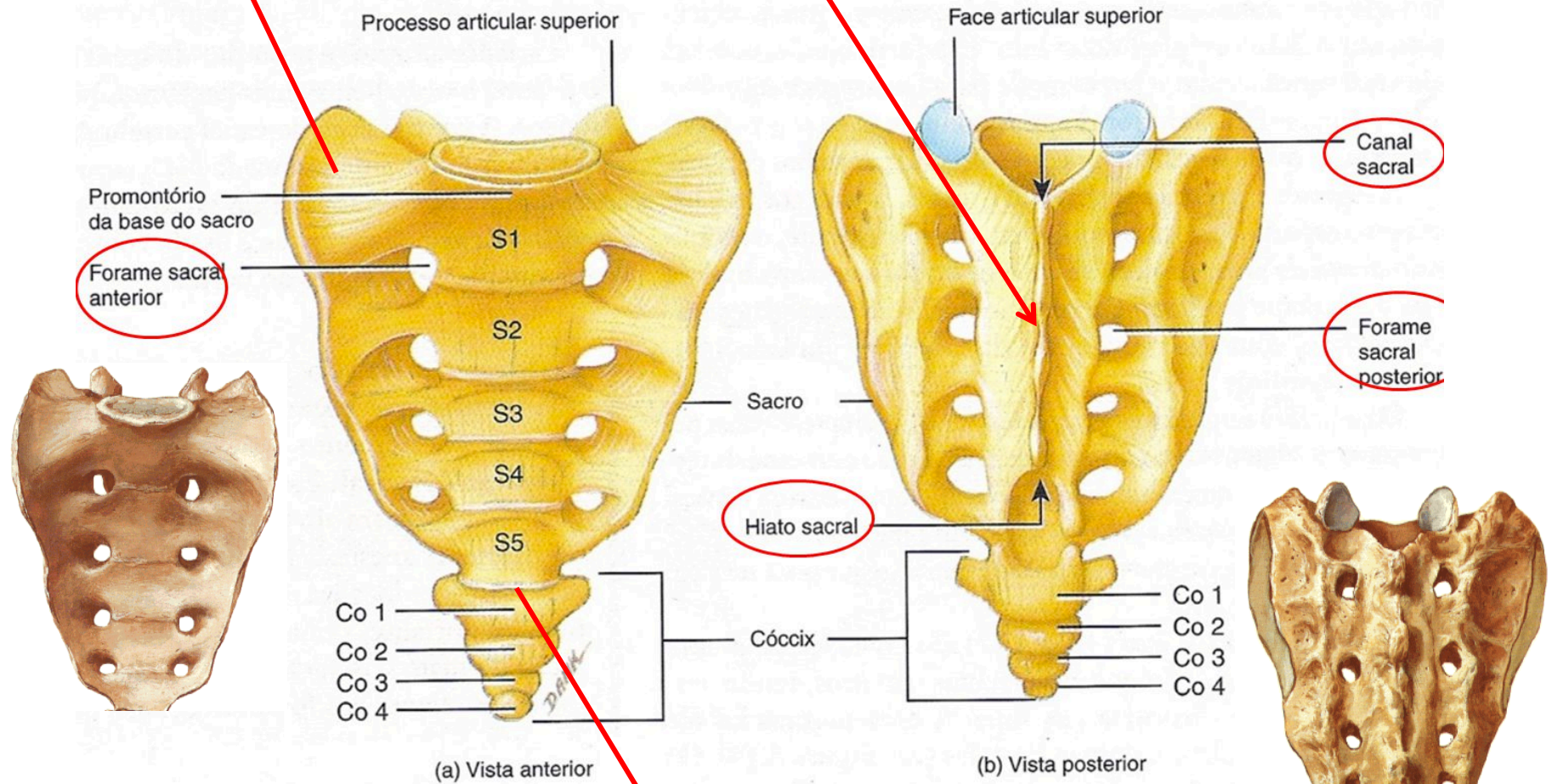
ESQUELETO AXIAL - COLUNA SACRAL E COCCÍGEA



ESQUELETO AXIAL - COLUNA SACRAL E COCCÍGEA

Asa sacral

crista sacral mediana



Processo articular superior

Face articular superior

Promontório da base do sacro

Forame sacral anterior

S1

S2

S3

S4

S5

Co 1

Co 2

Co 3

Co 4

Hiato sacral

Cóccix

Canal sacral

Forame sacral posterior

Co 1

Co 2

Co 3

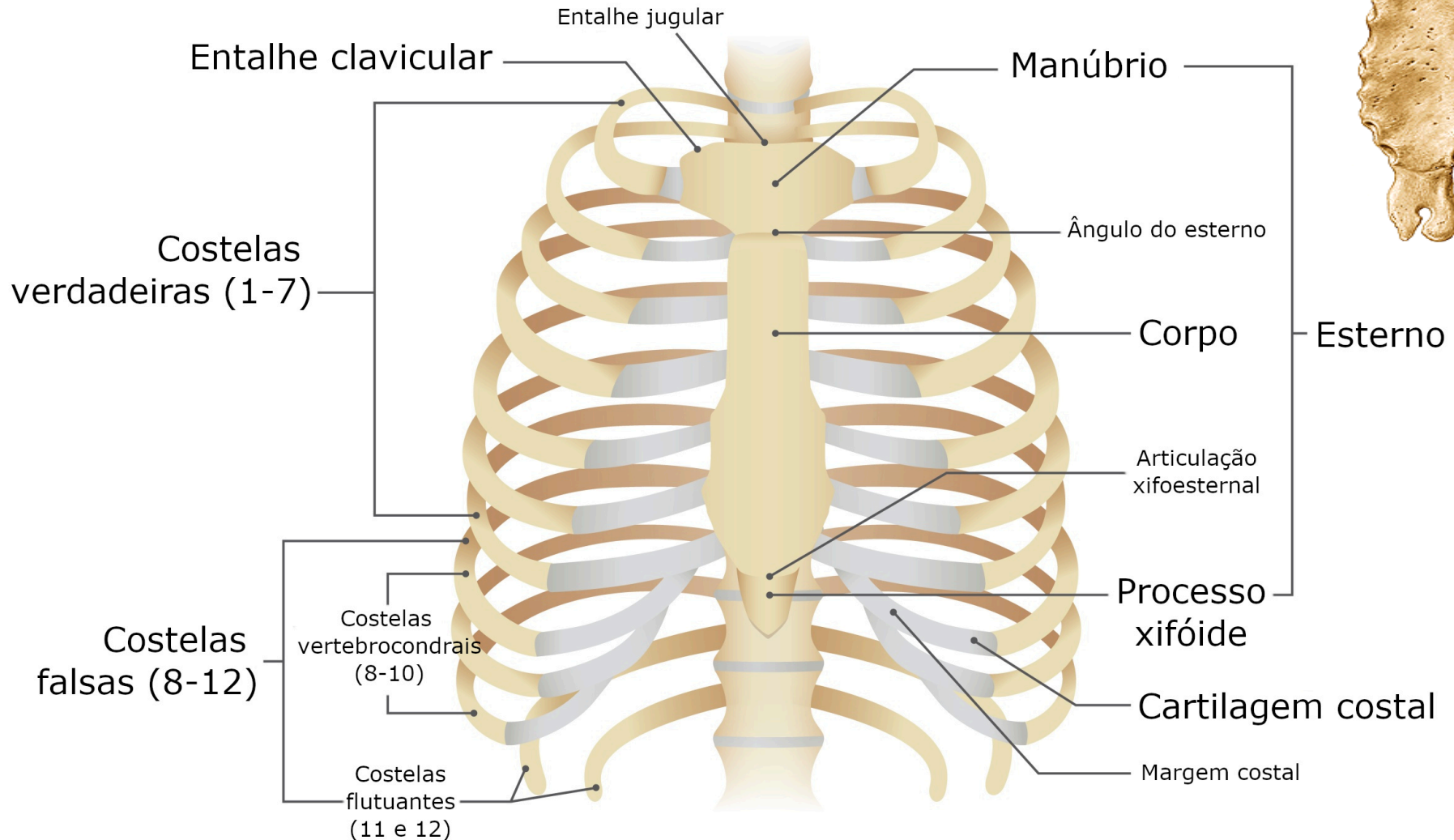
Co 4

(a) Vista anterior

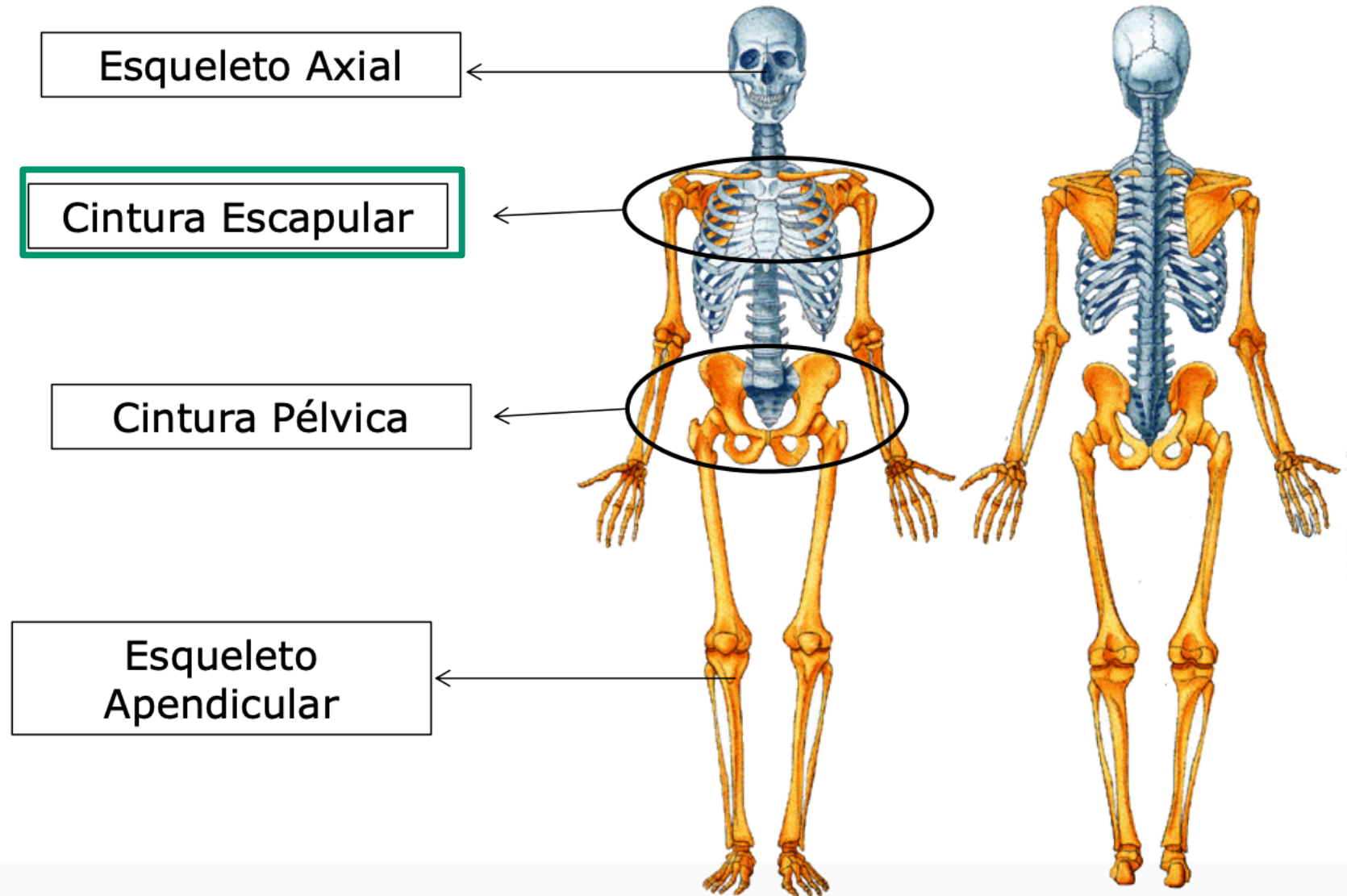
(b) Vista posterior

Ápice sacro

ESQUELETO AXIAL OSSOS DO TÓRAX - ESTERNO

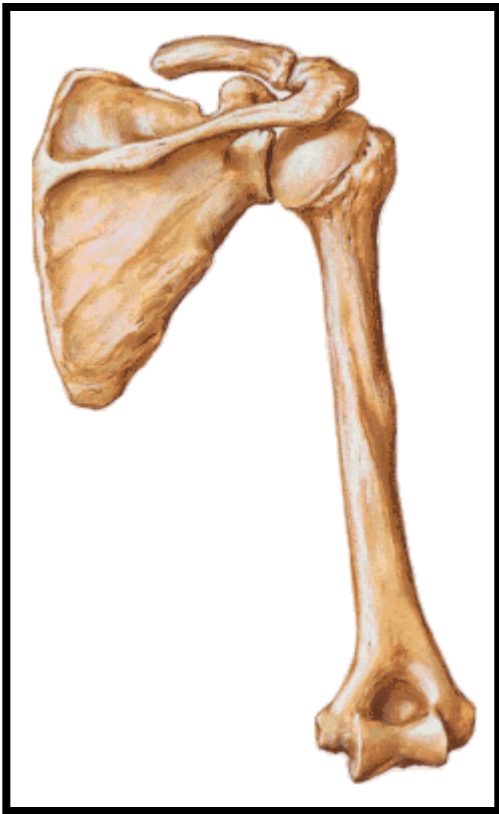


Divisões dos sistema esquelético



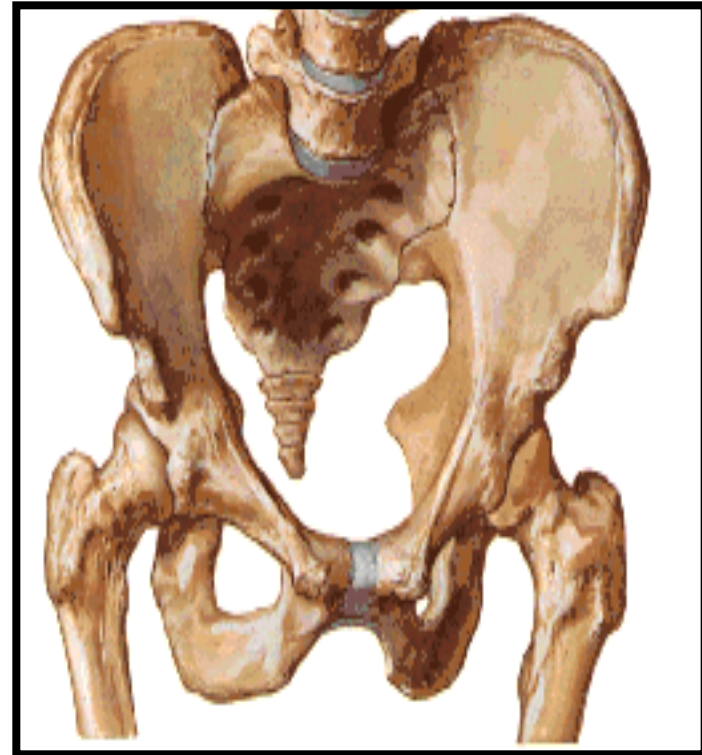
CÍNGULOS: UNIÃO ENTRE O ESQUELETO AXIAL E APENDICULAR (CINTAS)

Cíngulo do membro superior



Escápulas
Clavículas

Cíngulo do membro inferior



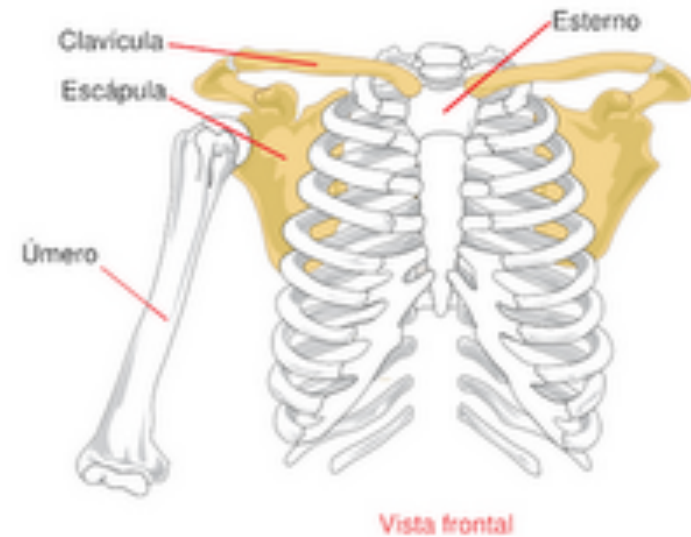
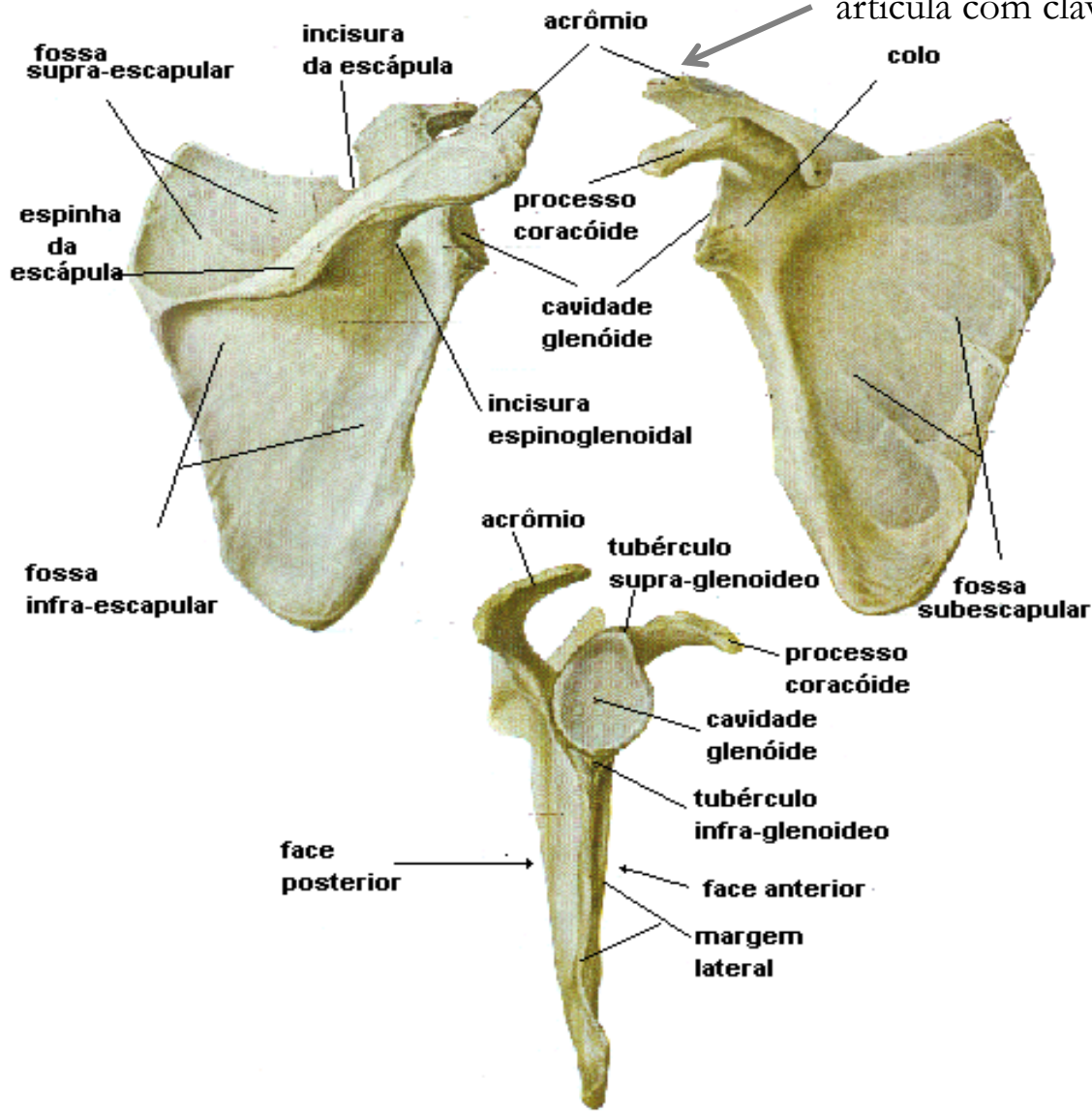
Ossos do Quadril

CÍNGULO DO MEMBRO SUPERIOR ESCÁPULA

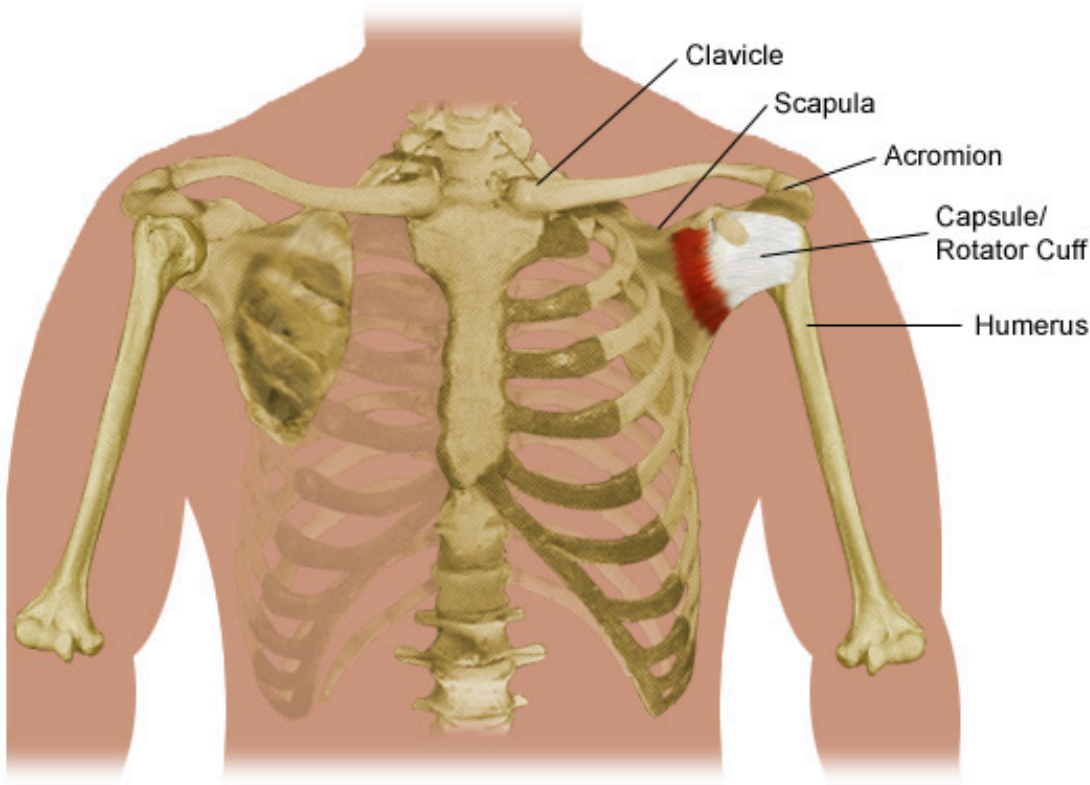
Face posterior

Face anterior

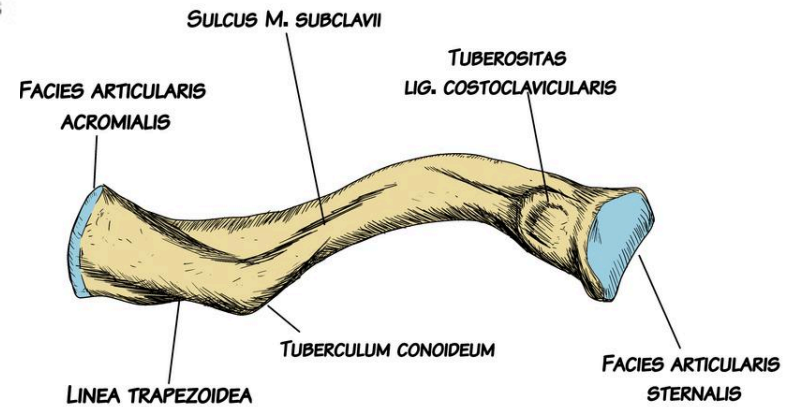
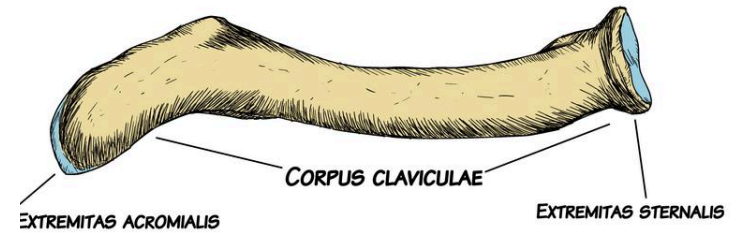
articula com clavícula



CÍNGULO DO MEMBRO SUPERIOR CLAVÍCULA



Right Clavícula- View from above



Right Clavícula- View from below

ESQUELETO APENDICULAR

OSSOS DOS MEMBROS SUPERIORES

ÚMERO

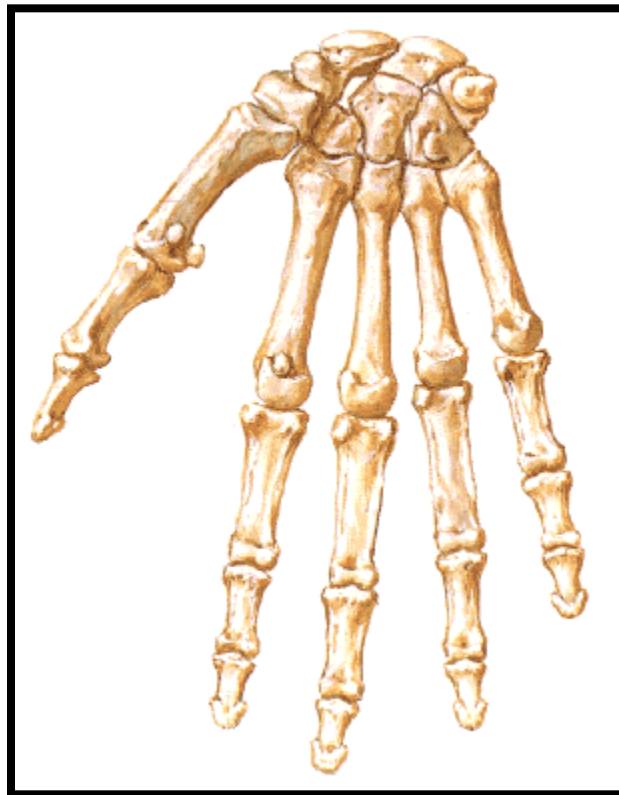
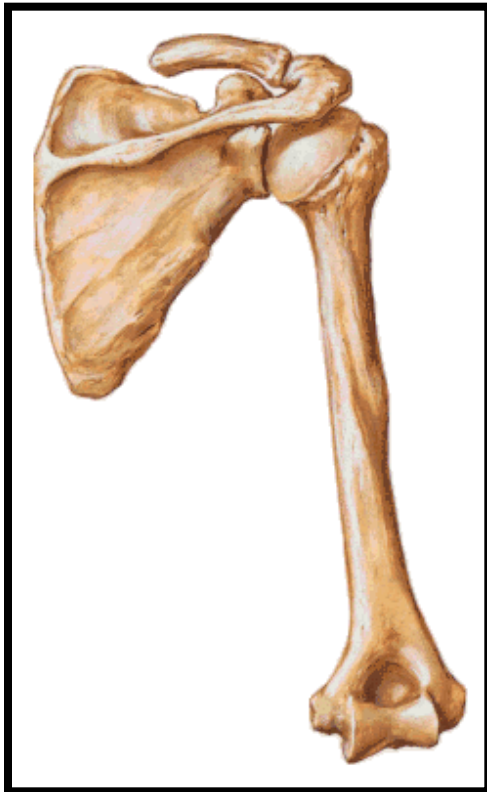
RÁDIO

ULNA

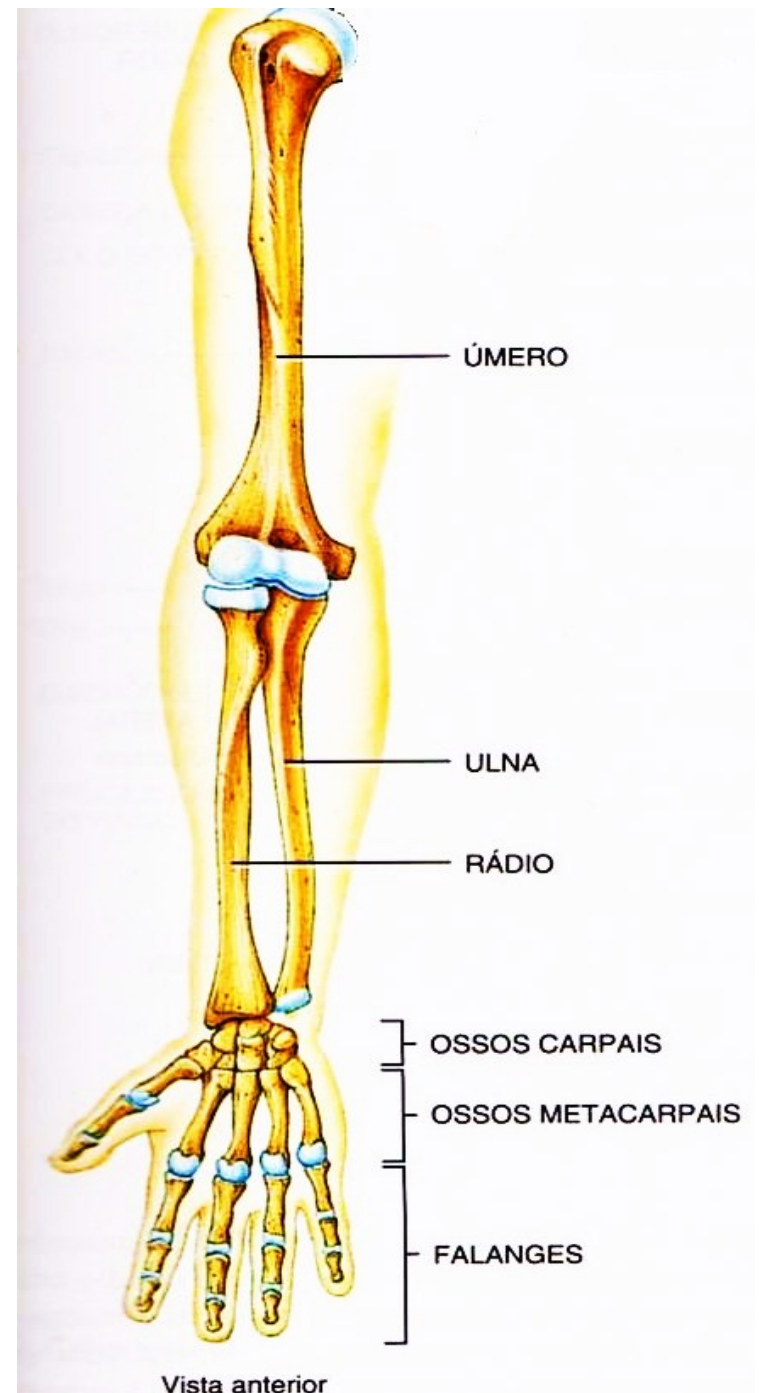
CARPO

METACARPO

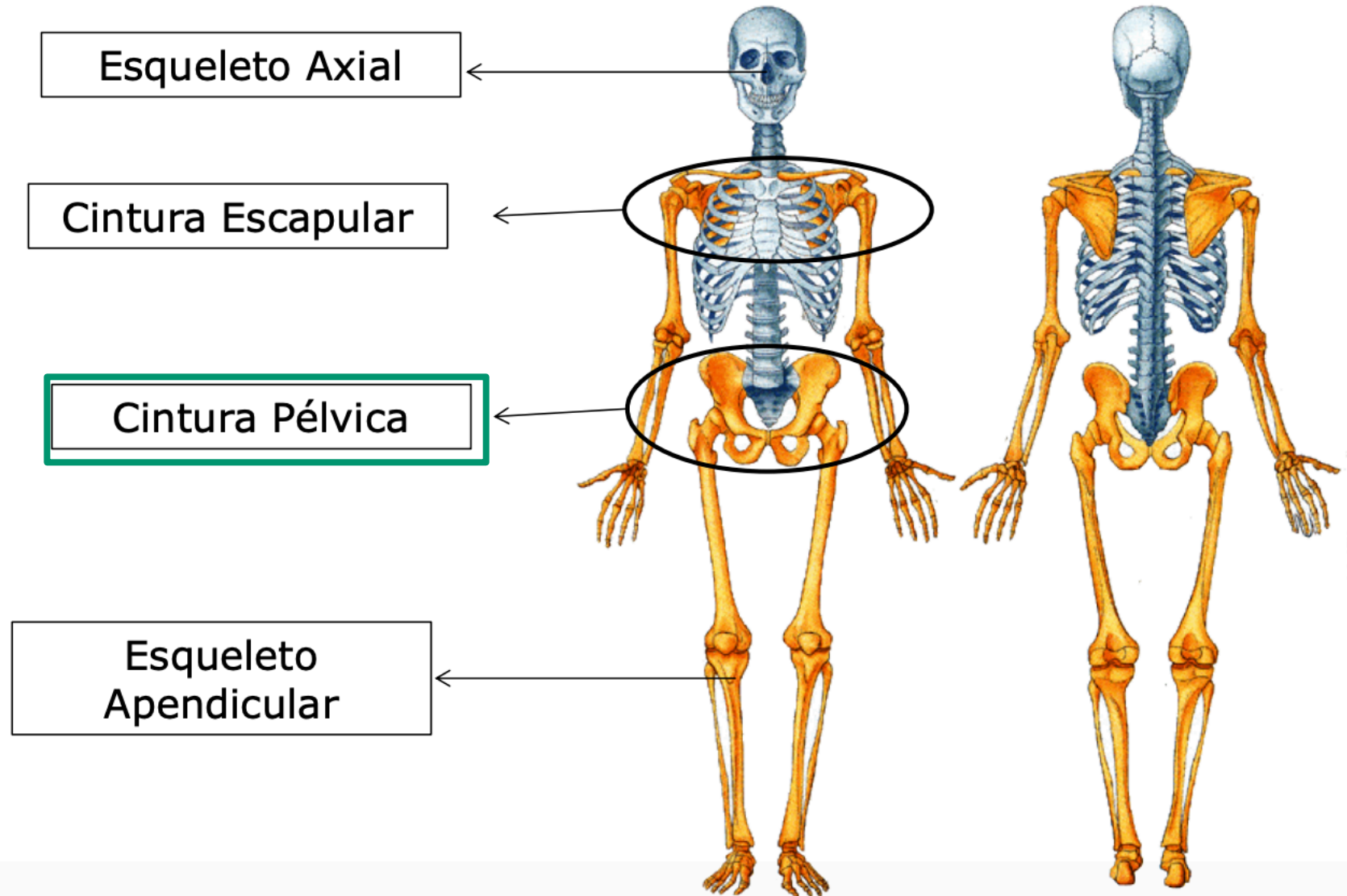
FALANGES



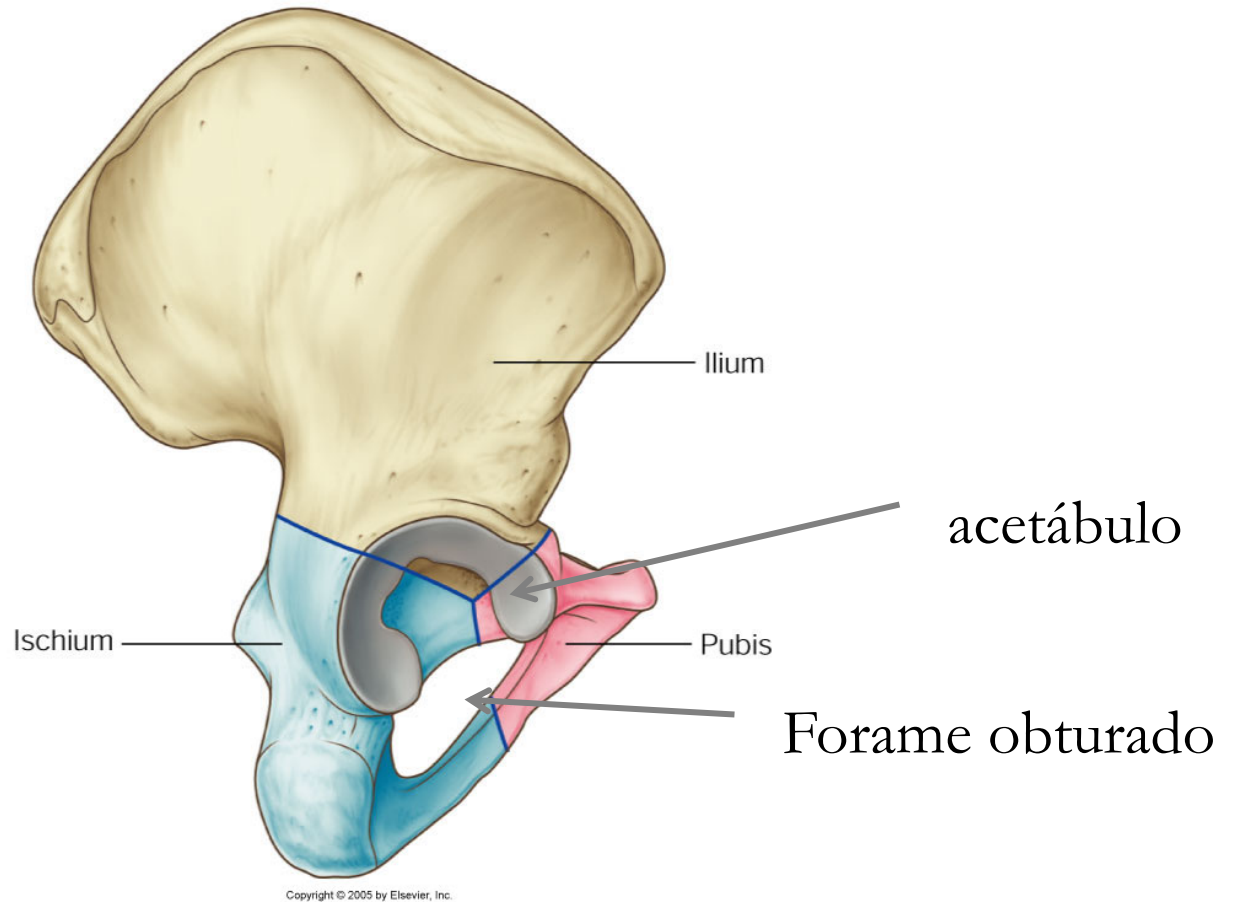
ESQUELETO APENDICULAR OSSOS DOS MEMBROS SUPERIORES



Divisões dos sistema esquelético



CÍNGULO DO MEMBRO INFERIOR OSSO DO QUADRIL

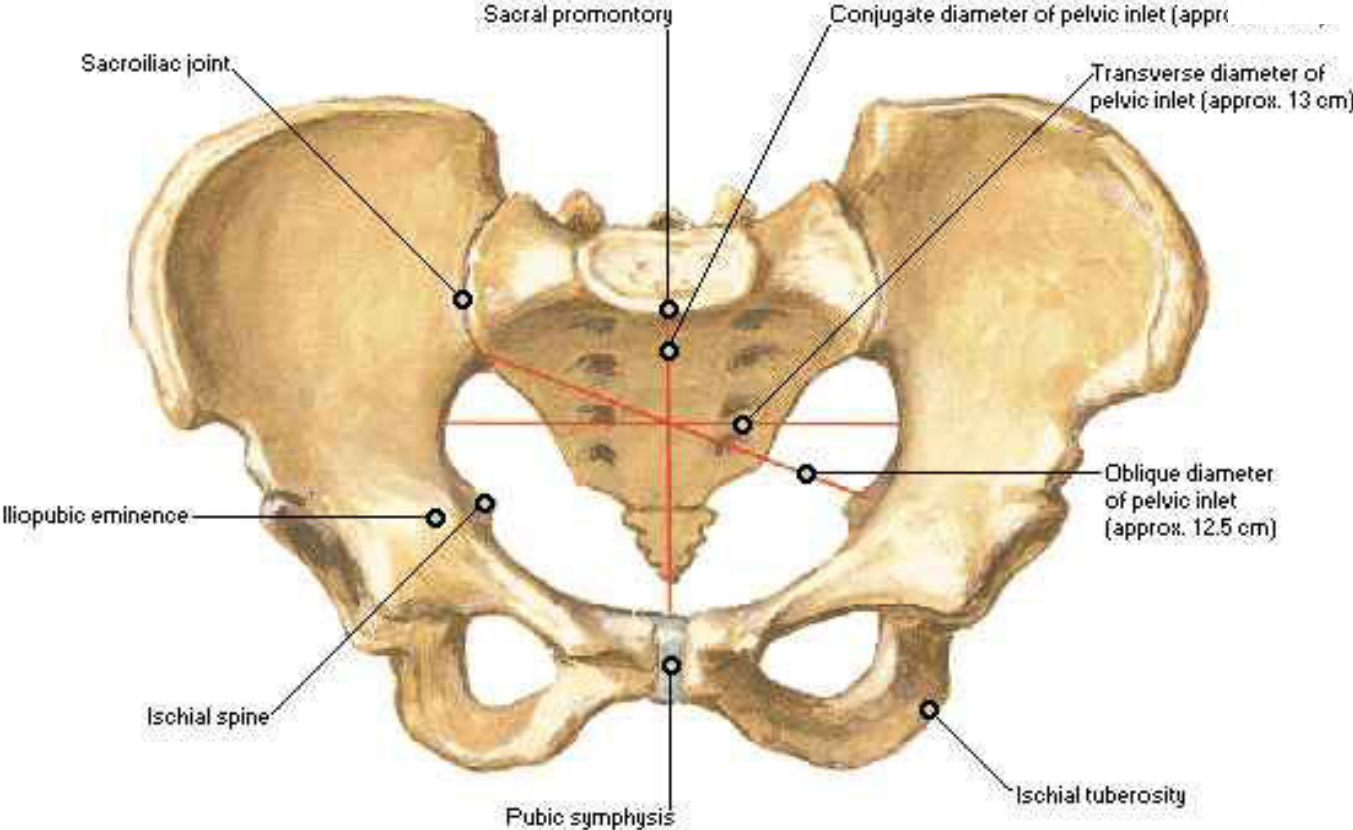


CÍNGULO DO MEMBRO INFERIOR

OSSO DO QUADRIL

Female Pelvis

Measurements - Anterior View



OSSOS DO MEMBRO INFERIOR

Fêmur

Tíbia

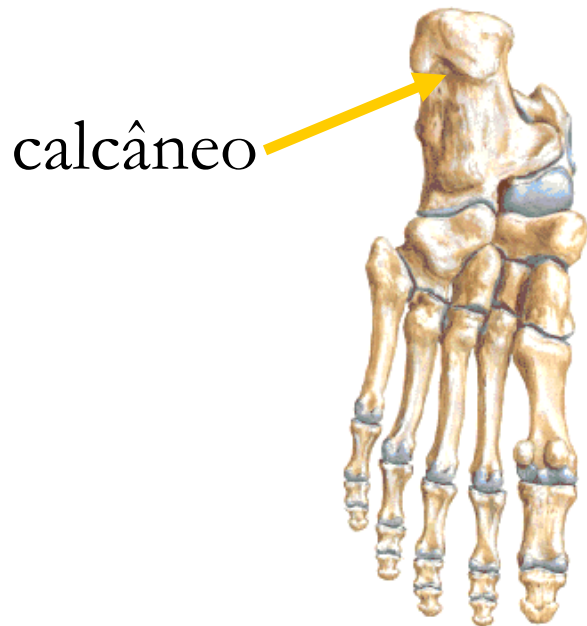
Fíbula

Patela

Ossos tarsais

Metatarsais

Falanges



ESQUELETO APENDICULAR

OSSOS DOS MEMBROS INFERIORES - FÊMUR



CABEÇA DO FÊMUR

TROCANTER MAIOR

CORPO

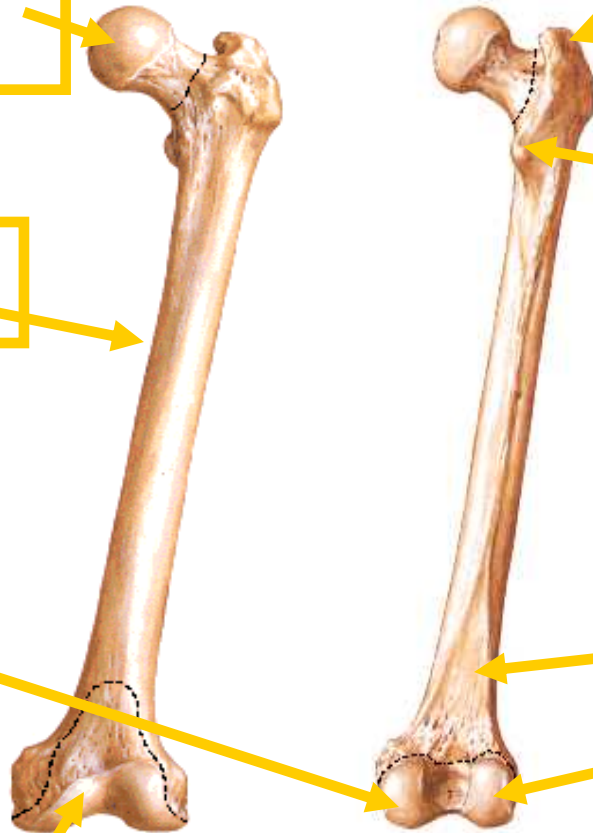
TROCANTER MENOR

CÔNDILO MEDIAL

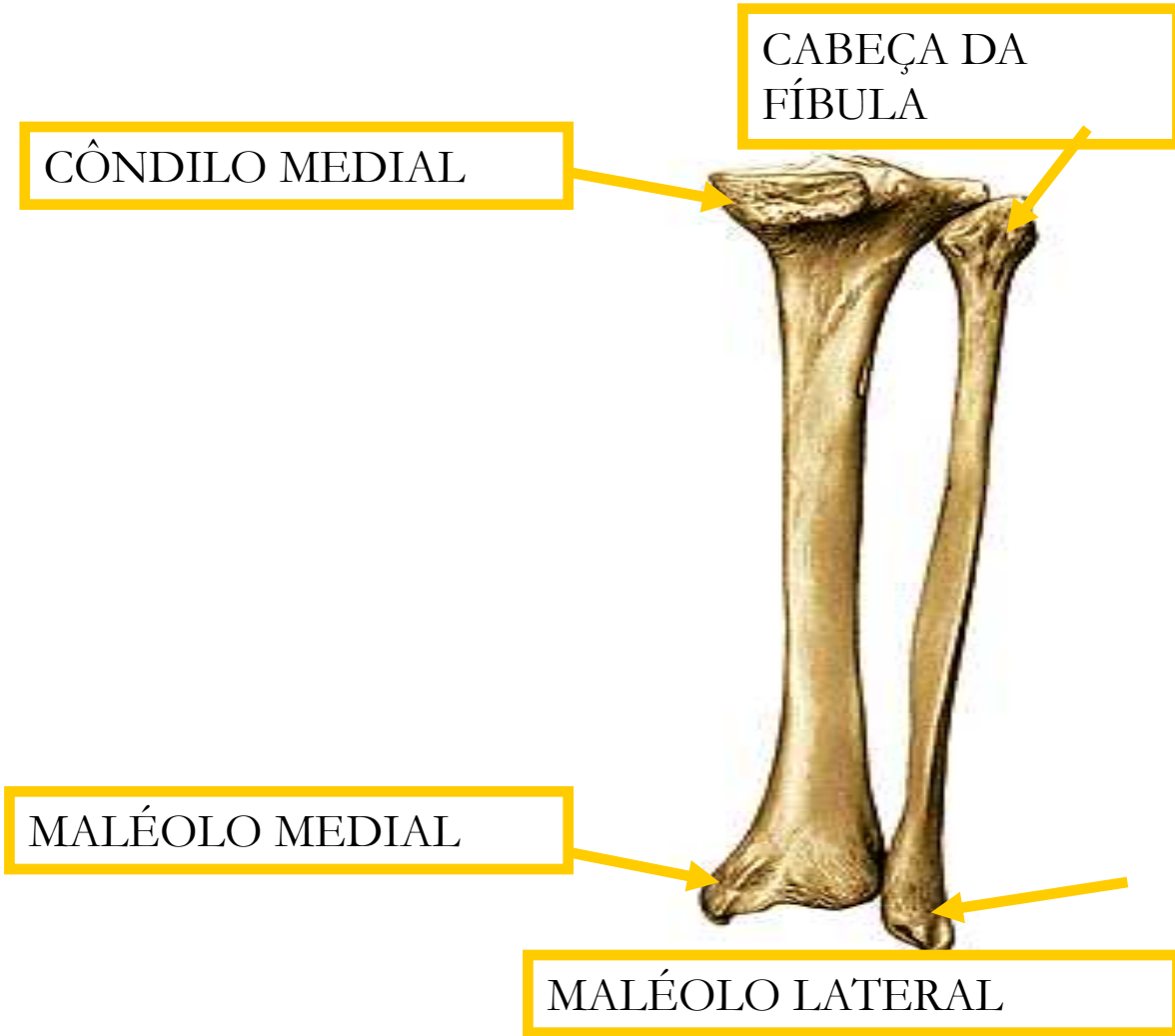
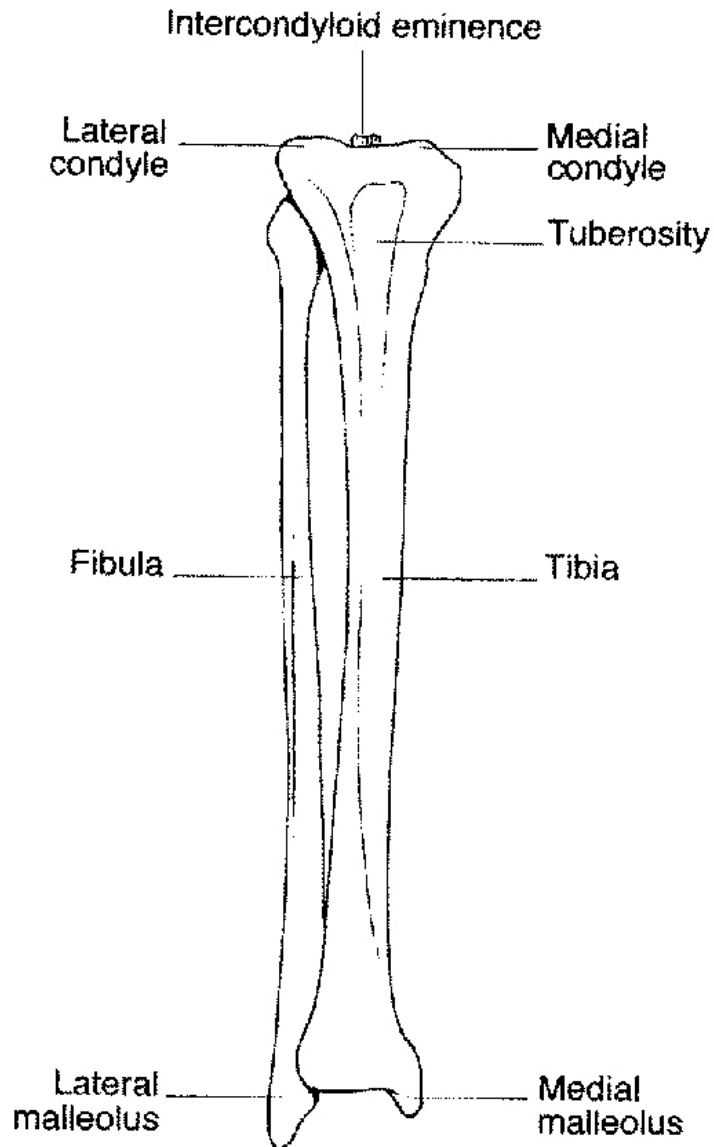
Face poplítea

CÔNDILO LATERAL

Face patelar



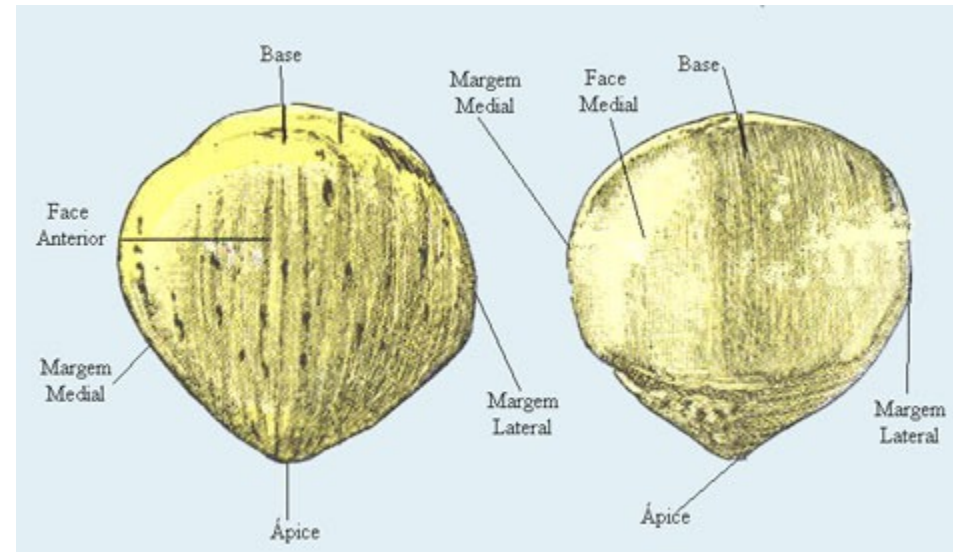
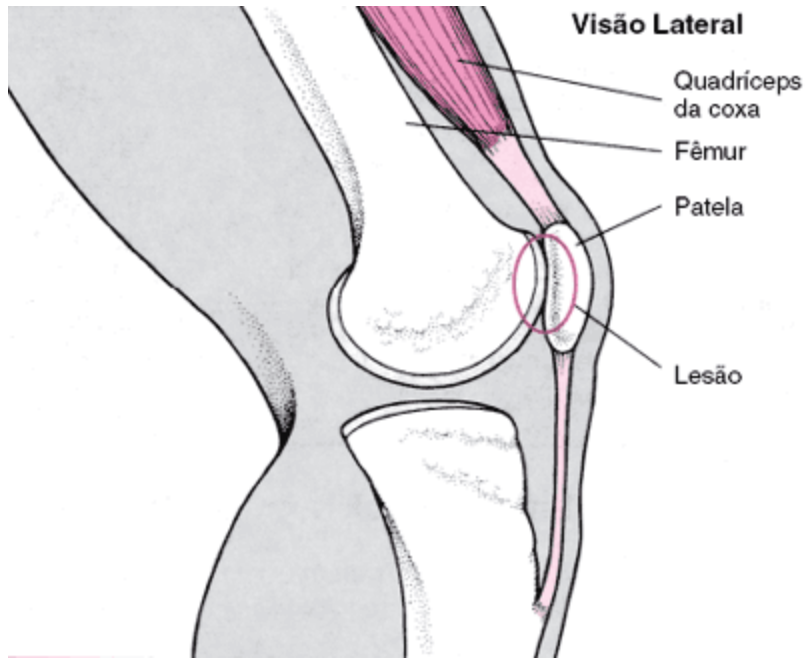
ESQUELETO APENDICULAR - OSSOS DOS MEMBROS INFERIORES - TÍBIA - FÍBULA



ESQUELETO APENDICULAR

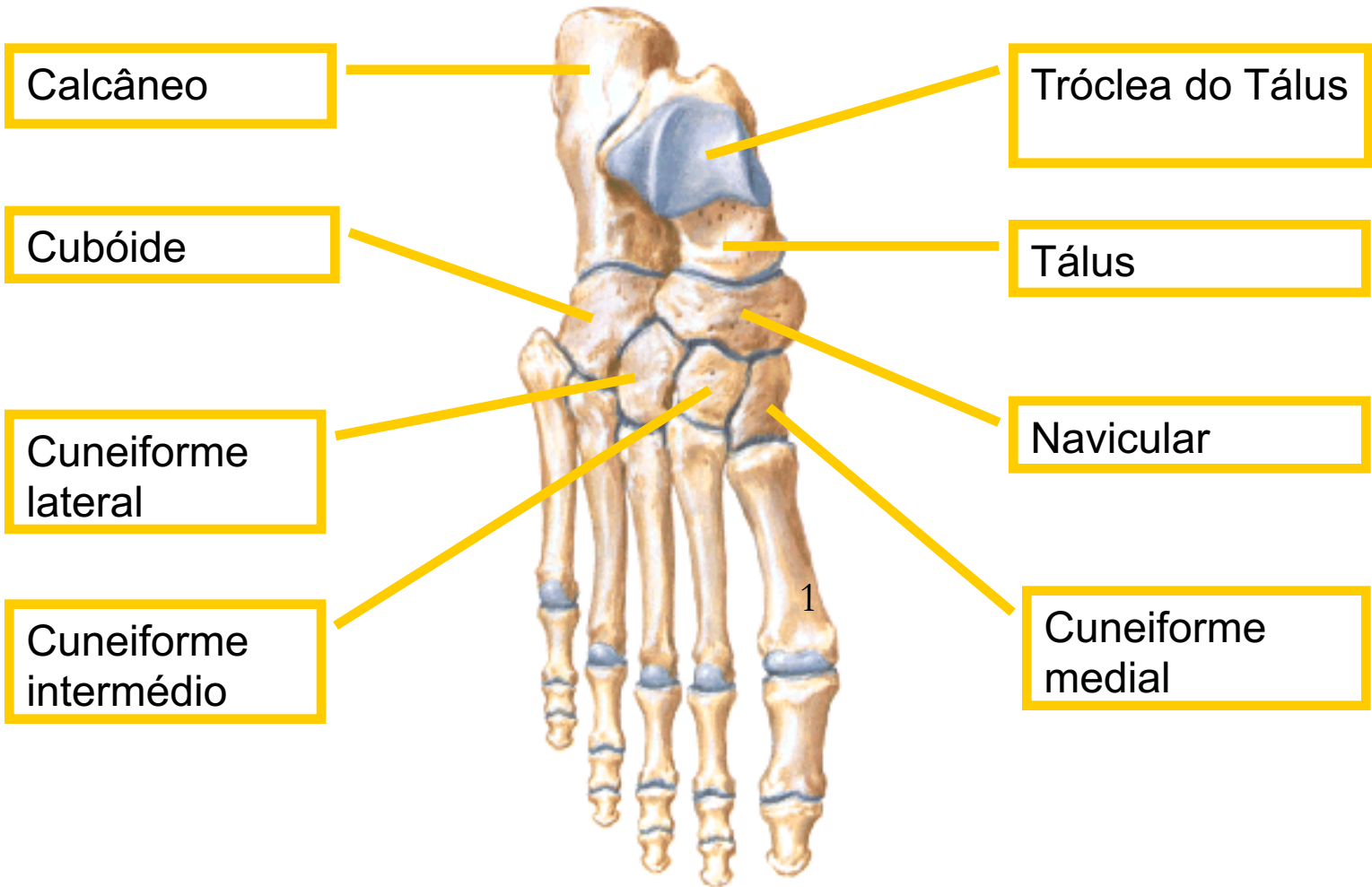
OSSOS DOS MEMBROS INFERIORES

PATELA



ESQUELETO APENDICULAR

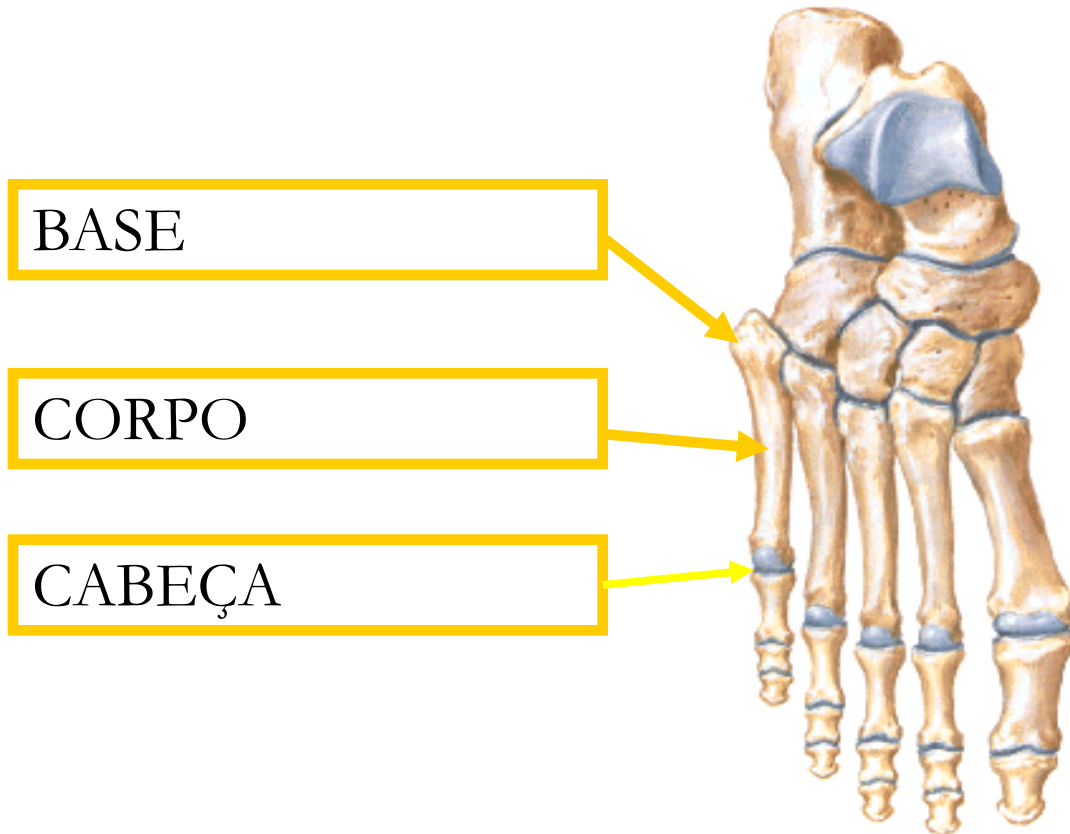
OSSOS DOS MEMBROS INFERIORES OSSOS DO TARSO (14)



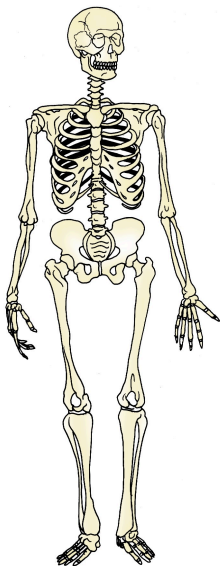
ESQUELETO APENDICULAR

OSSOS DOS MEMBROS INFERIORES

OSSOS METATARSOS E FALANGES



APARELHO LOCOMOTOR



SISTEMA ESQUELÉTICO

SISTEMA ARTICULAR

SISTEMA MUSCULAR

PASSIVO

UNIÃO

ATIVO



ARTICULAÇÕES

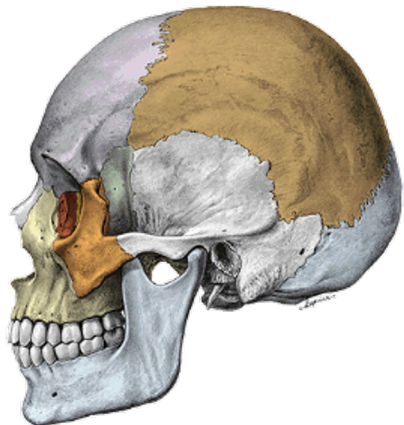
- Articulação é a região de união entre dois ou mais ossos.
- Com exceção do osso hióide, todos os ossos do corpo estão conectados ou formam uma articulação com pelo menos um outro osso.
- Duas funções: • Mantêm os ossos juntos; • Confere mobilidade ao esqueleto.

ARTICULAÇÕES

ESTRUTURA
FIBROSAS

MOBILIDADE
SINARTROSES

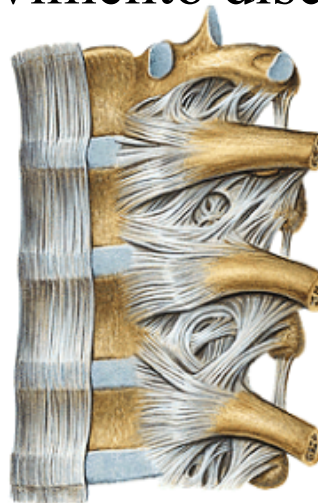
SEM movimento



ESTRUTURA
CARTILAGÍNEAS

MOBILIDADE
ANFIARTROSES

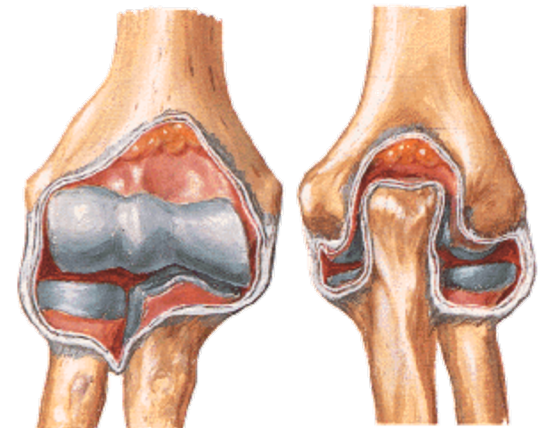
Movimento discreto



ESTRUTURA
SINOVIAIS

MOBILIDADE
DIARTROSES

Movimento amplo

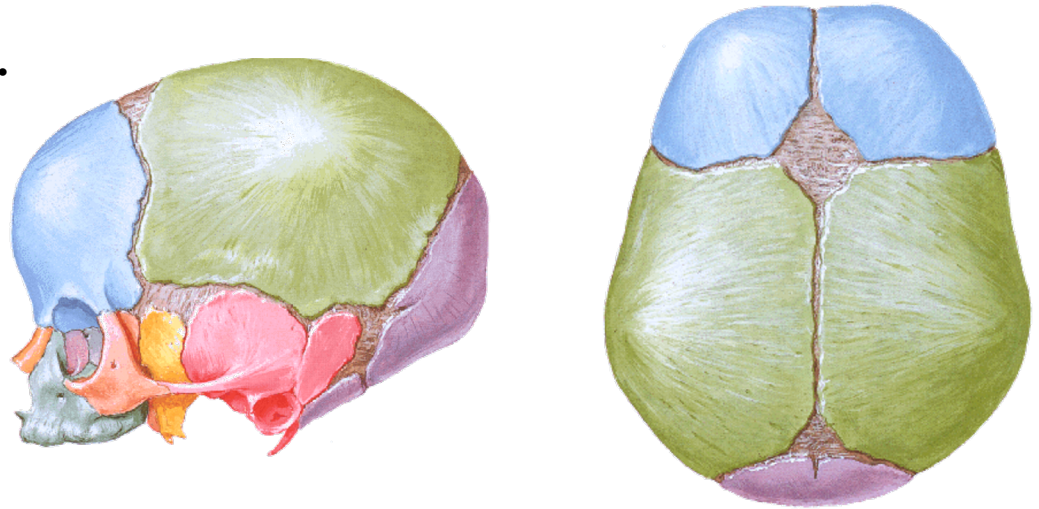


Fibrosa

1. Suturas

*Fontanelas

1.

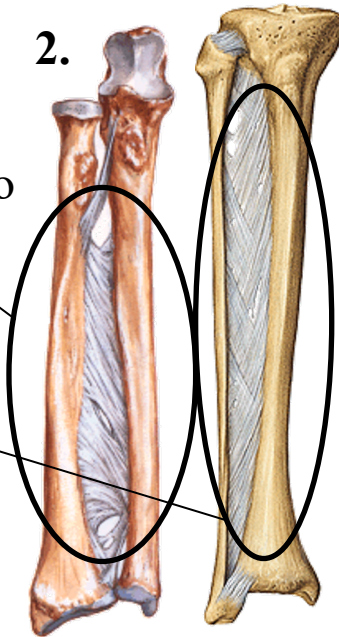


2. Sindesmoses

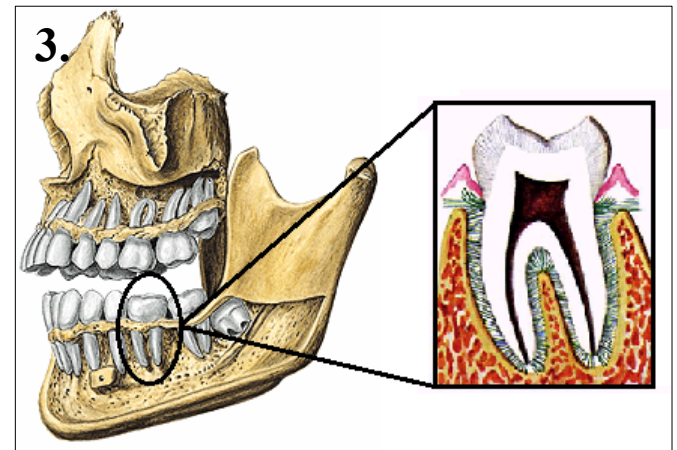
Sindesmose **rádio-ulnar** –
membrana interóssea do antebraço

Sindesmose **tíbio-fibular** –
membrana interóssea da perna

2.



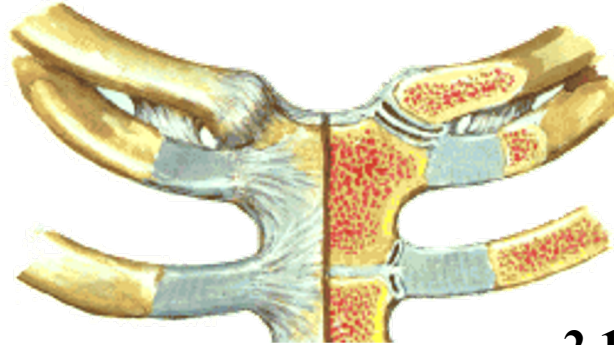
3. Gonfose



Cartilaginosa (Tecido conjuntivo do tipo **cartilaginoso**).

1. Hialina

1.



2.1



2. Fibro-cartilaginosa

Sínfises (2.1)

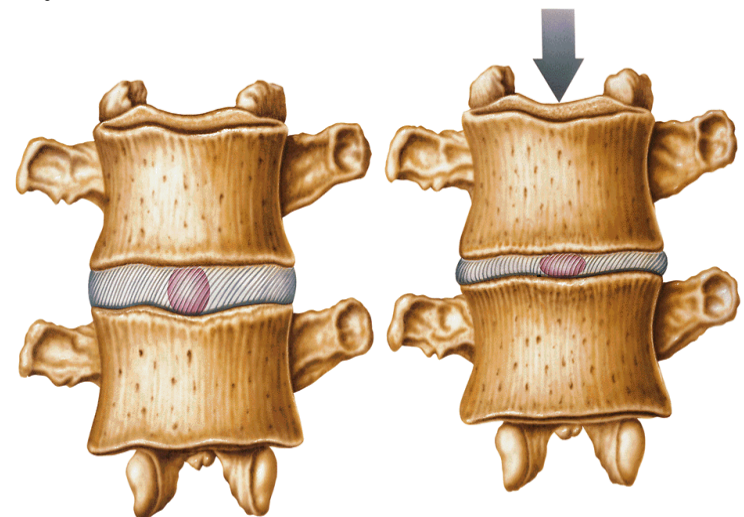
Discos intervertebrais (2.2) 2.2

Características

-ossos são unidos por tecido fibroso forte e/ou fibrocartilagem

-resistentes – permitem absorção de choque

-ligeiramente móveis



Sinovial

- São a grande maioria das articulações do corpo.
- As superfícies ósseas são recobertas por cartilagem articular e unidas por ligamentos revestidos por membrana sinovial.
- Para que haja o grau desejável de movimento, em muitas juntas, o elemento que se interpõe as peças que se articulam é um líquido denominado **Sinóvia** ou **Líquido Sinovial**.

Sinovial

Caracterizada por apresentar **líquido sinovial** se interpondo entre as estruturas. Para isso, existem duas estruturas responsáveis por manter esse tipo de articulação.

1. Cápsula articular

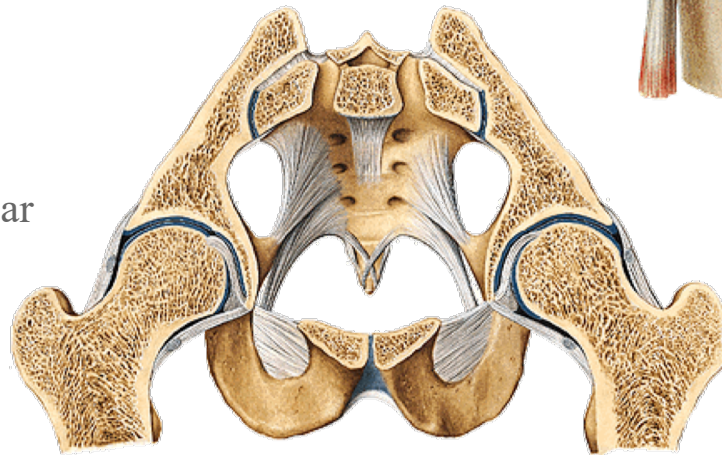
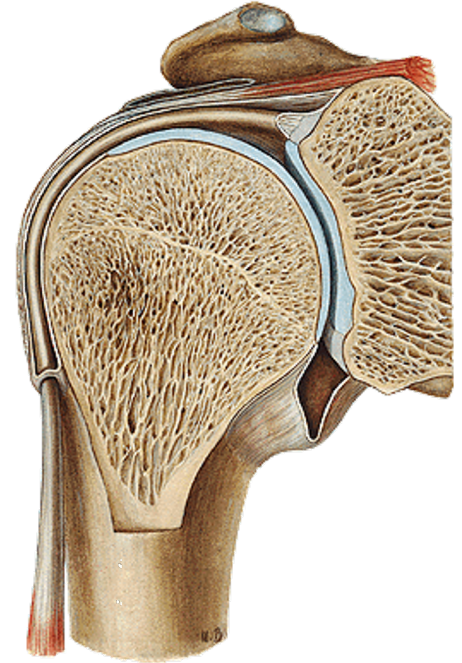
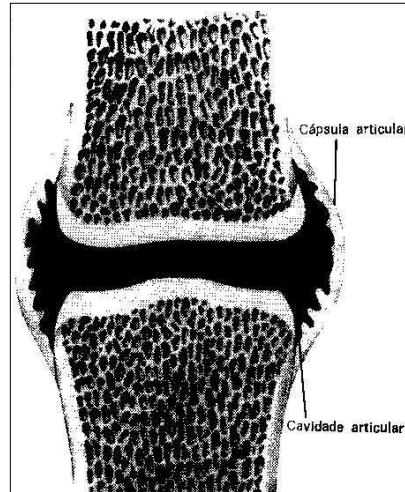
- a) Cápsula fibrosa
- b) Membrana sinovial

2. Superfície articular

- a) Revestimento de cartilagem Hialina

3. Líquido sinovial

- a) Viscoso
- b) Nutrição da cartilagem articular
- c) Lubrificante
- d) Ácido hialurônico

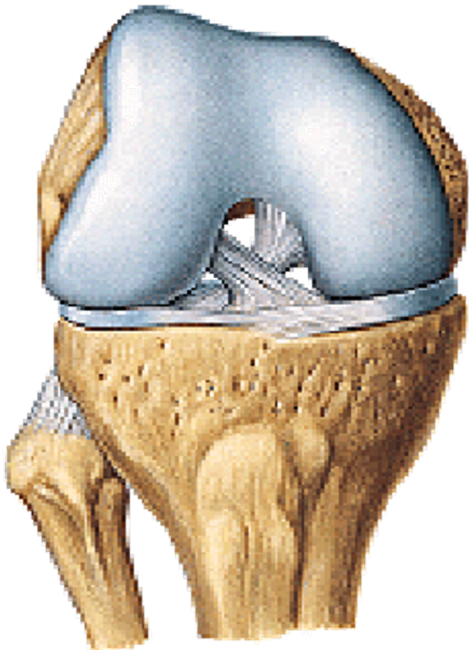


Sinovial

4. Estruturas extras

- a) Discos e meniscos
- b) Ligamentos extracapsulares
- c) Ligamentos intracapsulares

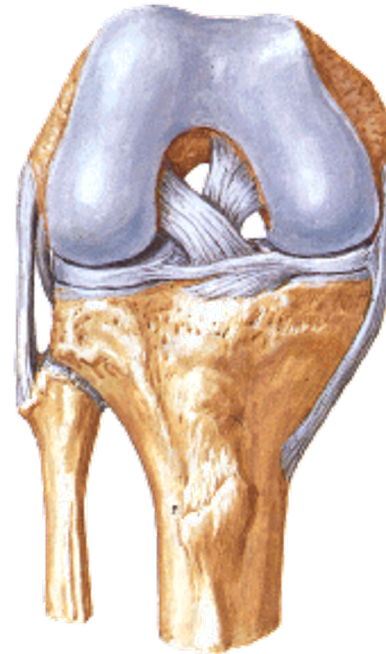
4a



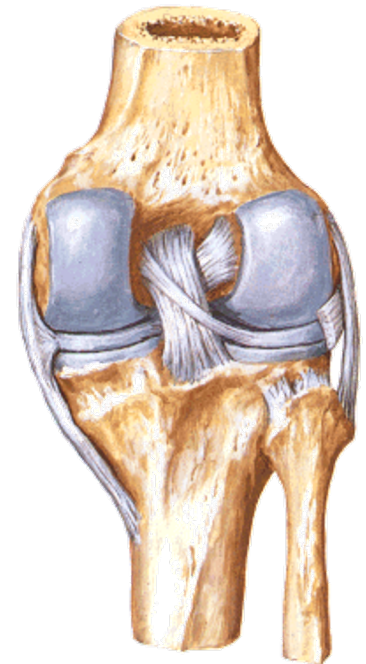
4b



4c



4c



Sinovial

Classificação funcional

Variam de acordo com o grau de liberdade do movimento

Def. \Rightarrow Número de planos nos quais os segmentos ósseos de uma articulação se movem, sendo que esses planos são determinados pelo número de eixos que a articulação possui.

Classificação Funcional	Grau de Liberdade	Eixos Articulares
Monoaxial	1	1
Biaxial	2	2
Triaxial	3	3

CLASSIFICAÇÕES DAS ART. SINOVIAIS MOVIMENTOS PERMITIDOS

