



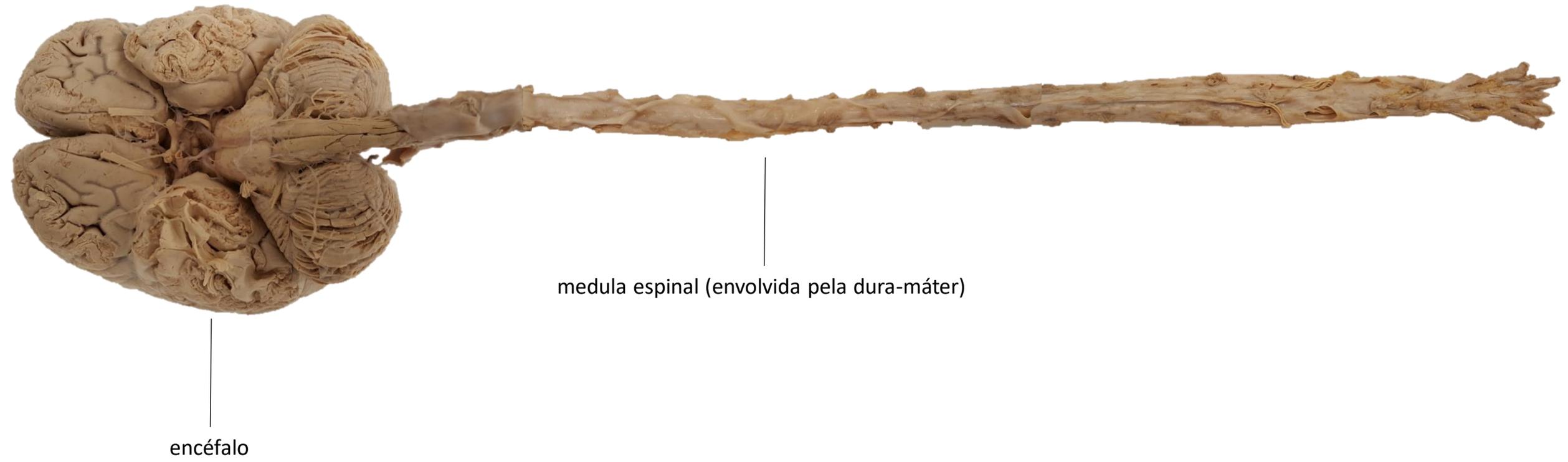
NEUROANATOMIA

atlas

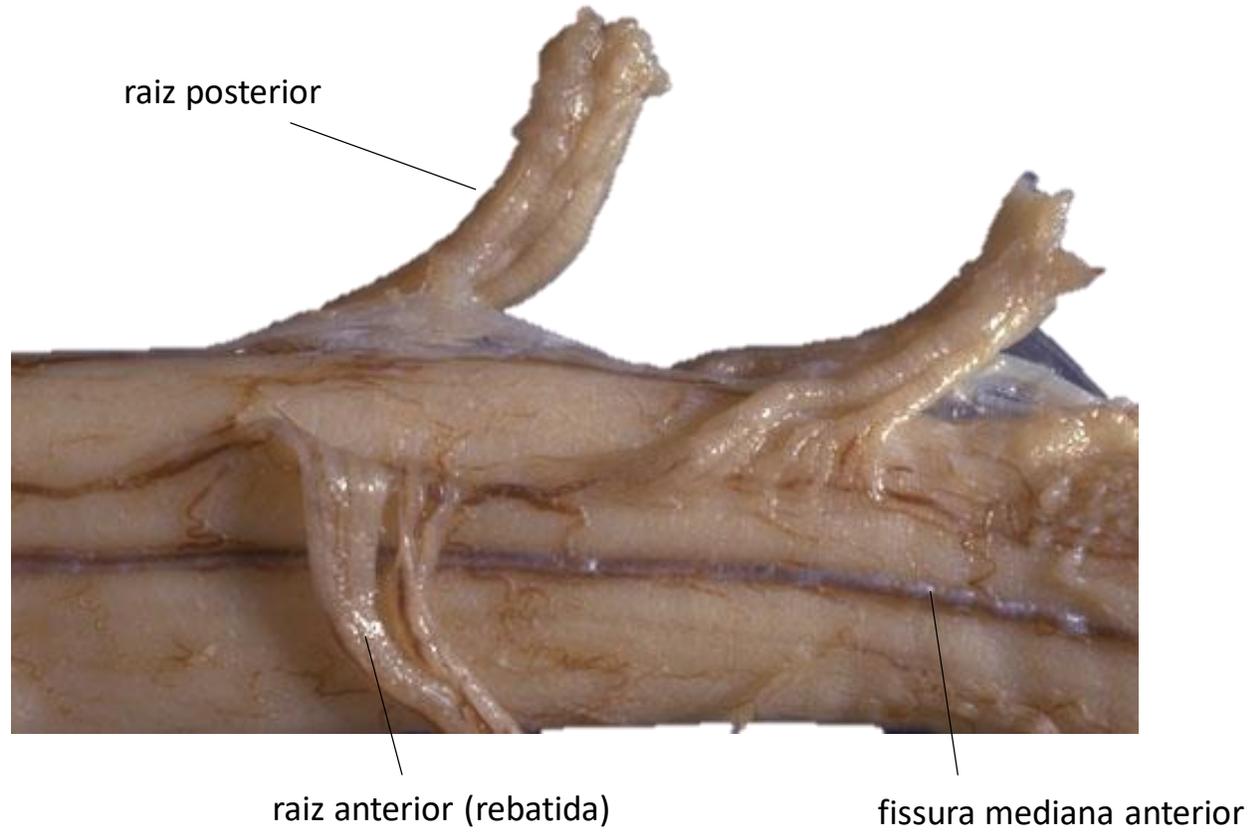
Profa. Dra. Luiza da Silva Lopes

Medula espinal

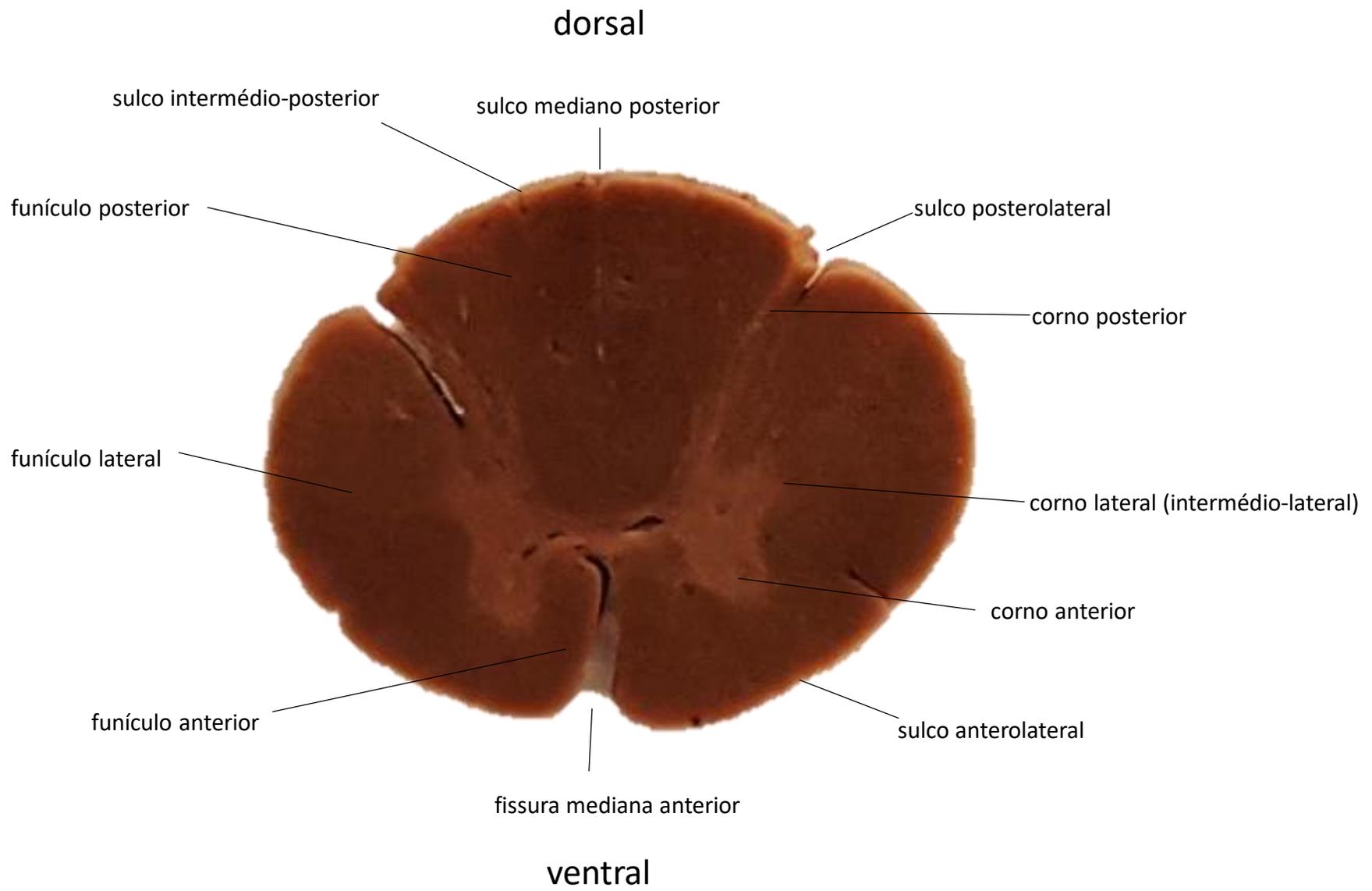




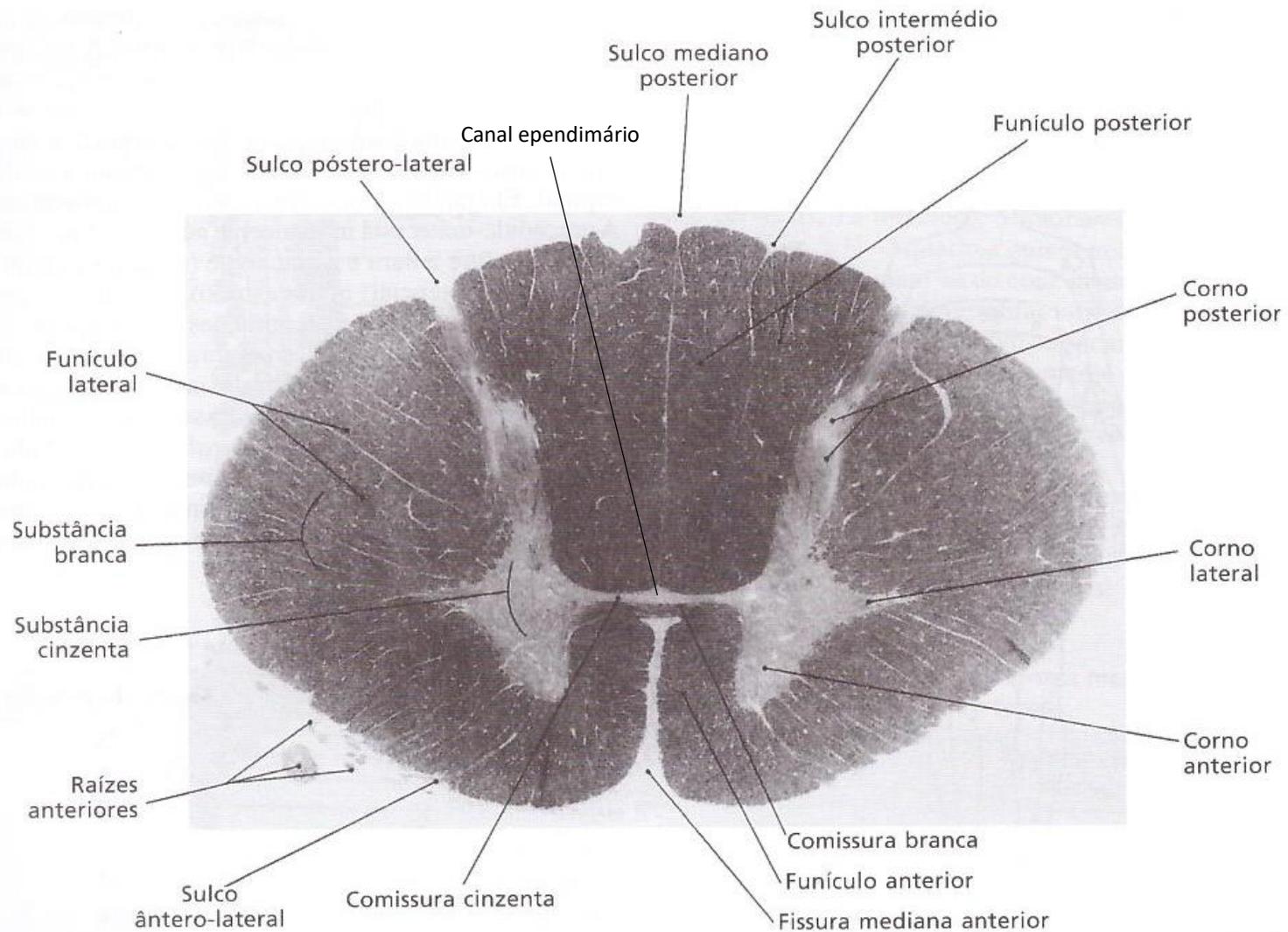
Medula espinal (vista anterior) e encéfalo (vista inferior)



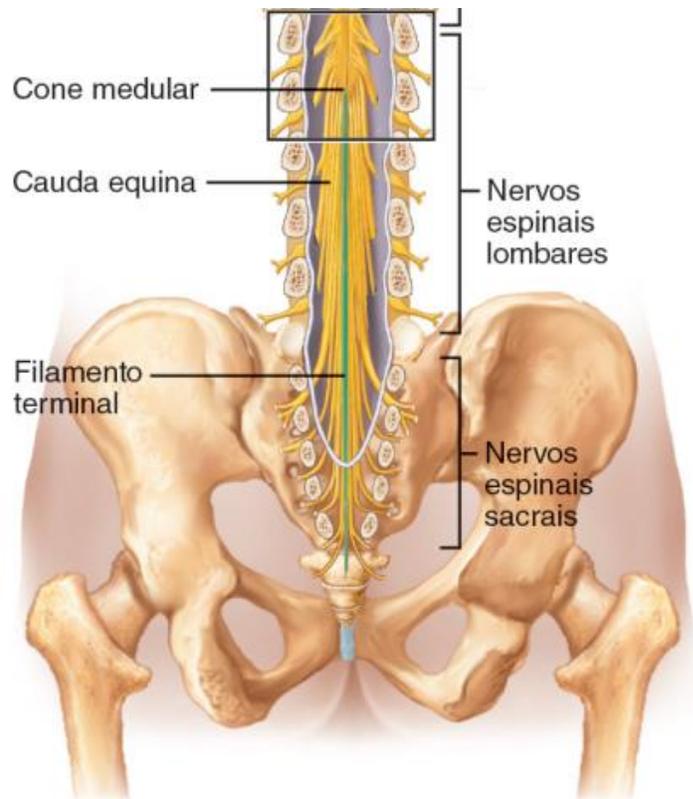
Medula espinal – vista anterior



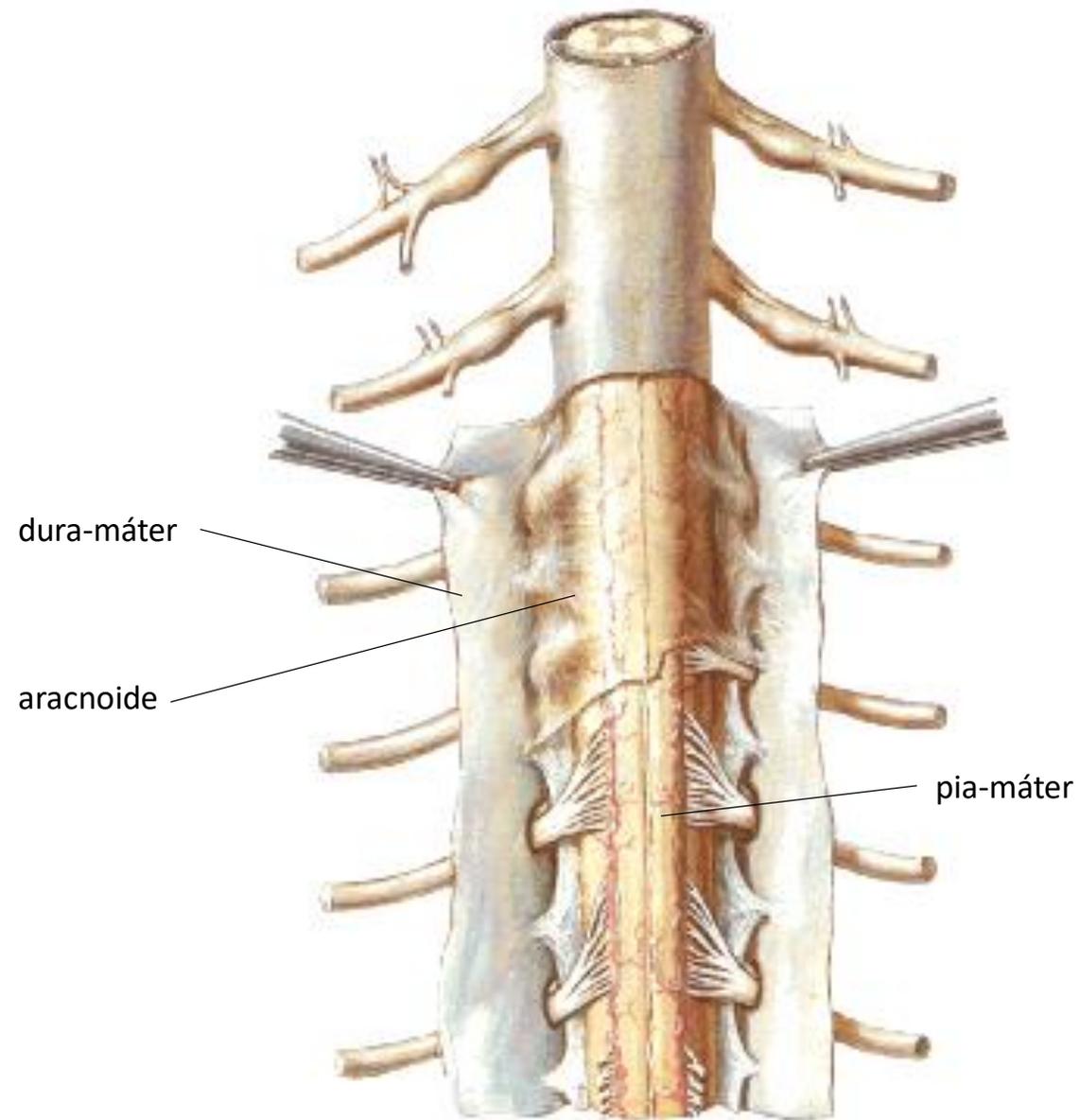
Medula espinal – corte transversal – segmento torácico



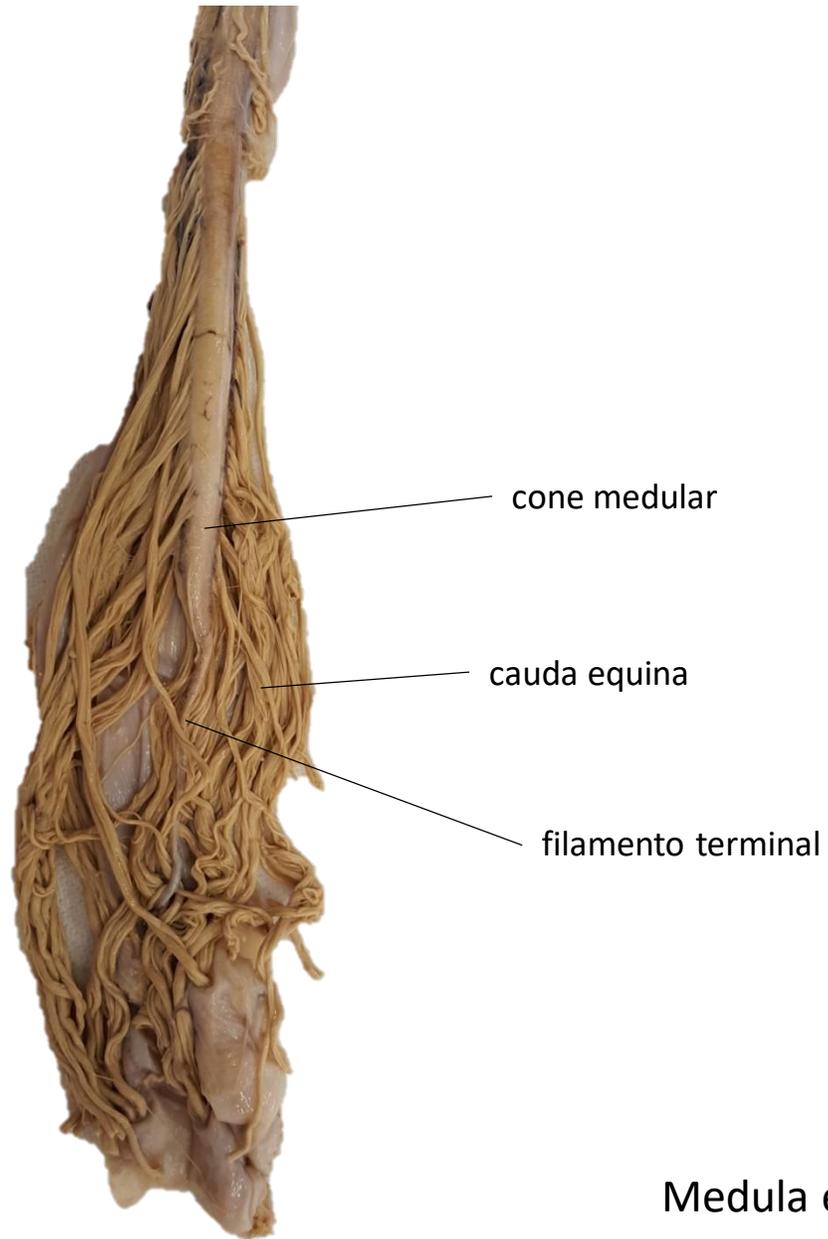
Fotomicrografia da medula espinal mostrando a divisão em substância cinzenta e branca, os sulcos e fissuras, os cornos (colunas cinzenta) e os funículos da substância branca.



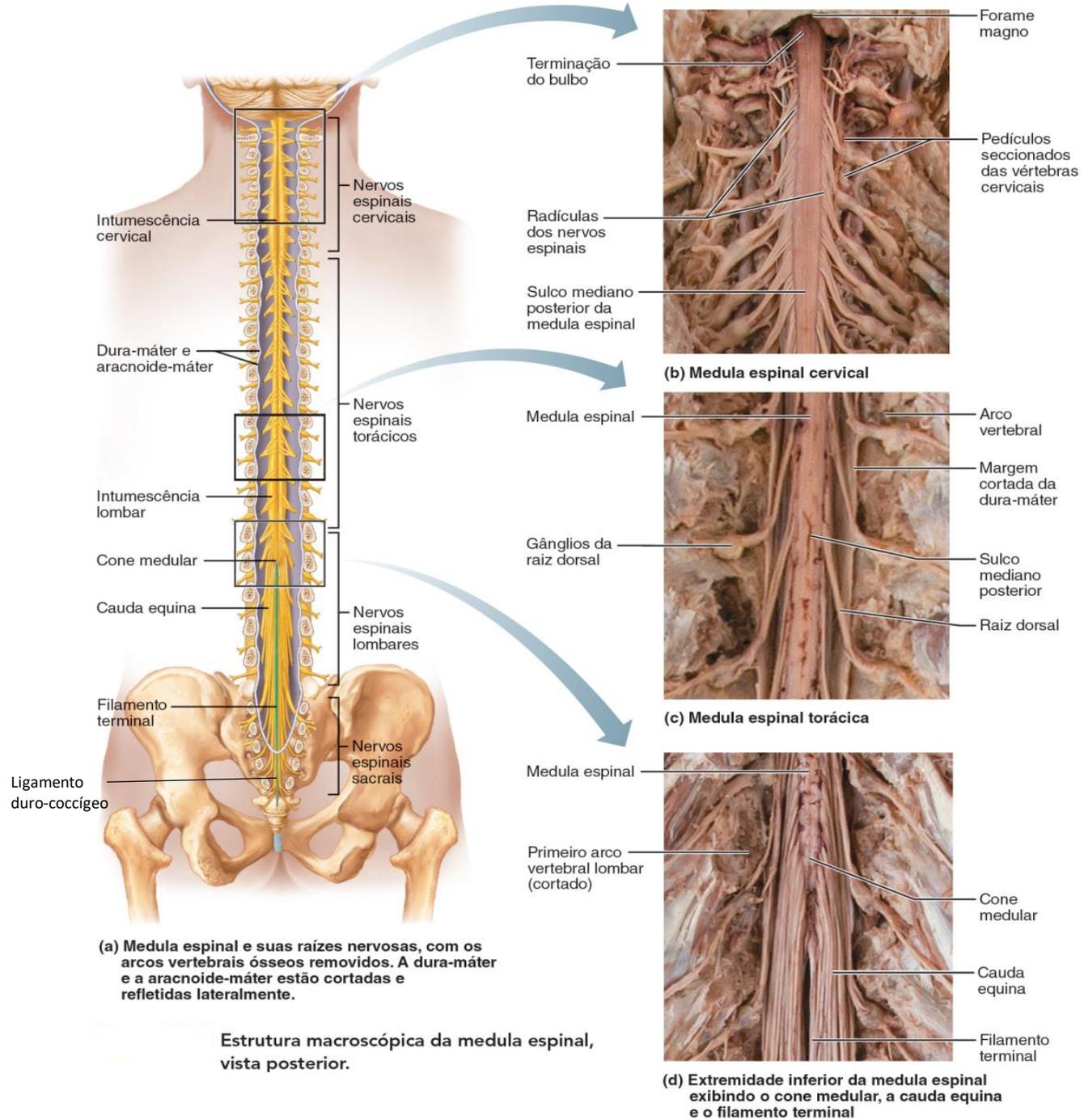
(a) Medula espinal e suas raízes nervosas, com os arcos vertebrais ósseos removidos. A dura-máter e a aracnoide-máter estão cortadas e refletidas lateralmente.



Medula espinal e seus envoltórios
Vista anterior



Medula espinal – extremidade caudal
Vista anterior

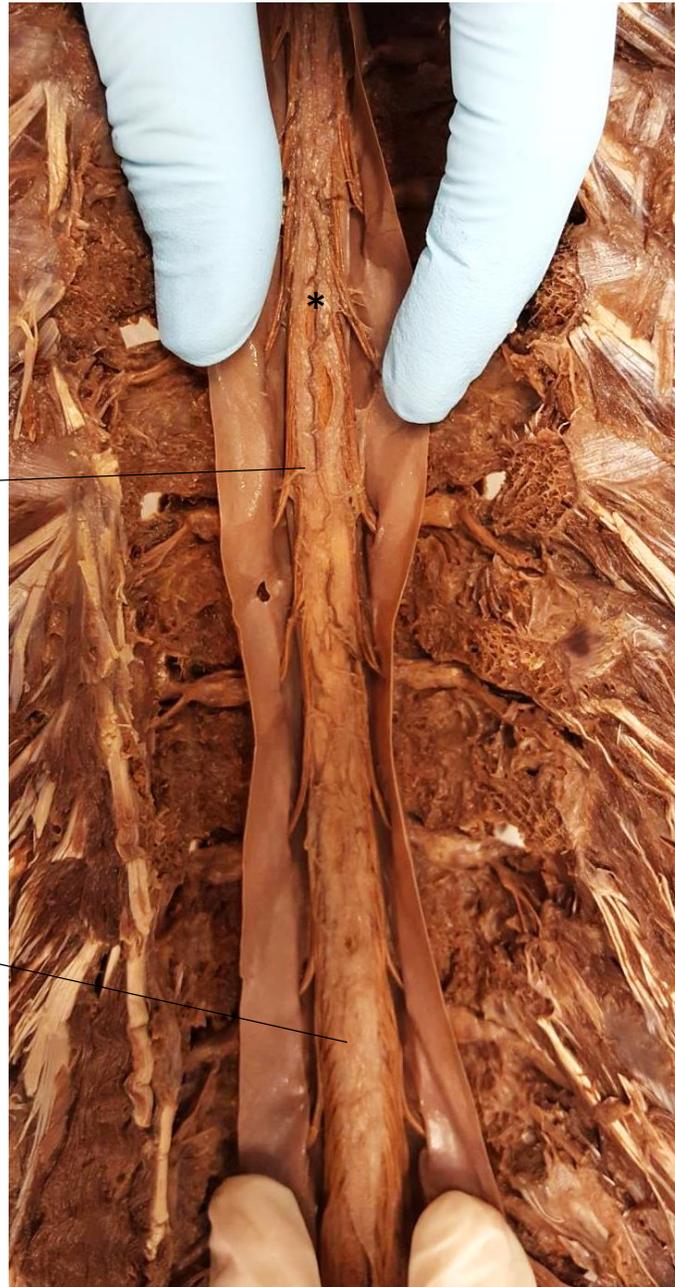


Estrutura macroscópica da medula espinal, vista posterior.

Medula espinal e seus segmentos

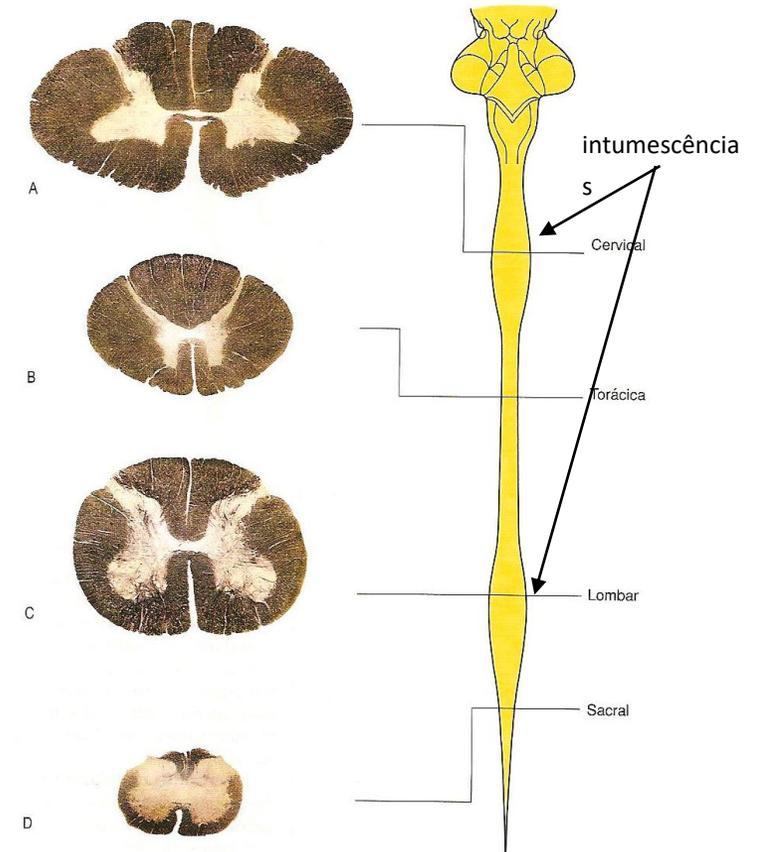
medula torácica

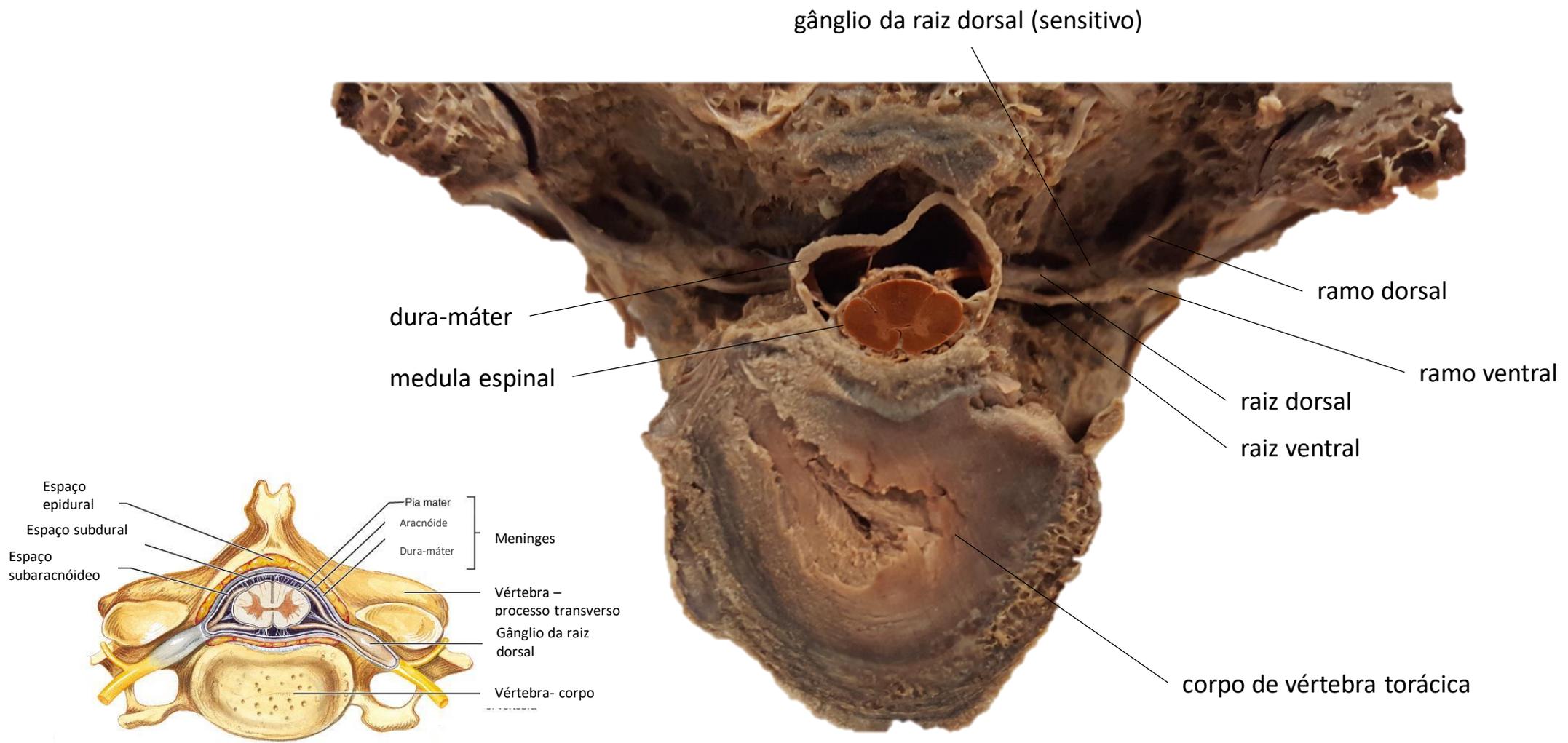
intumescência lombar



Medula espinal – vista posterior

Dura-máter aberta longitudinalmente, rebatida com os dedos. Em sua porção cranial, a medula está recoberta pela aracnoide e vasos (*) podem ser vistos (no espaço subaracnóideo).





Corte transversal do tórax, com medula espinal *in situ*



cervical



torácico



lombar



sacral

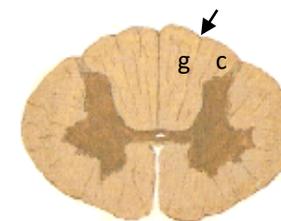
Cortes transversais de medula espinal em diferentes níveis de secção

Substância branca aumenta de caudal para rostral

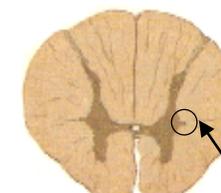
Coluna intermédio-lateral: T1-L2

Funículo posterior subdividido em fascículos grácil e cuneiforme (T6 para cima)

Substância cinzenta em maior volume nas regiões das intumescências



cervical



torácica



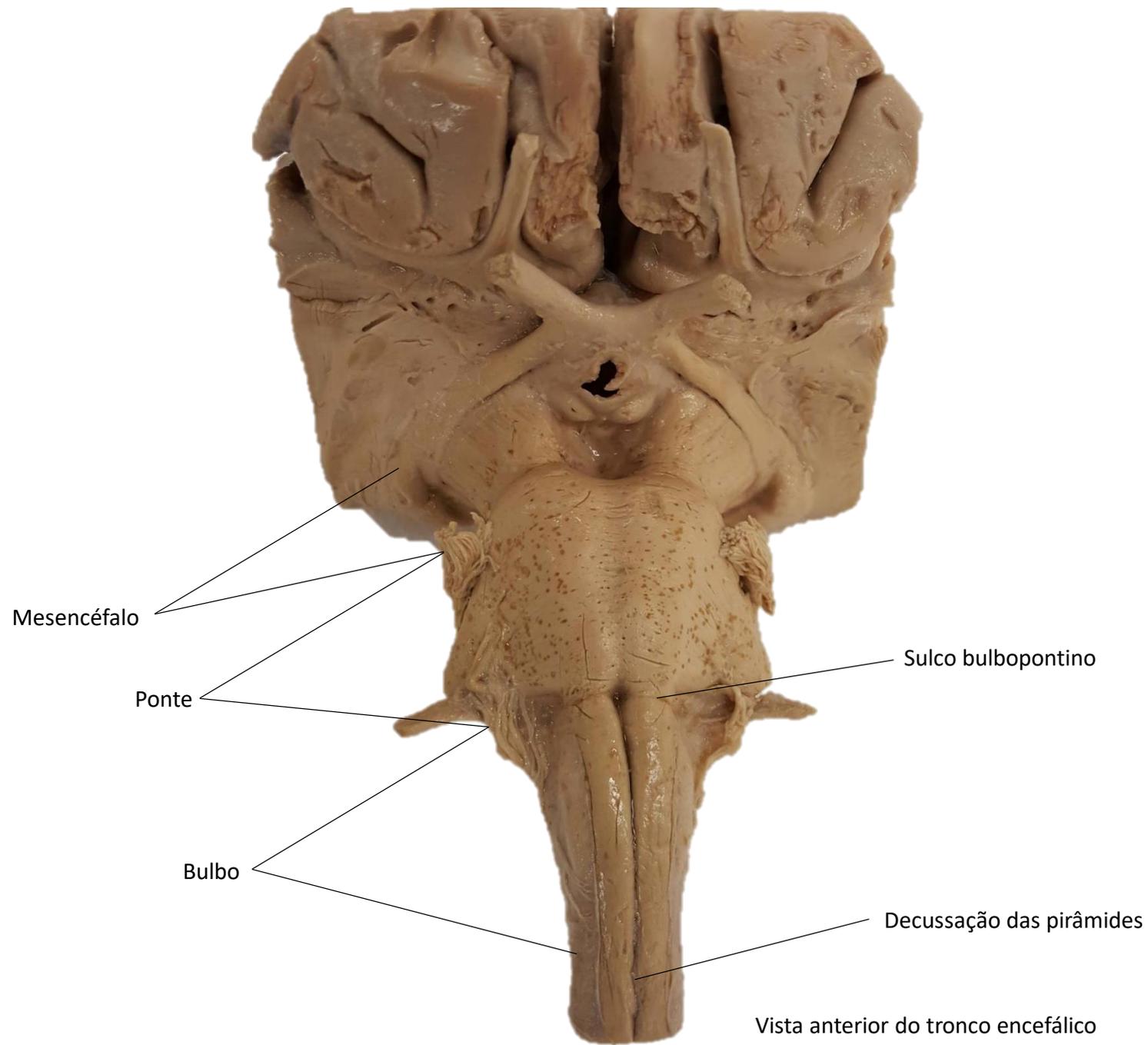
lombar

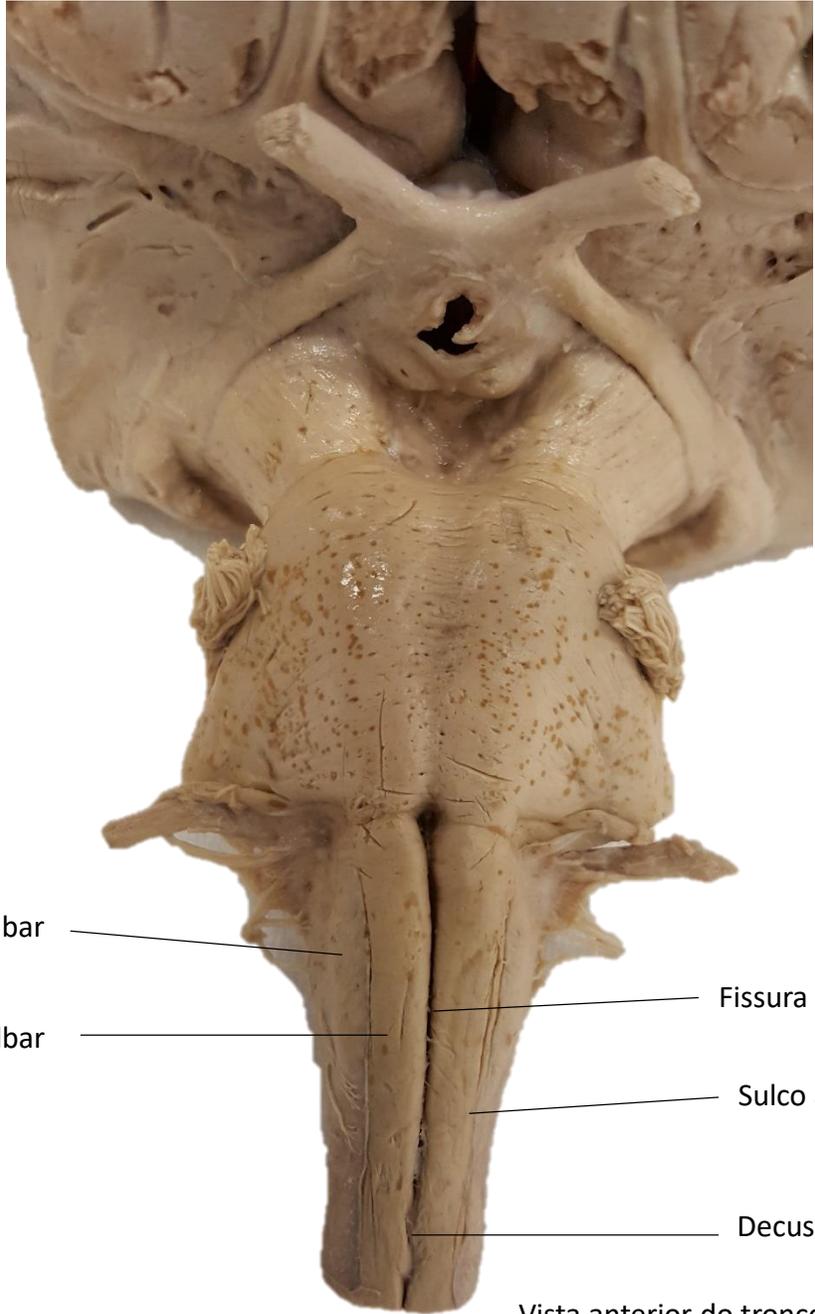


sacral

Tronco encefálico e Cerebelo

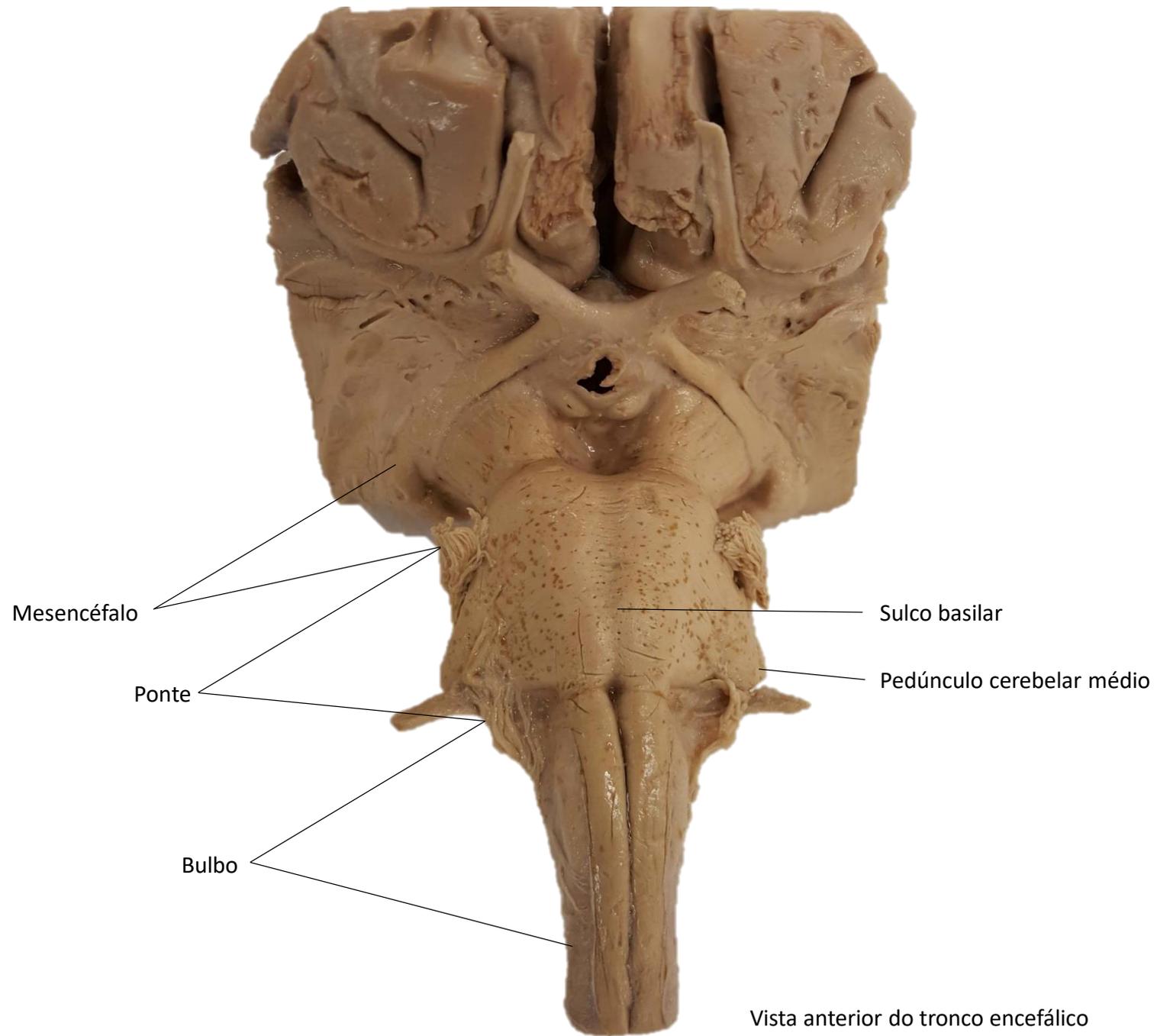


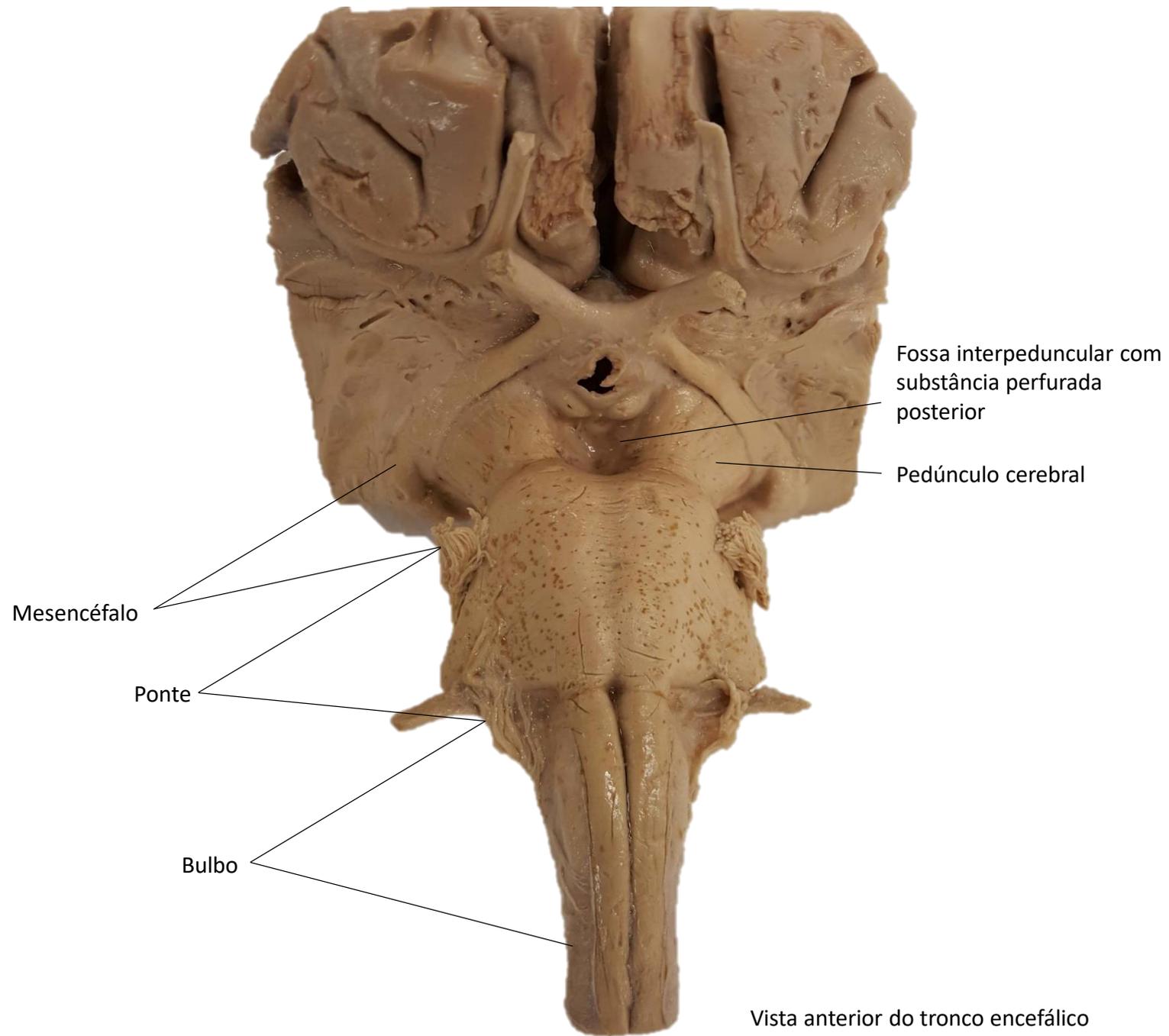


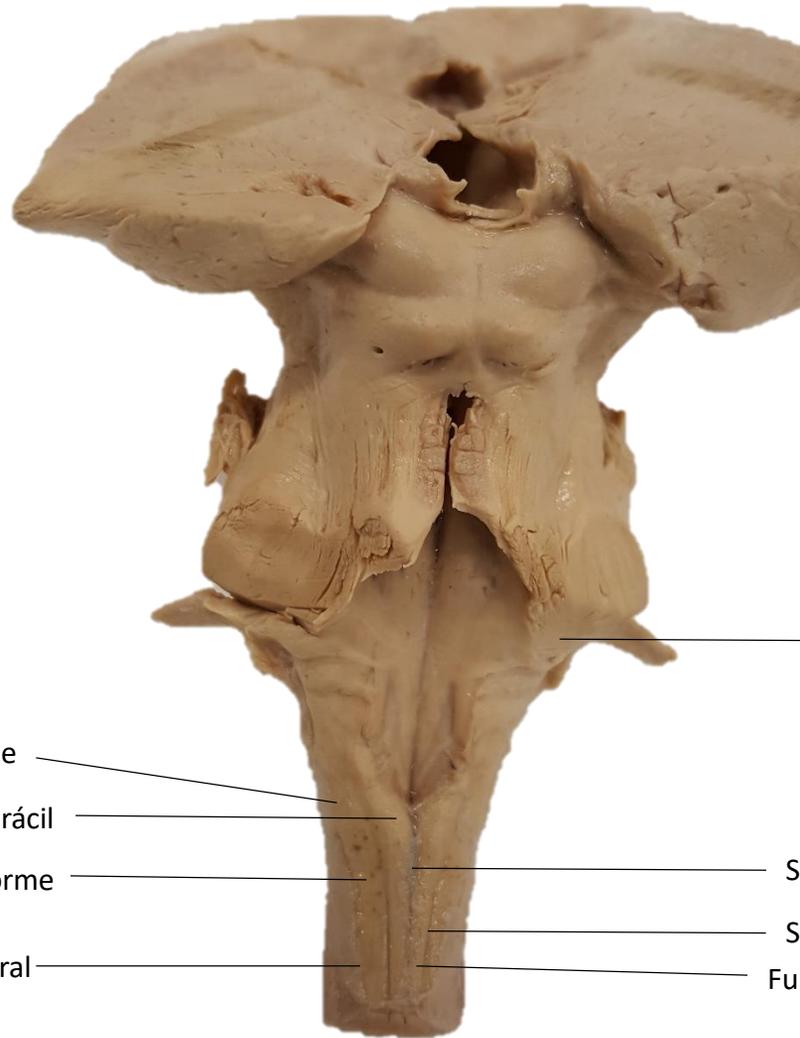


- Oliva bulbar
- Pirâmide bulbar
- Fissura mediana anterior
- Sulco anterolateral
- Decussação das pirâmides

Vista anterior do tronco encefálico







Pedúnculo cerebelar inferior

Tubérculo cuneiforme

Tubérculo grácil

Funículo cuneiforme

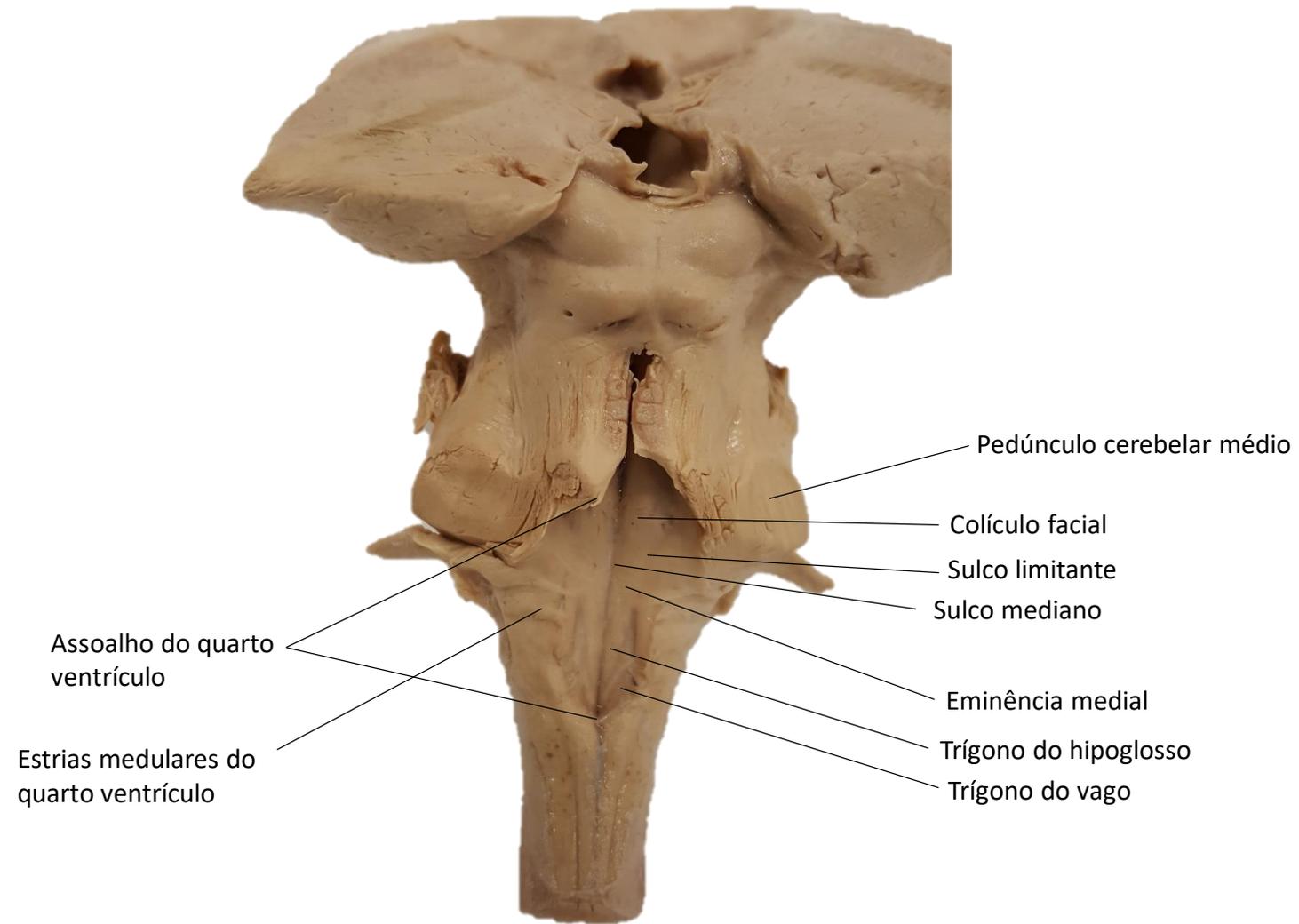
Sulco póstero-lateral

Sulco mediano posterior

Sulco intermédio-posterior

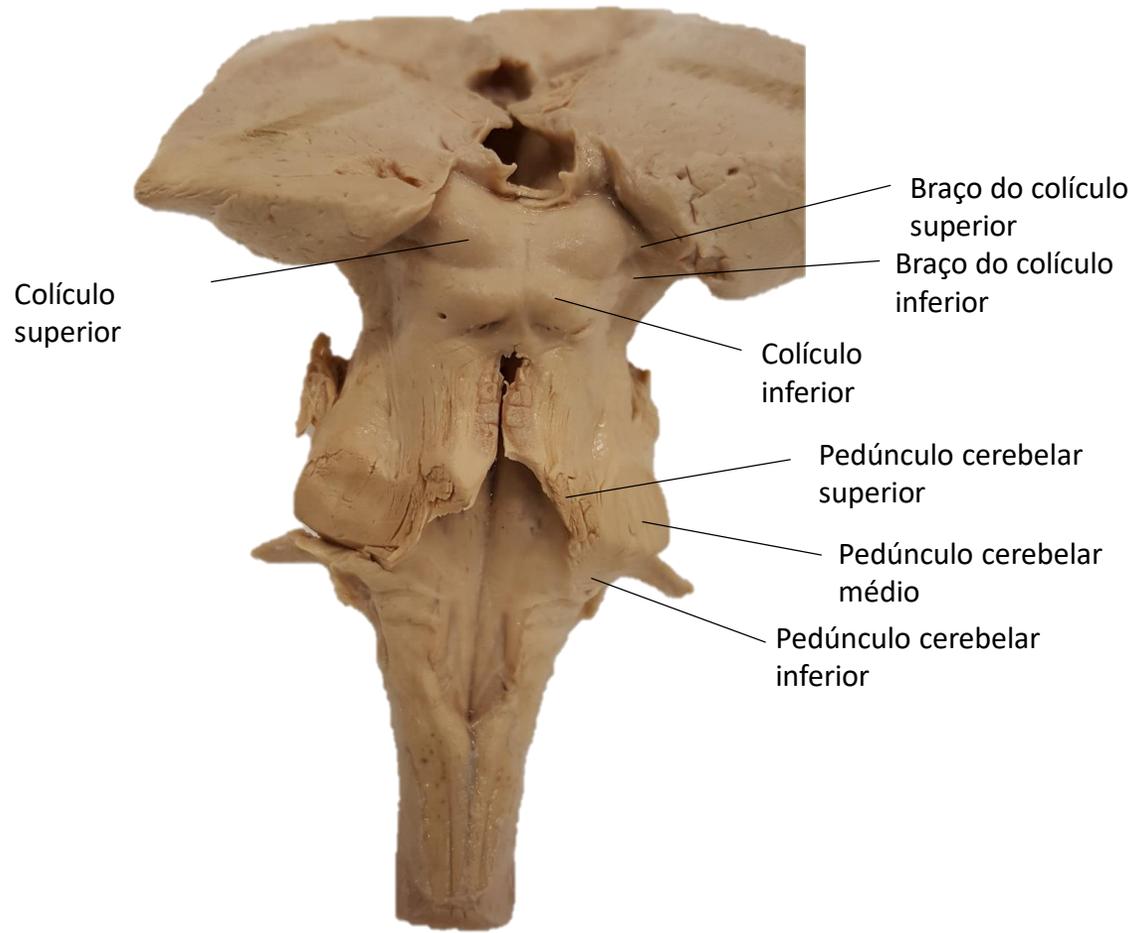
Funículo grácil

Vista posterior tronco encefálico

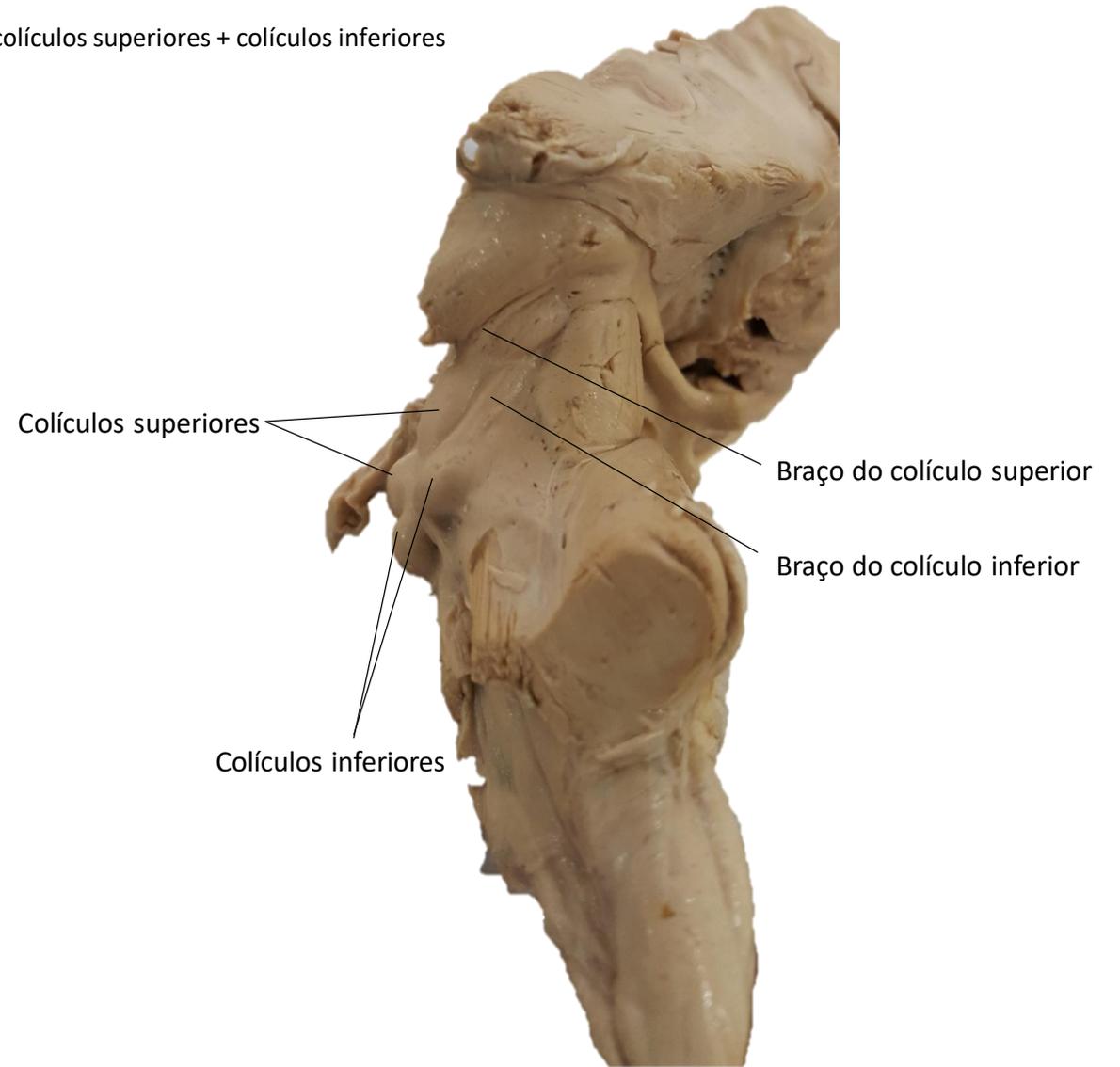


Vista posterior tronco encefálico

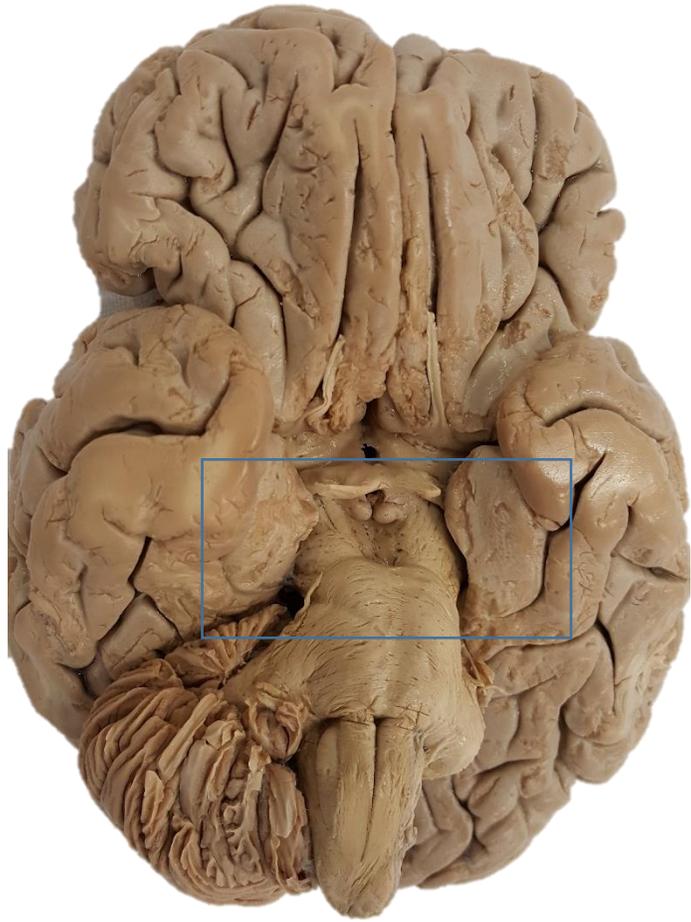
Lâmina tectal (quadrigêmea) = colículos superiores + colículos inferiores



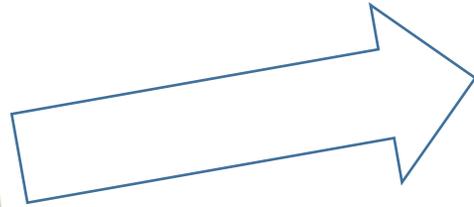
Vista posterior do tronco encefálico



Vista lateral do tronco encefálico



Vista inferior do encéfalo
(anterior do tronco encefálico)

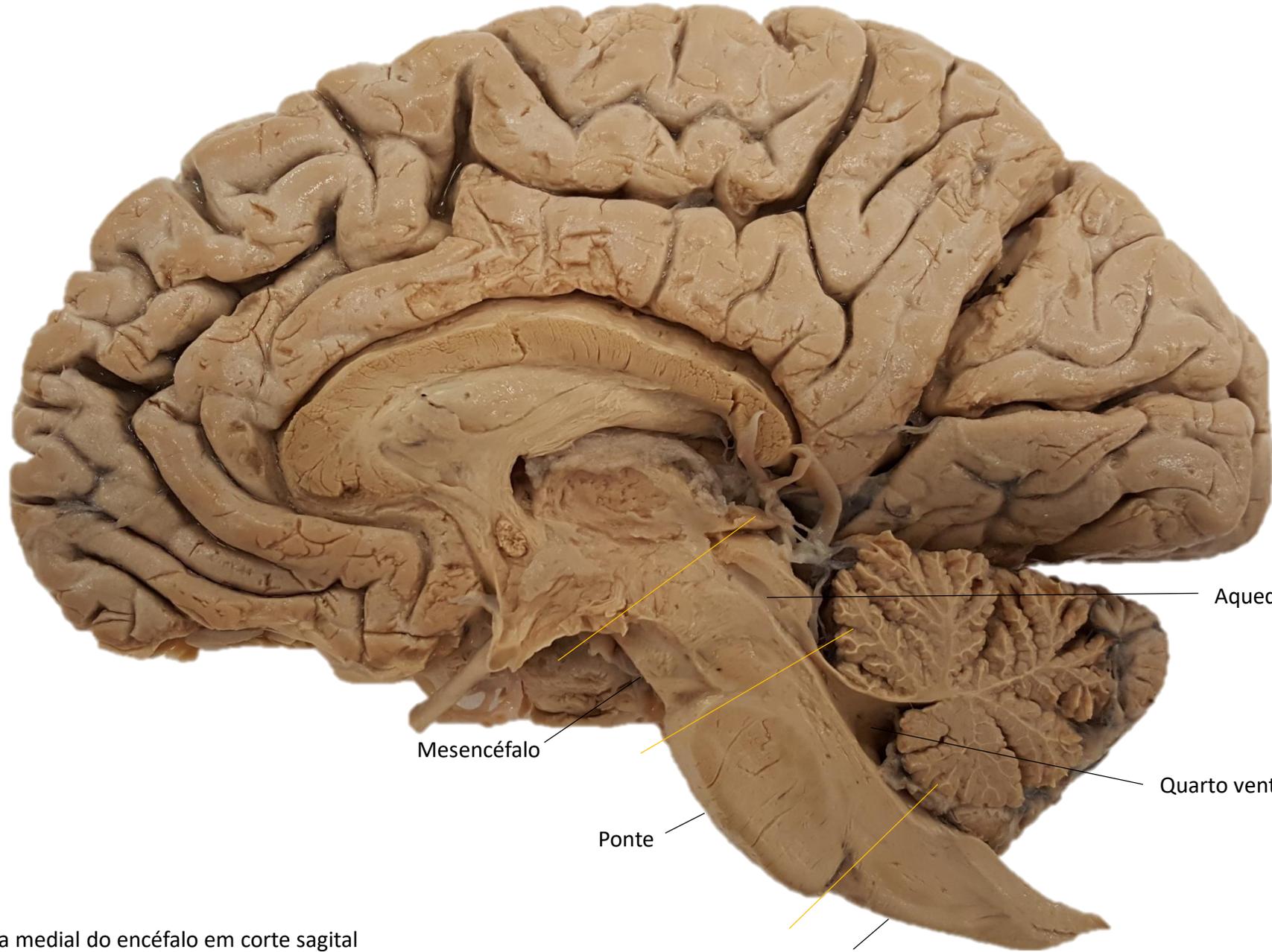


Corpo mamilar
(diencéfalo)

Fossa interpeduncular
com substância
perfurada posterior

Ponte

Pedúnculo cerebral
(mesencéfalo)



Mesencéfalo

Ponte

Bulbo

Aqueduto do mesencéfalo

Quarto ventrículo

Vista medial do encéfalo em corte sagital



Nervo troclear

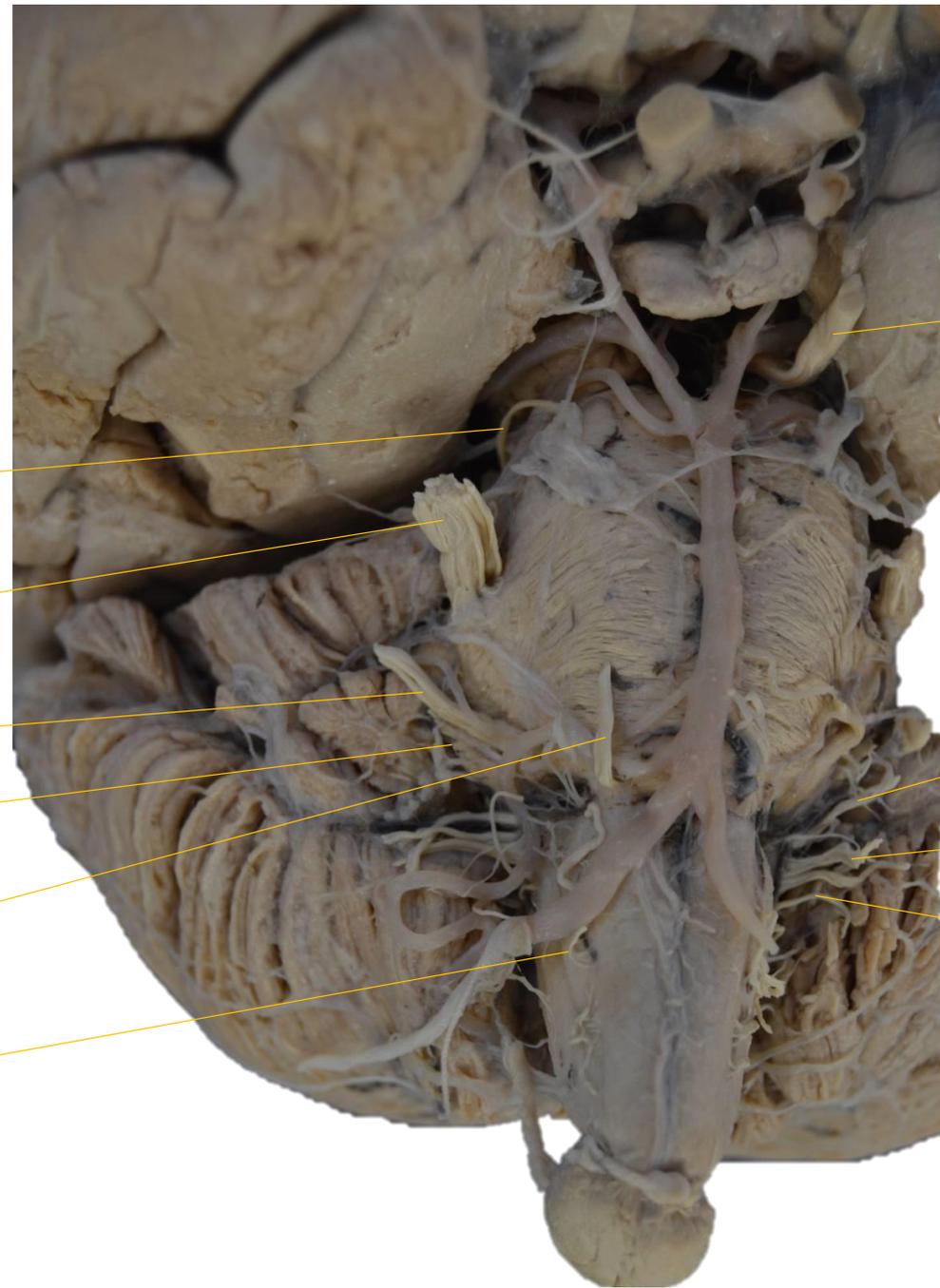
Nervo trigêmeo

Nervo facial

Nervo vestibulococlear

Nervo abducente

Nervo hipoglosso



Nervo oculomotor

Nervo glossofaríngeo

Nervo vago

Nervo acessório

Nervo oculomotor (III)

Nervo troclear (IV)

Nervo trigêmeo (V)

Nervo abducente (VI)

Nervo facial (VII)

Nervo vestibulococlear (VIII)

Nervo glossofaríngeo (IX)

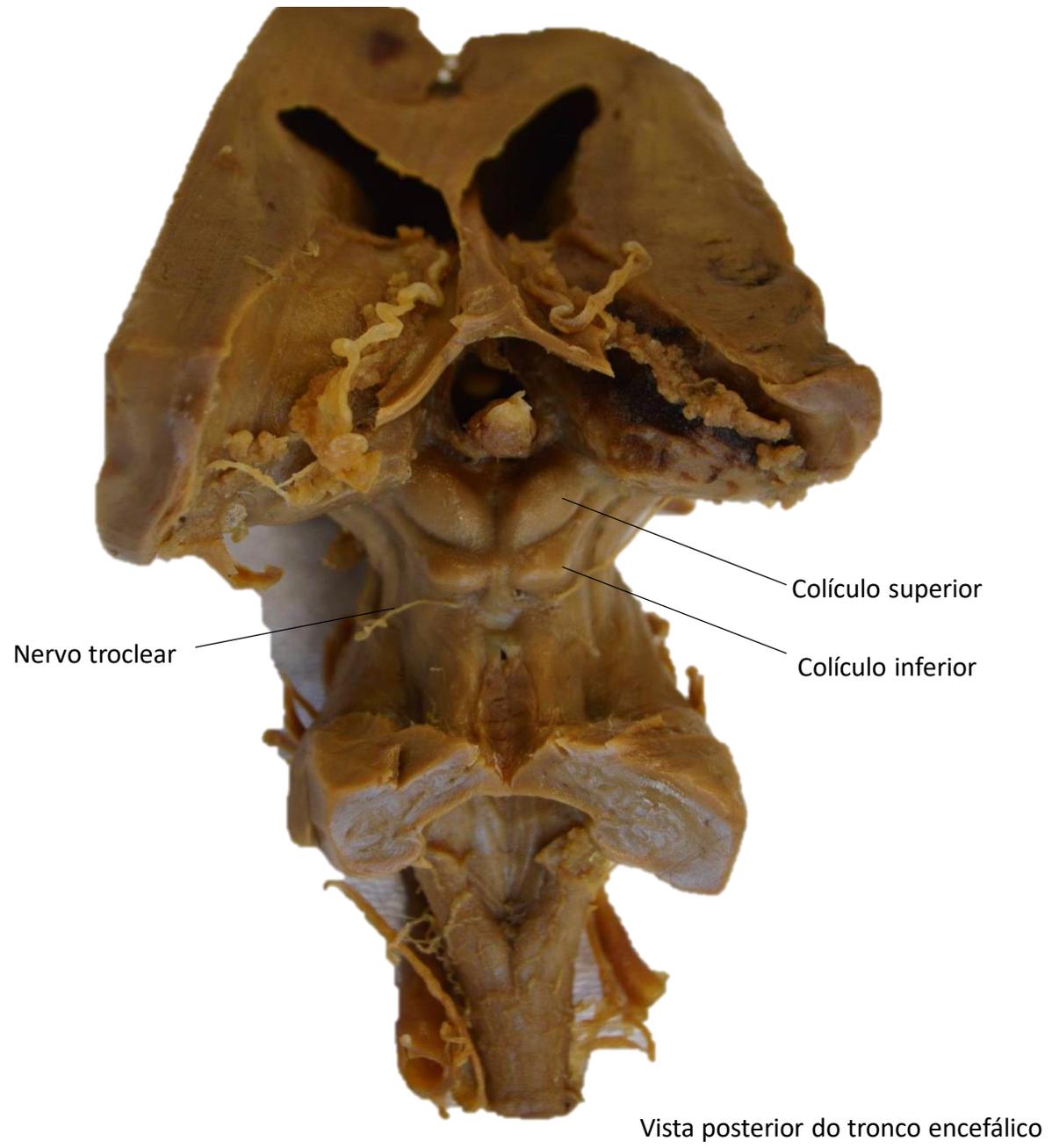
Nervo vago (X)

Nervo acessório (XI)

Nervo hipoglosso (XII)



Vista inferior do encéfalo
(face anterior do tronco encefálico)

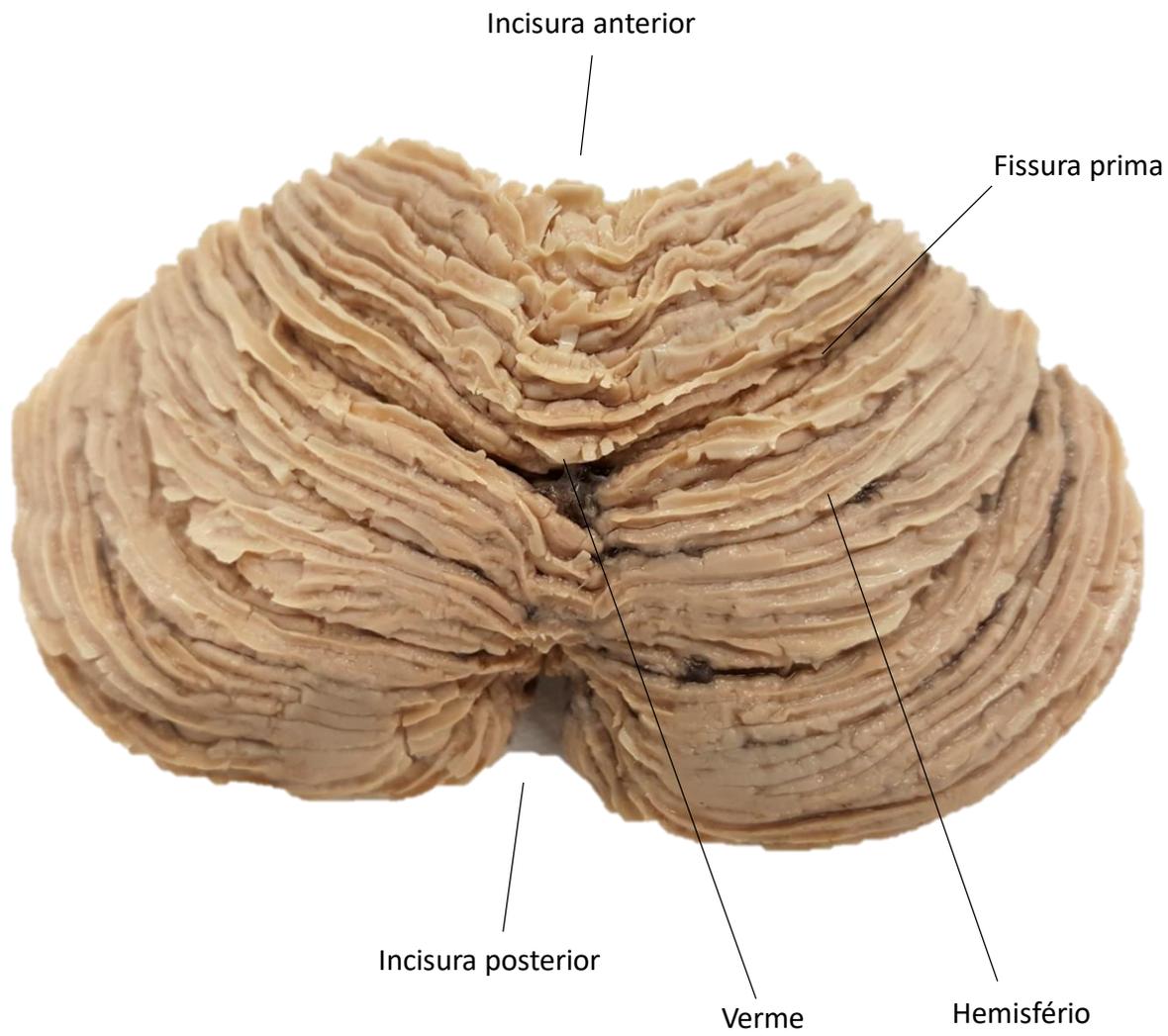


Nervo troclear

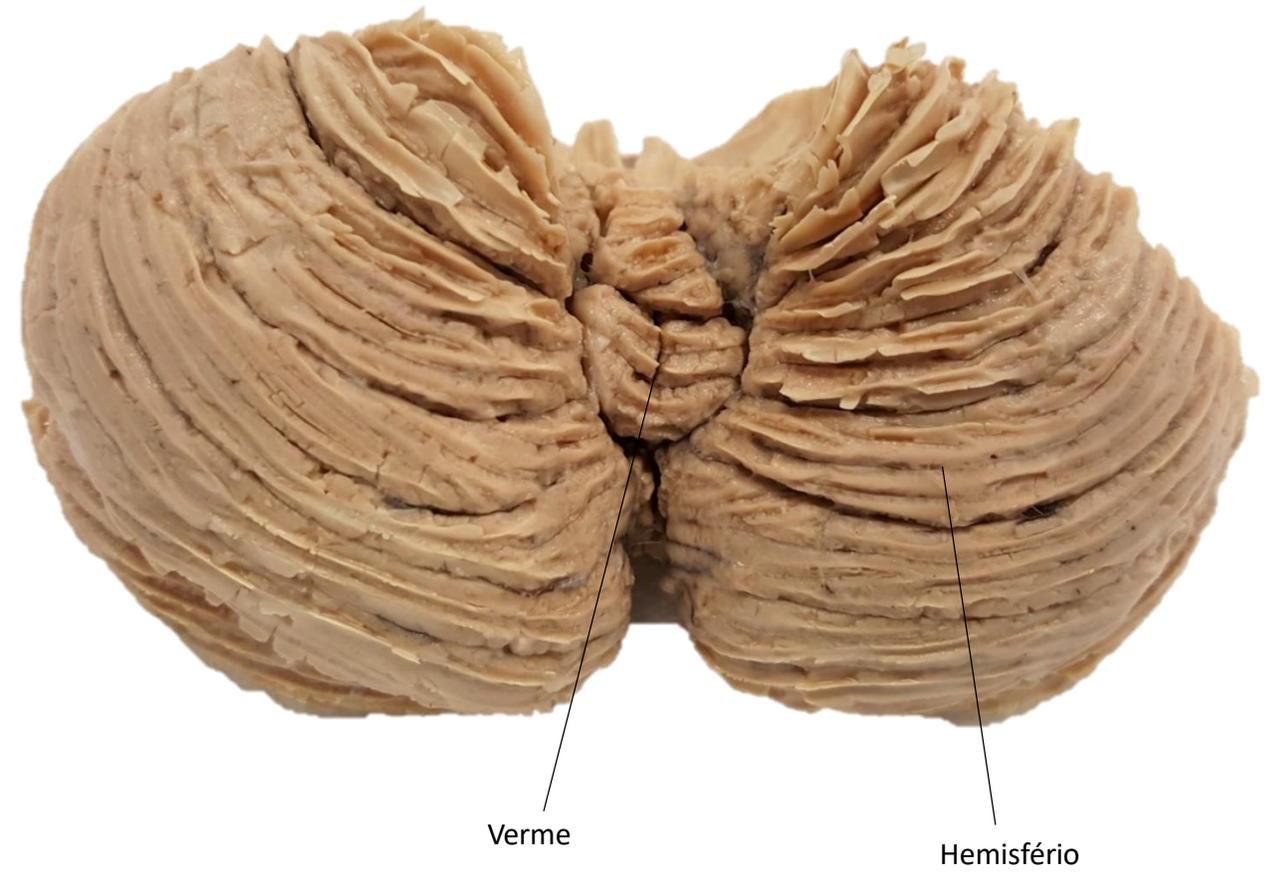
Colículo superior

Colículo inferior

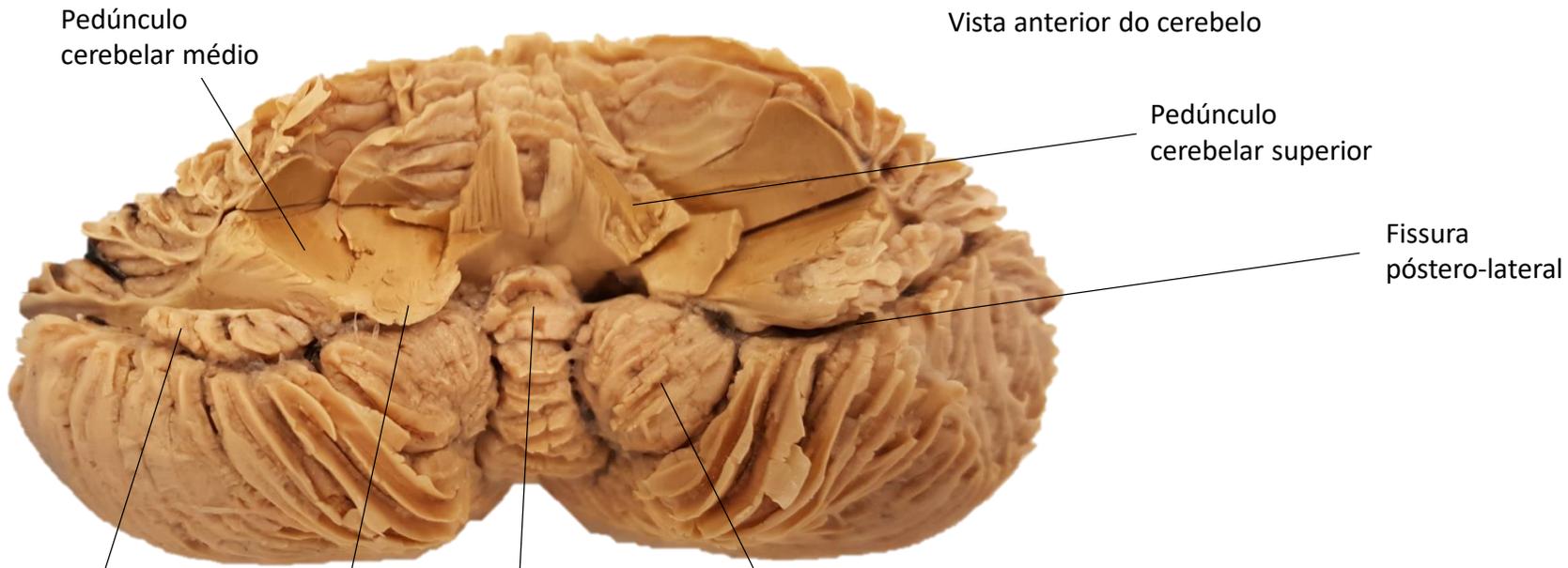
Vista posterior do tronco encefálico



Vista superior do cerebelo



Vista inferior do cerebelo



Flóculo

Pedúnculo cerebelar inferior

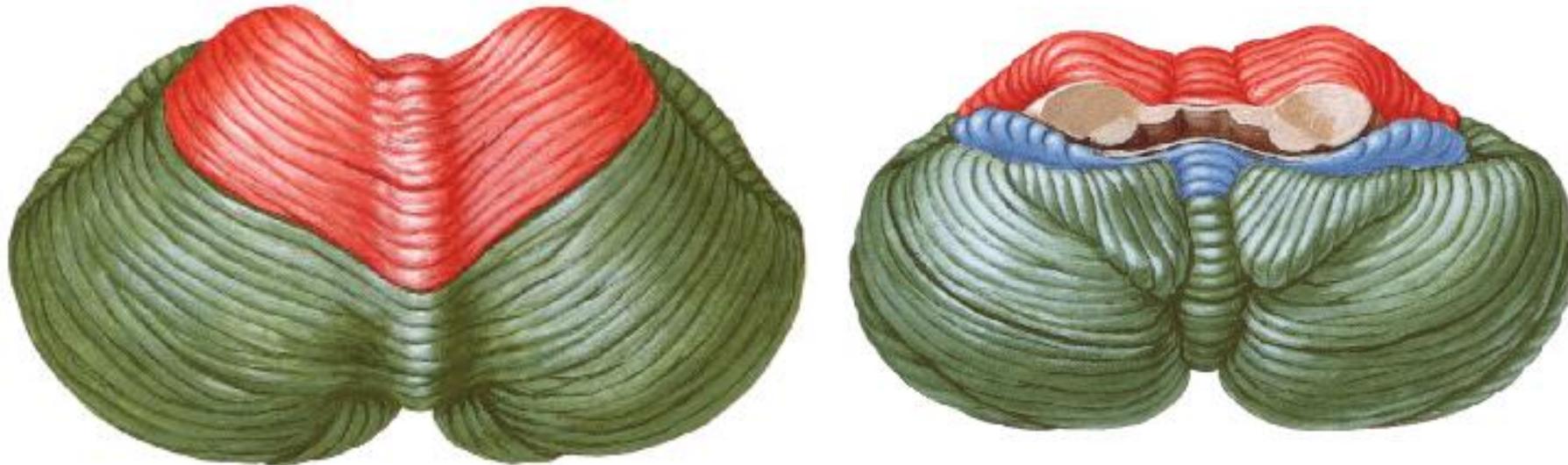
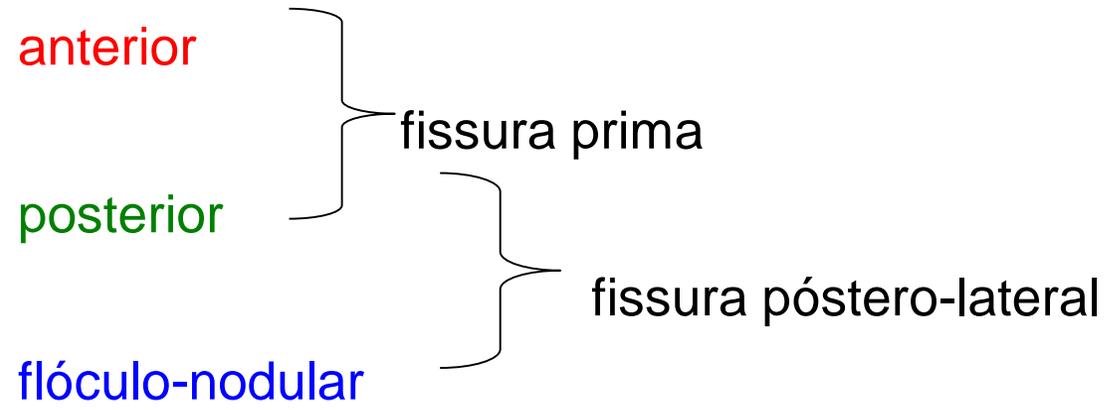
Vista posterior do cerebelo

Fissura horizontal



Cerebelo

Lobos – divisão anatômica





Quarto ventrículo

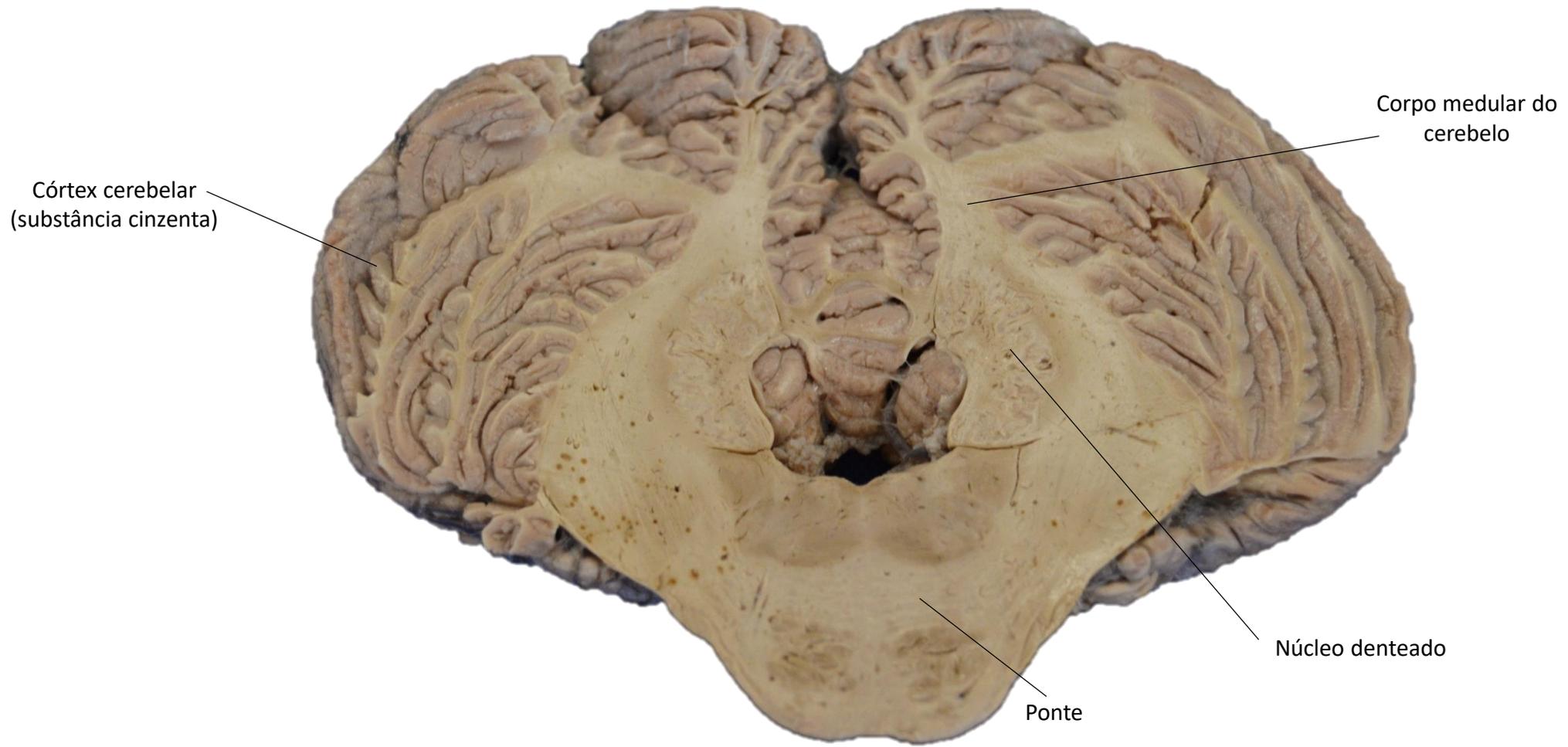
Aqueduto do mesencéfalo

Véu medular superior

Cerebelo (verme)

Tela e plexo coroides

Vista medial do encéfalo em corte sagital



Corte transversal do cerebello



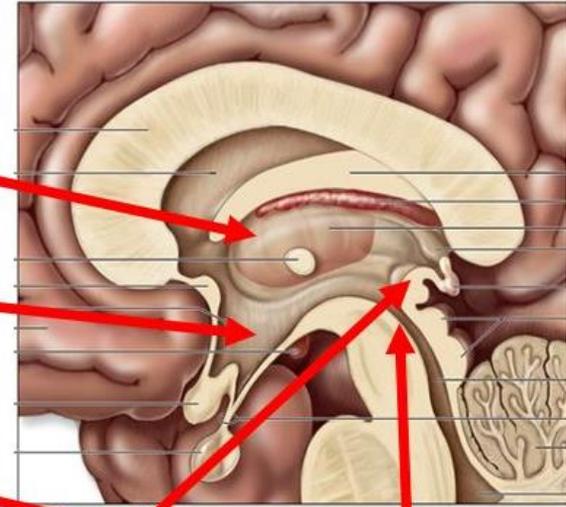
Diencéfalo e Telencéfalo

TÁLAMO

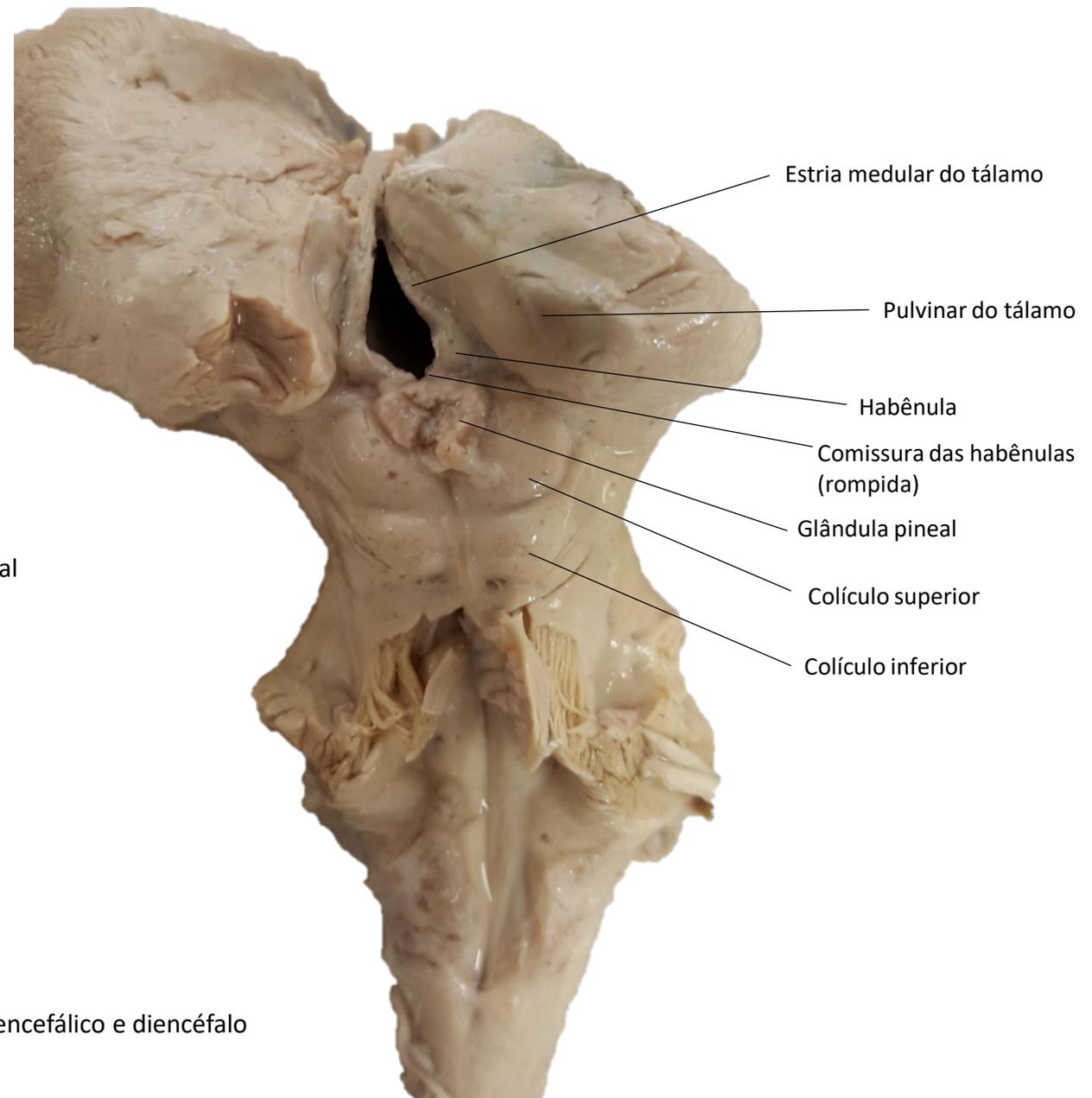
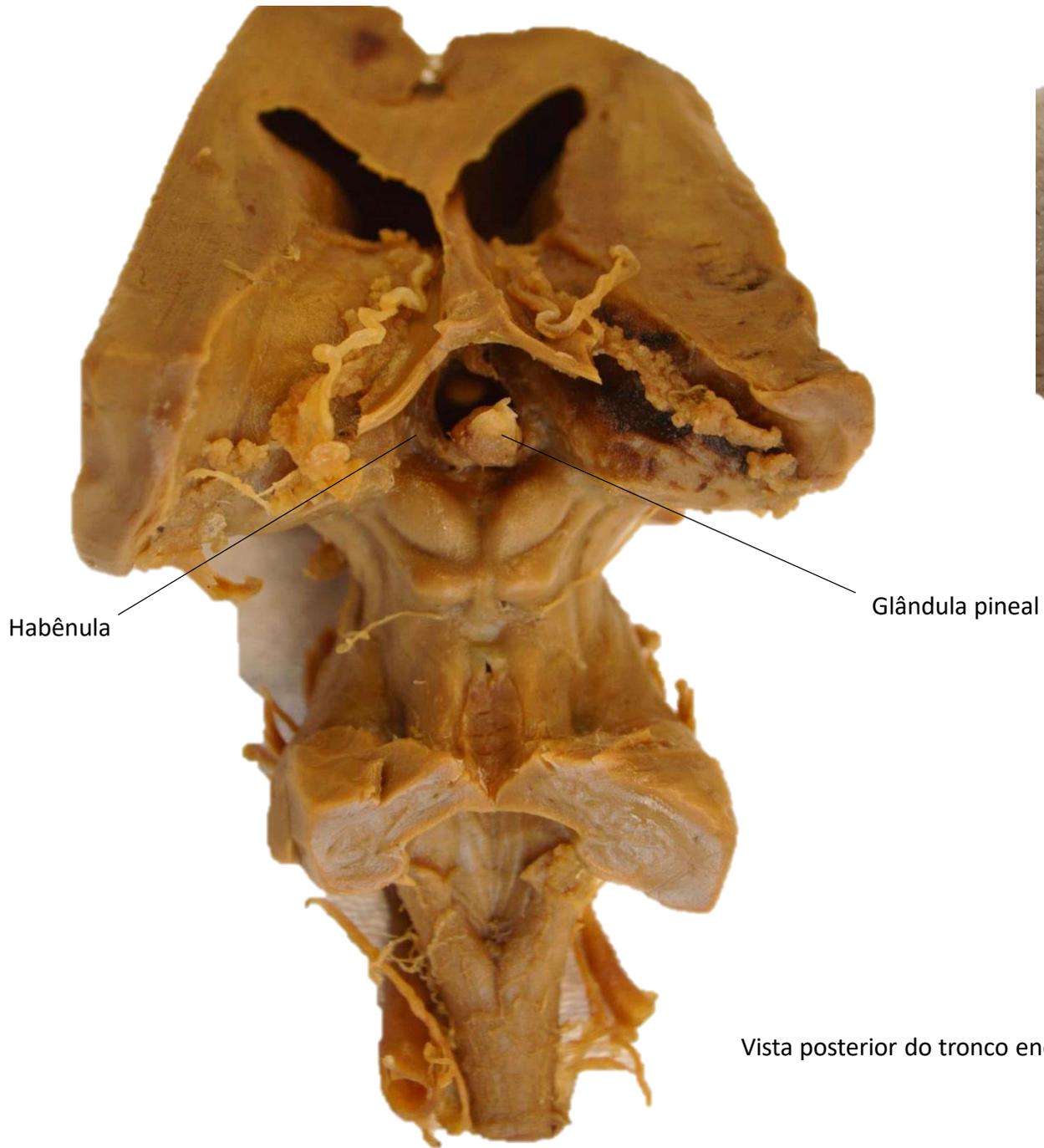
HIPOTÁLAMO

EPITÁLAMO

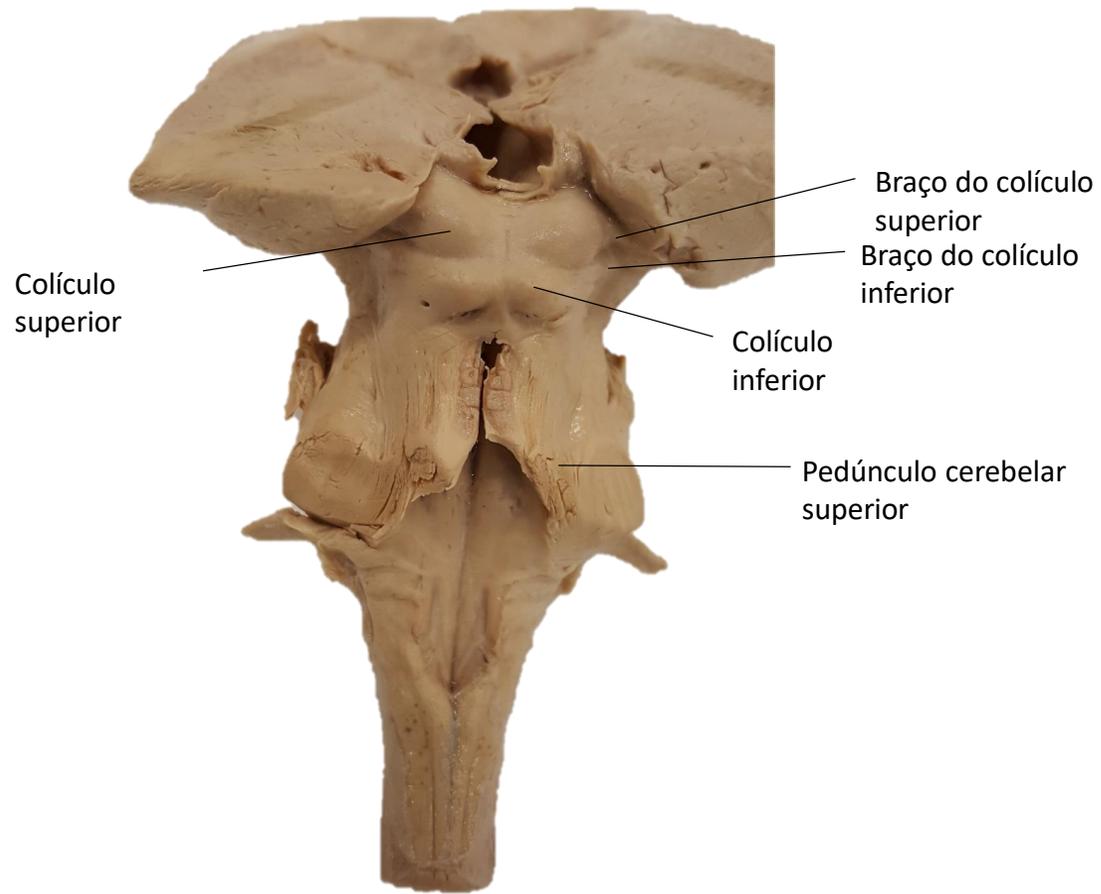
SUBTÁLAMO



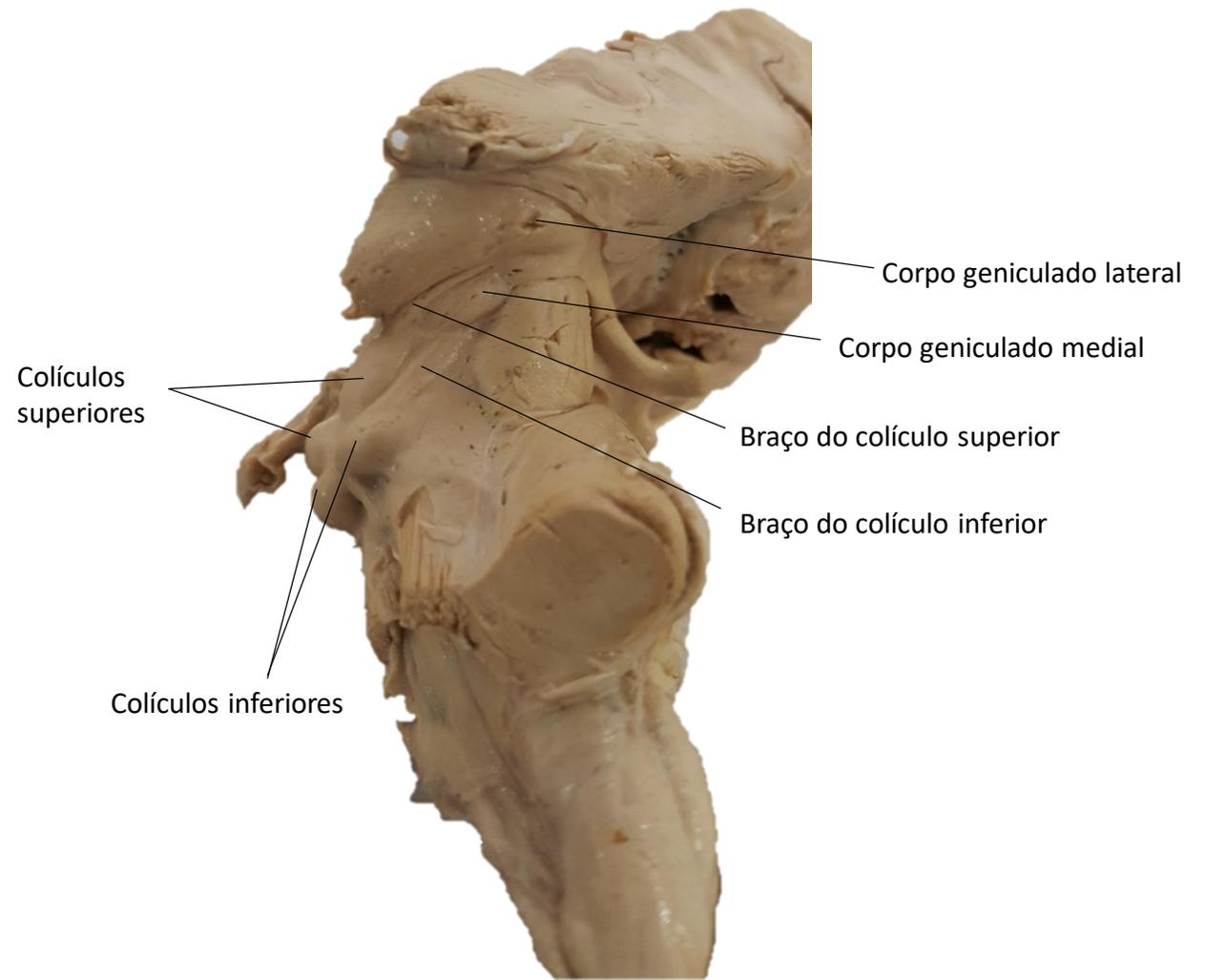
Diencéfalo



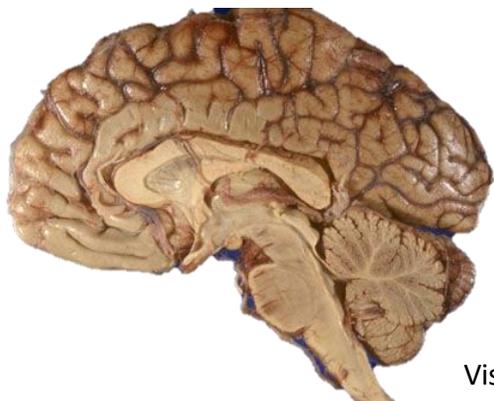
Vista posterior do tronco encefálico e diencefalo



Vista posterior do tronco encefálico



Vista lateral do tronco encefálico



Vista medial do encéfalo em corte sagital

Forame interventricular

Tubérculo anterior do tálamo

Coluna do fórnice

Comissura anterior

Lâmina terminal

Recesso óptico

Quiasma óptico

Infundíbulo e haste hipofisária

Túber cinéreo

Sulco hipotalâmico

Corpo mamilar

Aderência intertalâmica

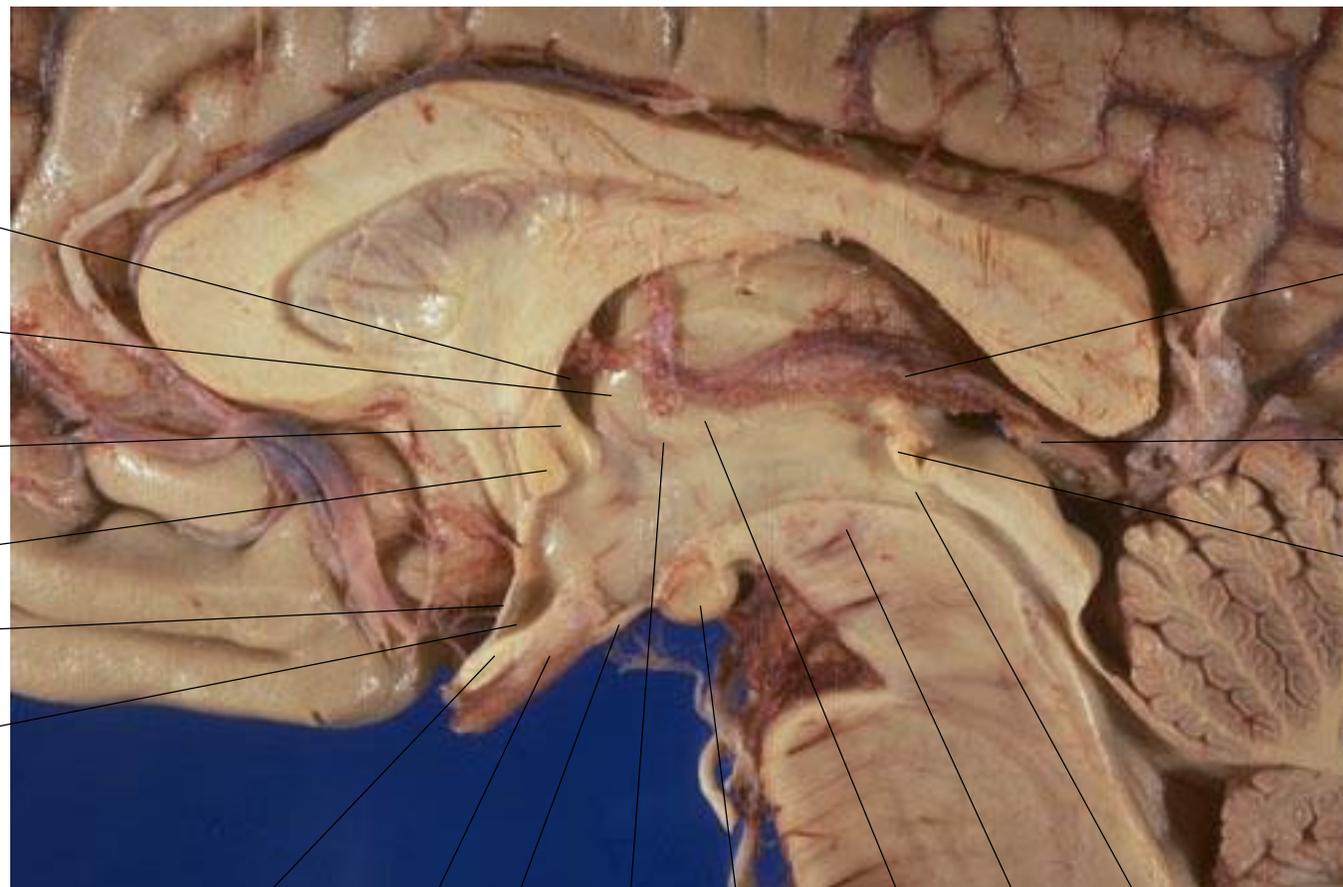
Tegmento mesencefálico

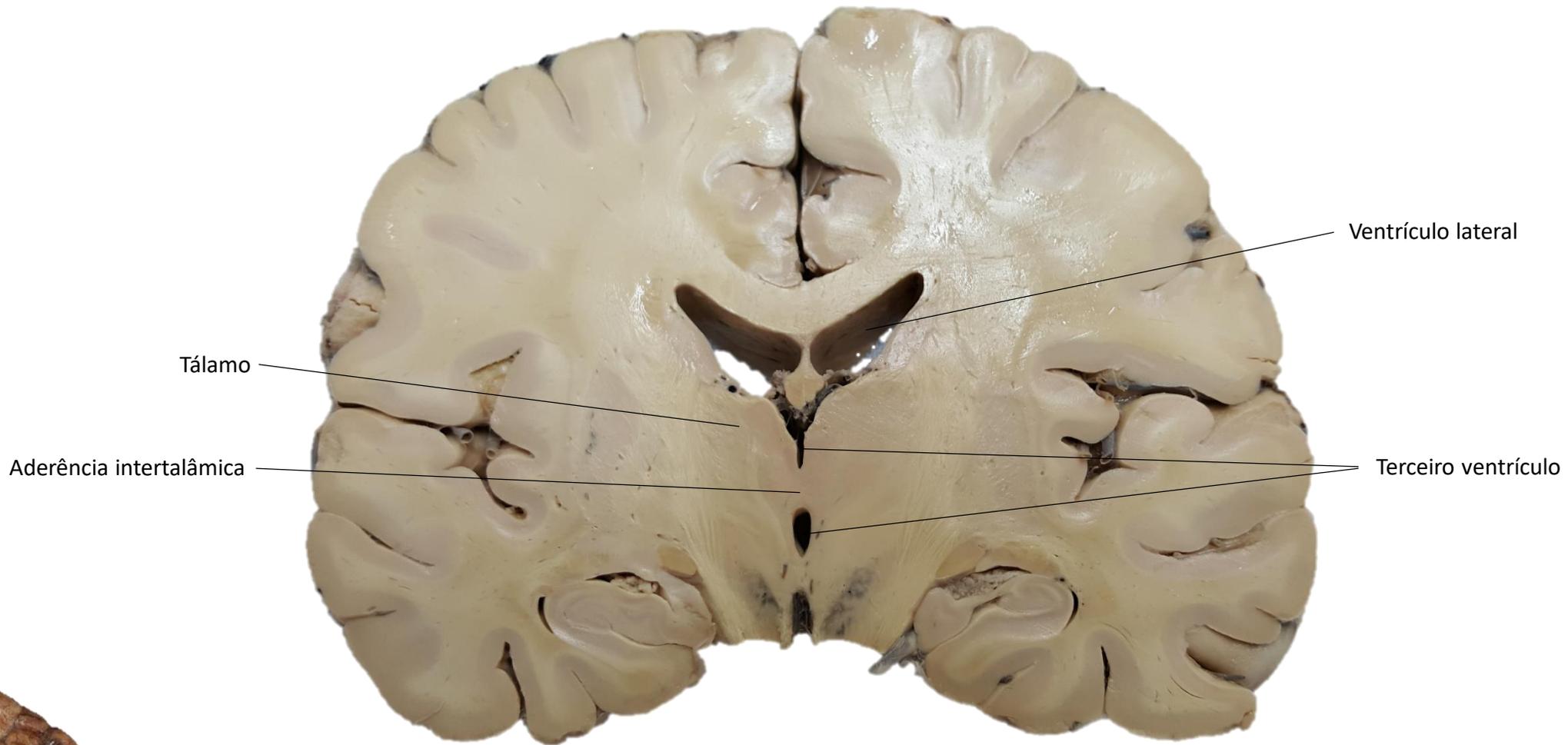
Abertura superior do aqueduto do mesencéfalo

Tela e plexo coróide (deslocados inferiormente)

Glândula pineal

Comissura posterior





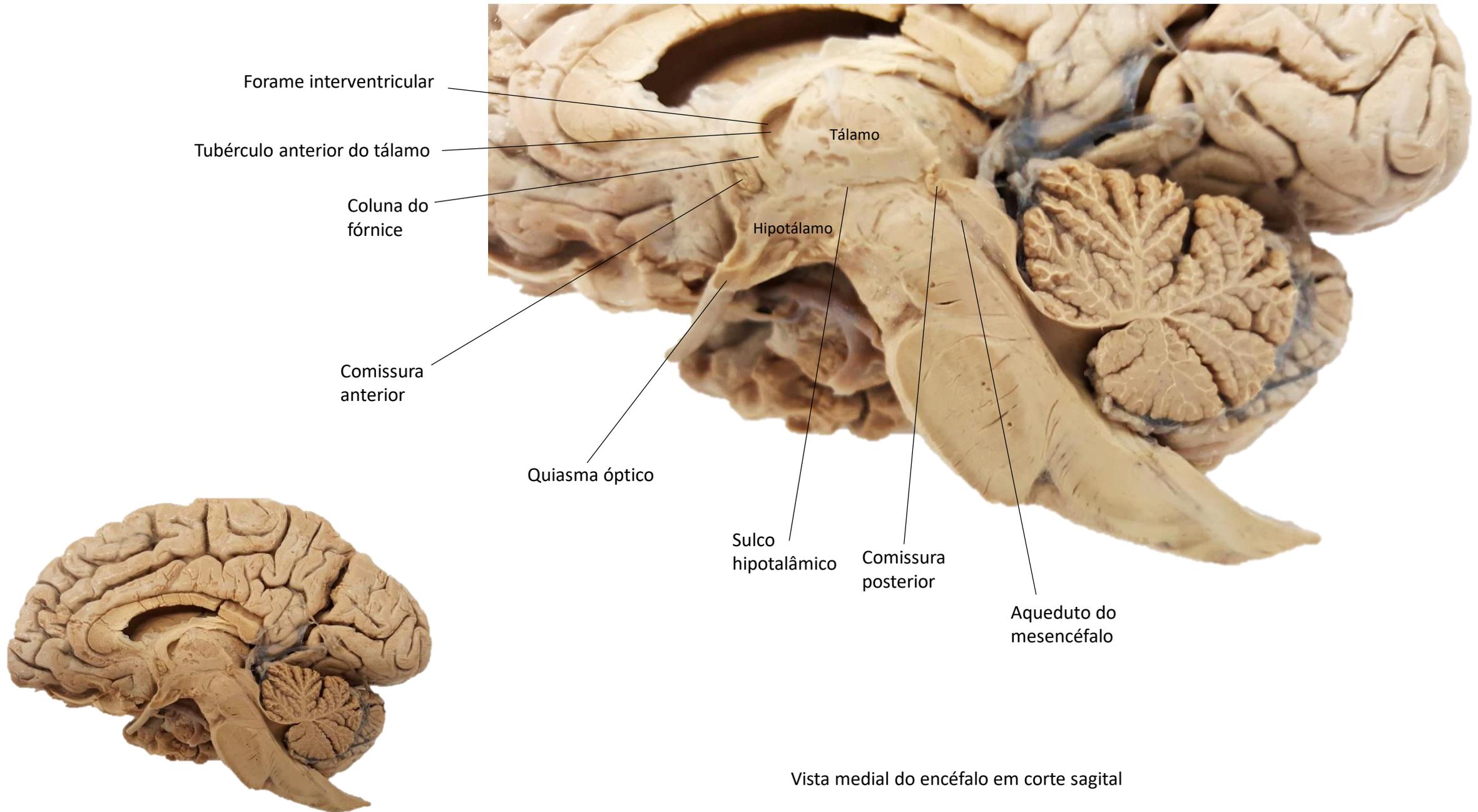
Tálamo

Aderência intertalâmica

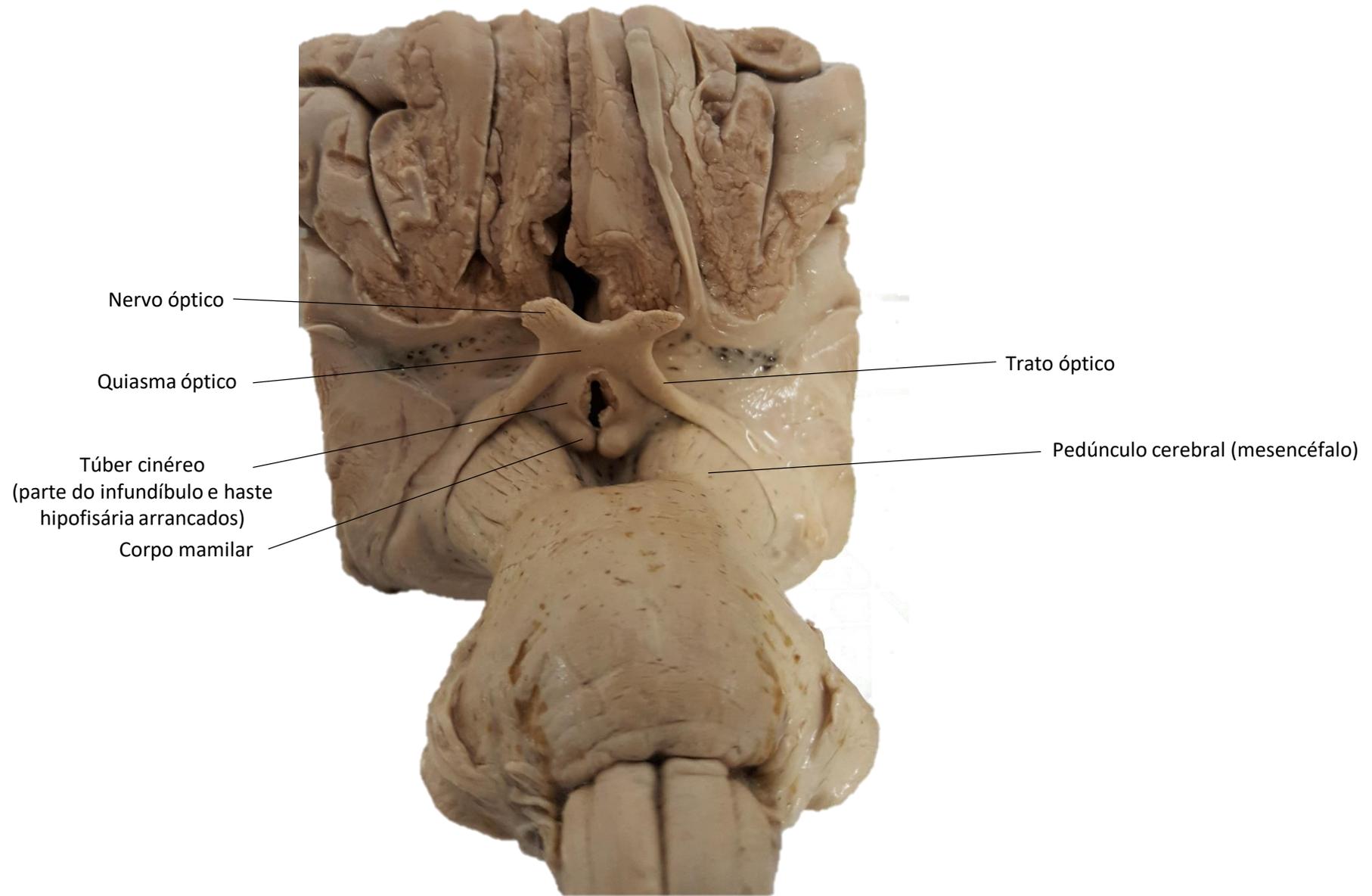
Ventrículo lateral

Terceiro ventrículo

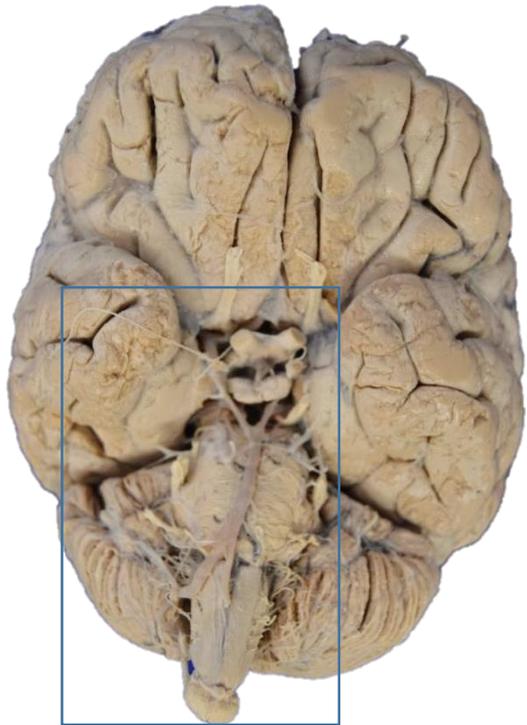
Encéfalo em corte coronal
(passando pelos pedúnculos cerebrais)



Vista medial do encéfalo em corte sagital



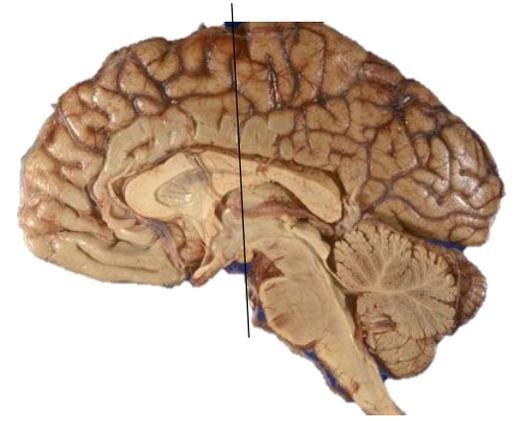
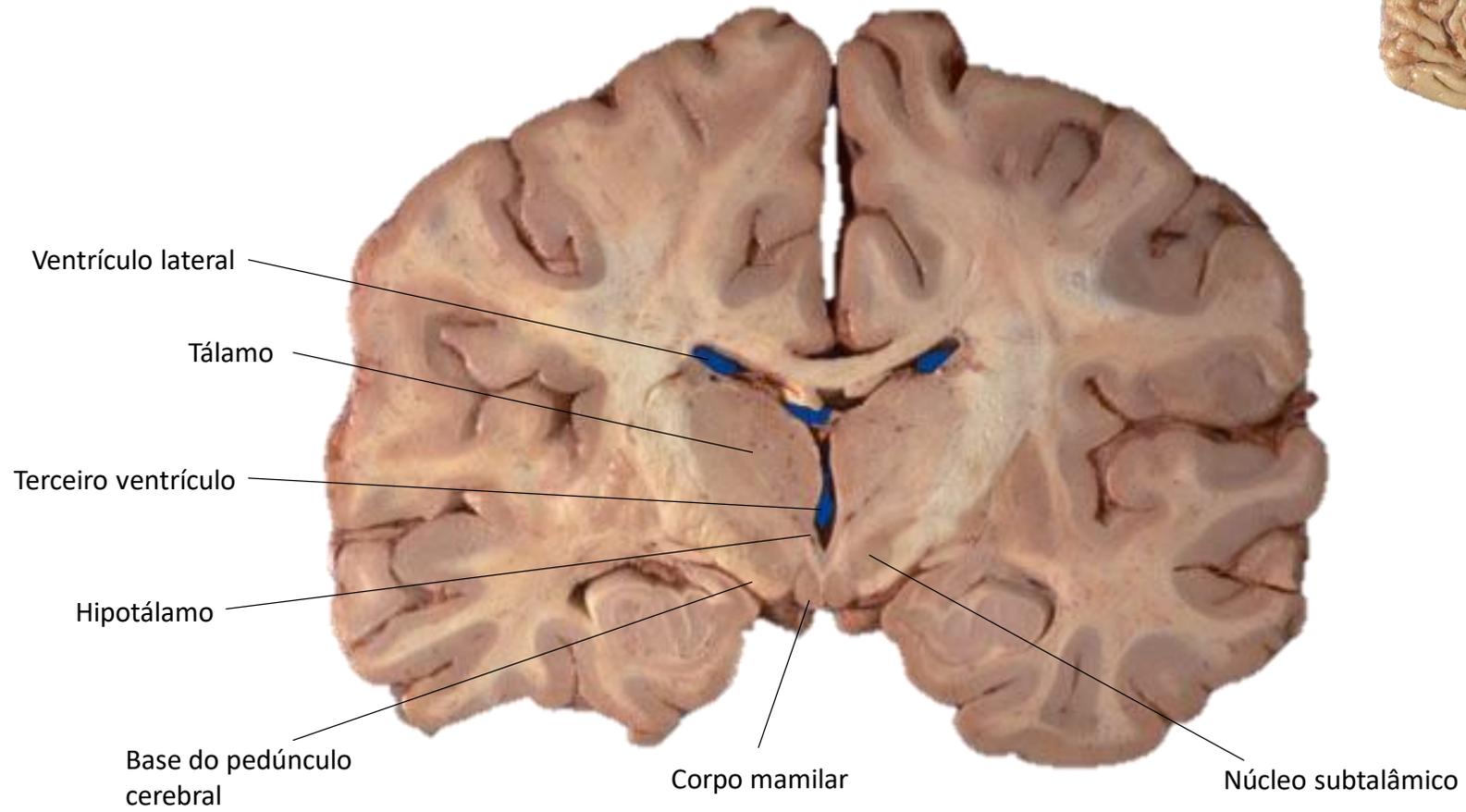
Vista inferior do encéfalo (anterior do tronco encefálico)



Quiasma óptico
Infundíbulo e haste hipofisária
Hipófise



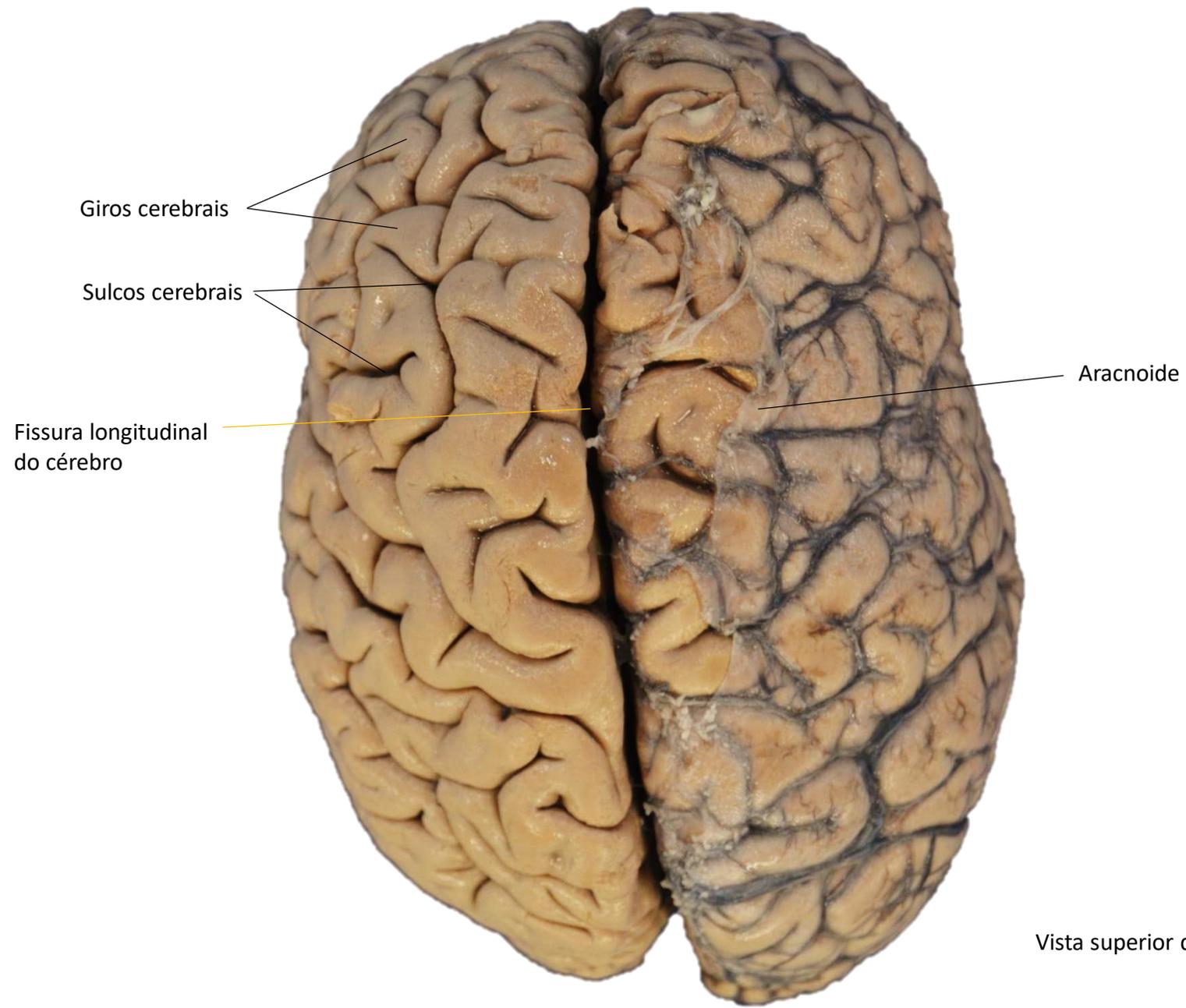
Vista inferior do encéfalo



Corte frontal do cérebro (passando pelos corpos mamilares)



Telencéfalo e núcleos da base



Vista superior dos hemisférios cerebrais



Giro pré-central

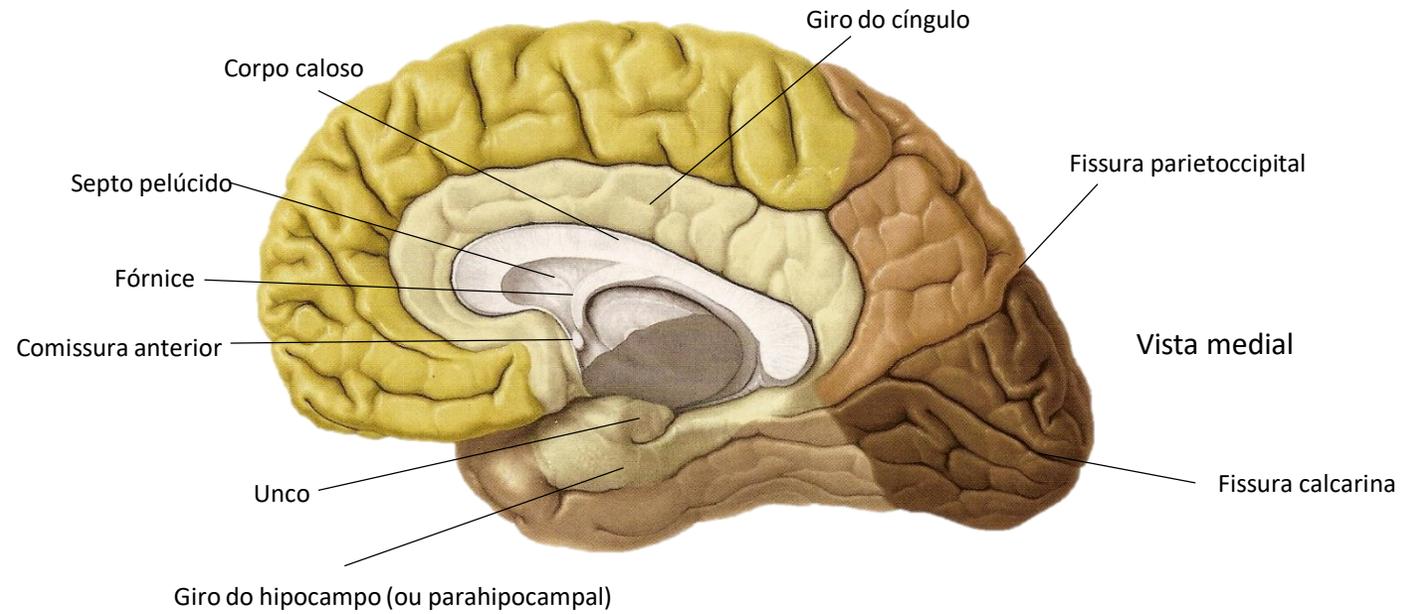
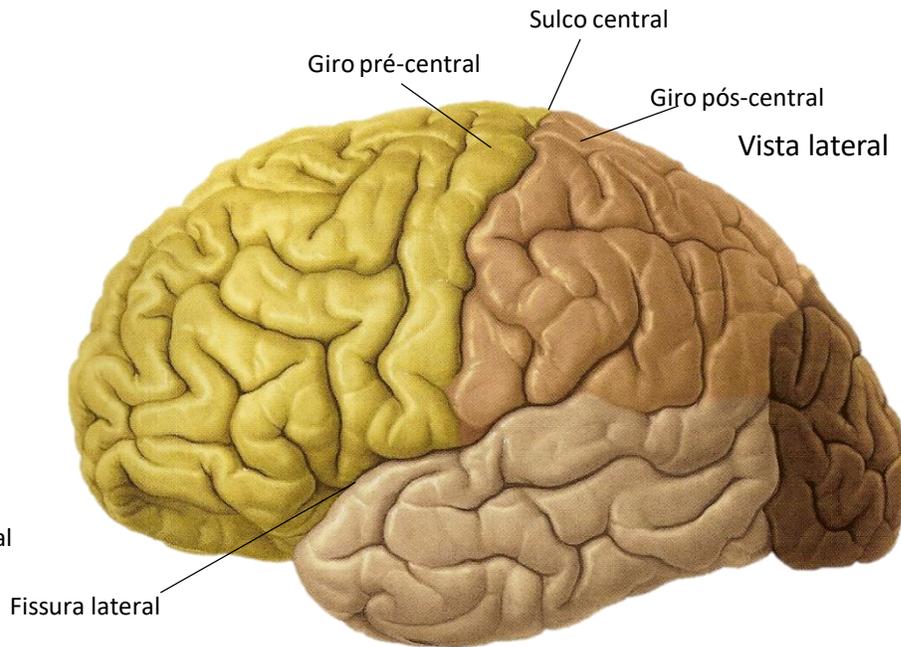
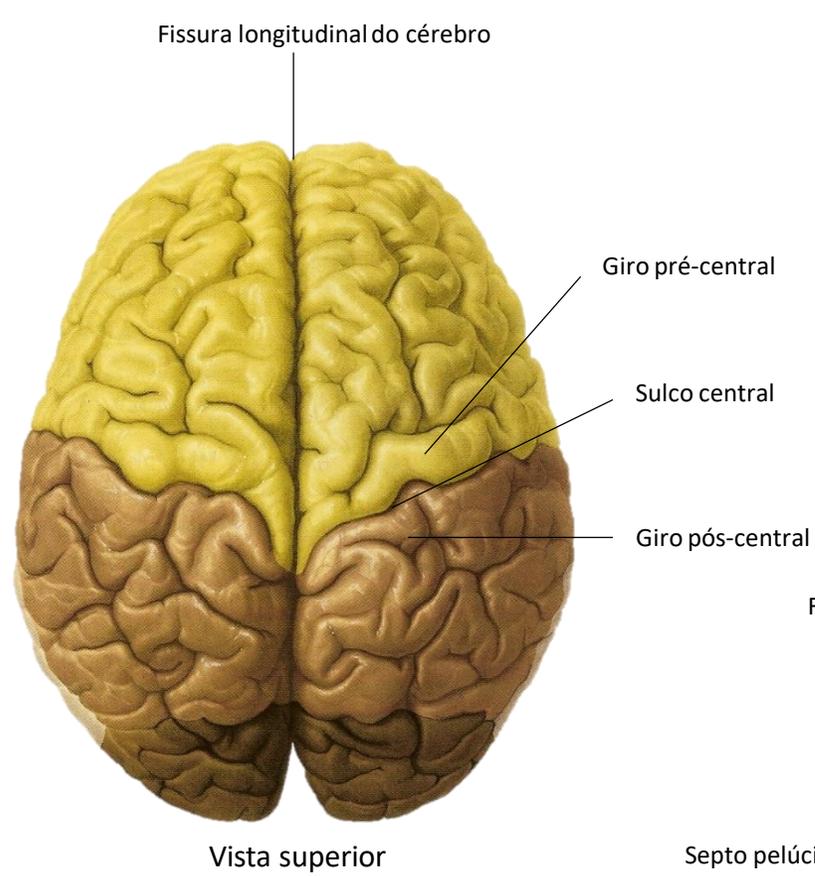
Sulco central

Giro pós-central

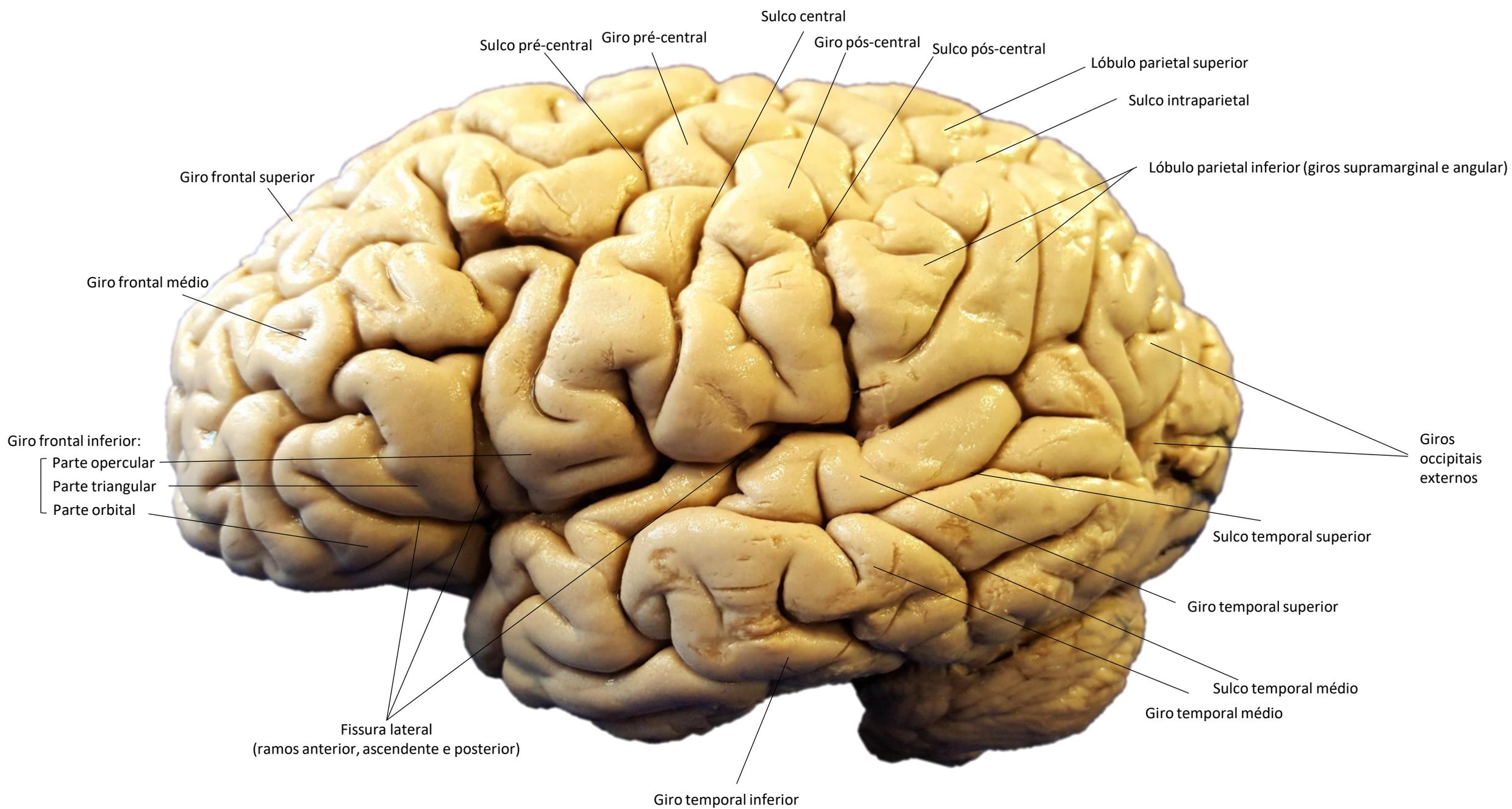
Fissura lateral

Vista lateral do encéfalo

- Lobo frontal
- Lobo parietal
- Lobo temporal
- Lobo occipital



Lobos cerebrais





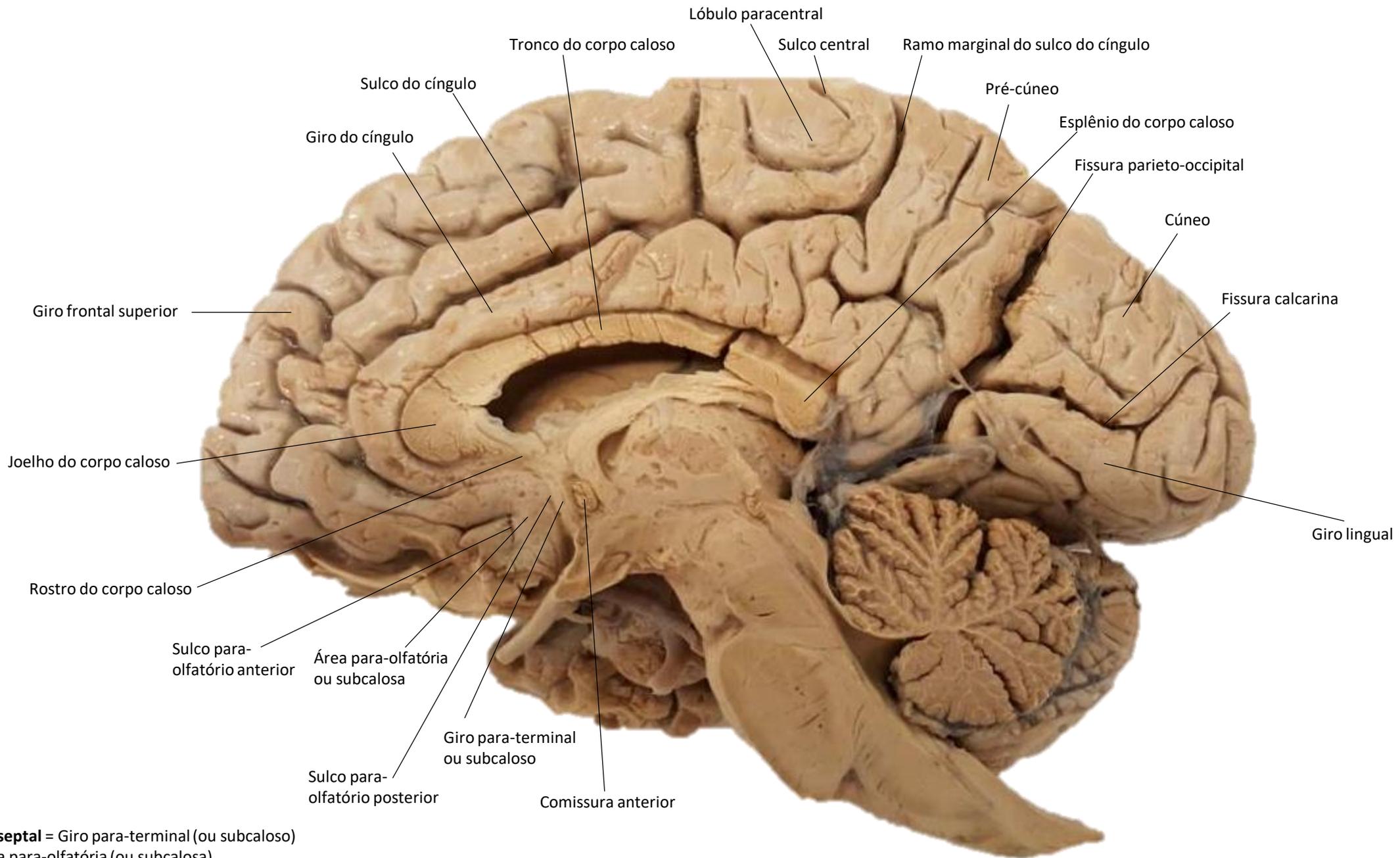
Giros da ínsula
(afastamento das bordas
da fissura lateral)

Vista lateral do
encéfalo

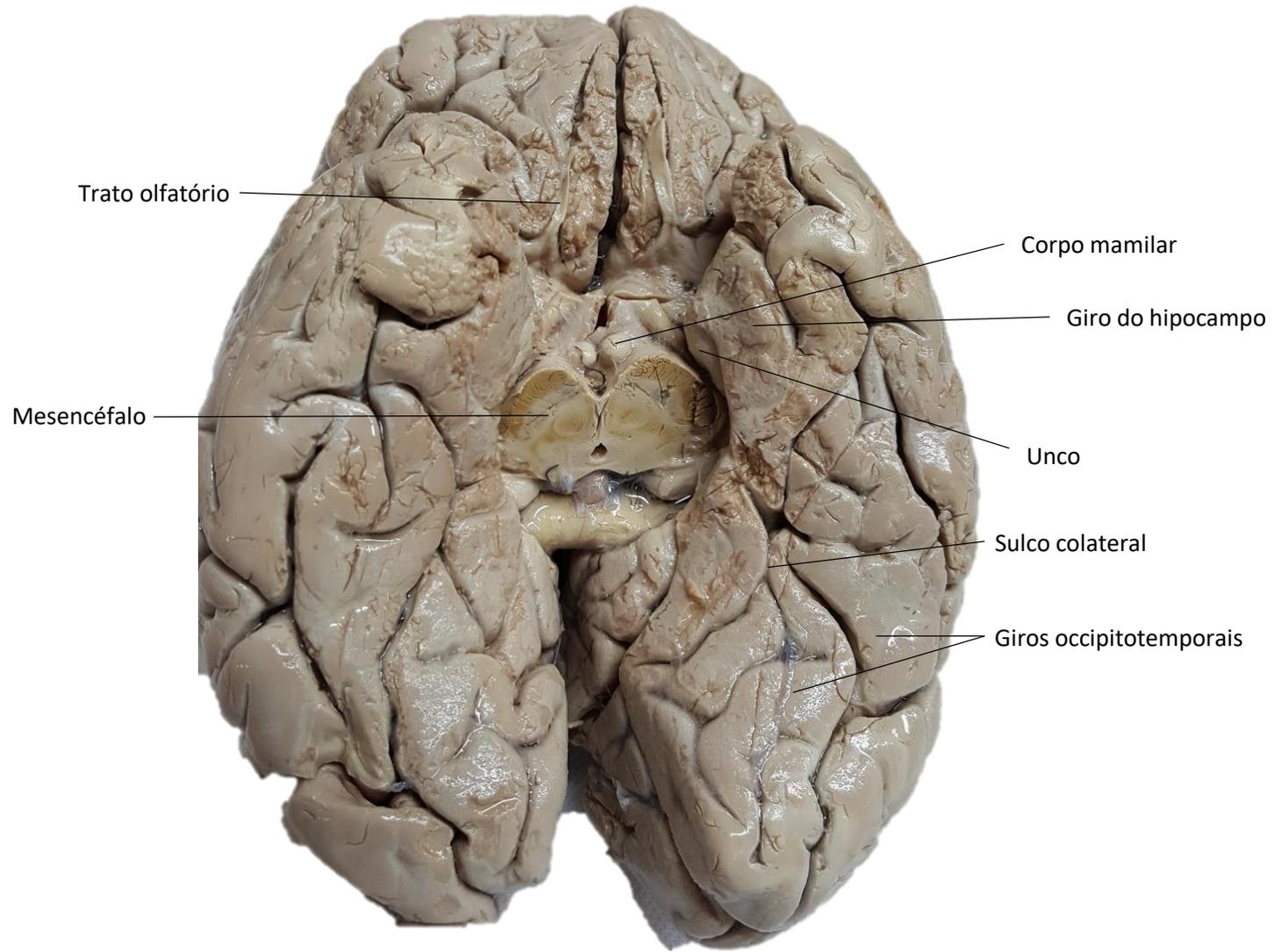


Giros da ínsula (retirada das bordas da fissura lateral – lobos frontal, parietal e temporal)

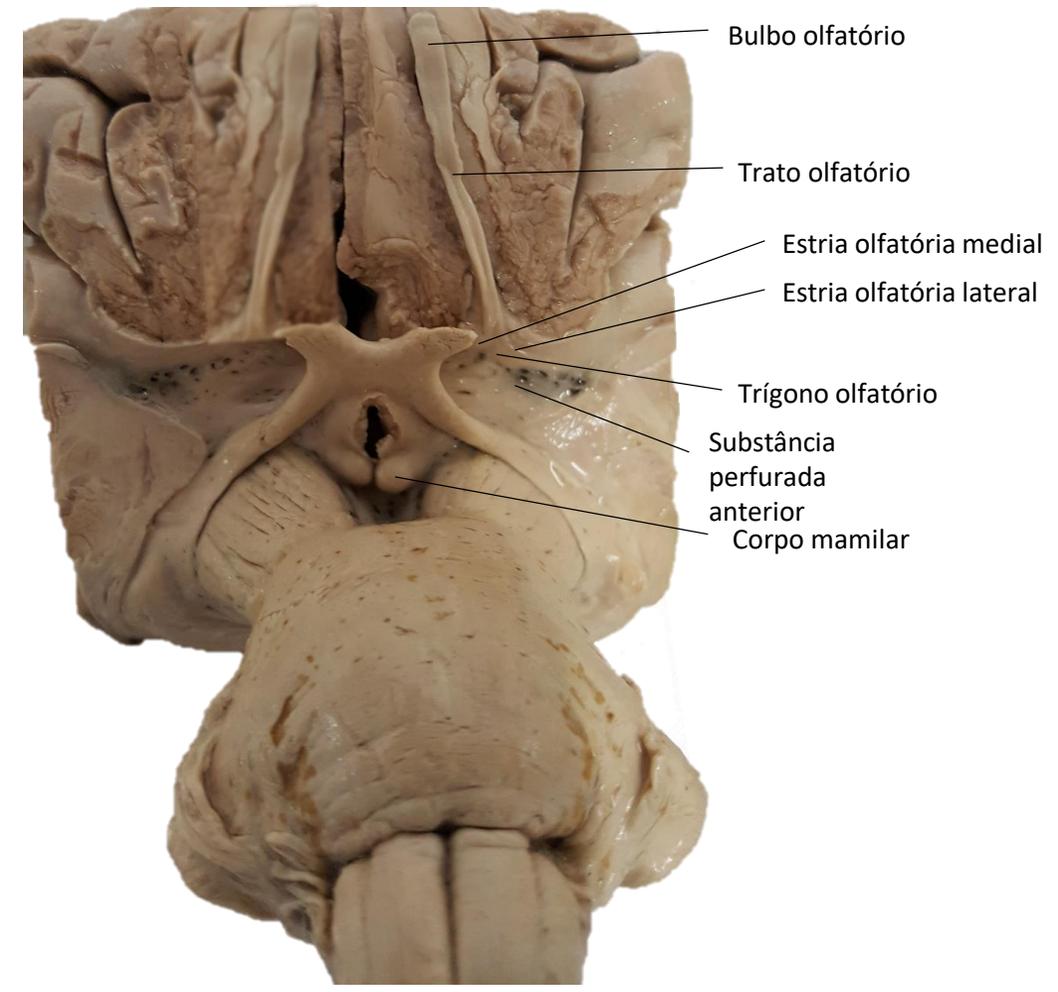
Vista lateral do encéfalo



Área septal = Giro para-terminal (ou subcaloso)
+ Área para-olfatória (ou subcalosa)

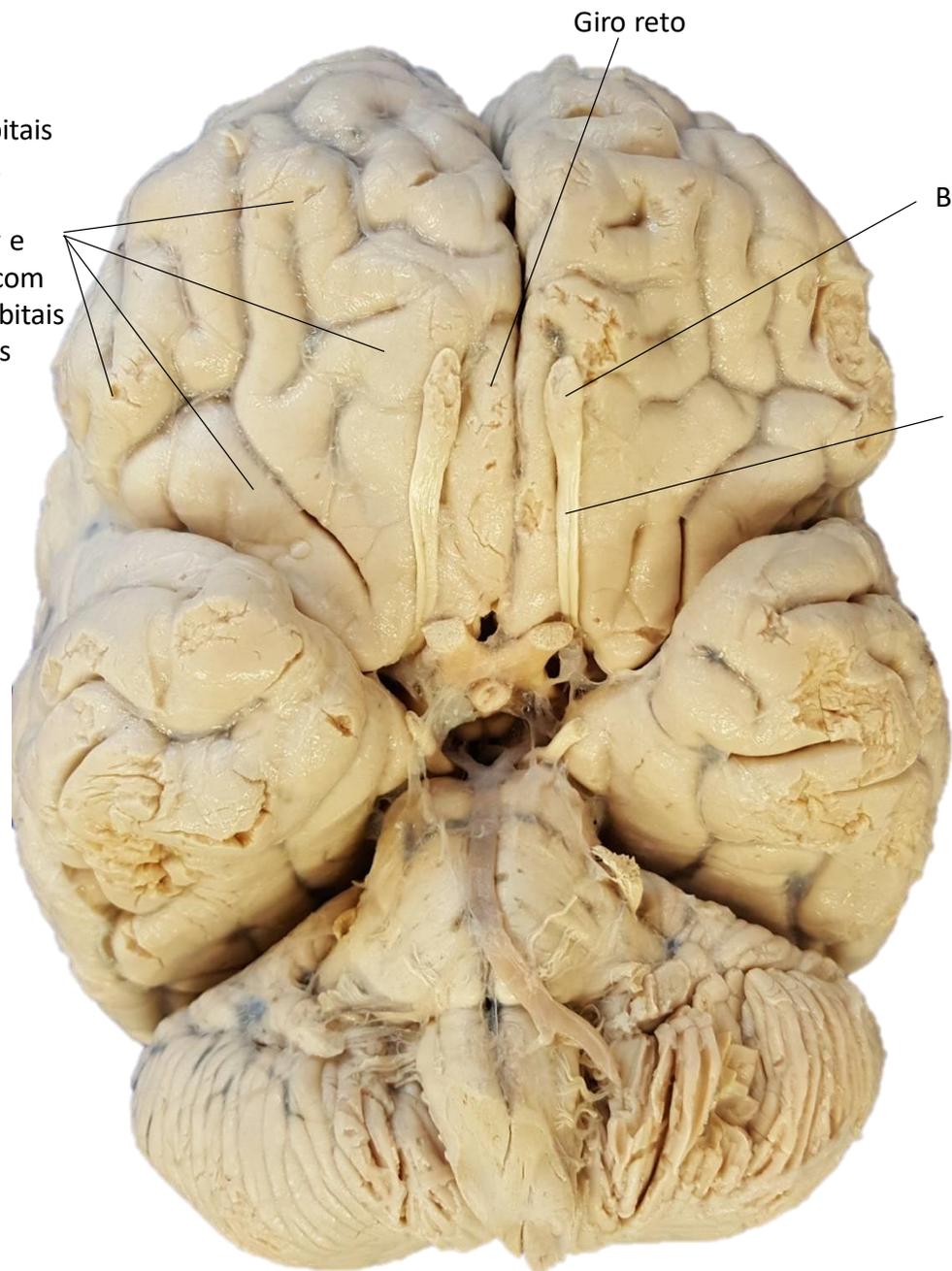


Vista inferior do cérebro (tronco encefálico seccionado e retirado)



Vista inferior do cérebro (anterior do tronco encefálico)

Giros orbitais
(anterior,
medial,
posterior e
lateral), com
sulcos orbitais
entre eles

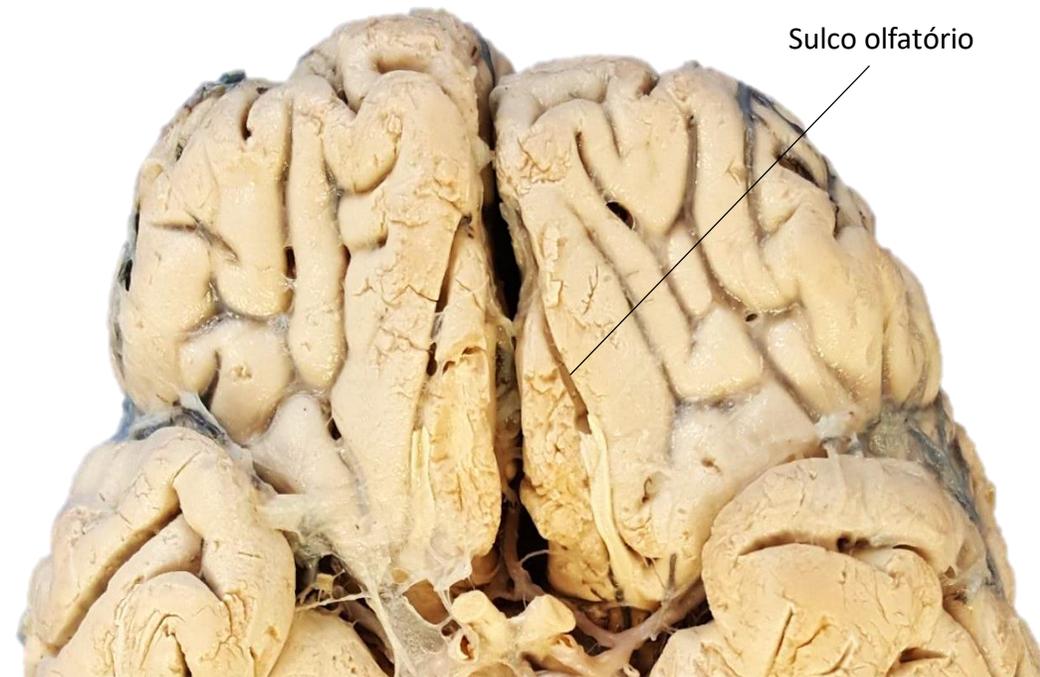


Giro reto

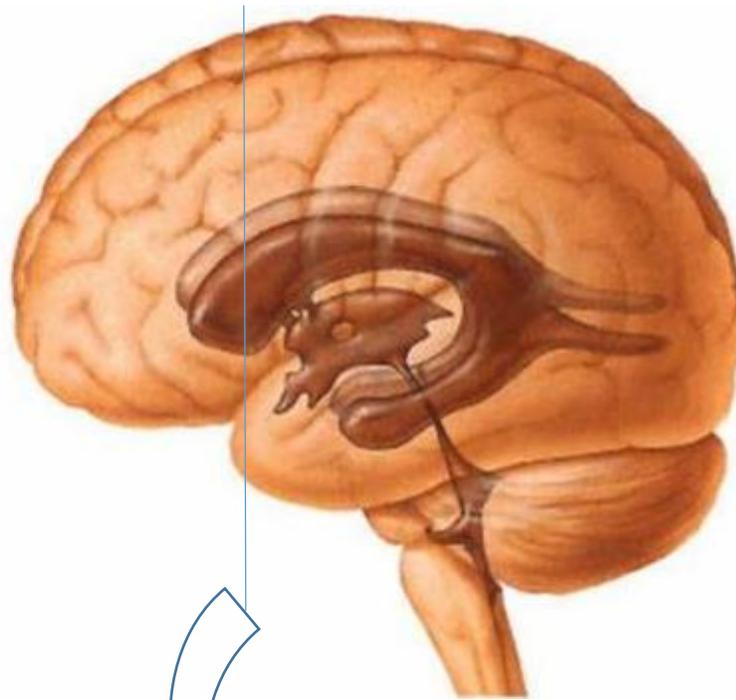
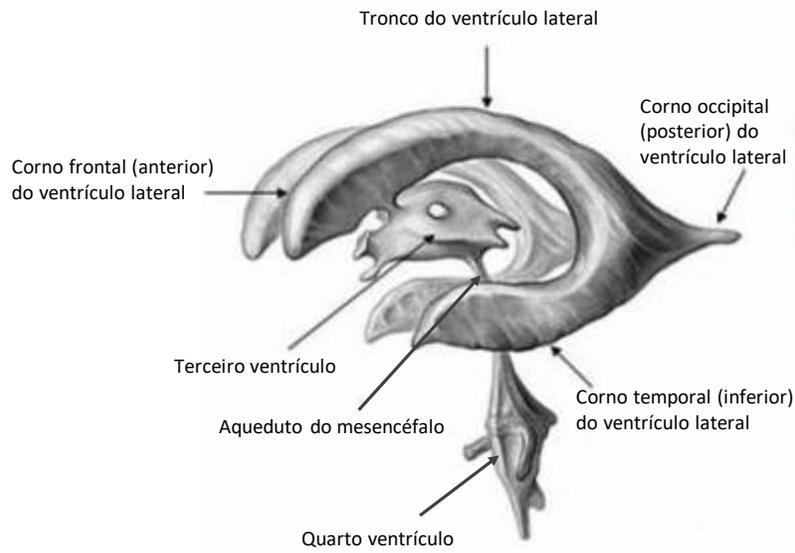
Bulbo olfatório

Trato olfatório

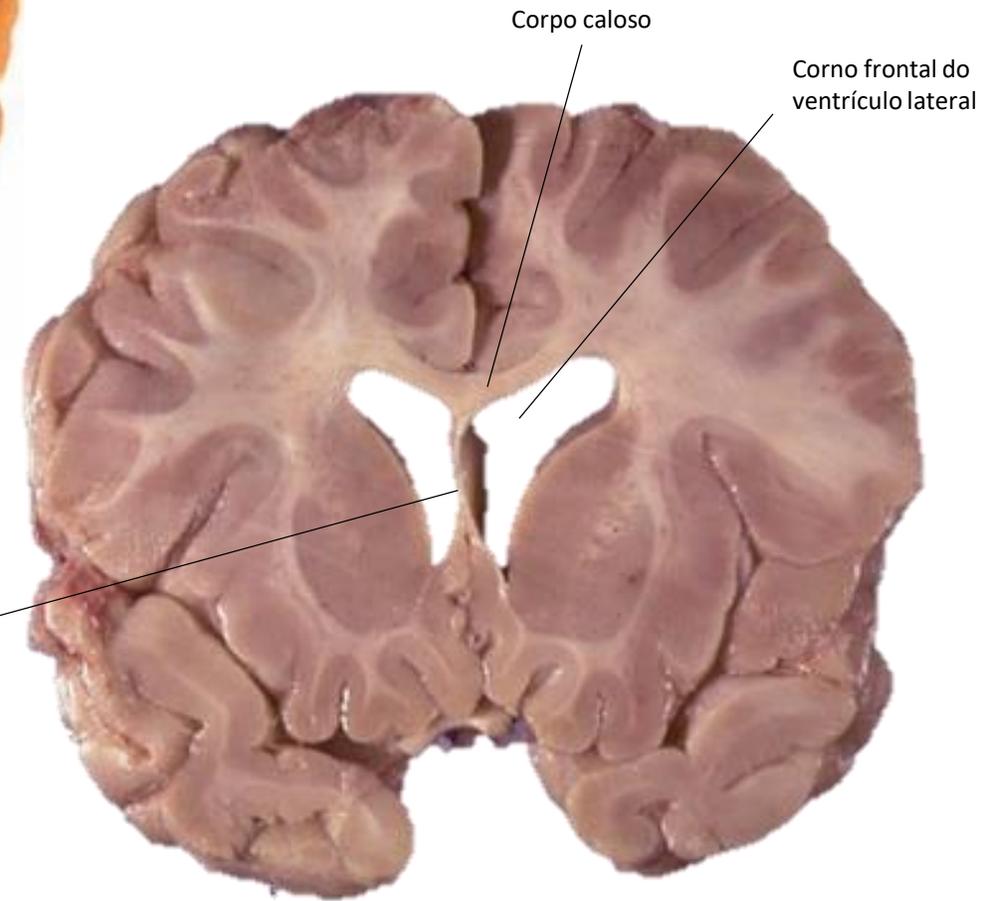
Sulco olfatório



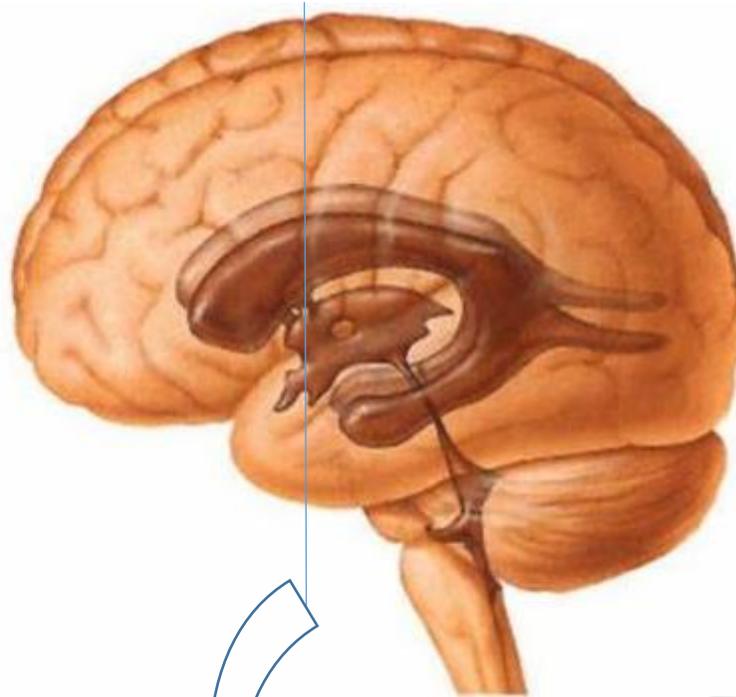
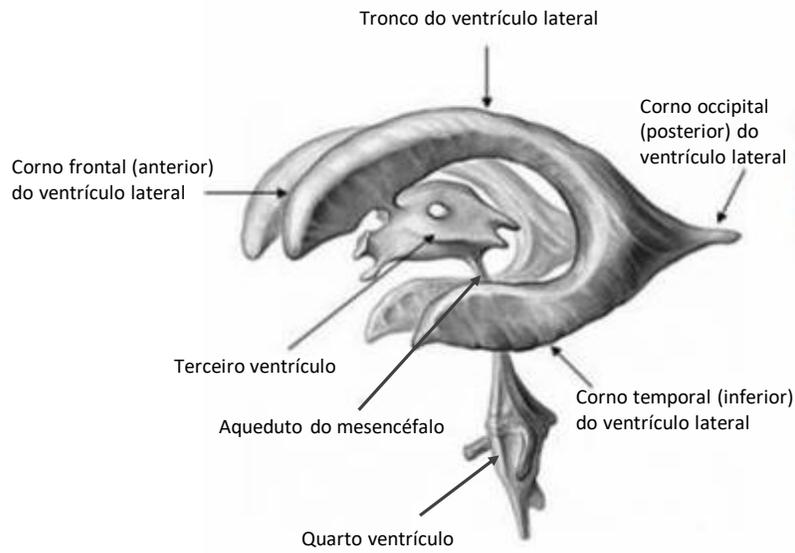
Vista inferior do
encéfalo



Septo pelúcido

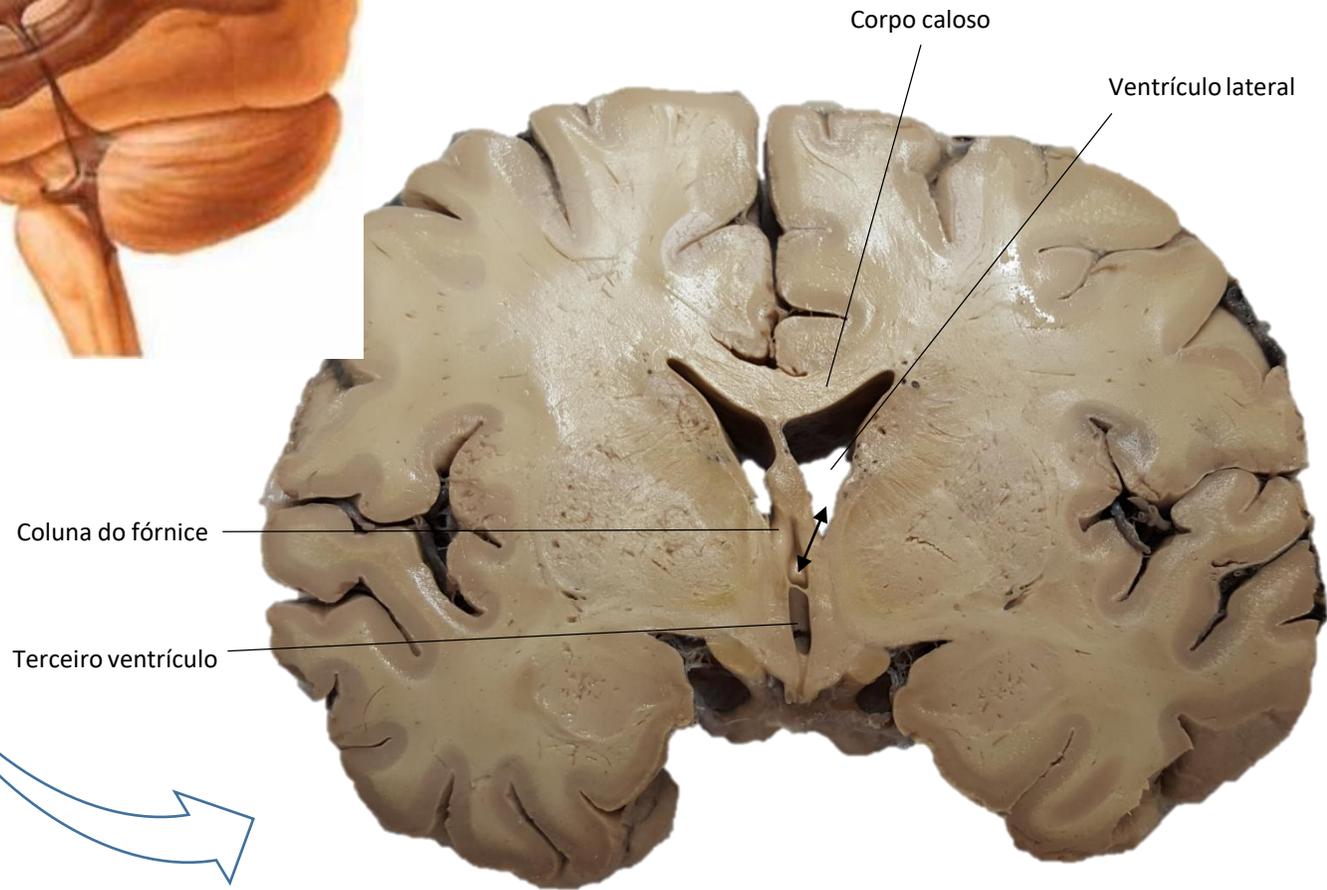


Corte frontal do cérebro

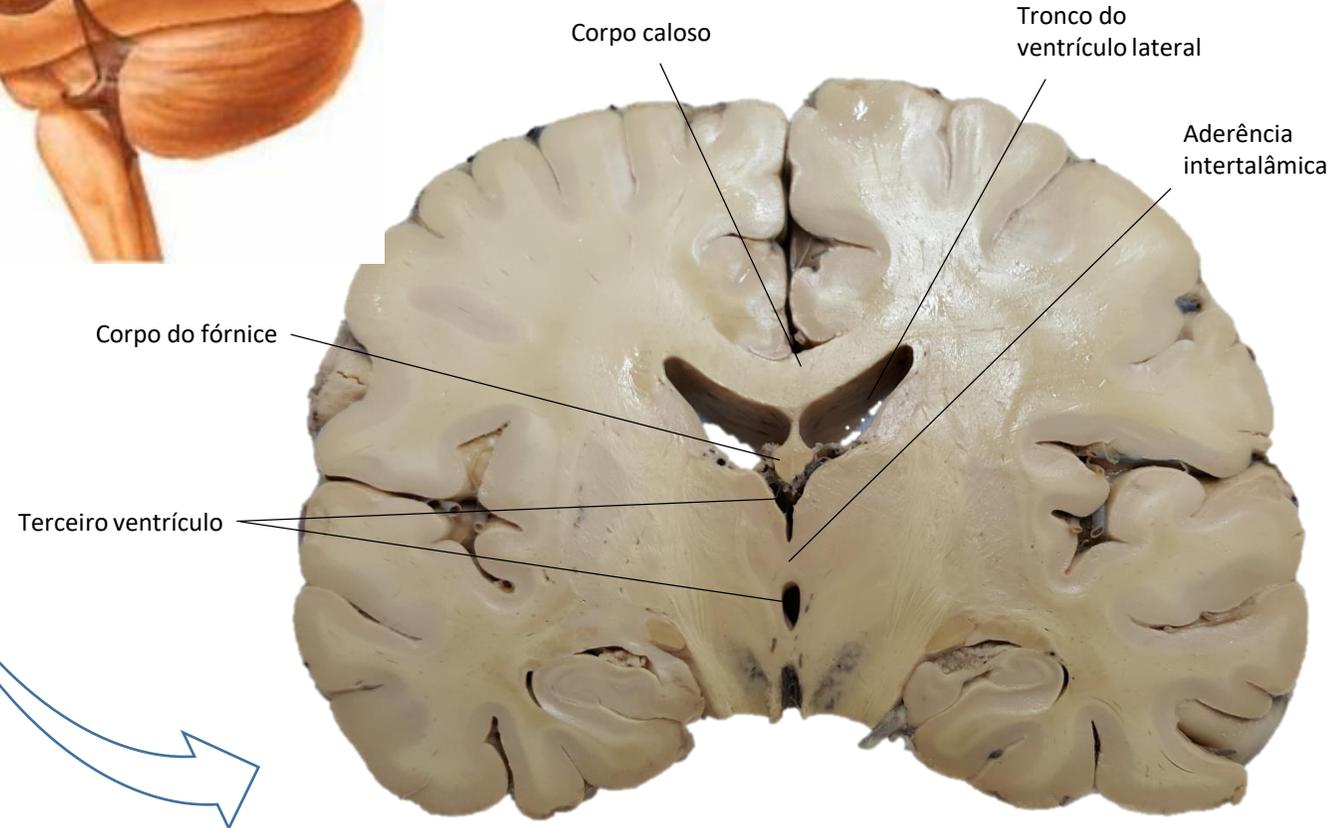
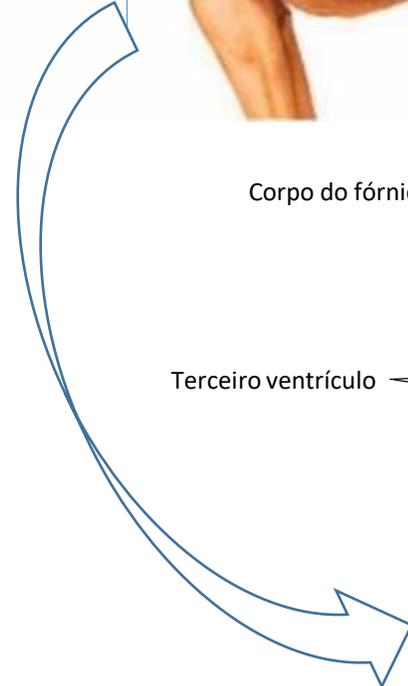
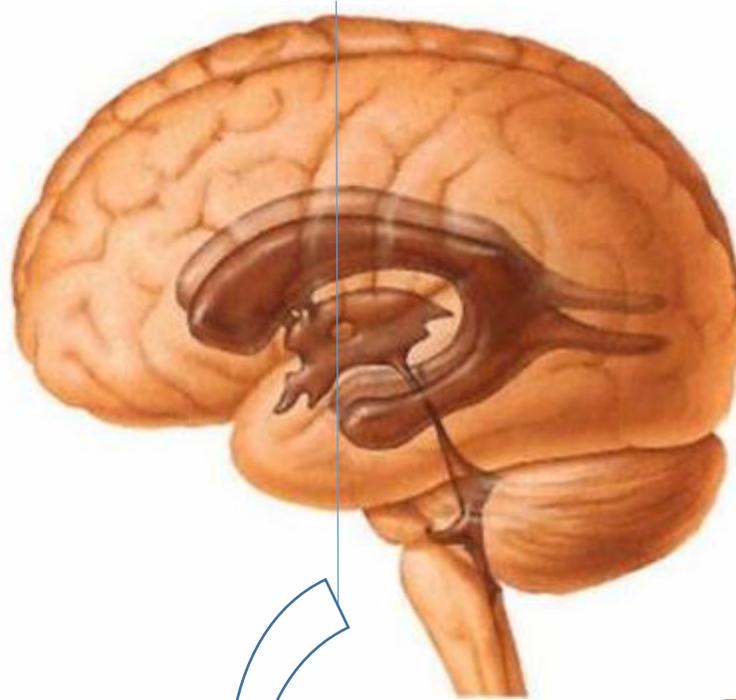
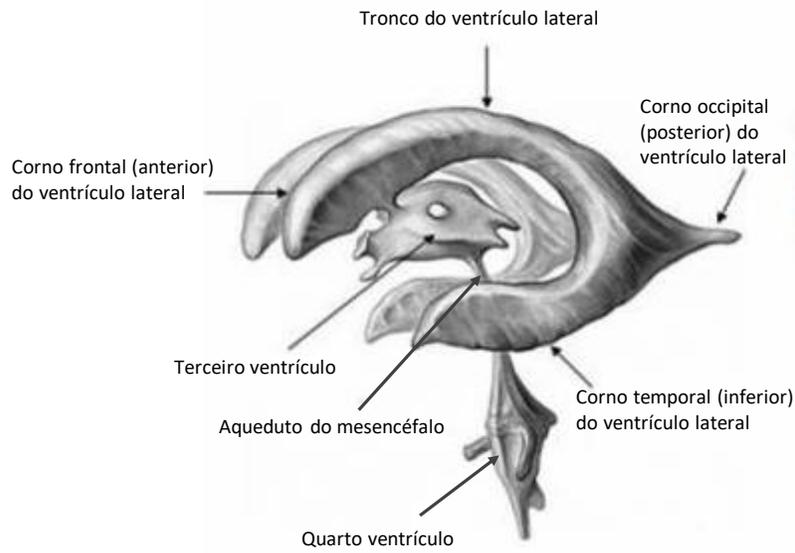


Forame interventricular

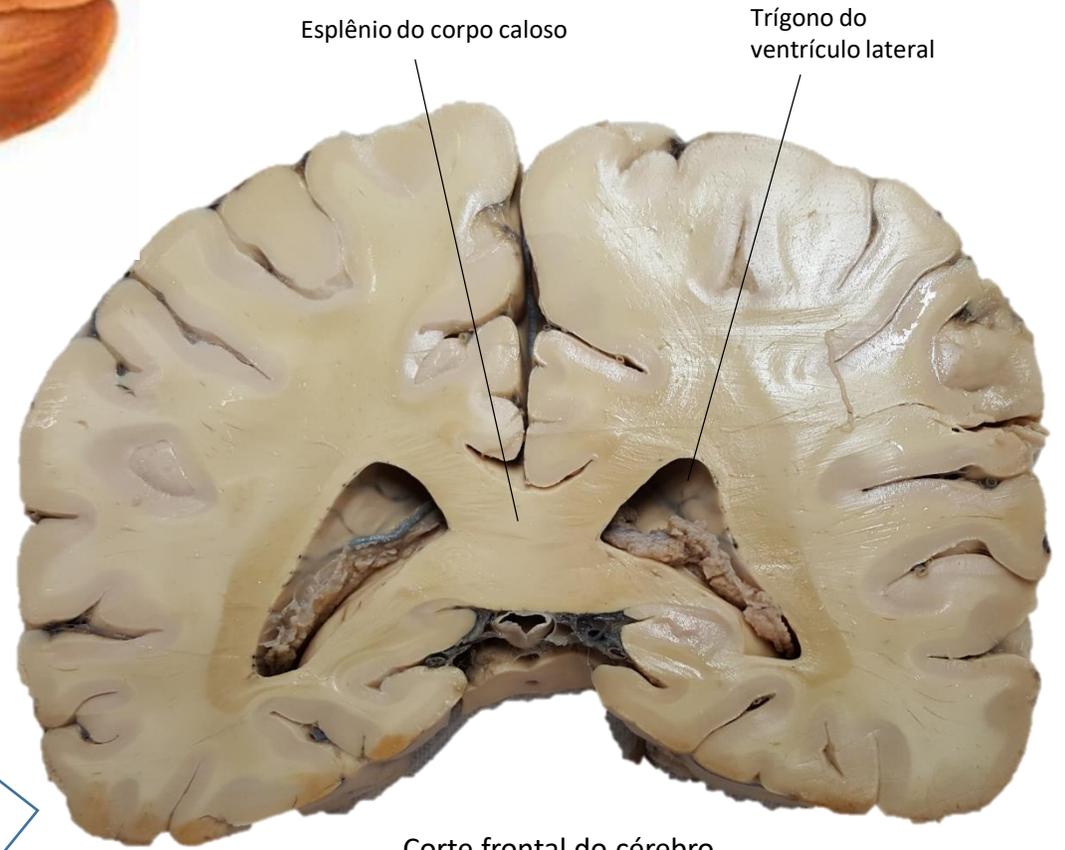
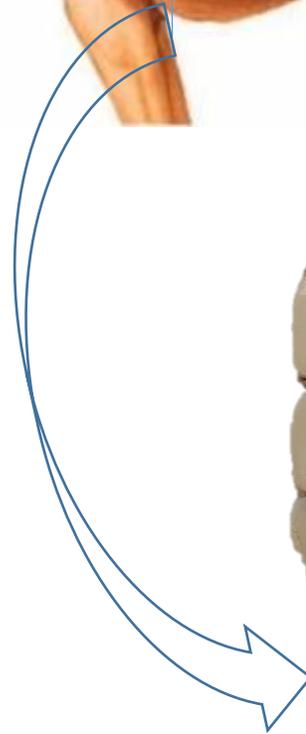
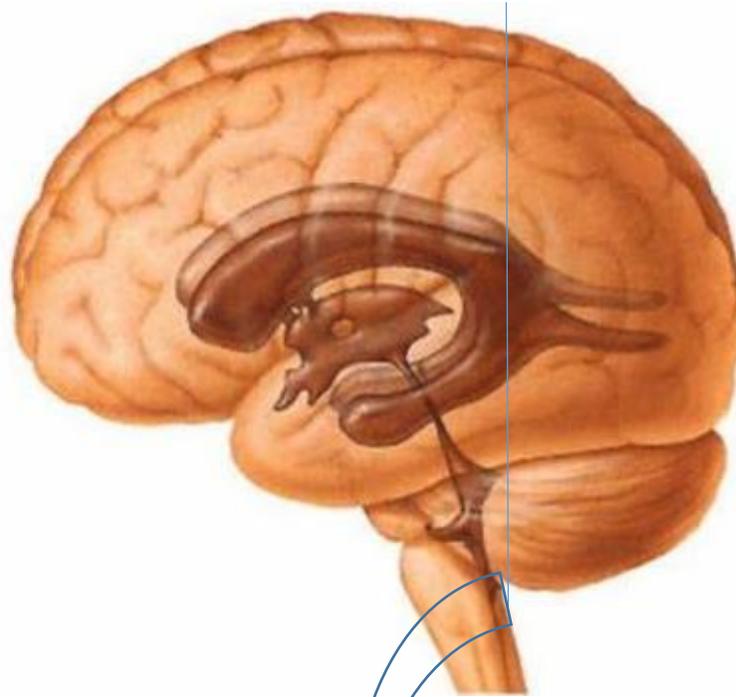
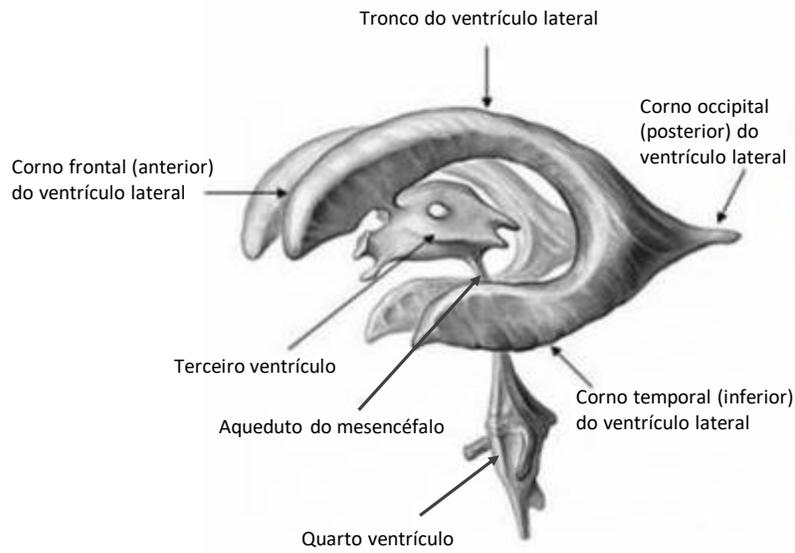
This label points to the 'Foramen interventriculare' (foramen of Monro), the opening that connects the lateral ventricle to the third ventricle. It is indicated by a double-headed arrow.



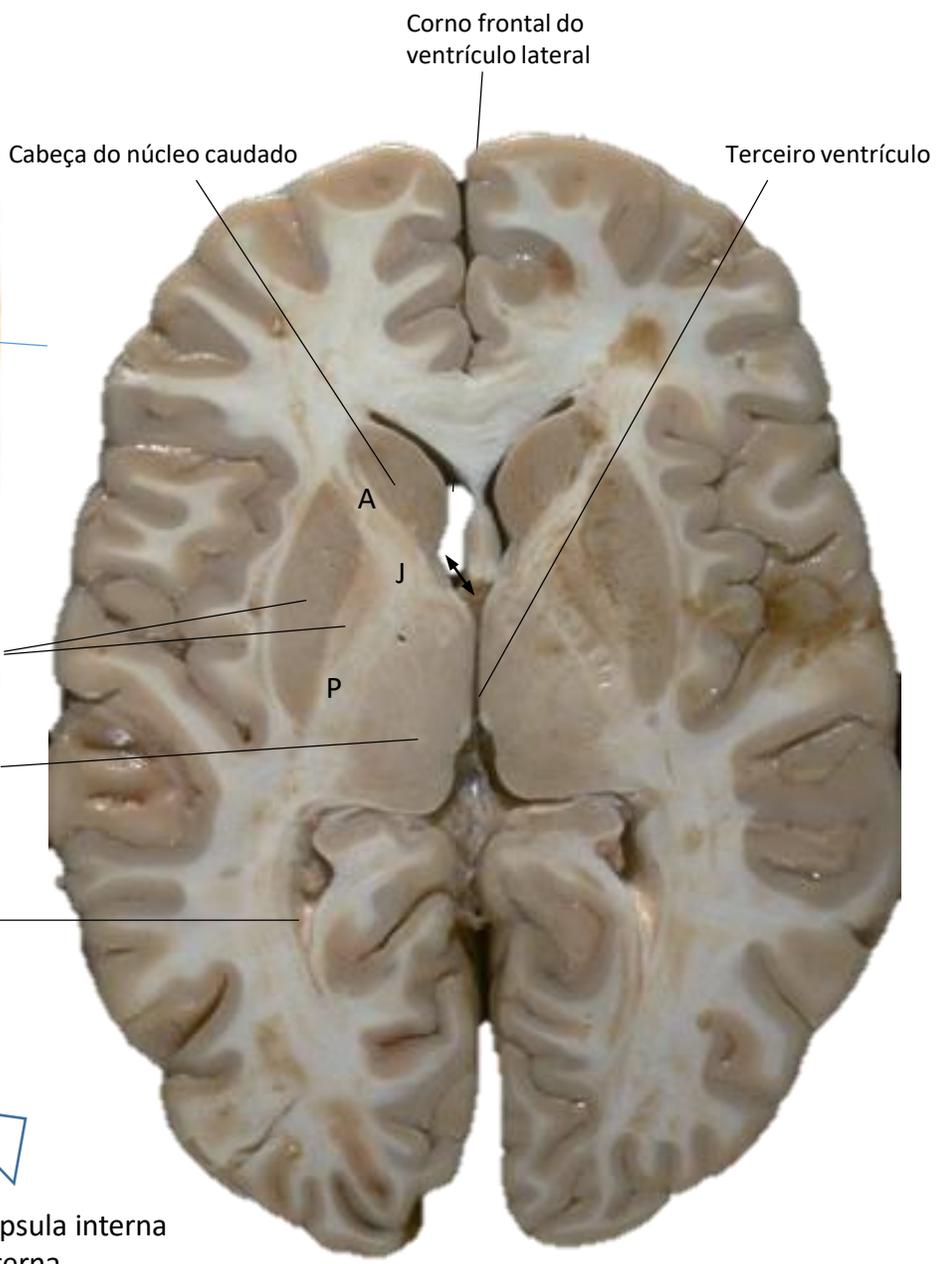
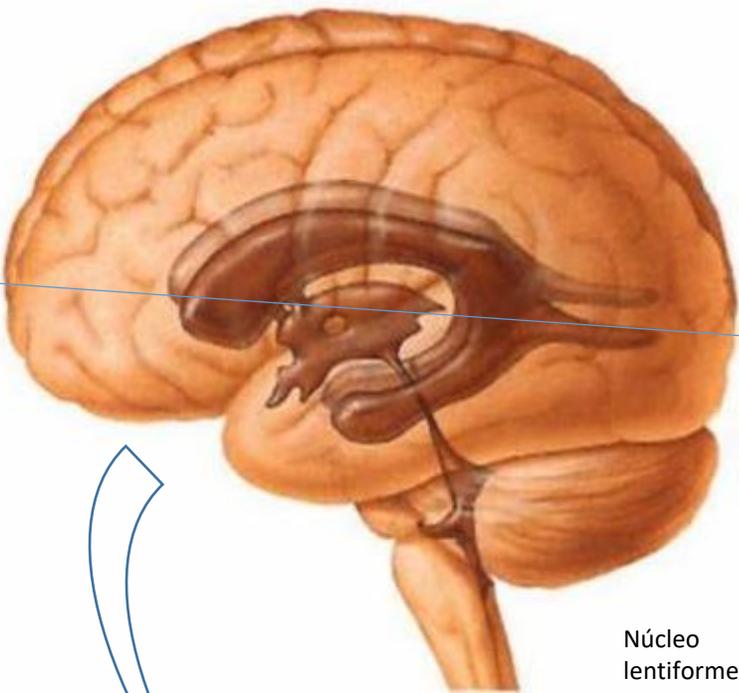
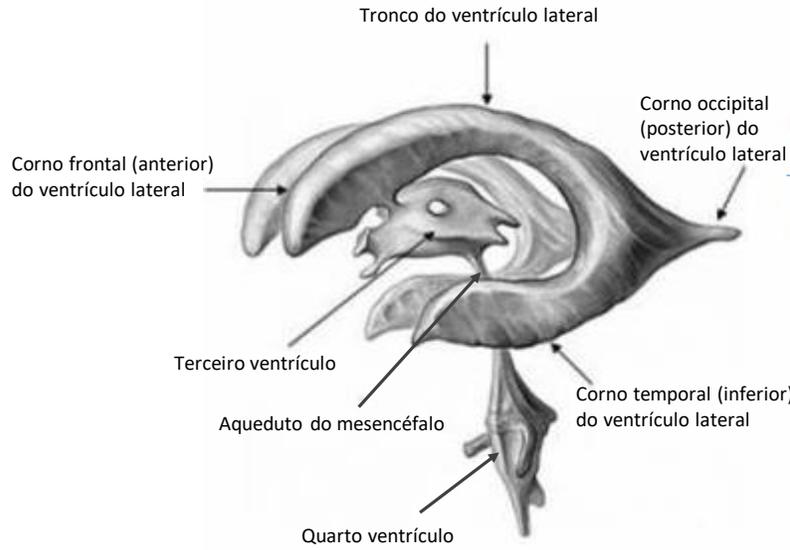
Corte frontal do cérebro



Corte frontal do cérebro

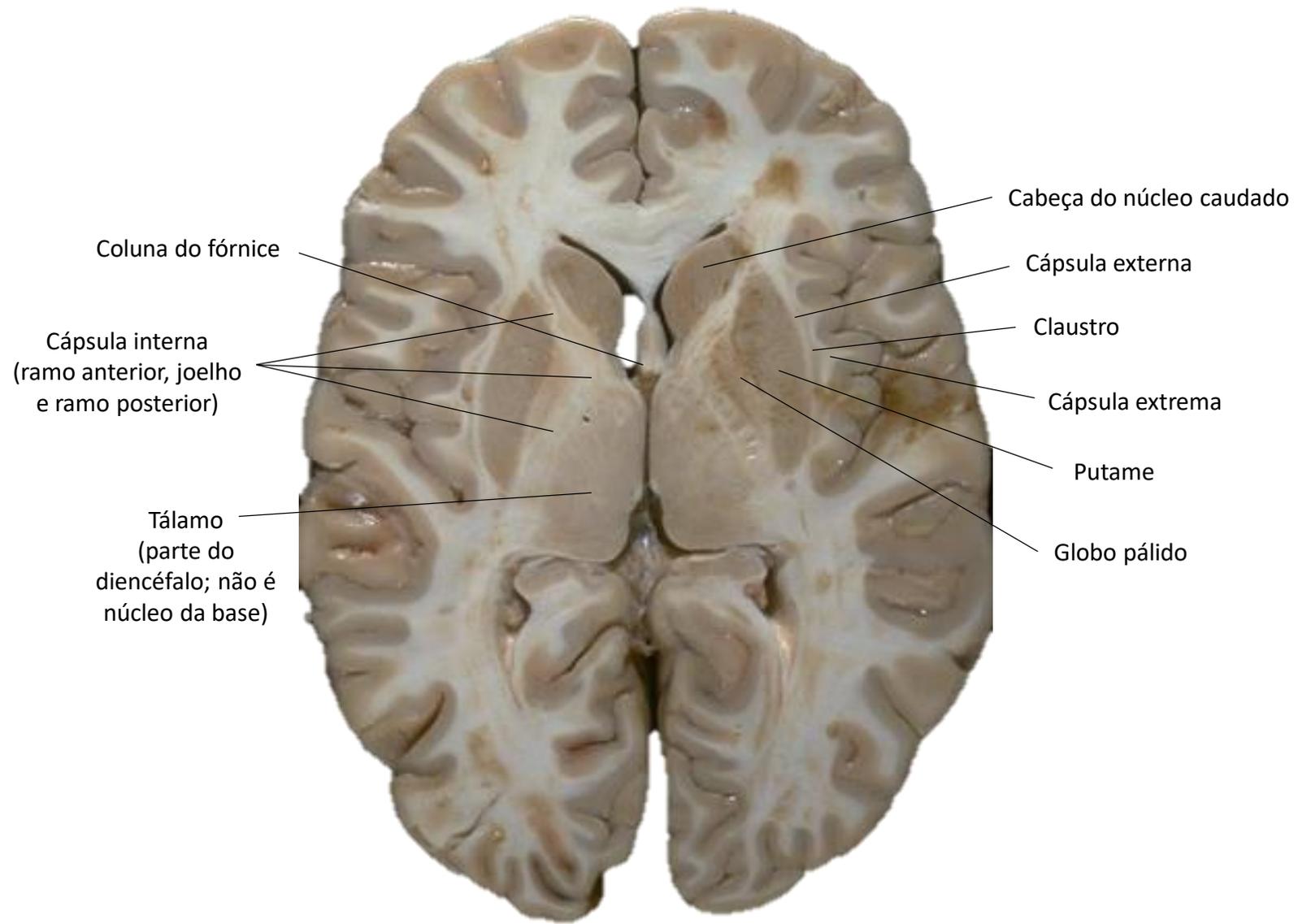


Corte frontal do cérebro

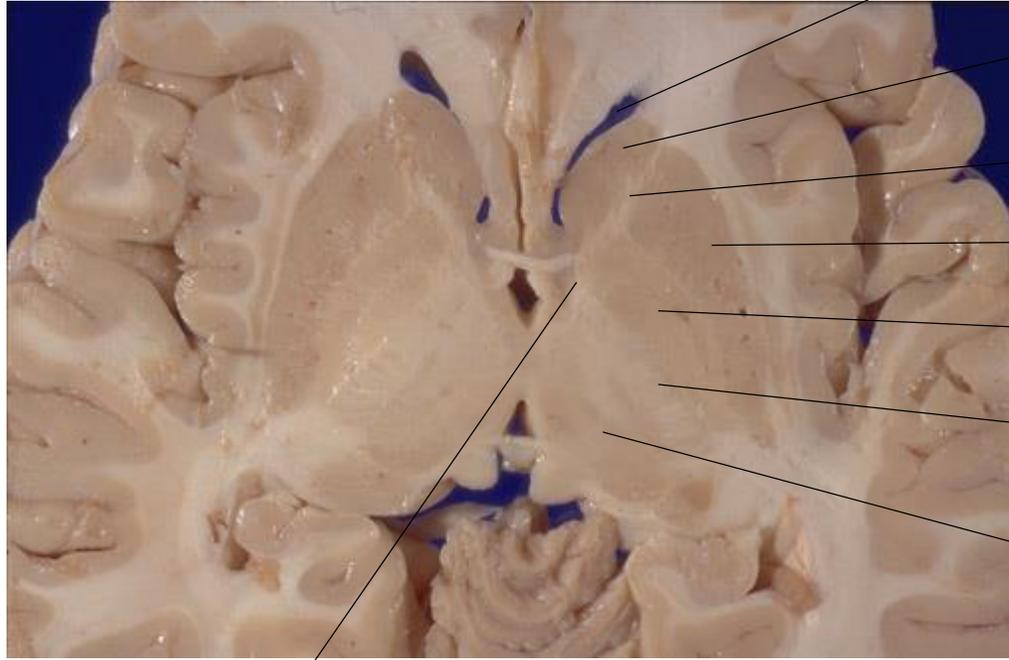


A = ramo anterior da cápsula interna
 J = joelho da cápsula interna
 P = ramo posterior da cápsula interna
 ↗ = forame interventricular

Corte horizontal do cérebro



Corte horizontal do cérebro



Corno frontal do ventrículo lateral

Cabeça do núcleo caudado

Ramo anterior da cápsula interna

Putame

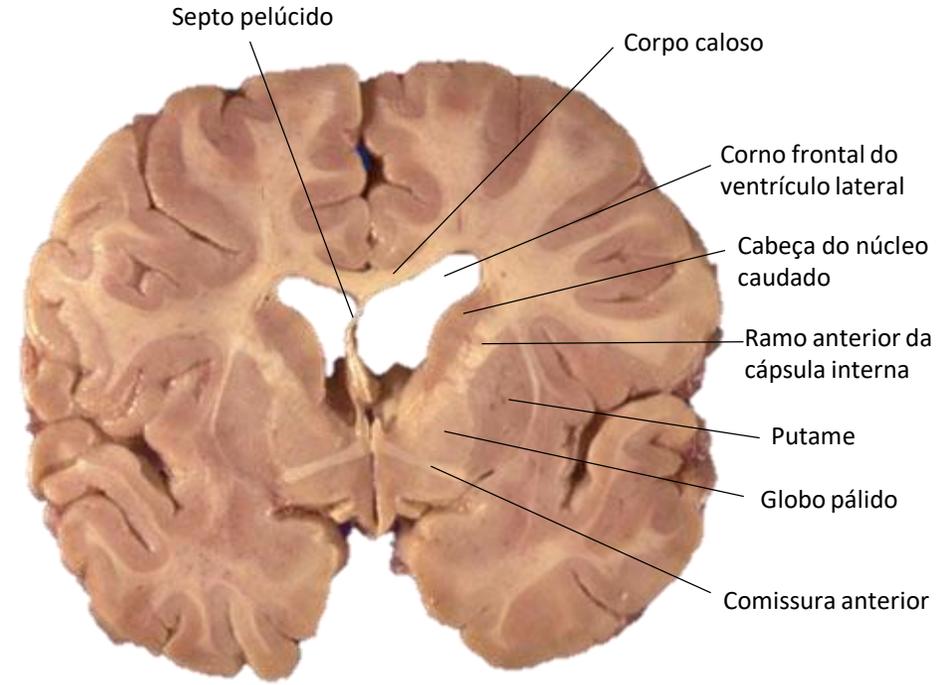
Globo pálido

Ramo posterior da cápsula interna

Tálamo

Joelho da cápsula interna

Corte horizontal do cérebro



Septo pelúcido

Corpo caloso

Corno frontal do ventrículo lateral

Cabeça do núcleo caudado

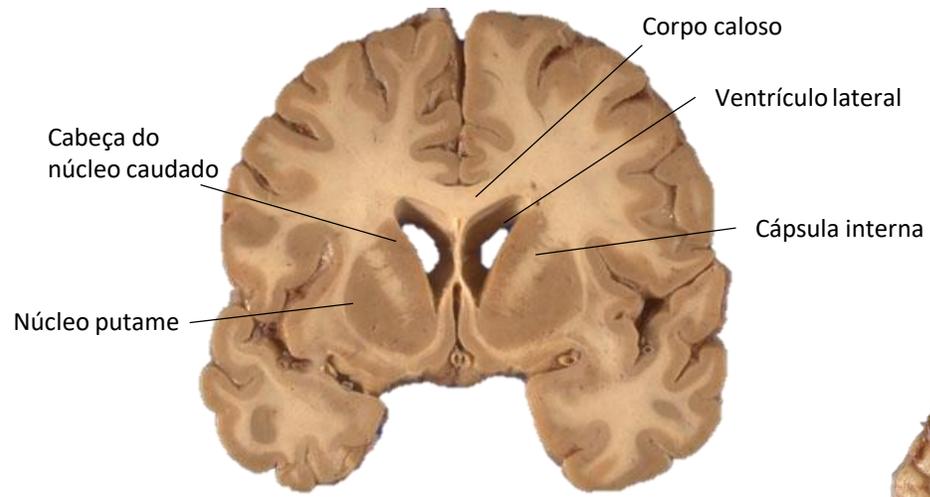
Ramo anterior da cápsula interna

Putame

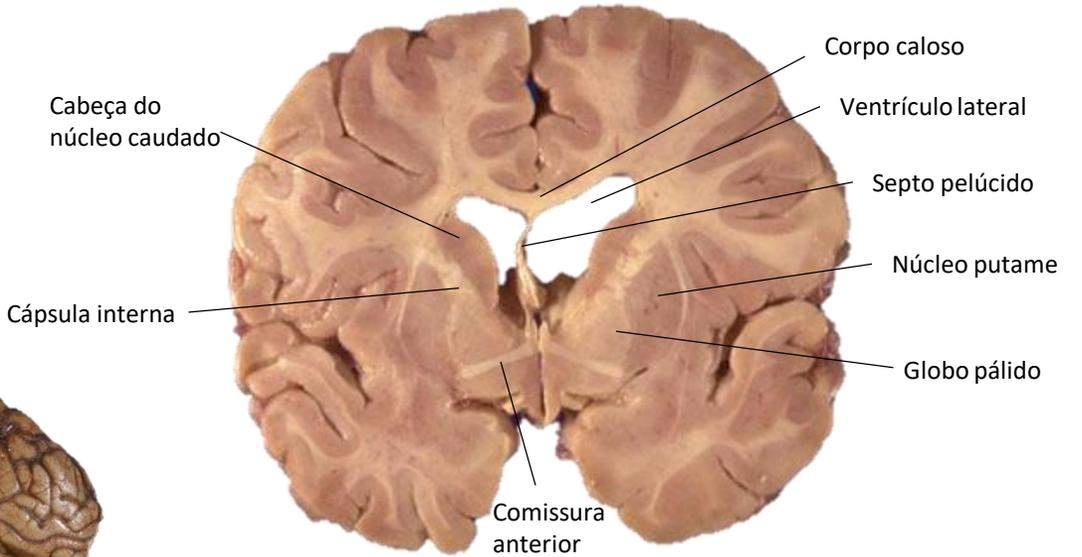
Globo pálido

Comissura anterior

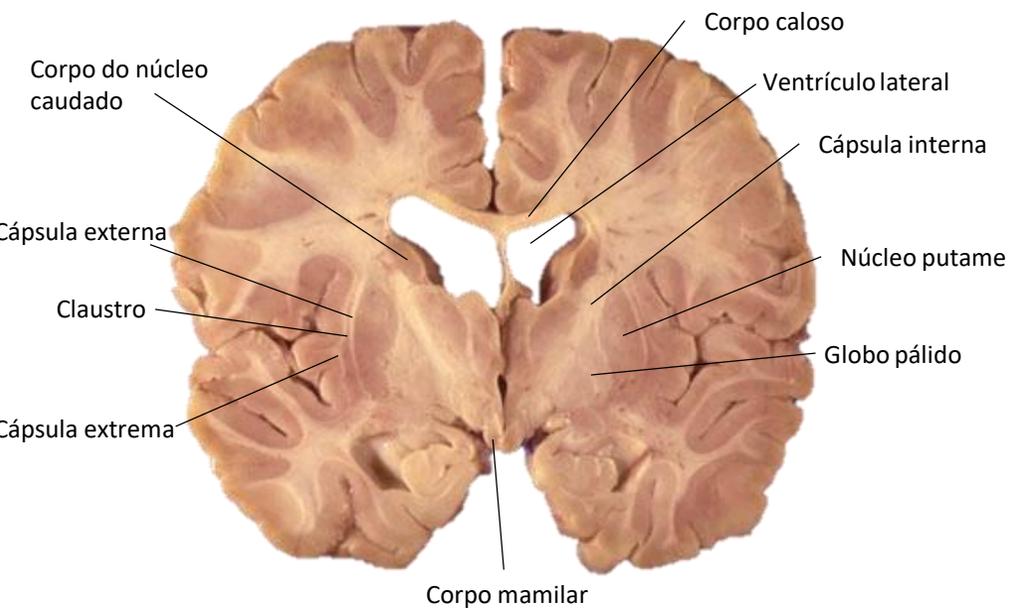
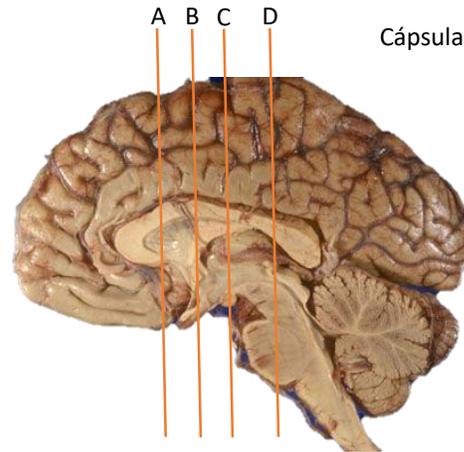
Corte frontal do cérebro



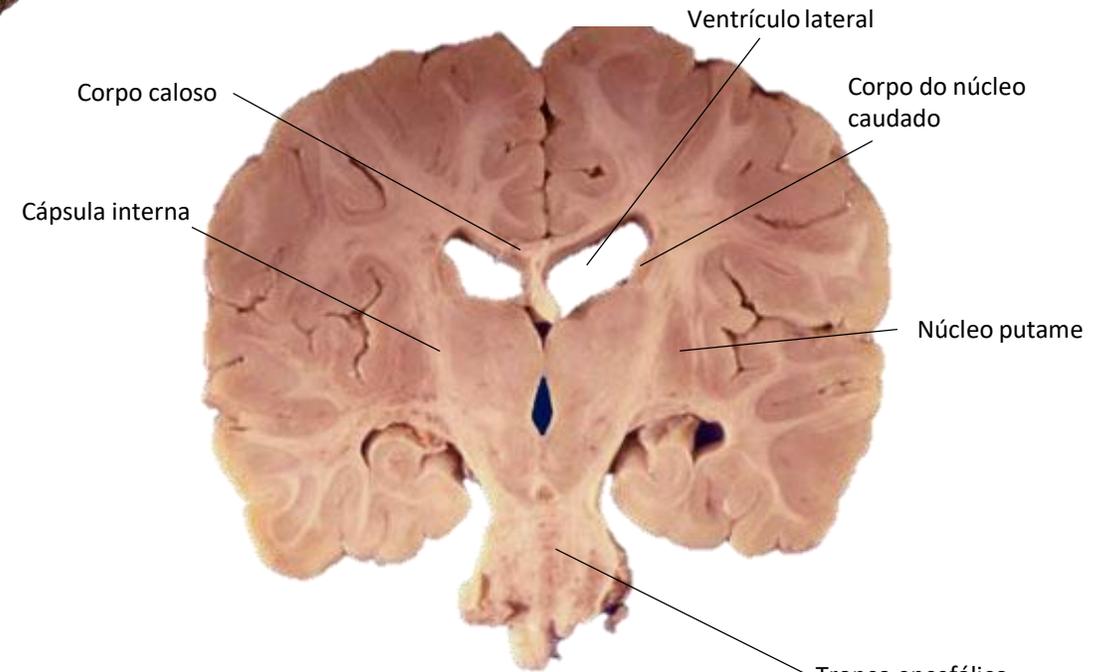
Corte frontal – nível do corte A



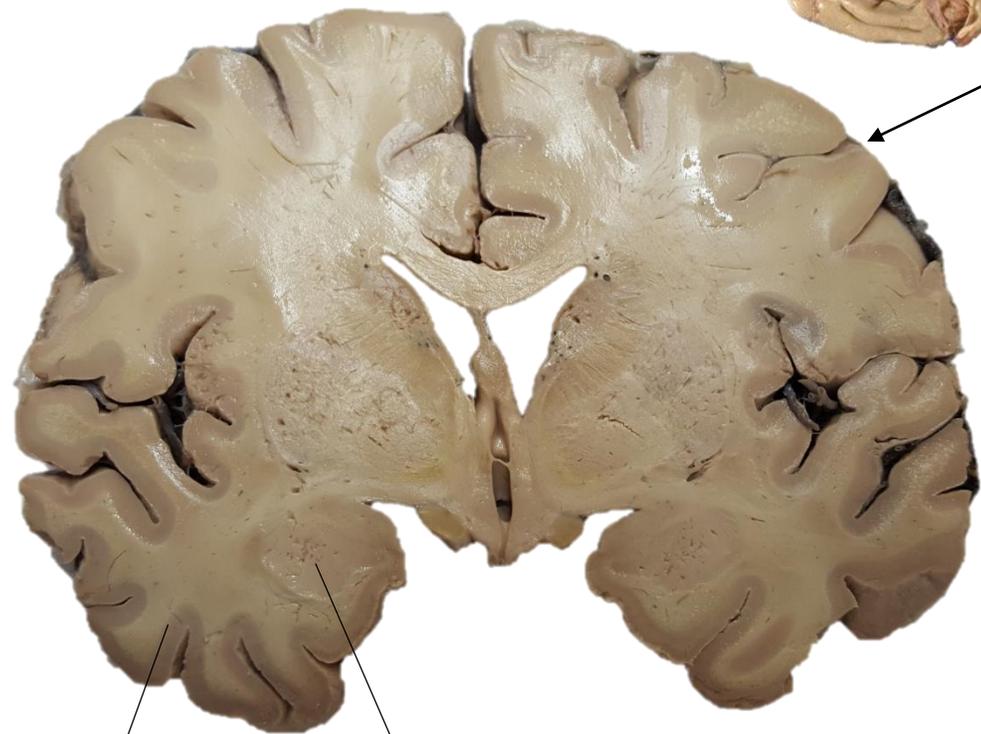
Corte frontal – nível do corte B



Corte frontal – nível do corte C

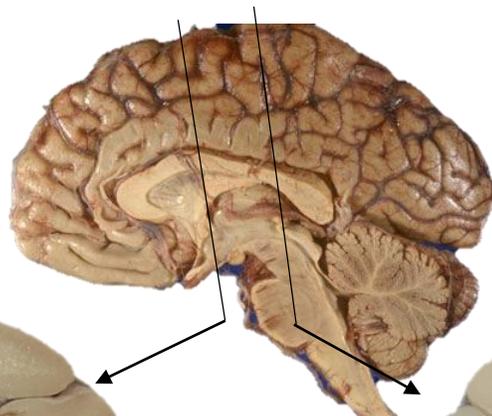


Corte frontal – nível do corte D



Lobo temporal

Corpo amigdalóide

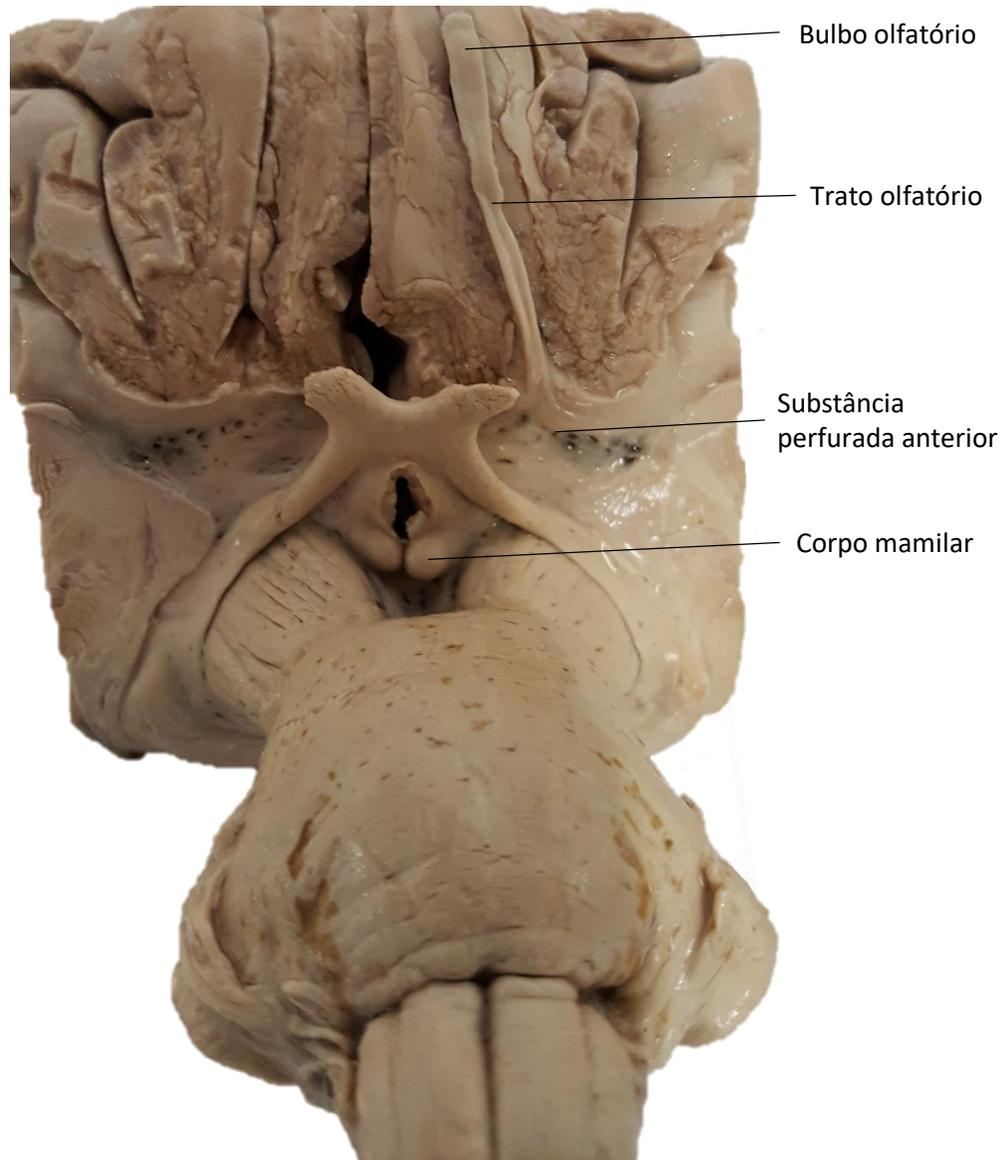


Corno temporal do ventrículo lateral

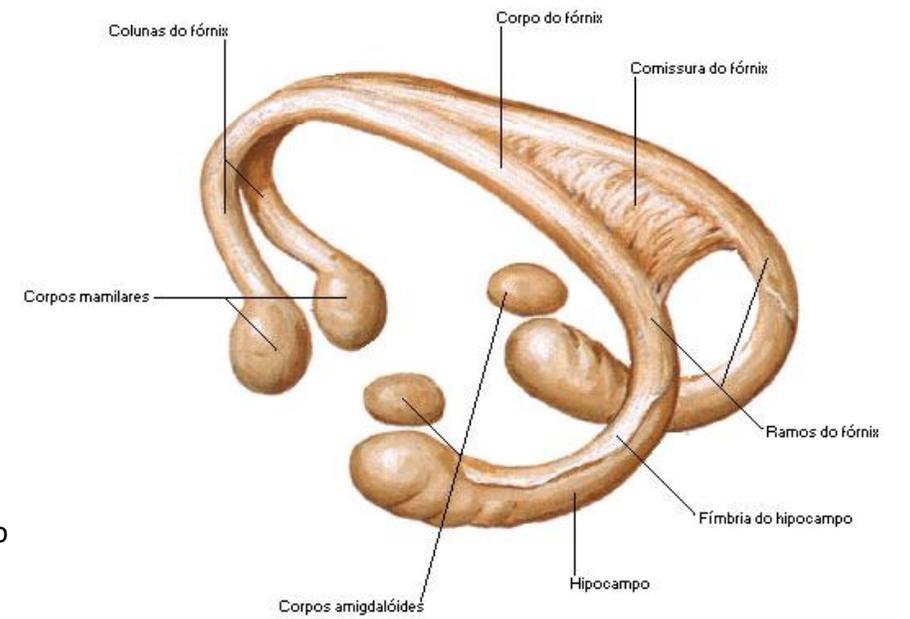
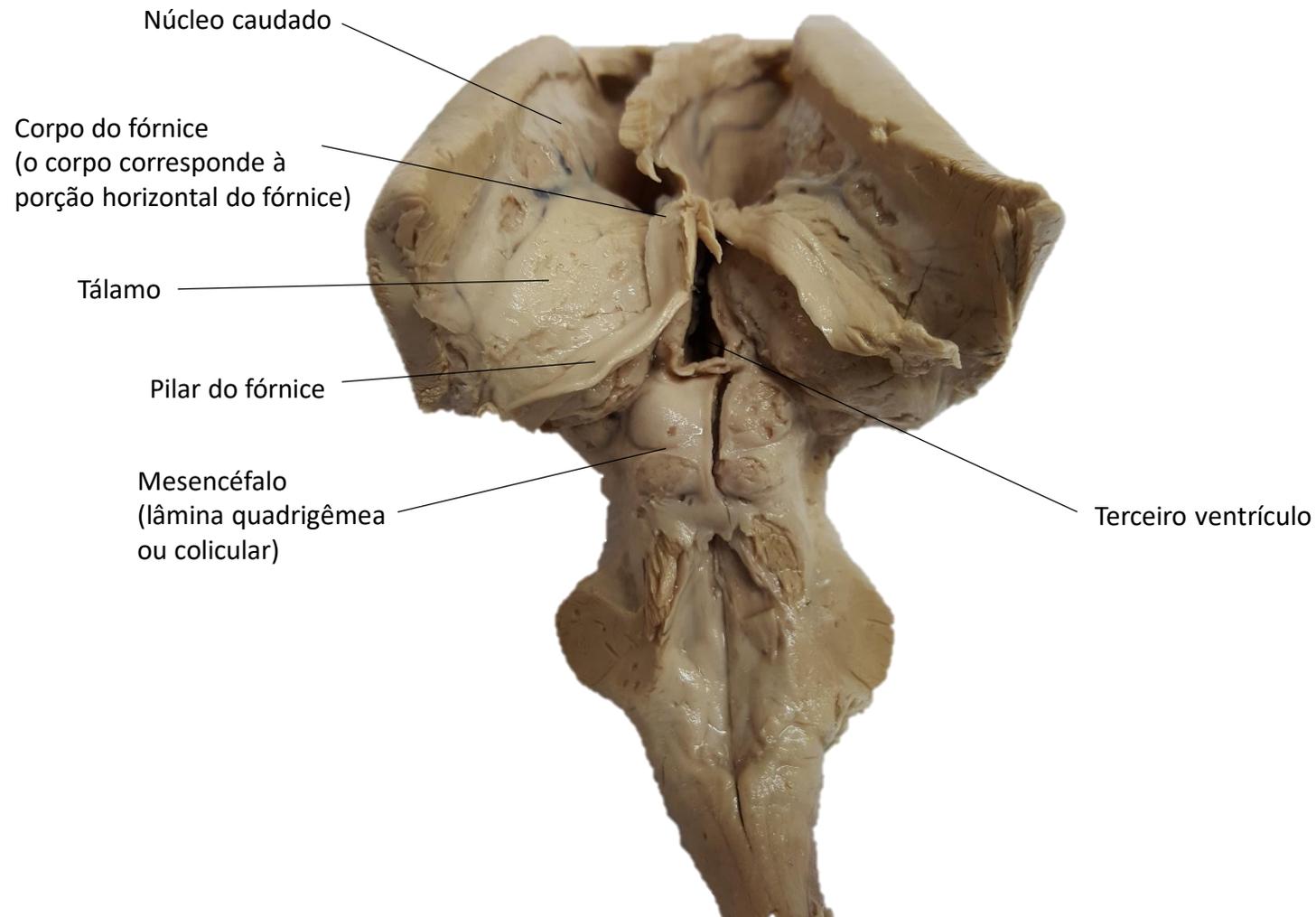
Hipocampo

Lobo temporal

Cortes frontais do encéfalo



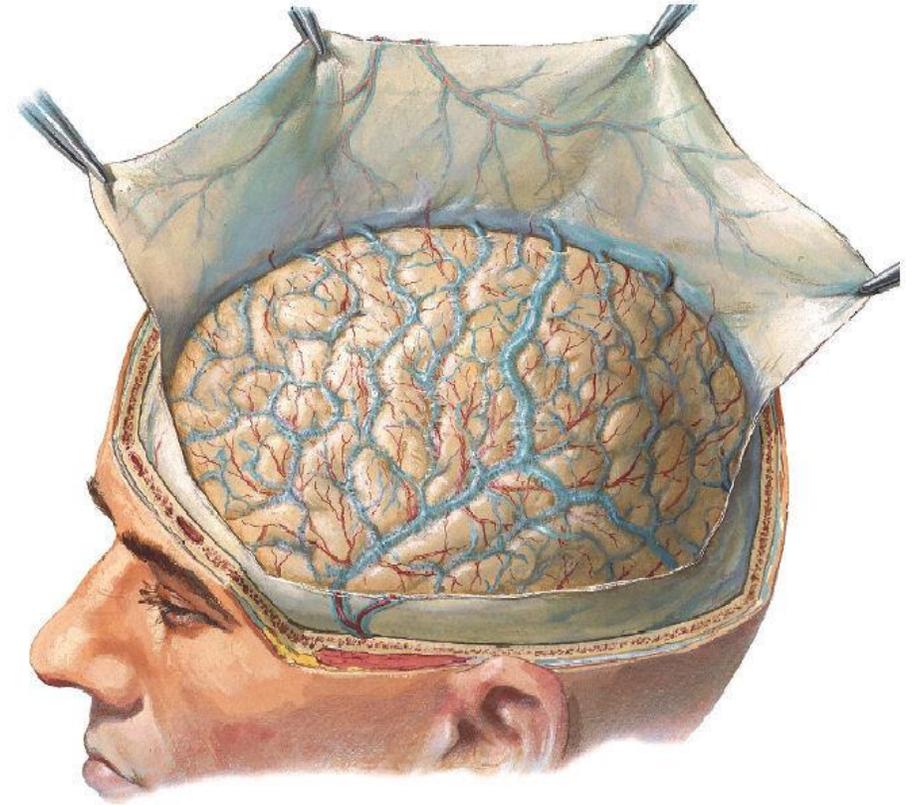
Vista inferior do cérebro (anterior do tronco encefálico)



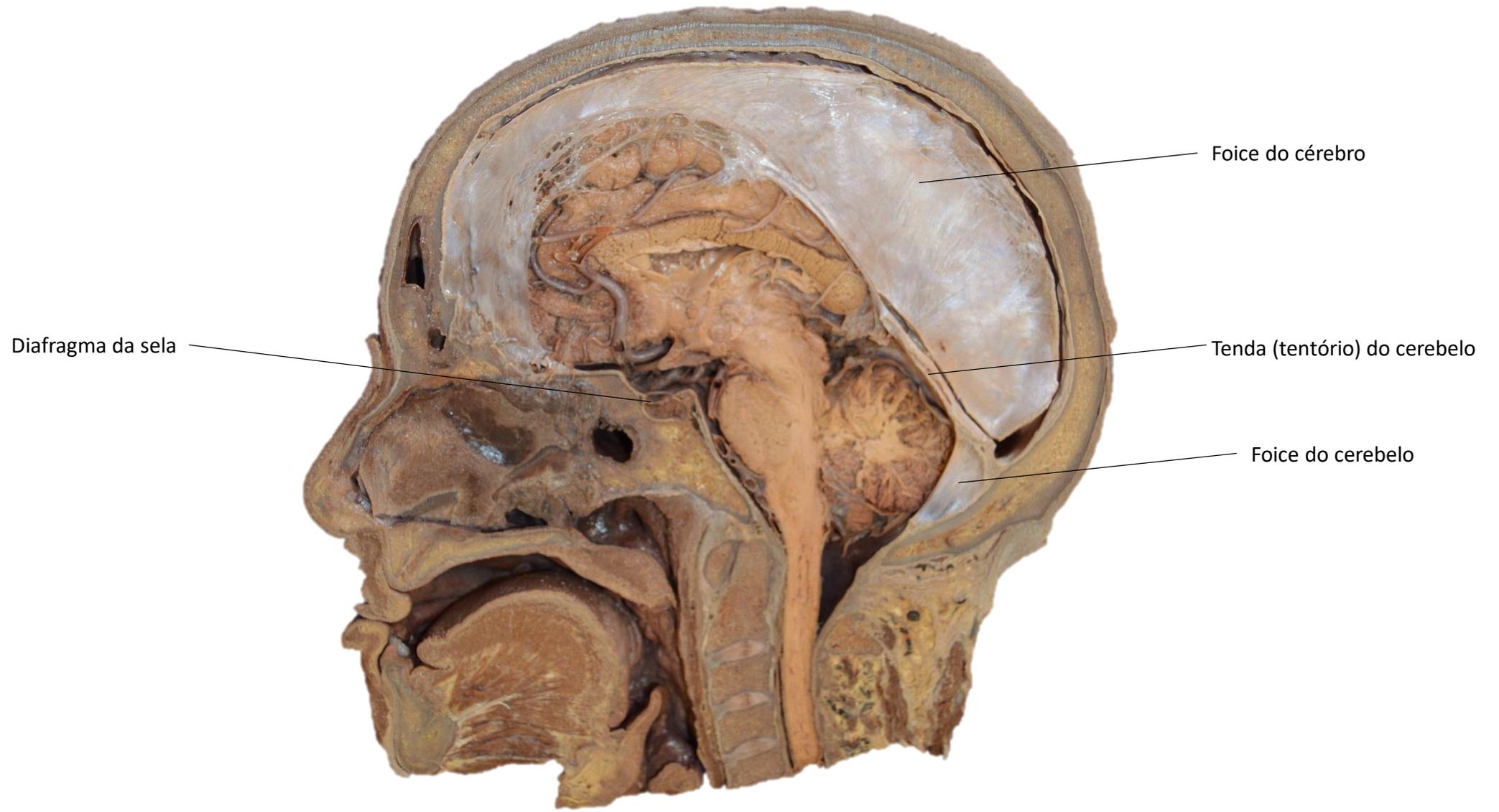
Vista posterior do tronco encefálico, de parte do diencefalo e parte do telencefalo (corpo caloso aberto, expondo a cavidade dos ventriculos laterais)



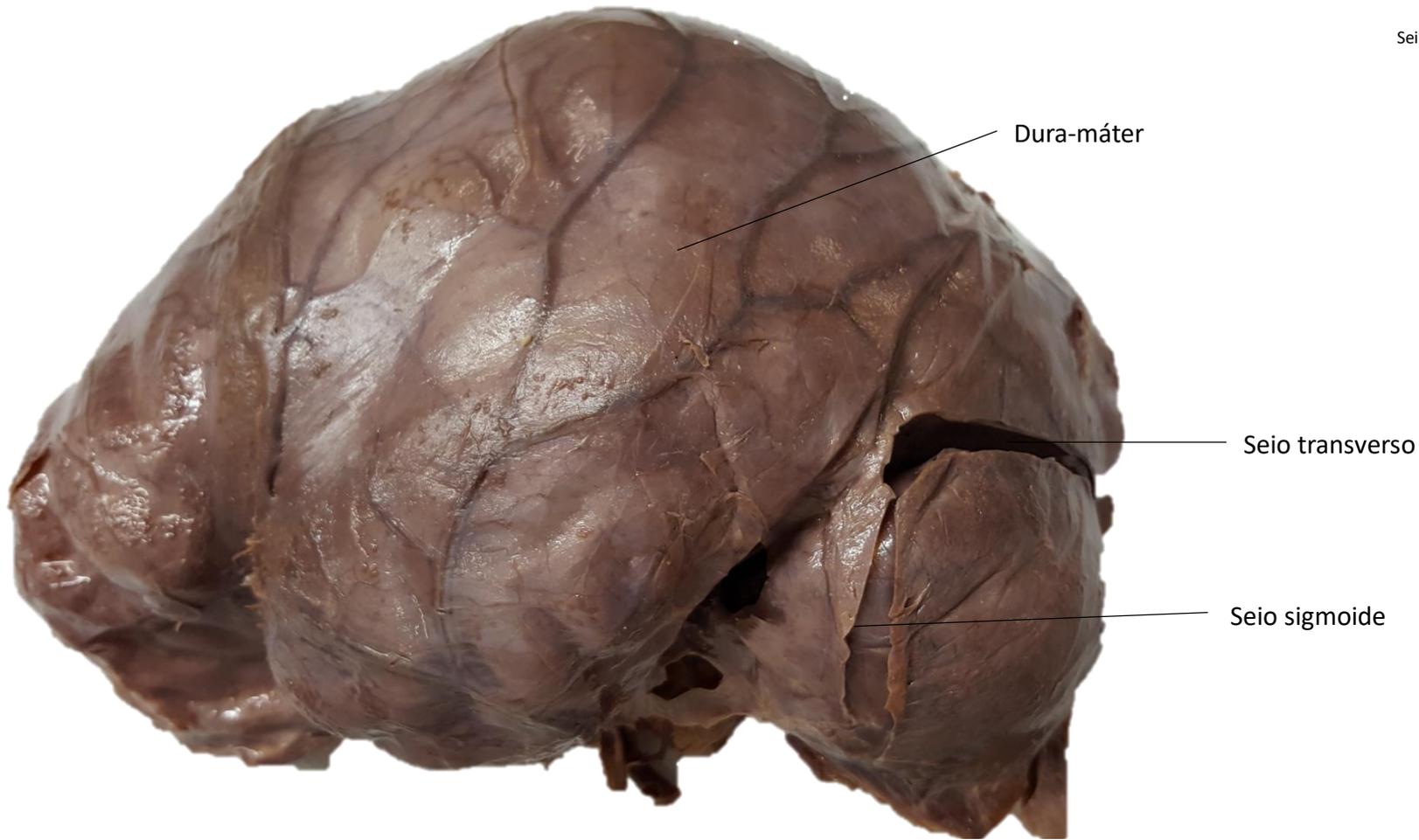
Envoltórios e Vascularização do Sistema Nervoso



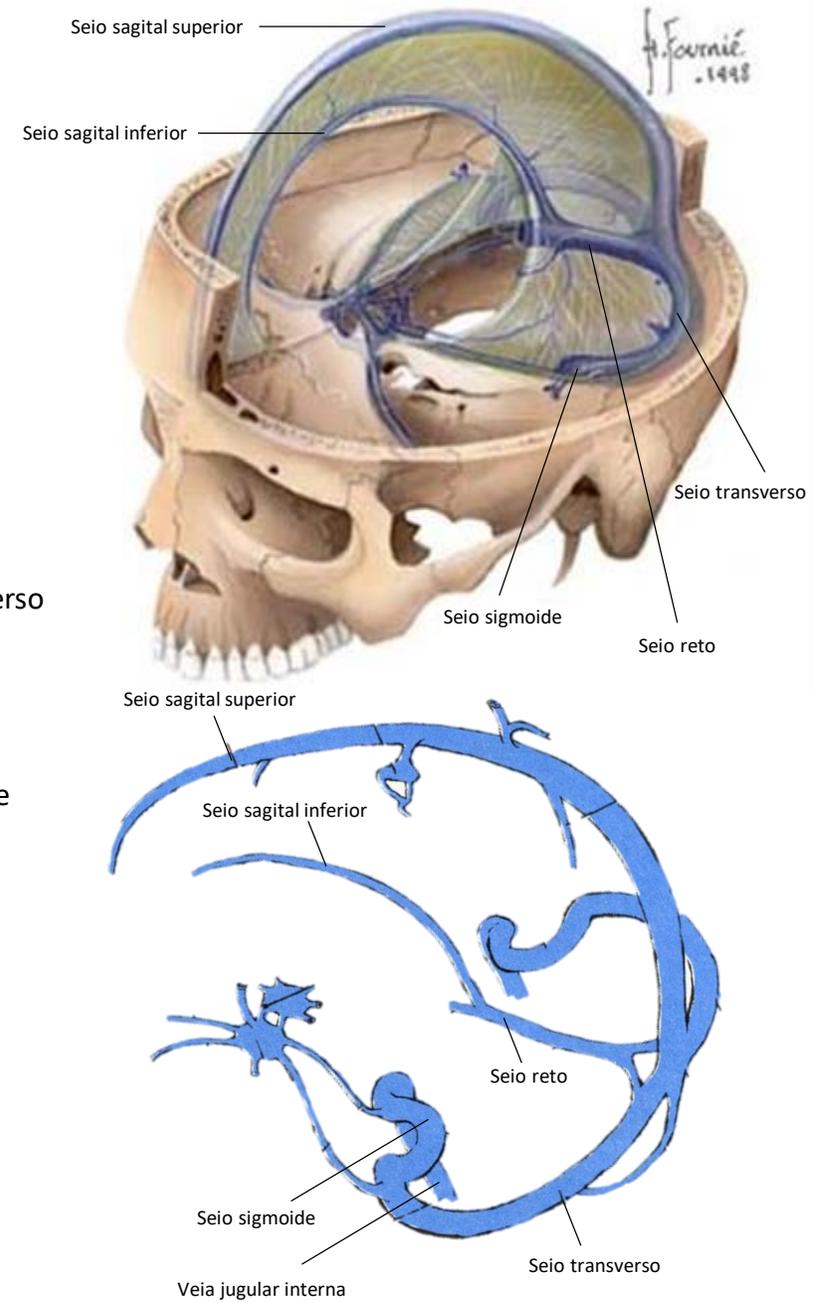
Envoltórios do Sistema Nervoso e estruturas associadas

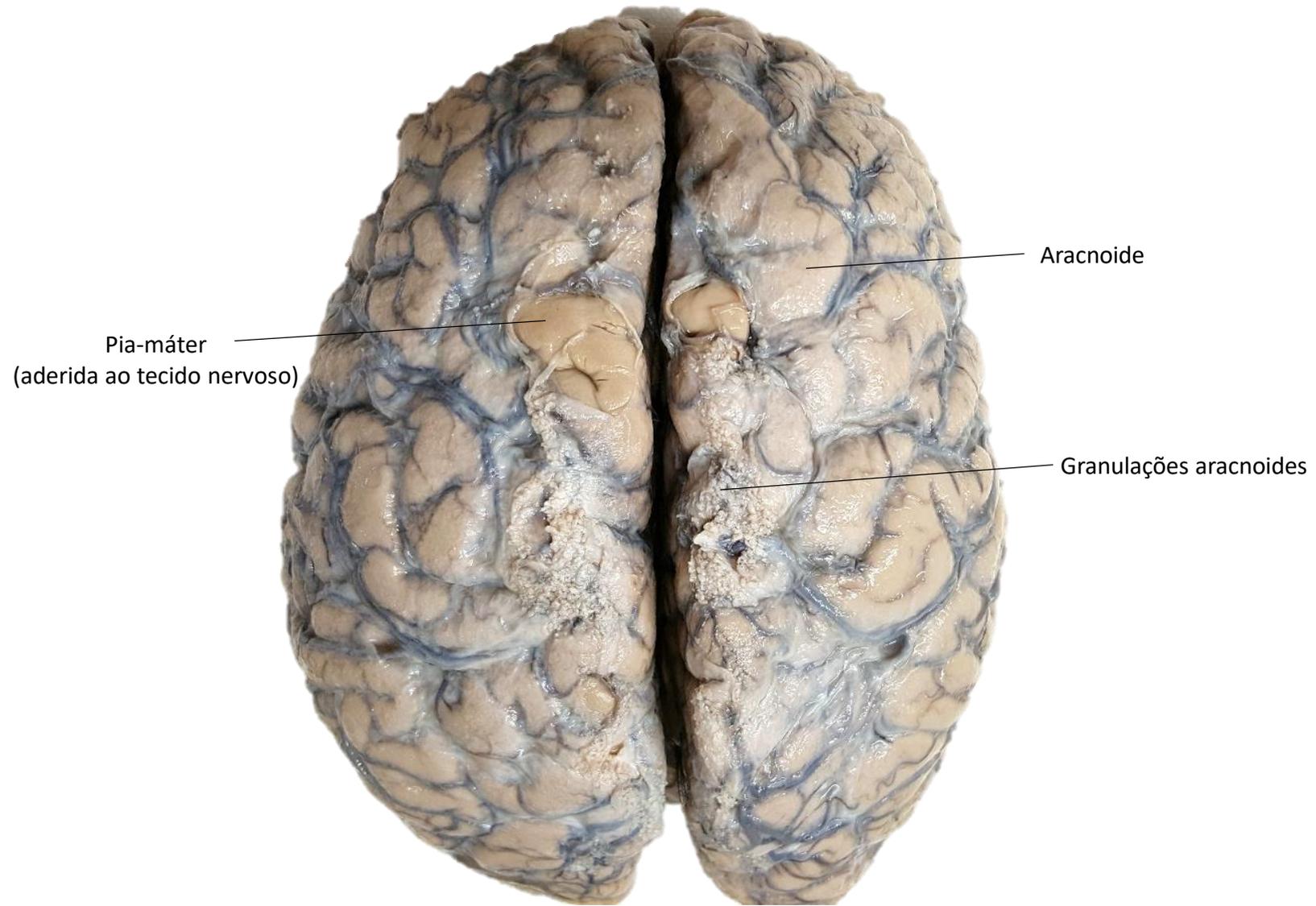


Corte sagital da cabeça – vista medial

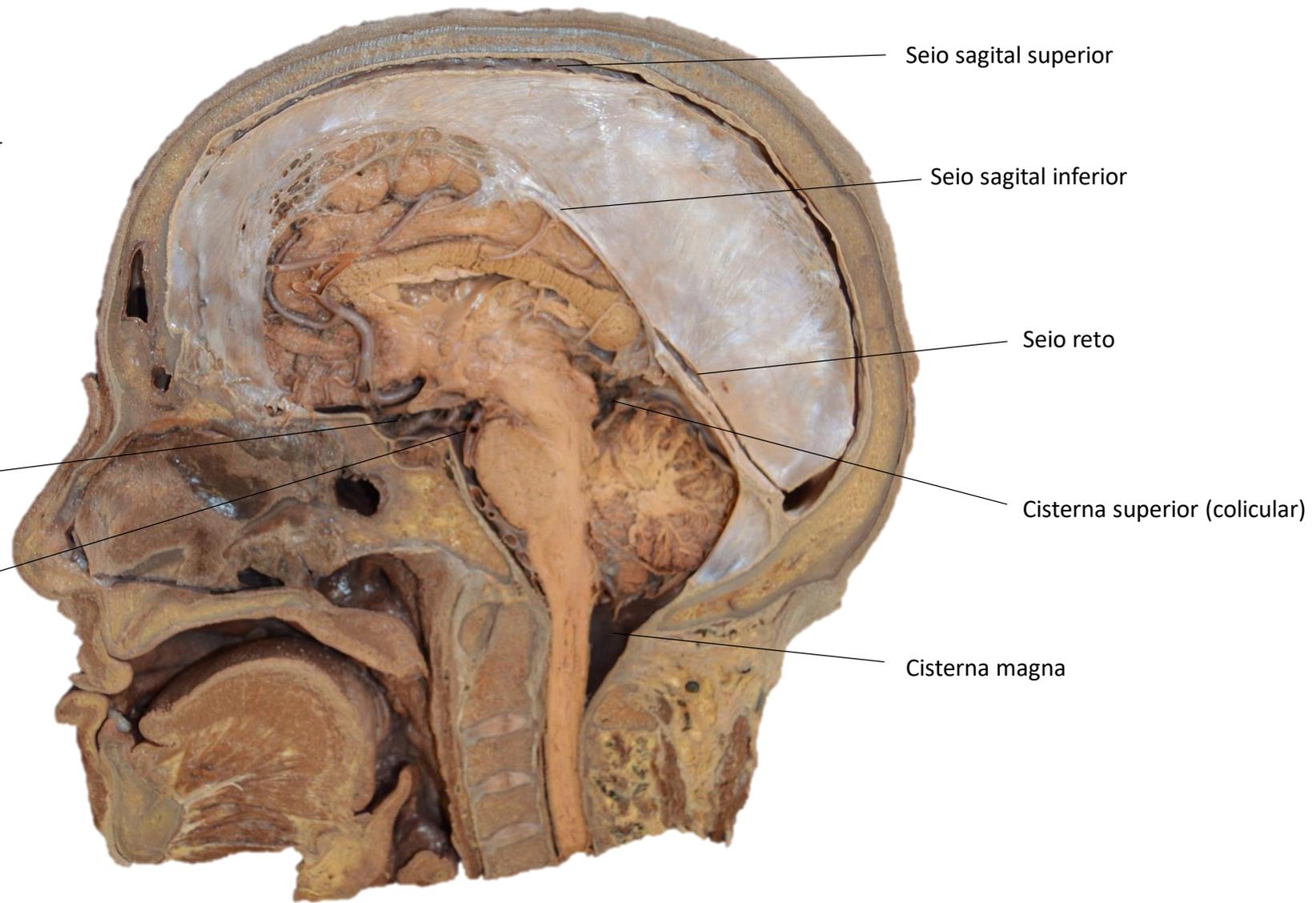
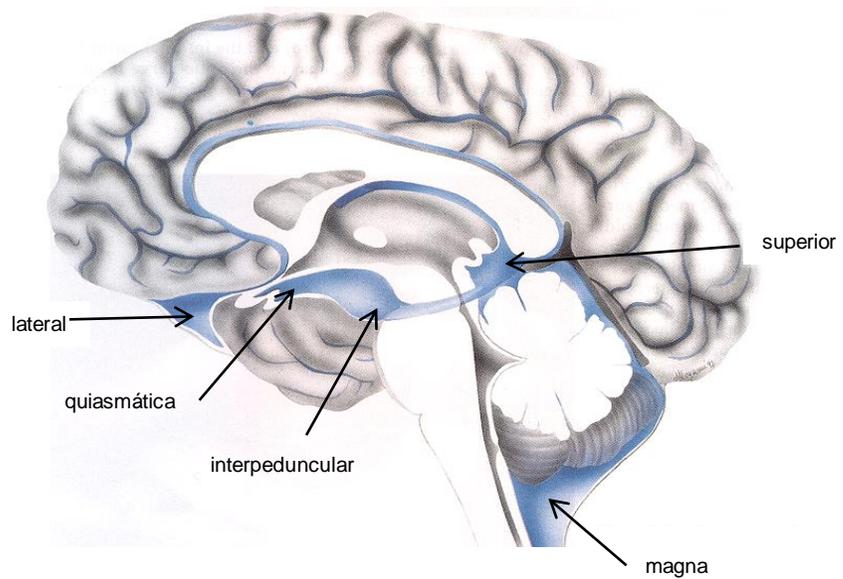


Vista lateral esquerda do encéfalo recoberto pela dura-máter – sobre os seios sigmoide e transverso, a dura-máter está aberta





Vista superior dos hemisférios cerebrais
(dura-máter retirada)



Corte sagital da cabeça – vista medial

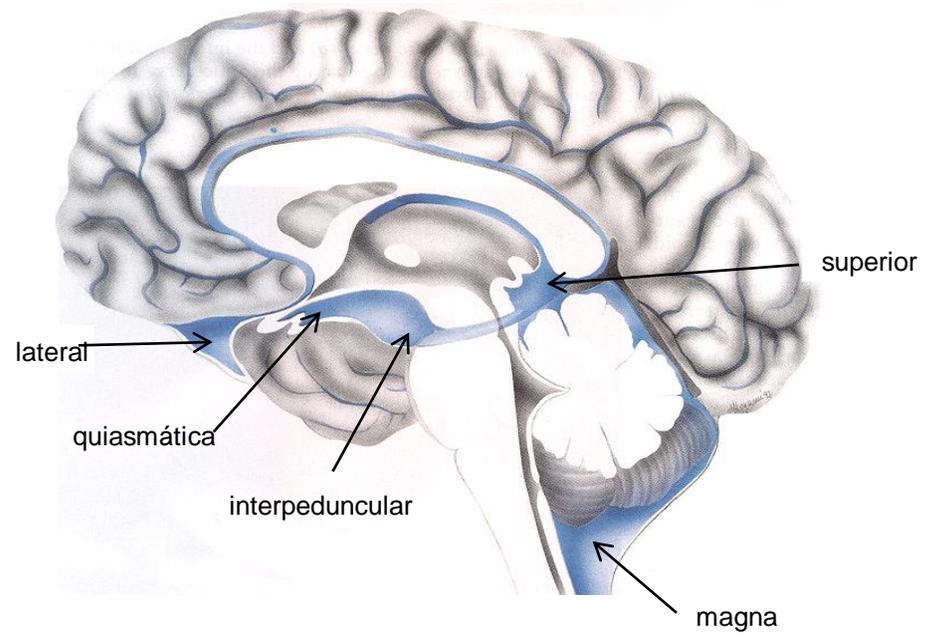


Cisterna superior

Cisterna quiasmática

Cisterna interpeduncular

Cisterna magna



lateral

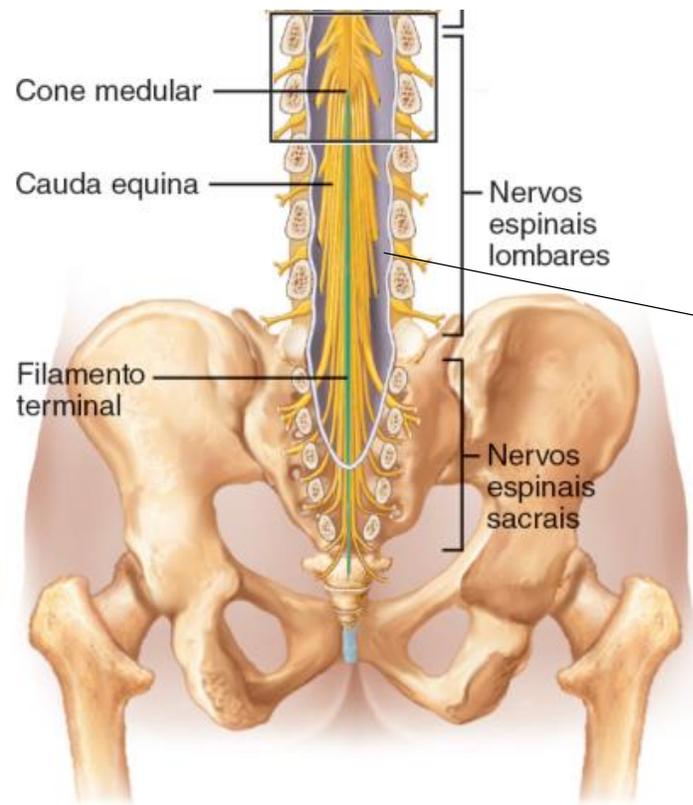
quiasmática

interpeduncular

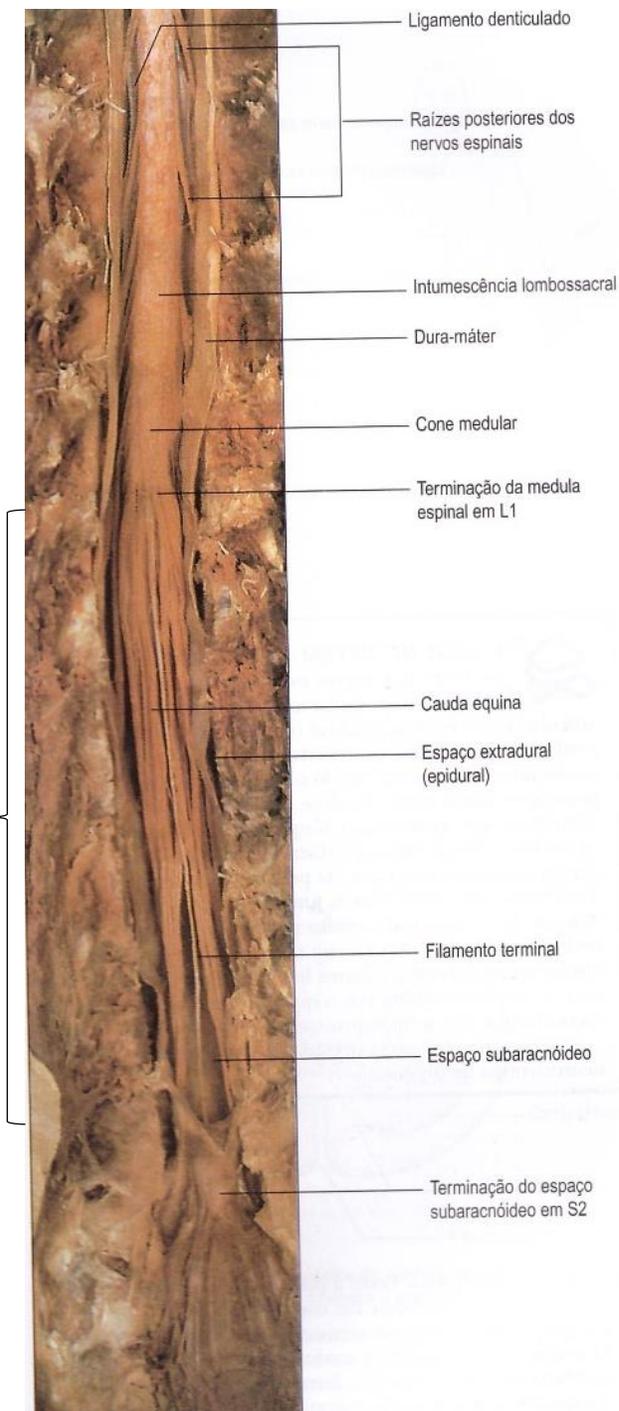
superior

magna

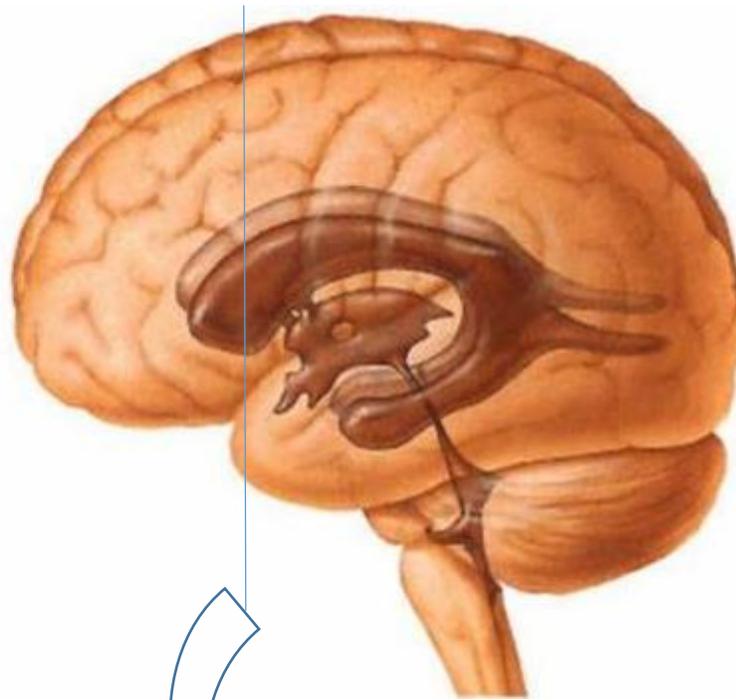
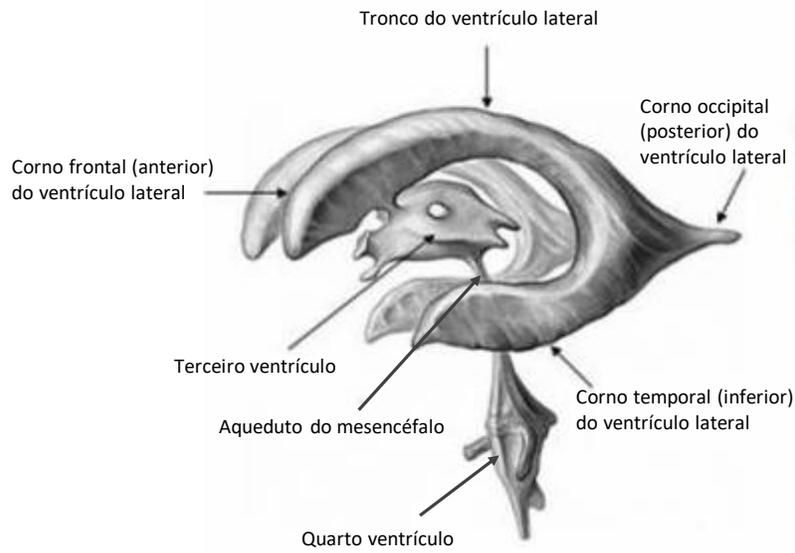
Corte sagital da cabeça – vista medial



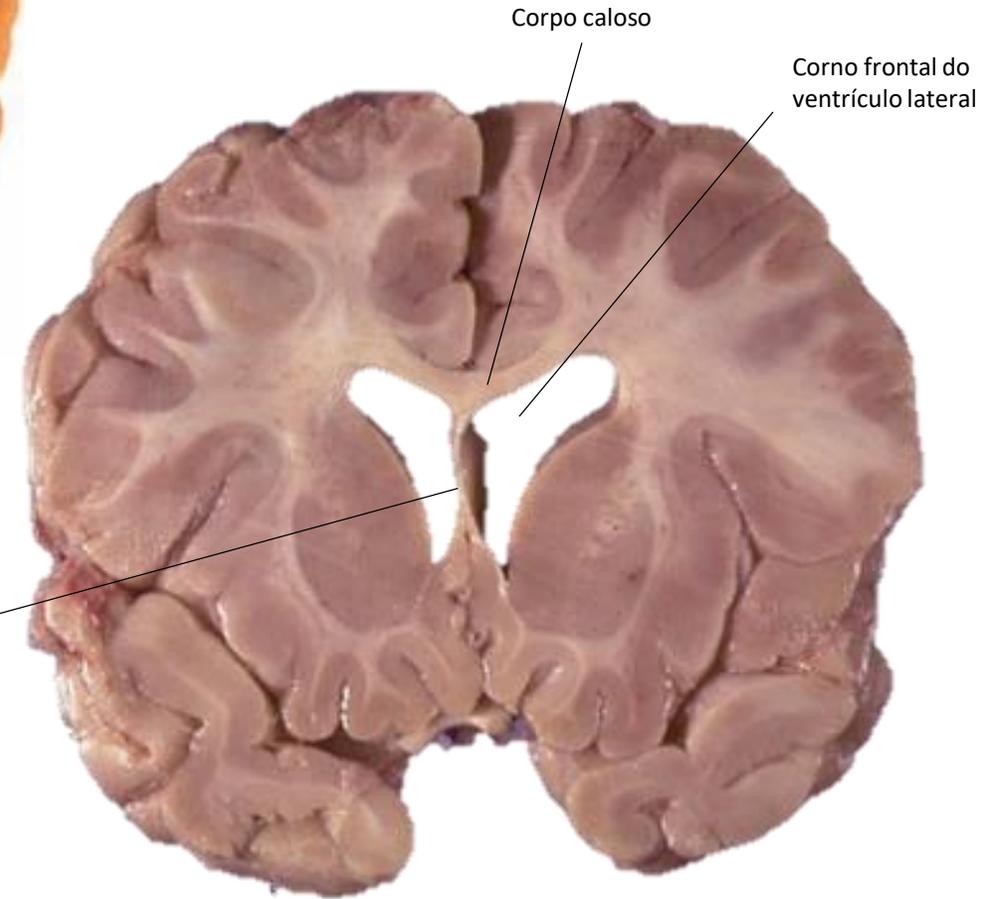
Cisterna lombar



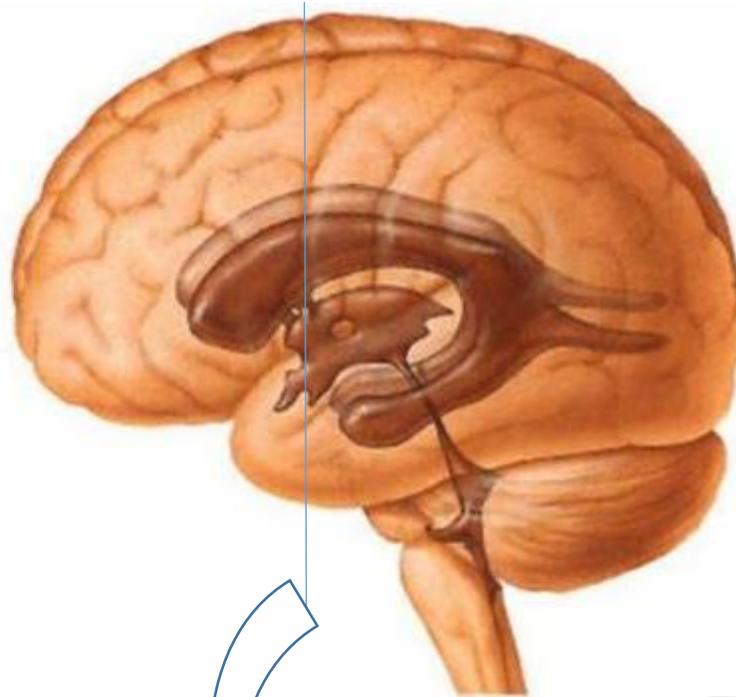
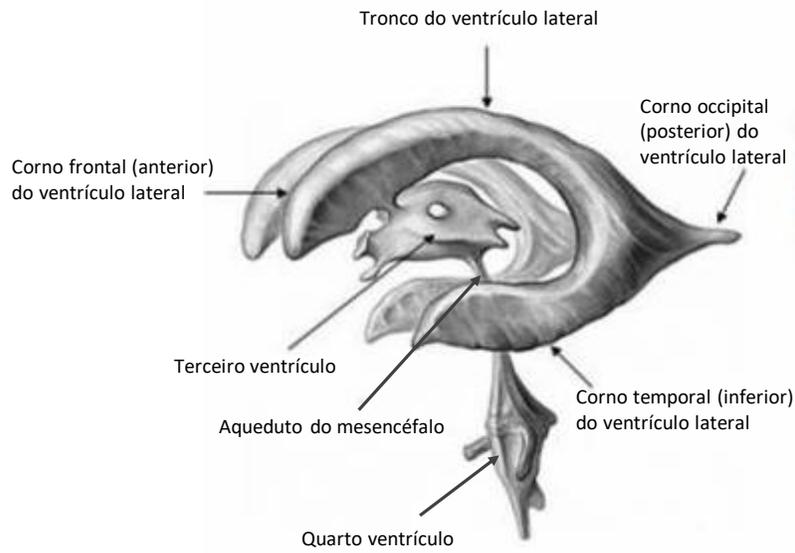
Vista posterior do dorso na região lombossacral
Arcos costais retirados. Dura-máter e aracnoide abertas



Septo pelúcido

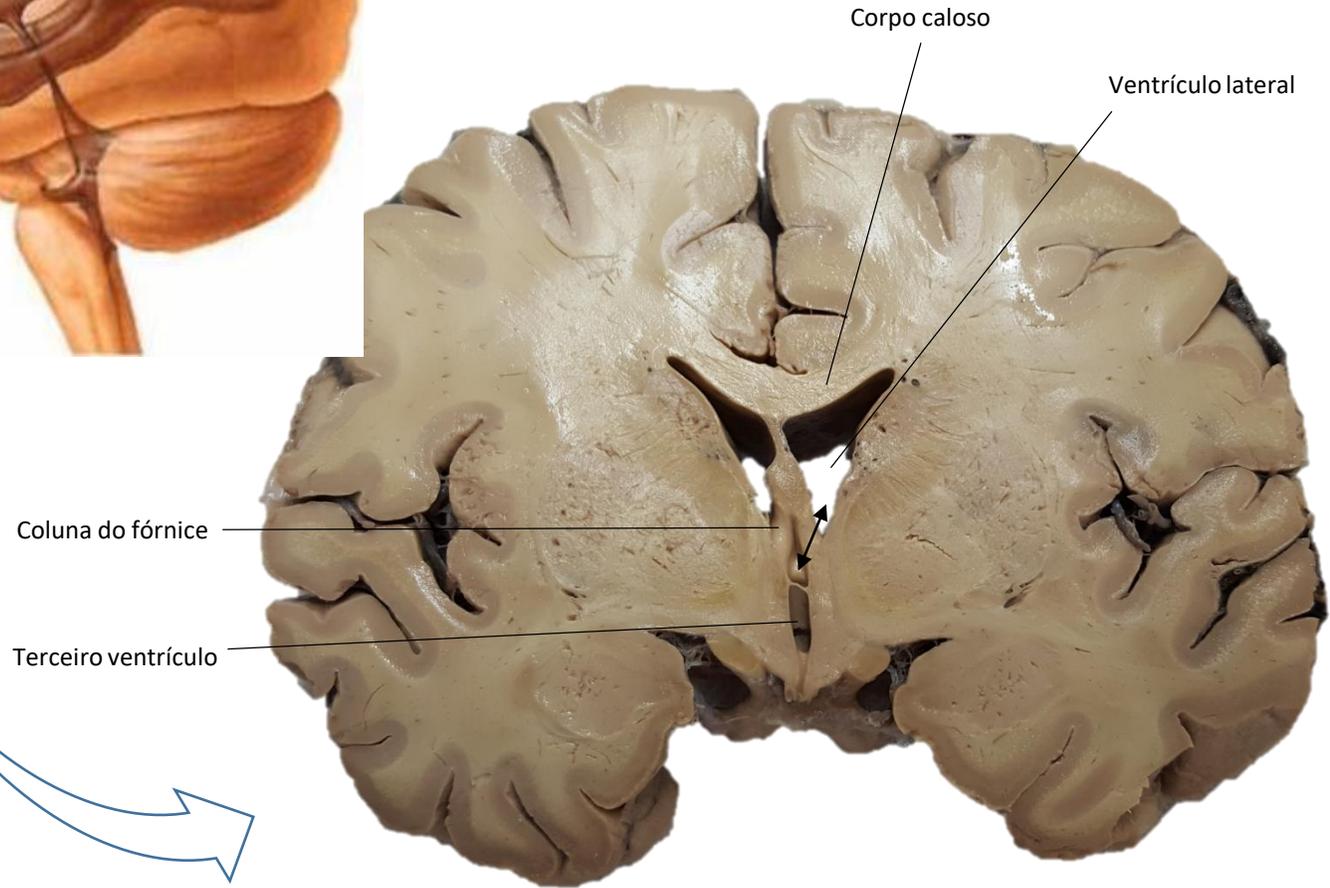


Corte frontal do cérebro

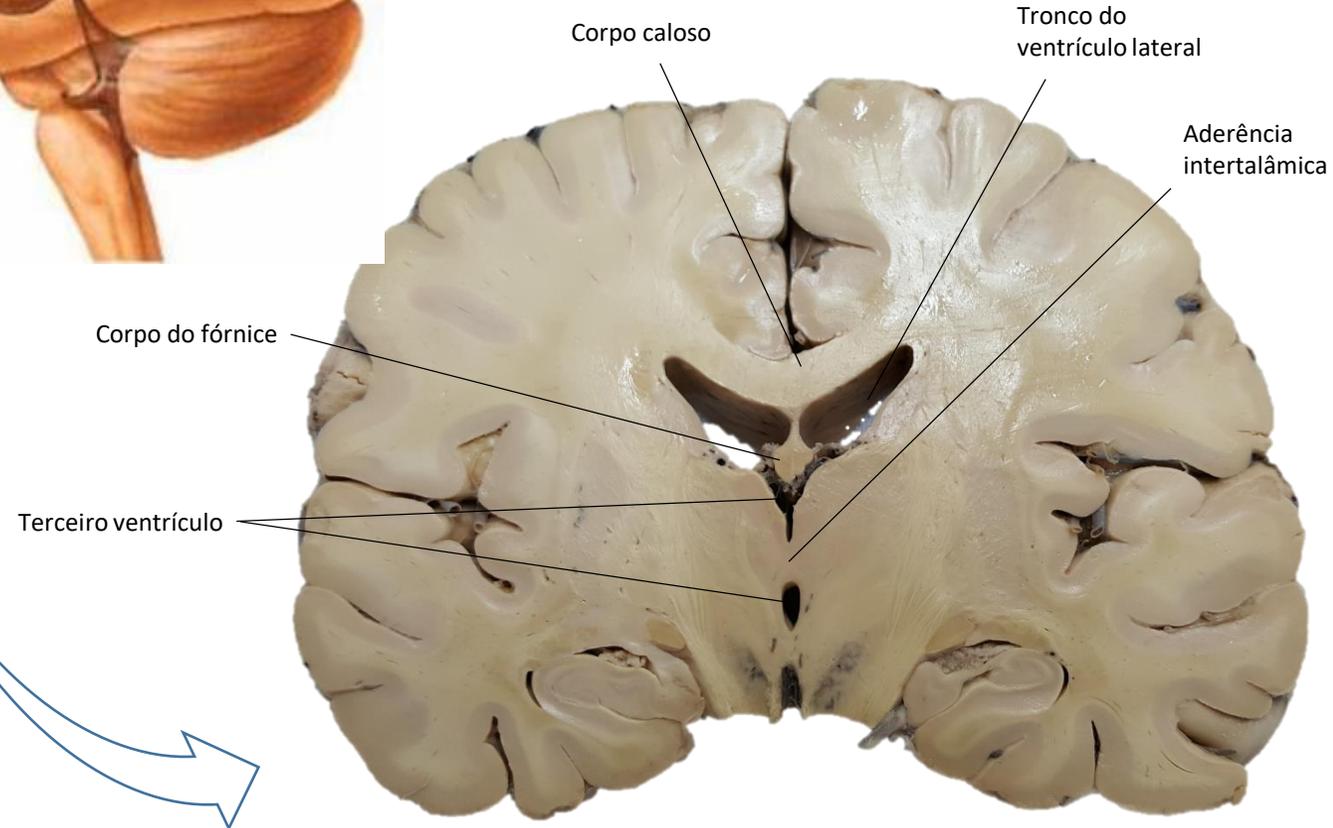
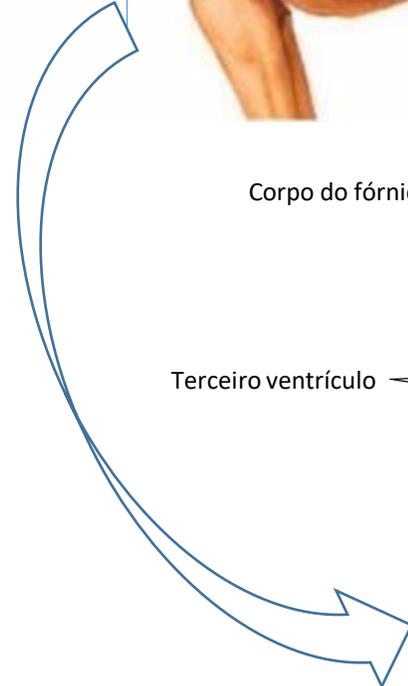
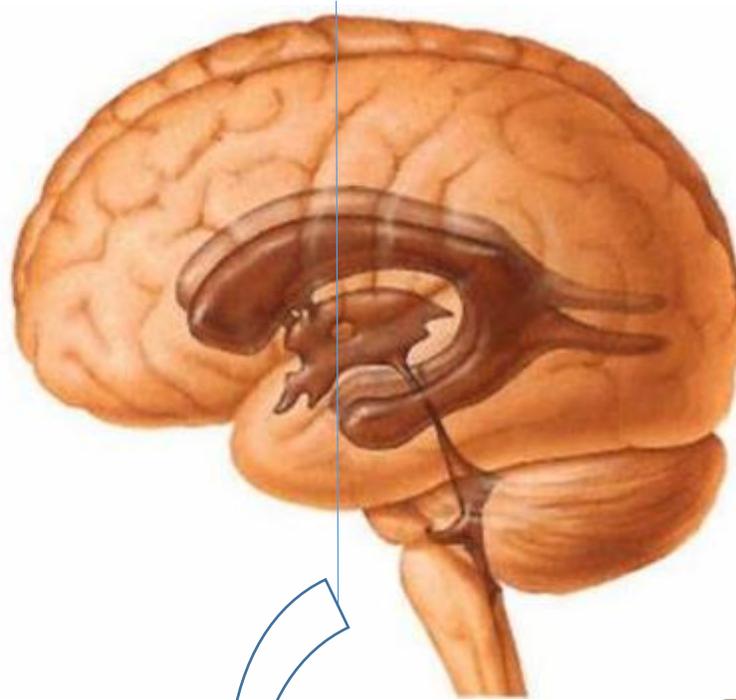
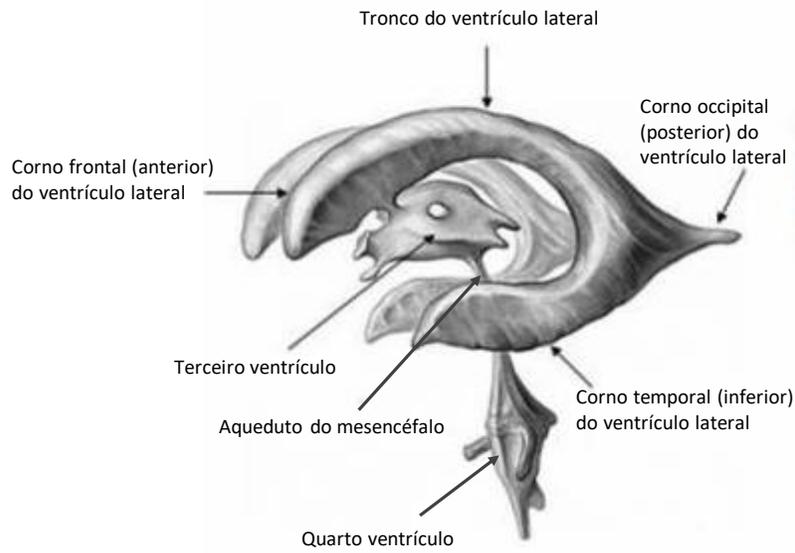


Forame interventricular

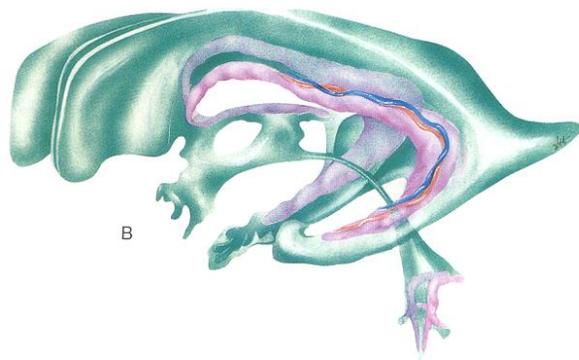
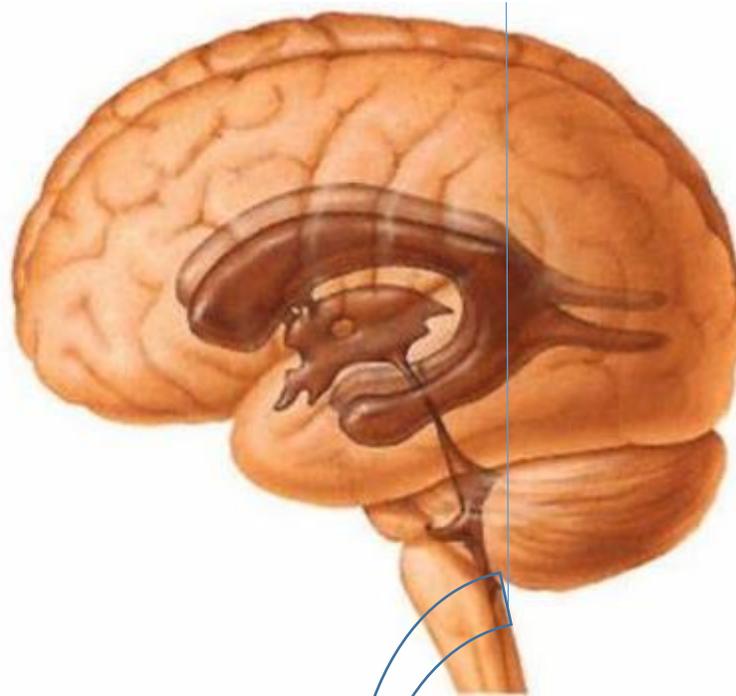
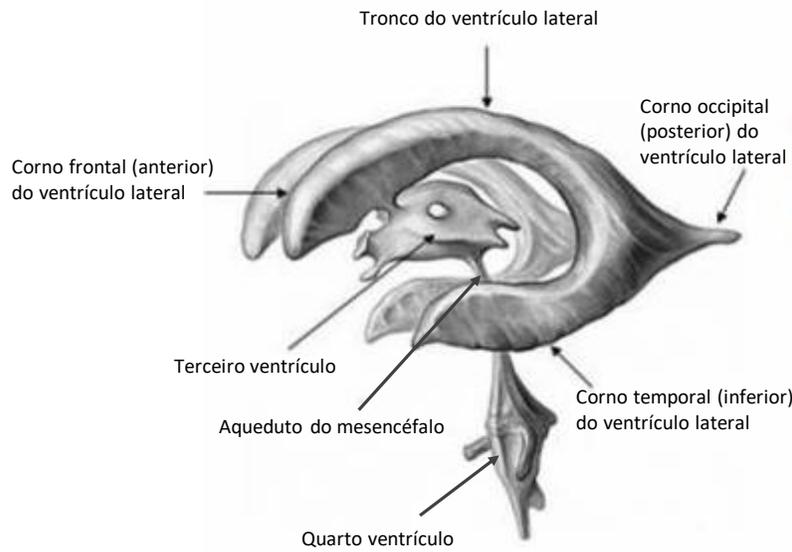
This label points to the interventricular foramen (foramen of Monro), the opening that connects the lateral ventricle to the third ventricle. It is indicated by a double-headed arrow.



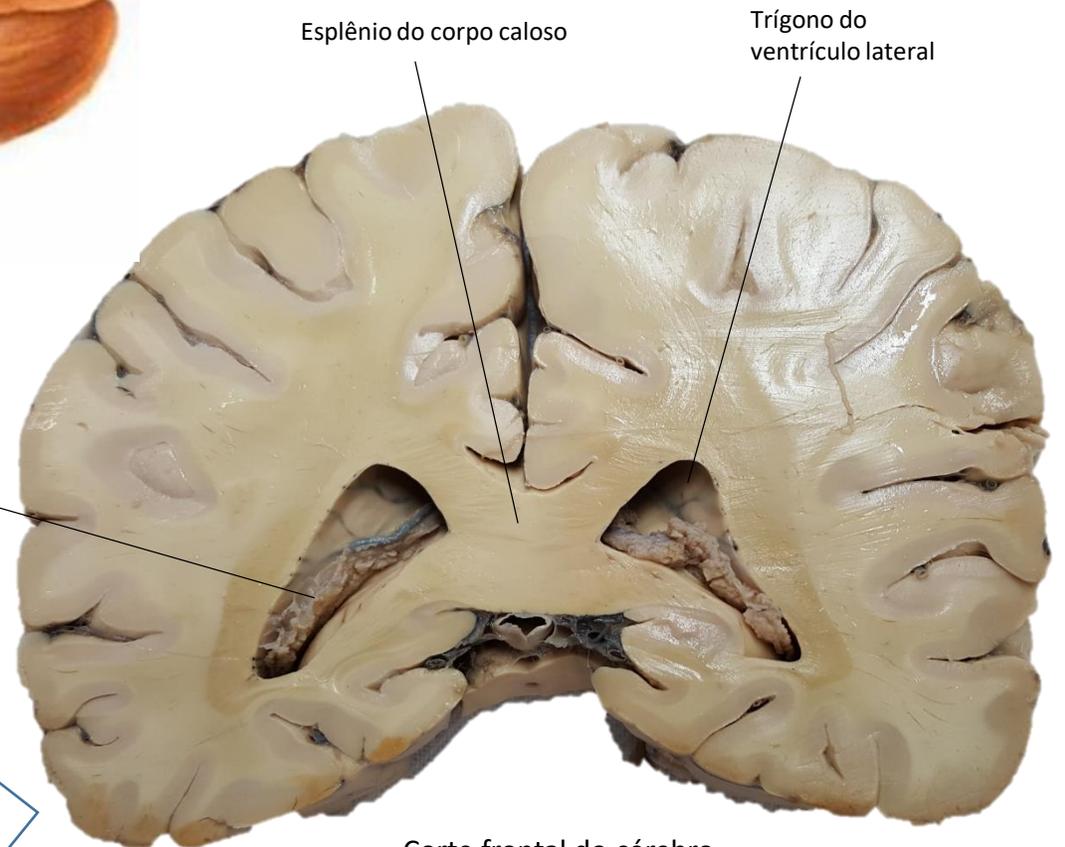
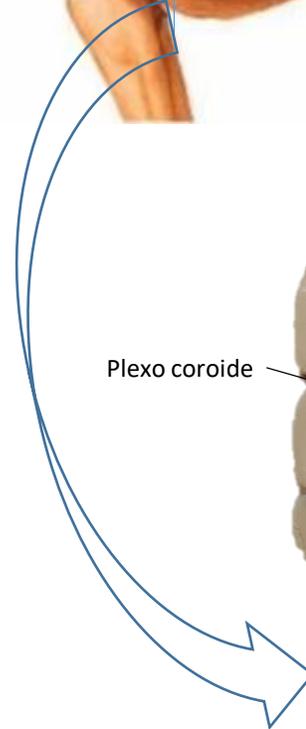
Corte frontal do cérebro

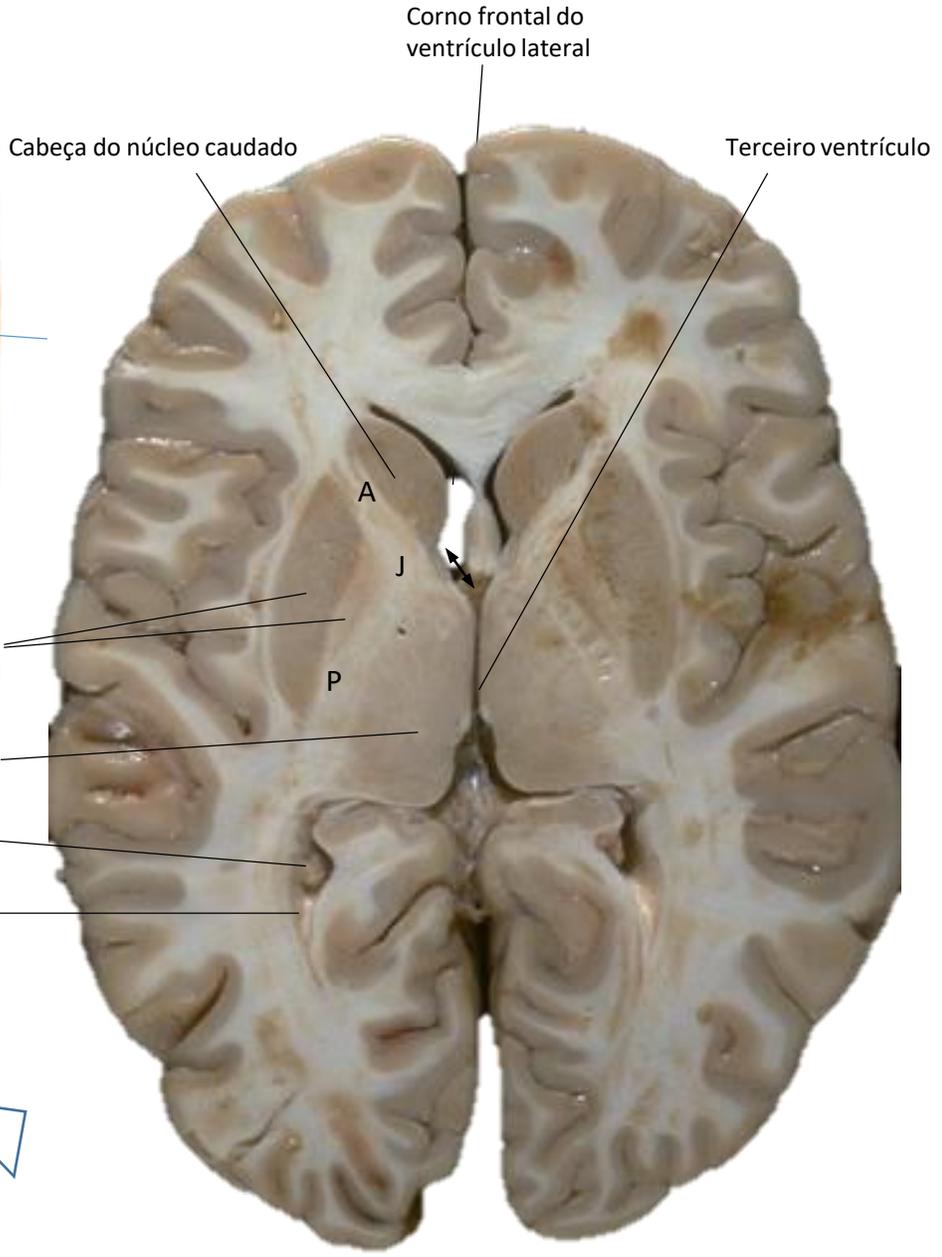
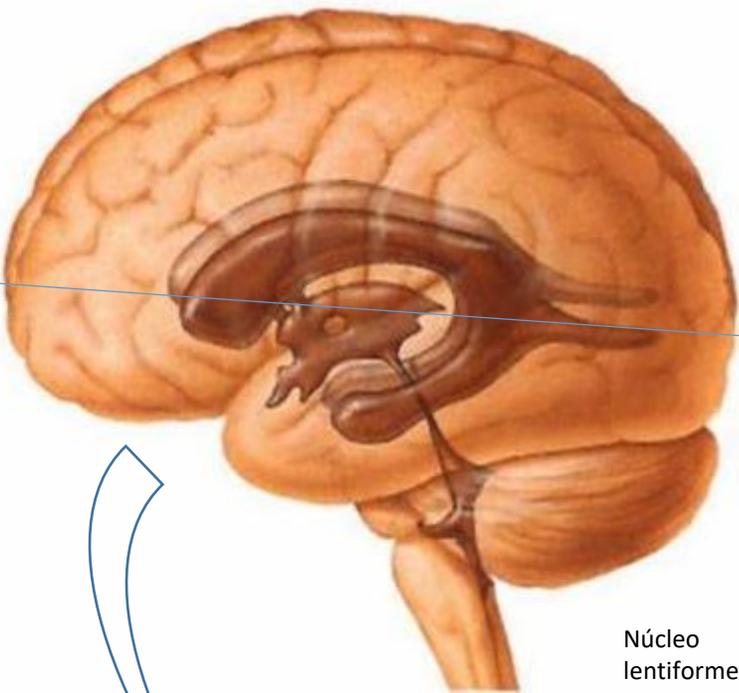
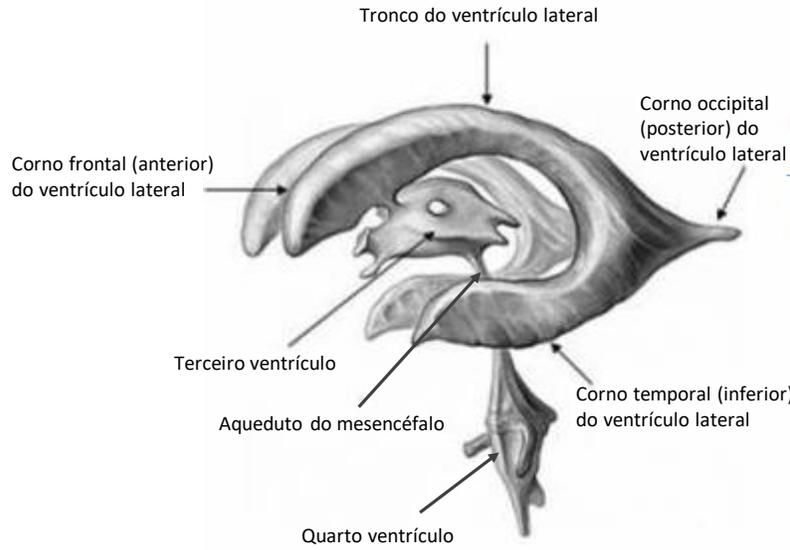


Corte frontal do cérebro



Posição do plexo coroide (roxo) no interior dos ventrículos



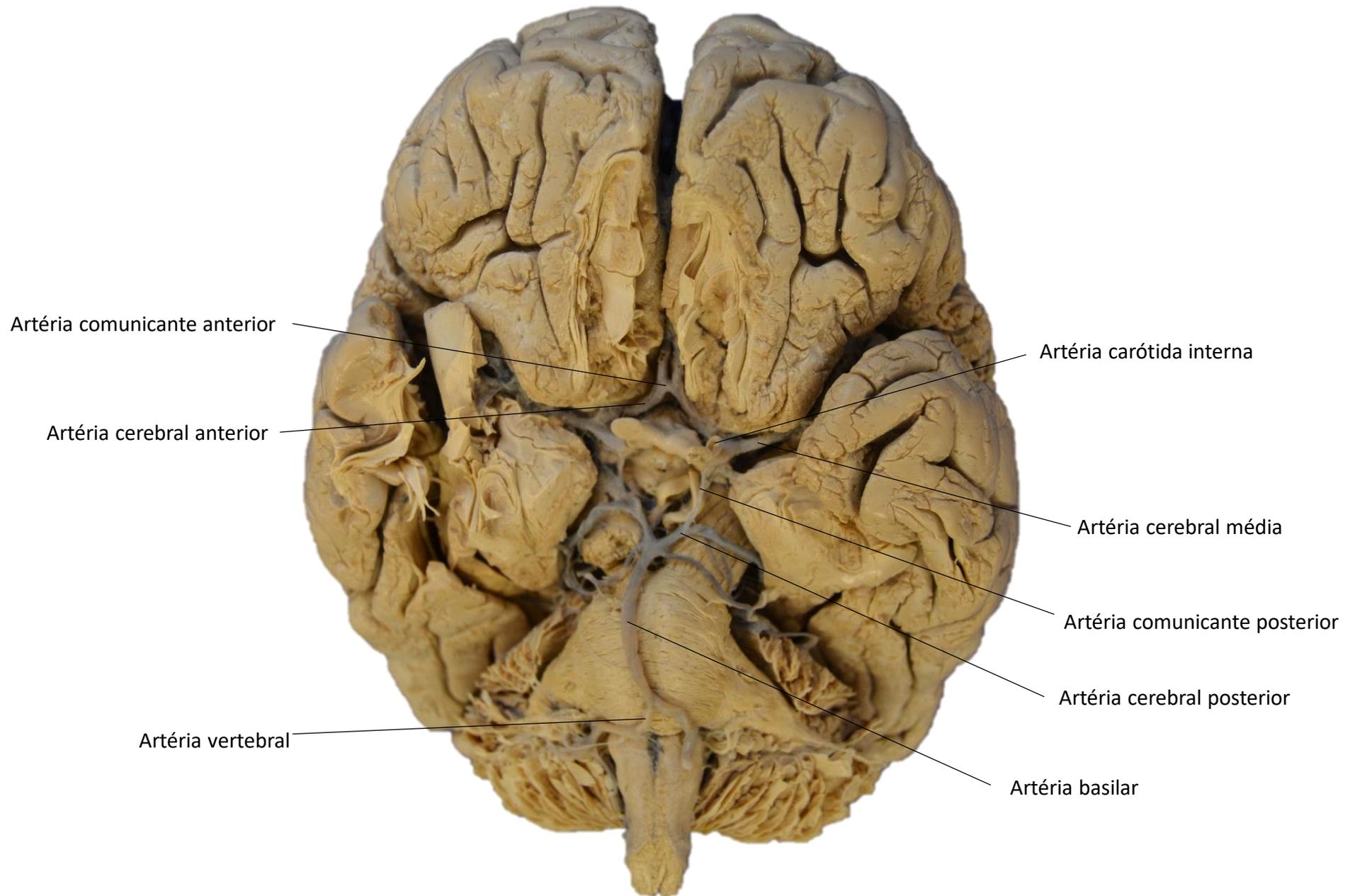


A = ramo anterior da cápsula interna
 J = joelho da cápsula interna
 P = ramo posterior da cápsula interna
 ↖ = forame interventricular

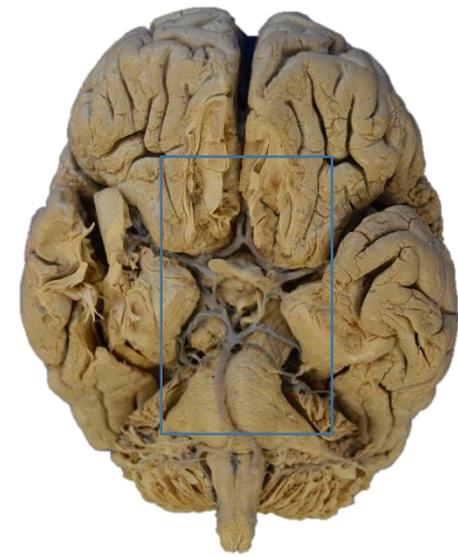
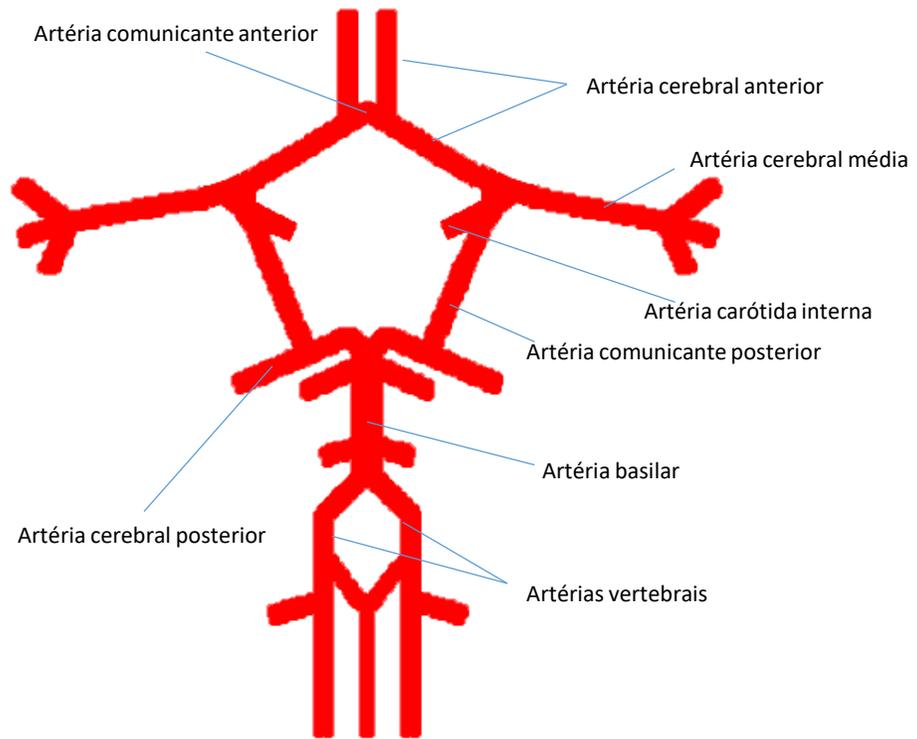
Corte horizontal do cérebro



Vascularização do Sistema Nervoso Central



Vista inferior do encéfalo



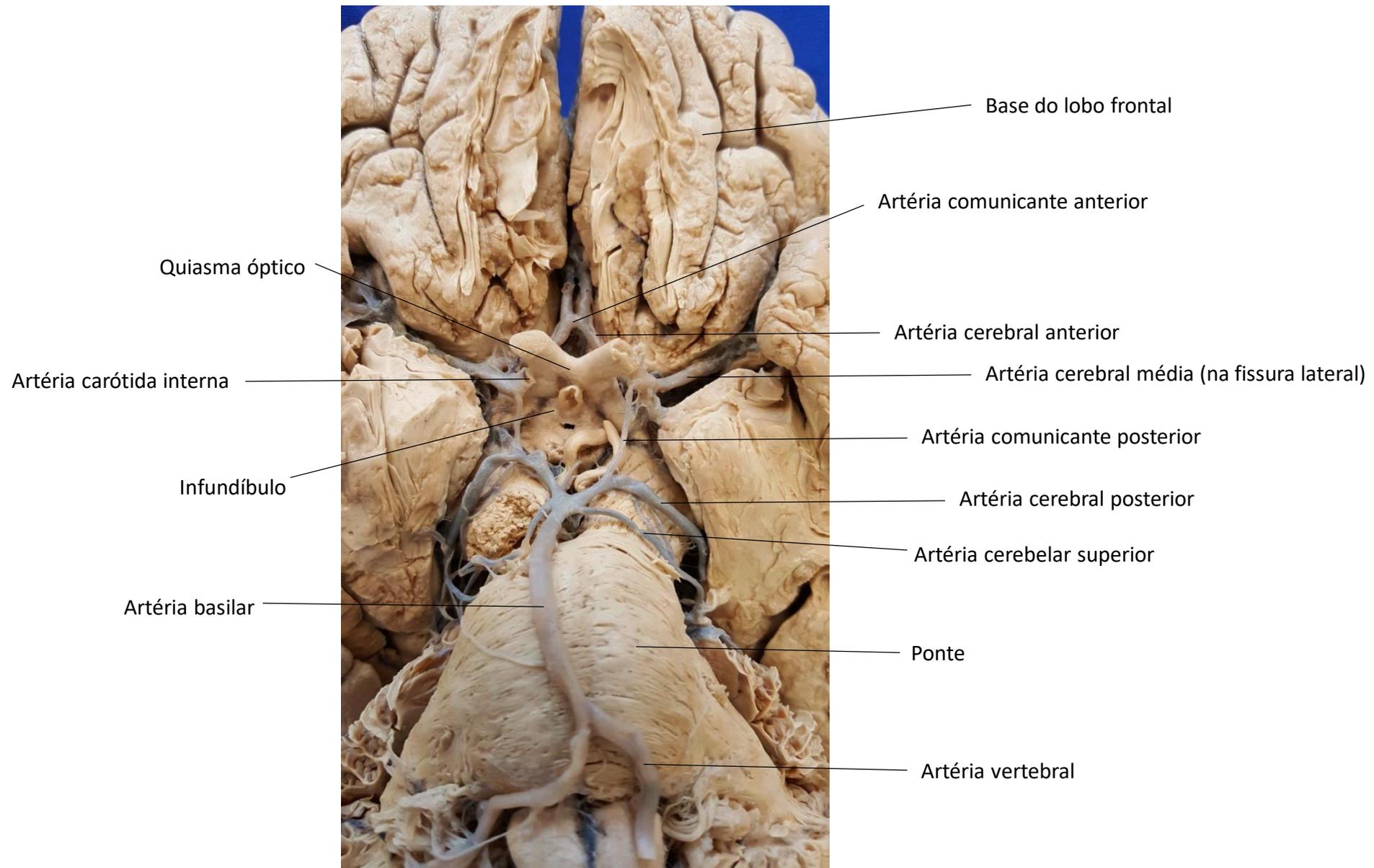
Artéria comunicante posterior

Artéria carótida interna

Artéria cerebral posterior

Artéria basilar

Vista inferior do encéfalo



Vista inferior do encéfalo

Artéria cerebral posterior

Artéria basilar

Artéria vertebral

Artéria espinal anterior

Artérias centrais do cérebro

Artéria cerebelar superior

Artéria cerebelar inferior anterior

Artéria cerebelar inferior posterior



Vista inferior do encéfalo

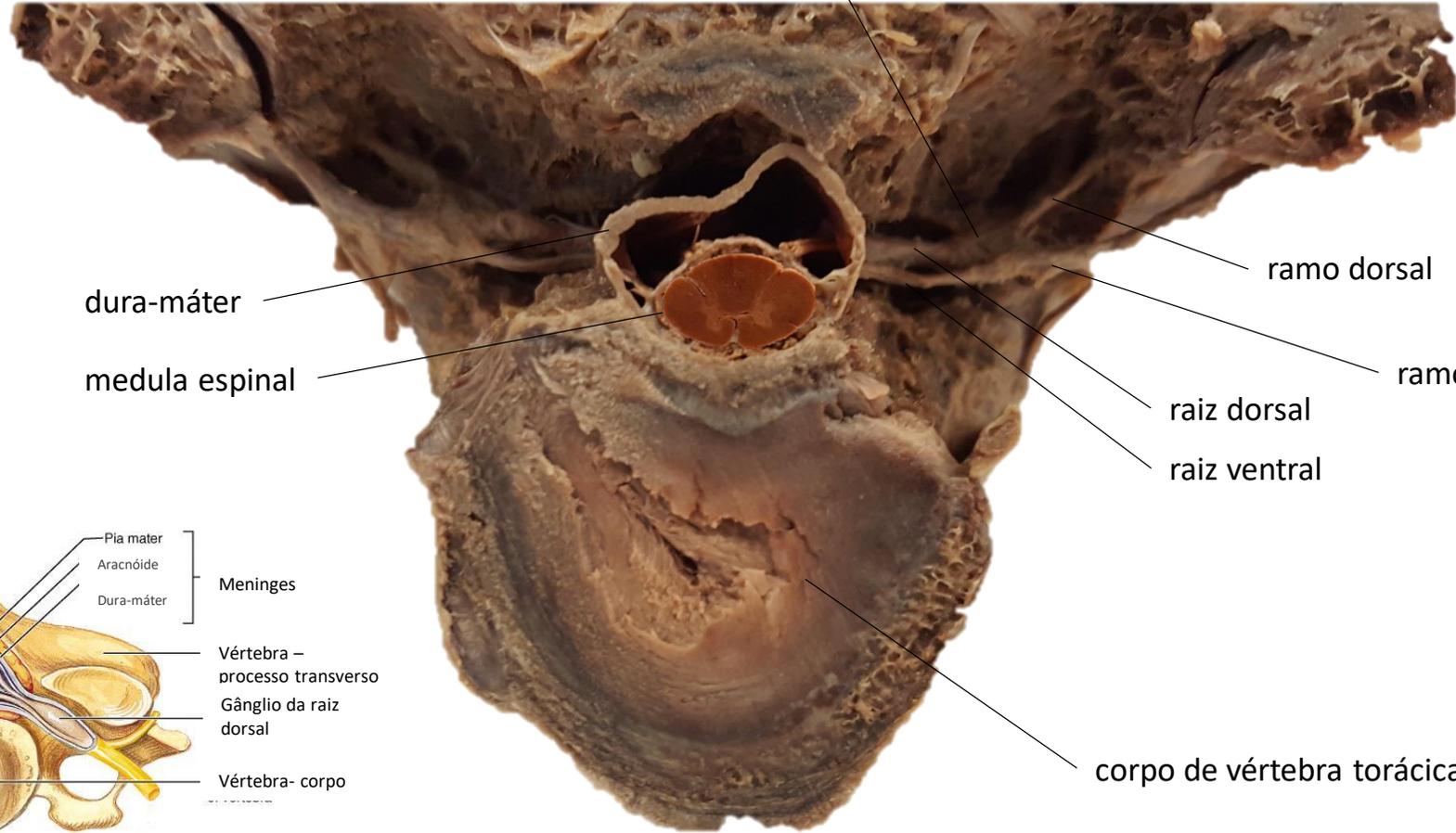
Sistema sensorial geral

Sistema visual

Sistemas coclear e vestibular



gânglio da raiz dorsal (sensitivo)



dura-máter

medula espinal

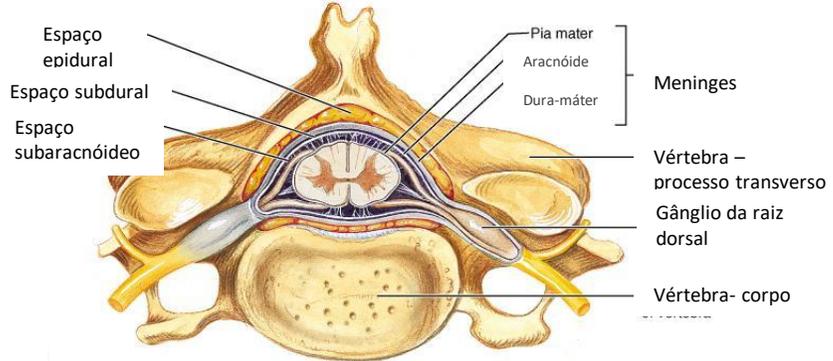
ramo dorsal

ramo ventral

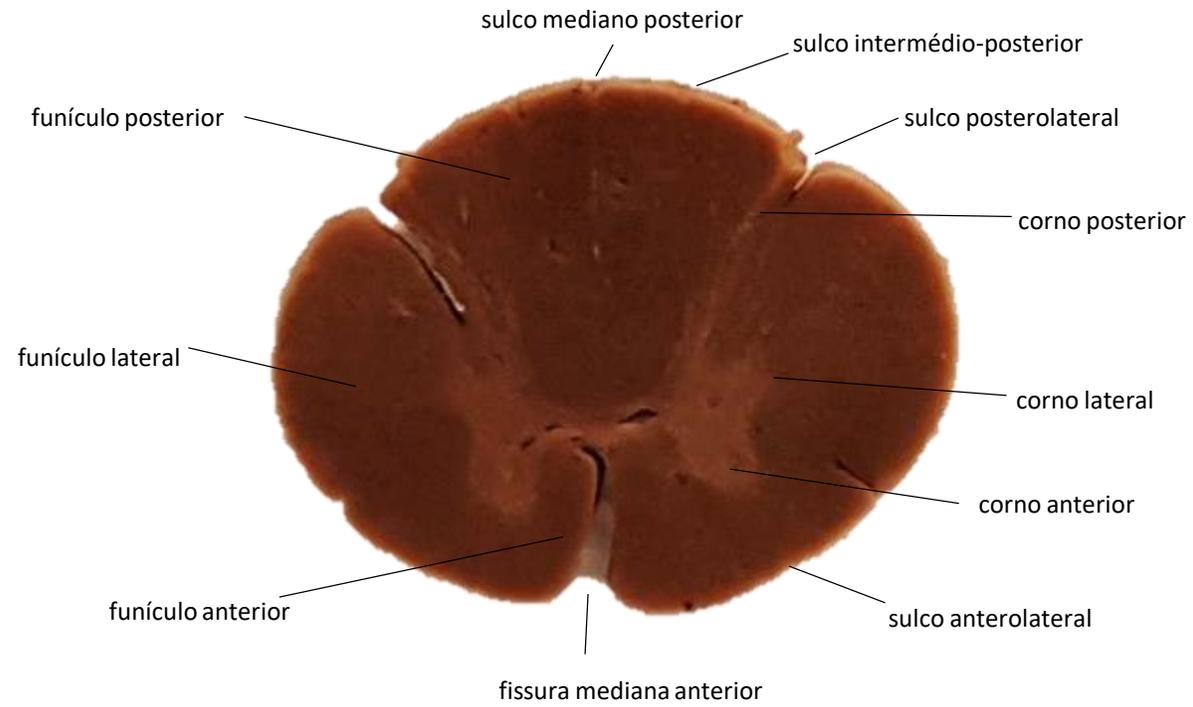
raiz dorsal

raiz ventral

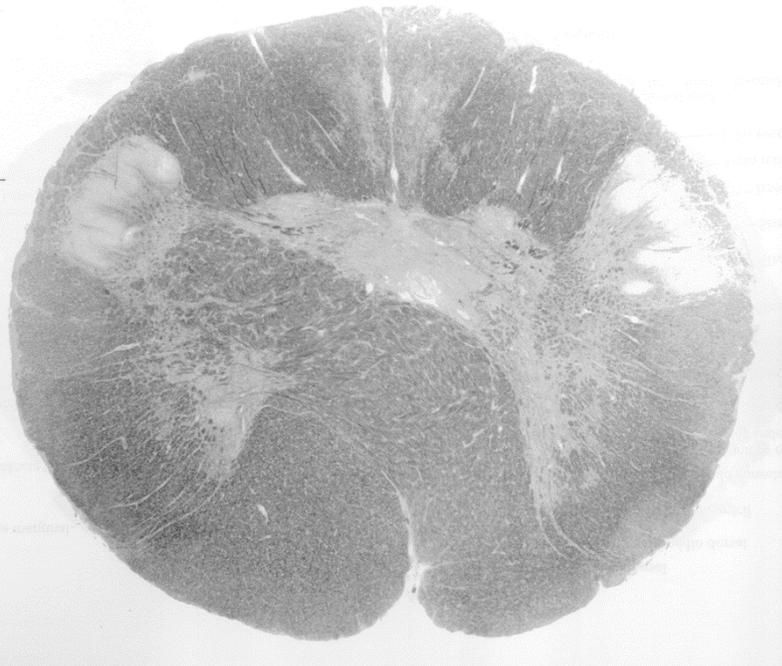
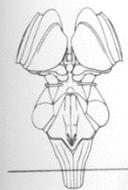
corpo de vértebra torácica



Corte transversal do tórax, com medula espinal *in situ*

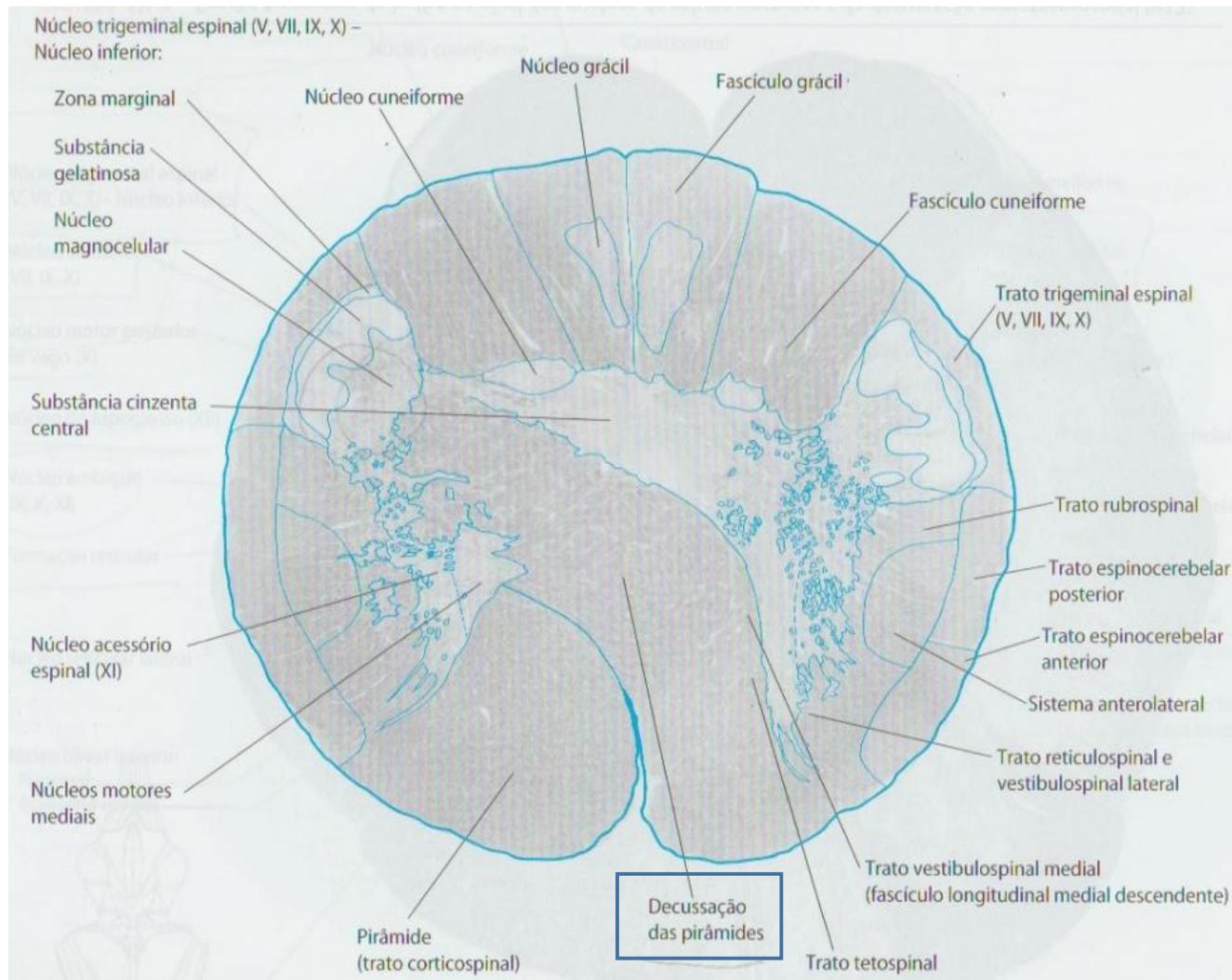


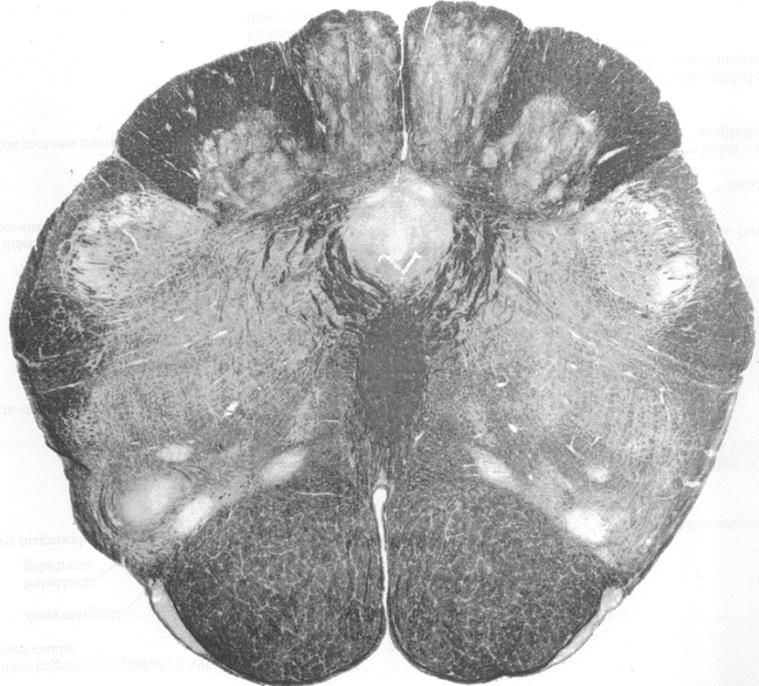
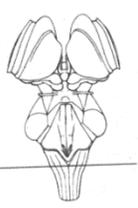
Corte transversal da medula espinal – nível torácico



Anterior

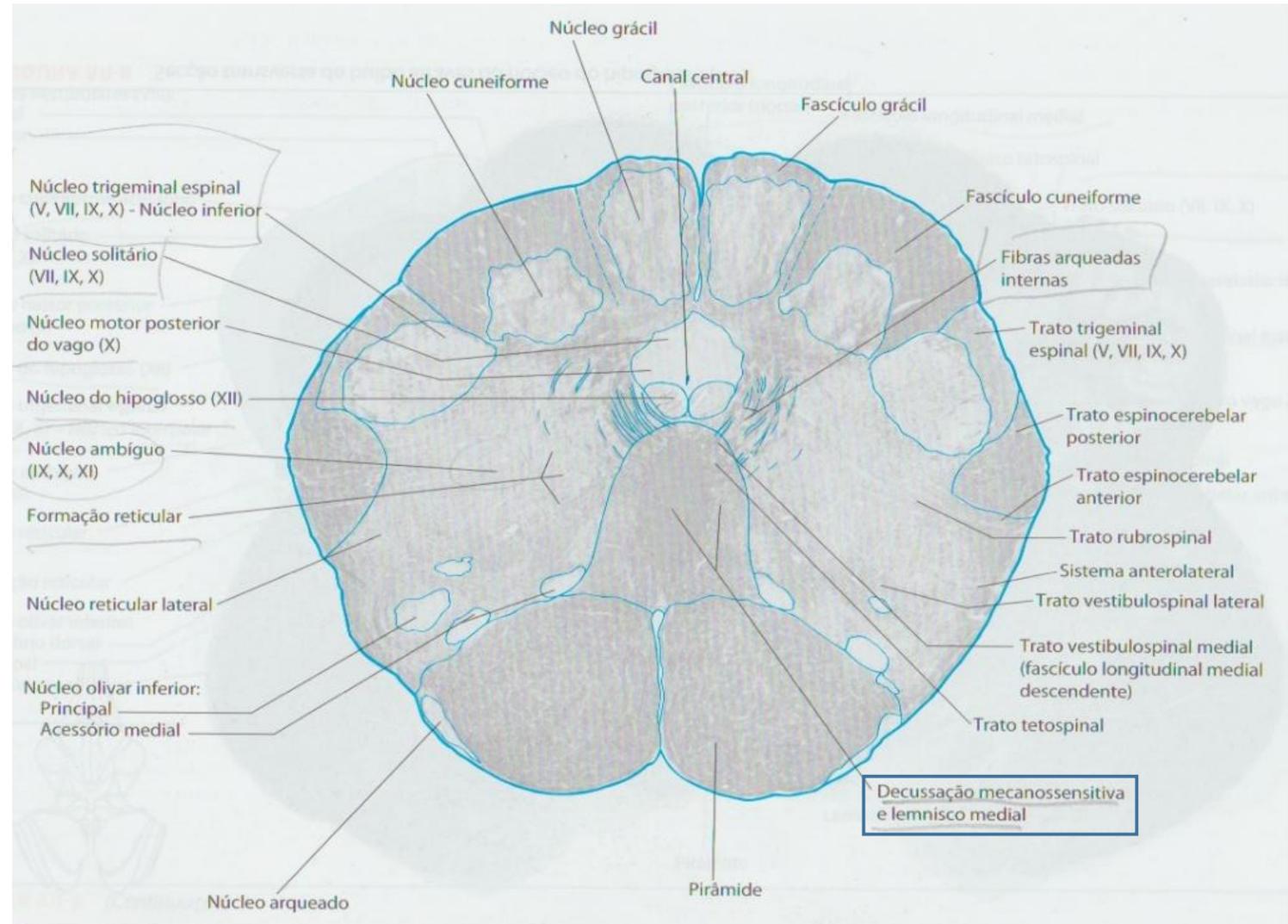
Bulbo caudal

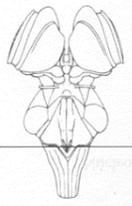




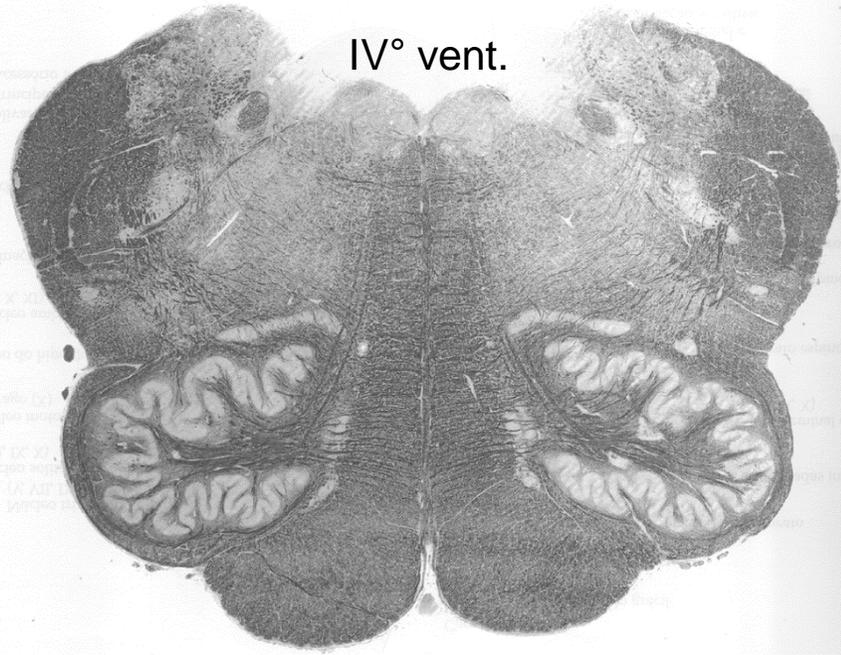
Anterior

Bulbo caudal





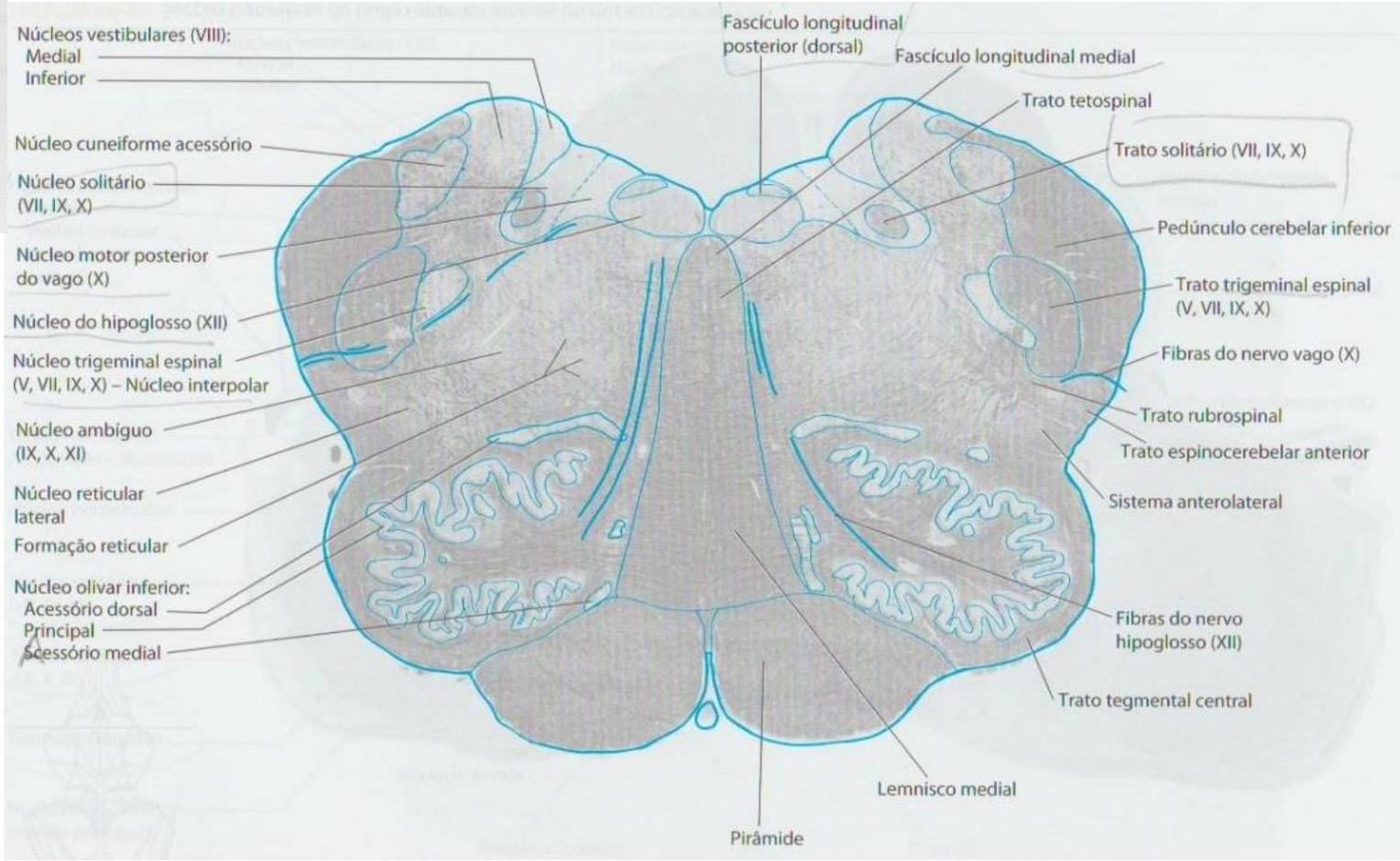
IV° vent.



IV° vent.

Anterior

Bulbo cranial



Núcleos vestibulares (VIII):

Medial
Inferior

Núcleo cuneiforme acessório

Núcleo solitário
(VII, IX, X)

Núcleo motor posterior
do vago (X)

Núcleo do hipoglosso (XII)

Núcleo trigeminal espinal
(V, VII, IX, X) - Núcleo interpolar

Núcleo ambíguo
(IX, X, XI)

Núcleo reticular
lateral

Formação reticular

Núcleo olivar inferior:

Acessório dorsal
Principal
Acessório medial

Fascículo longitudinal
posterior (dorsal)

Fascículo longitudinal medial

Trato tetospinal

Trato solitário (VII, IX, X)

Pedúnculo cerebelar inferior

Trato trigeminal espinal
(V, VII, IX, X)

Fibras do nervo vago (X)

Trato rubrospinal

Trato espinocerebelar anterior

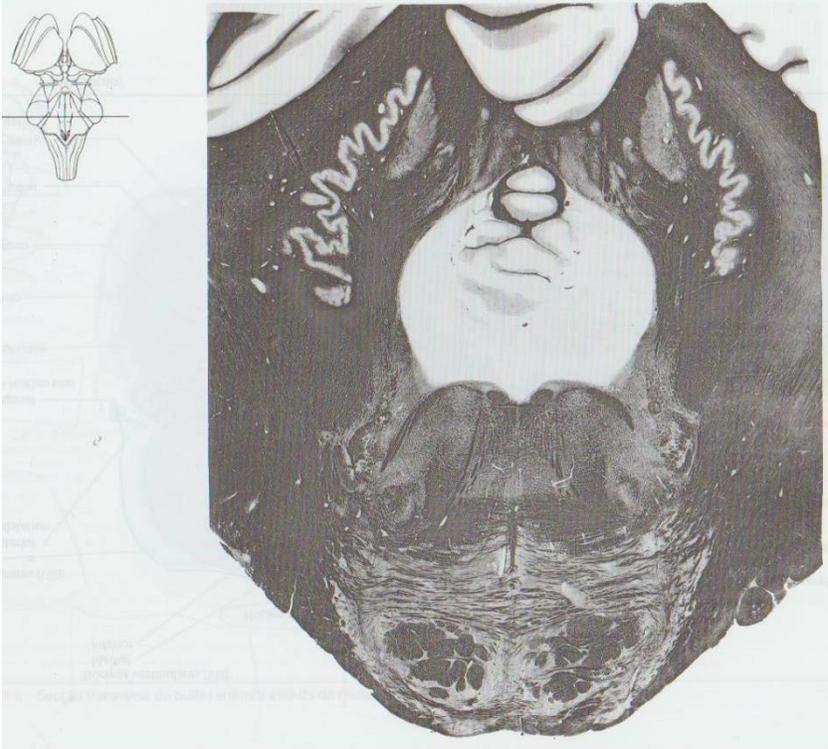
Sistema anterolateral

Fibras do nervo
hipoglosso (XII)

Trato tegmental central

Lemnisco medial

Pirâmide



Anterior

Núcleos profundos do cerebelo:

- Núcleo interposto
 - Denteado
 - Emboliforme
 - Globoso (interpósito)
 - Fastigio
- Nódulo do cerebelo

Núcleos vestibulares (VIII):

- Superior
- Medial
- Lateral

Núcleo abducente (VI)

Núcleo trigeminal espinal (V, VII, IX, X) – Núcleo oral

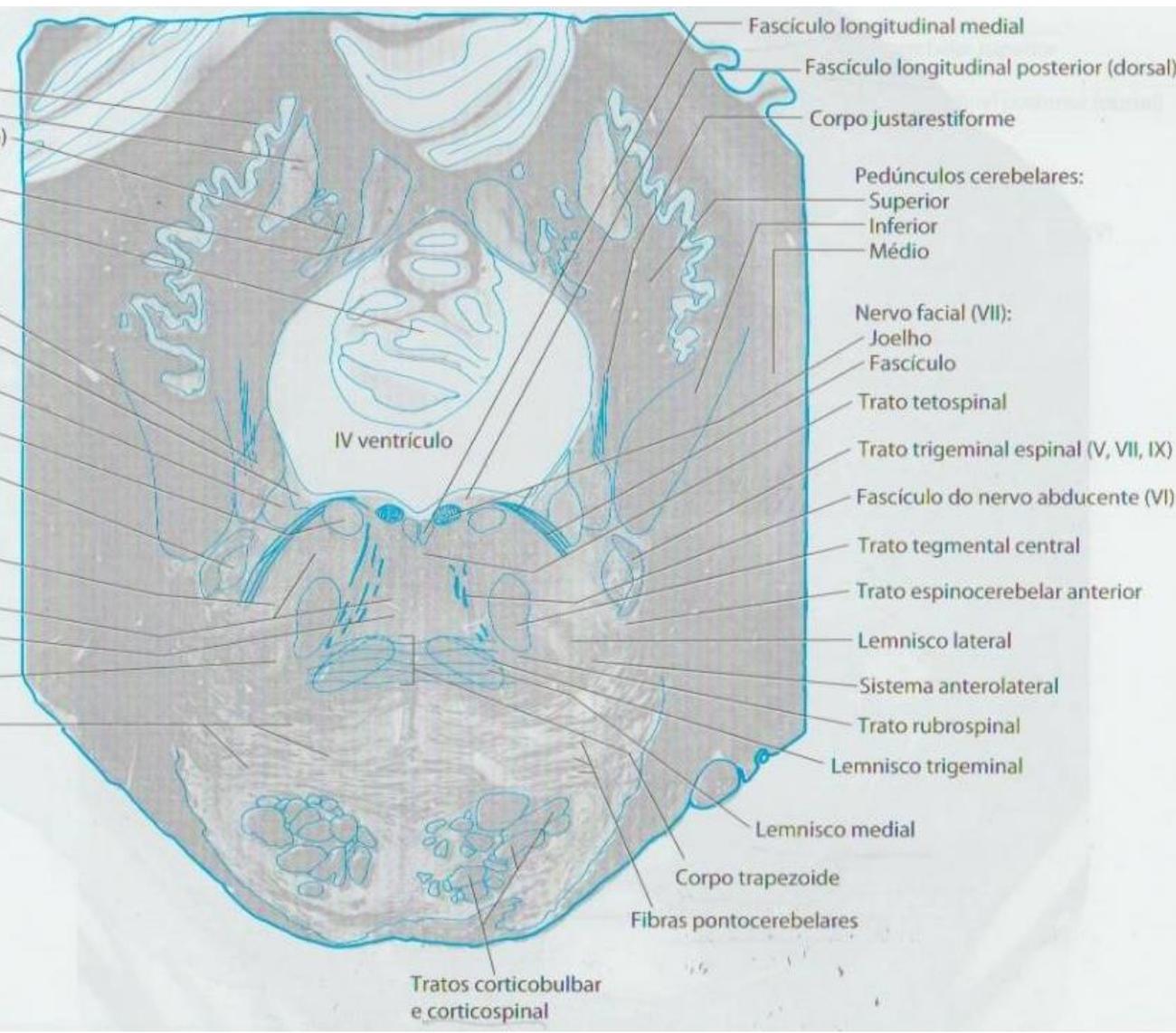
Núcleo do facial (VII)

Formação reticular

Formação reticular paramediana

Complexo olivar inferior

Núcleos pontinos



Fascículo longitudinal medial

Fascículo longitudinal posterior (dorsal)

Corpo justarestiforme

Pedúnculos cerebelares:

- Superior
- Inferior
- Médio

Nervo facial (VII):

- Joelho
- Fascículo

Trato tetospinal

Trato trigeminal espinal (V, VII, IX)

Fascículo do nervo abducente (VI)

Trato tegmental central

Trato espinocerebelar anterior

Lemnisco lateral

Sistema anterolateral

Trato rubrospinal

Lemnisco trigeminal

Lemnisco medial

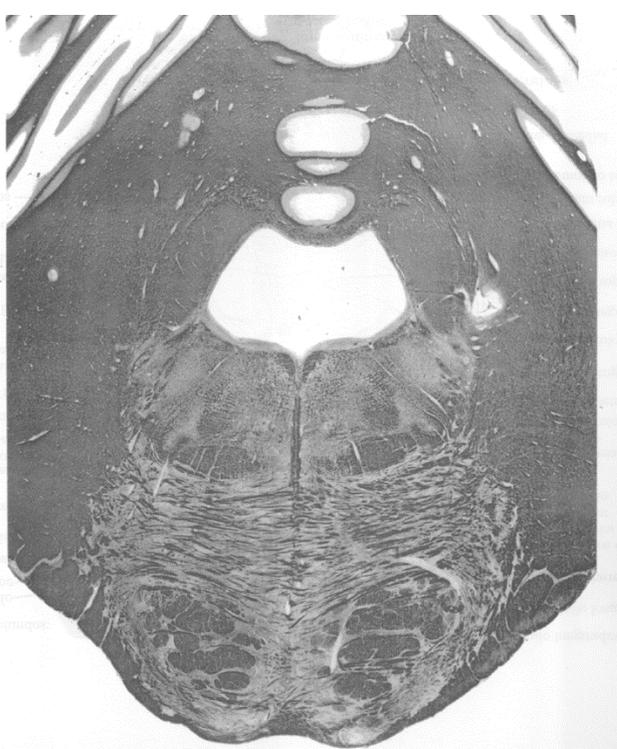
Corpo trapezoide

Fibras pontocerebelares

Tratos corticobulbar e corticospinal

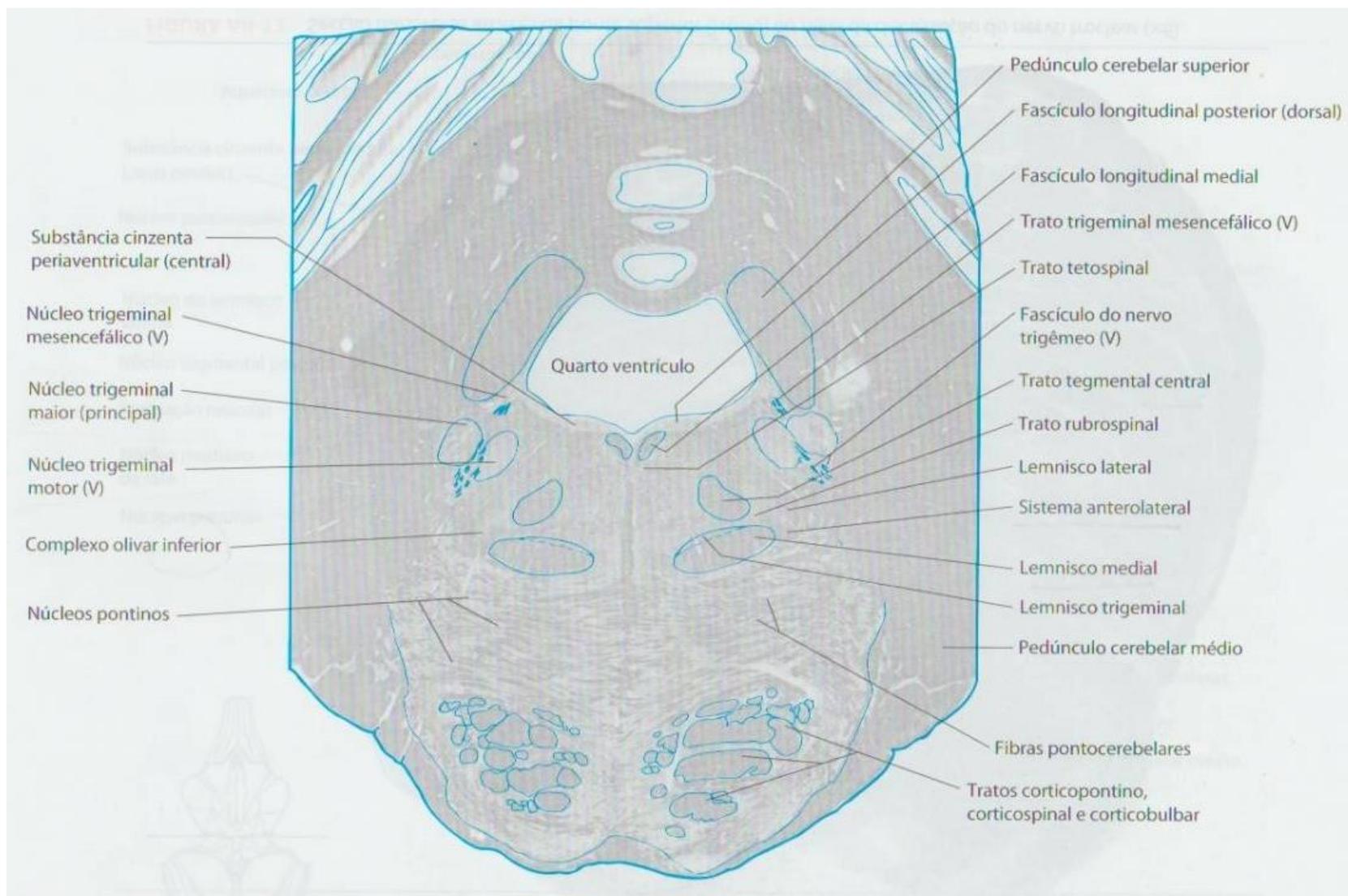
Ponte

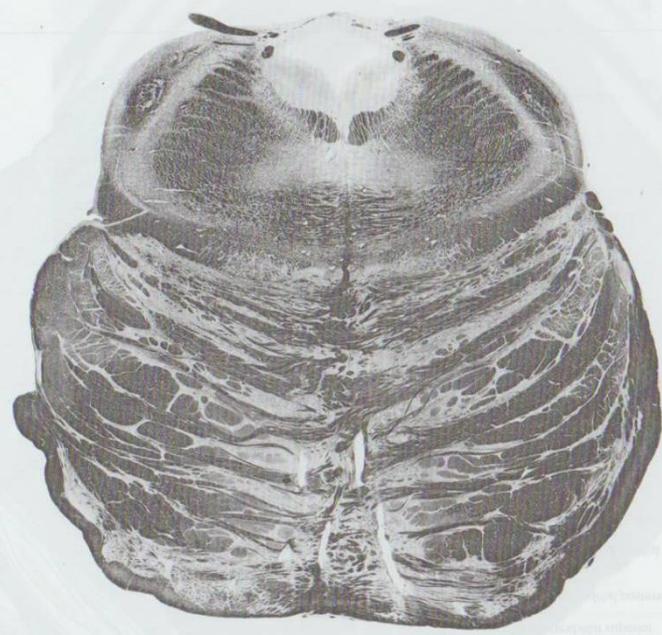
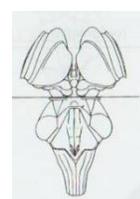
(joelho do facial)



Anterior

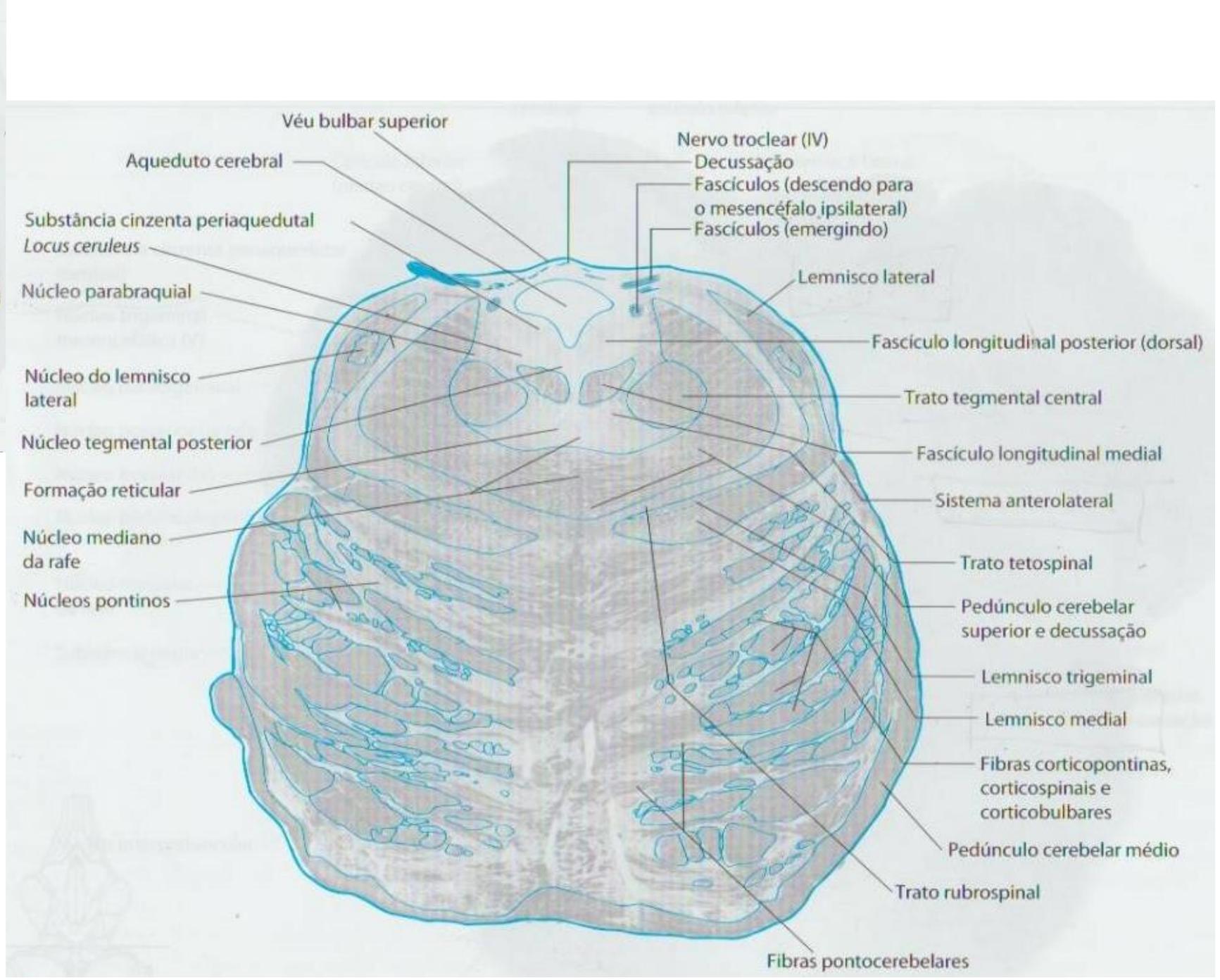
Ponte

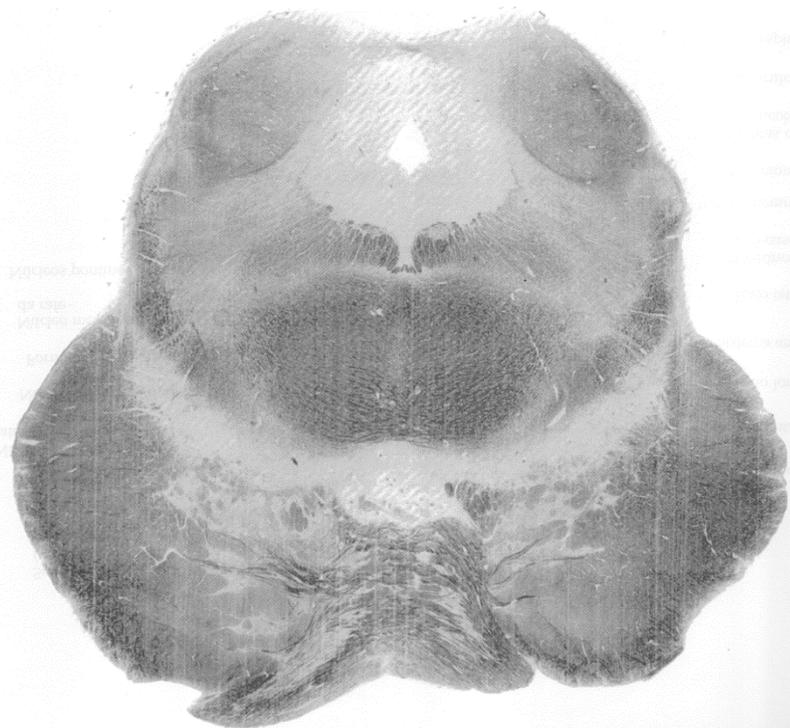
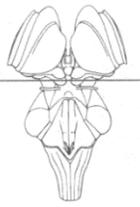




Anterior

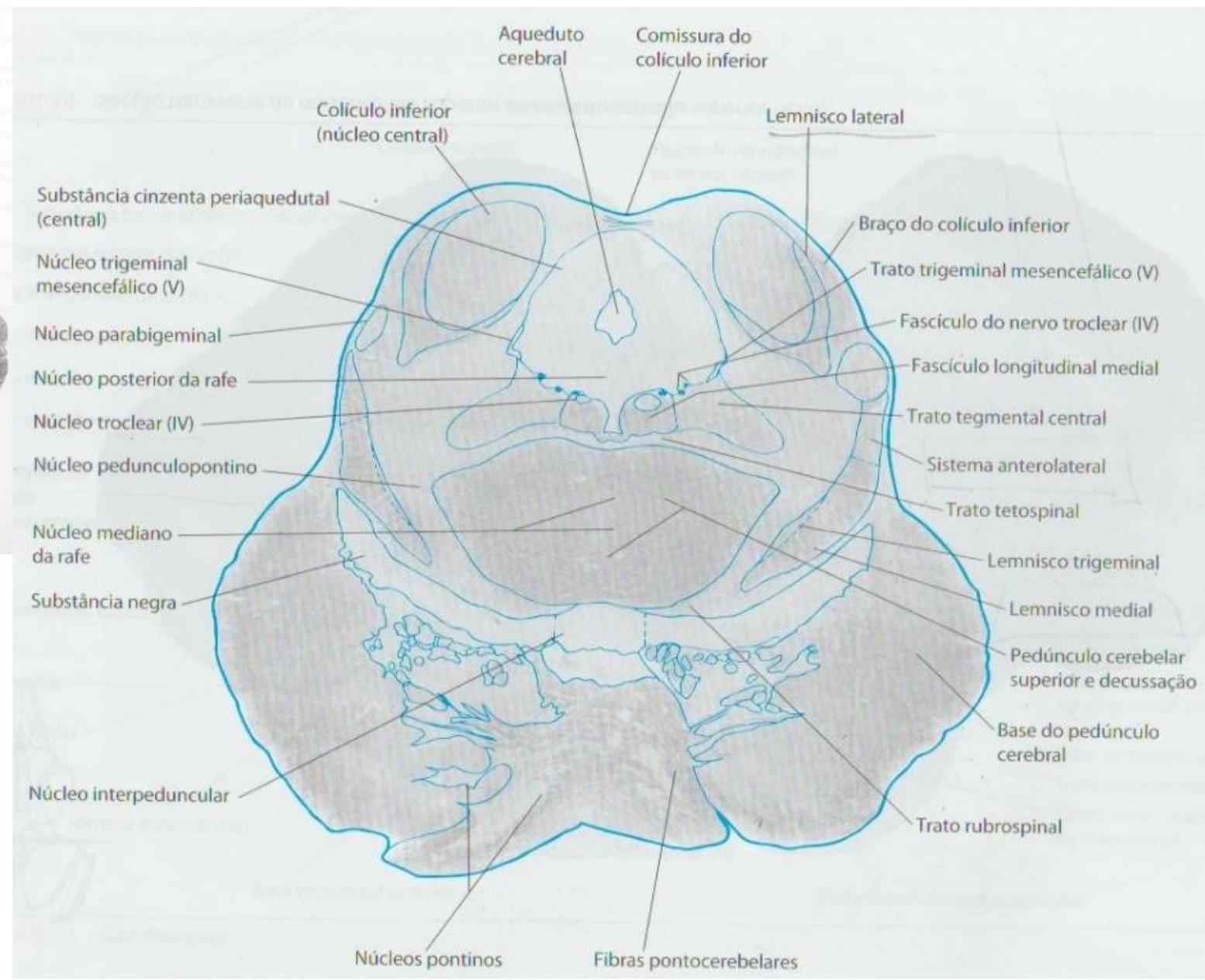
Istmo pontino

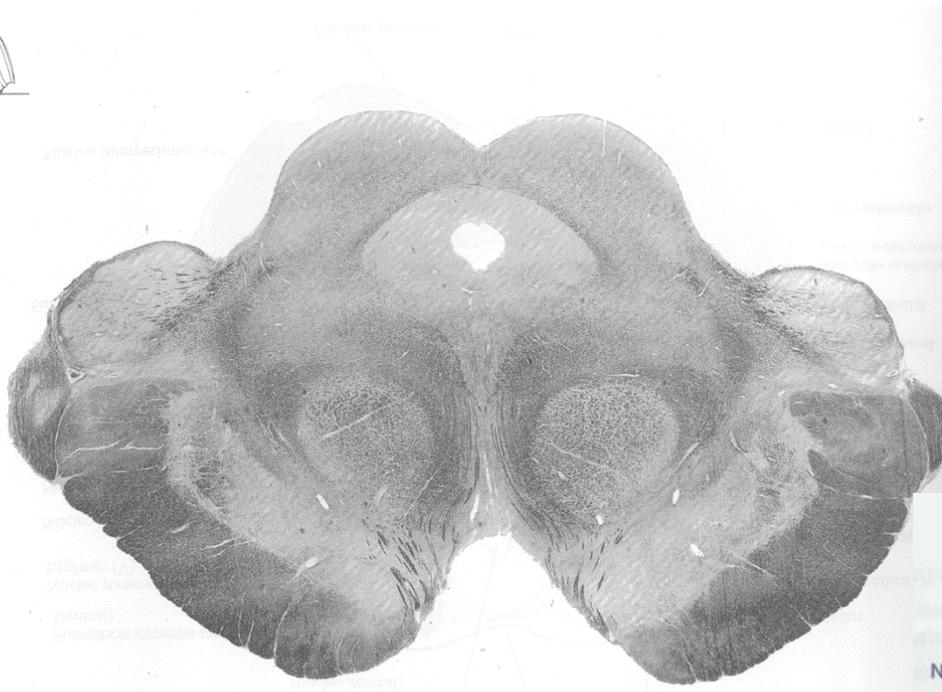
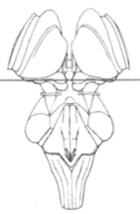




Anterior

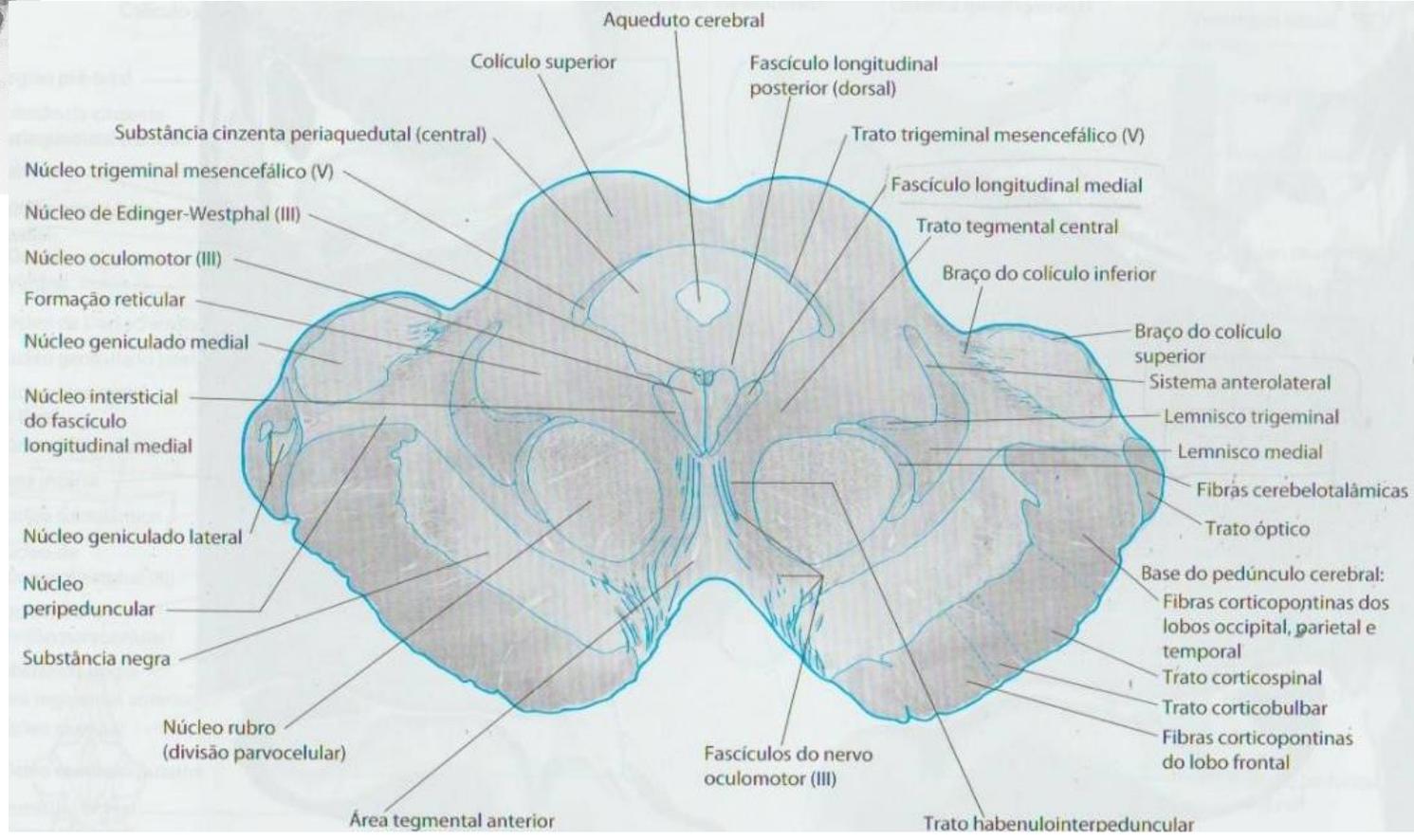
Mesencéfalo caudal

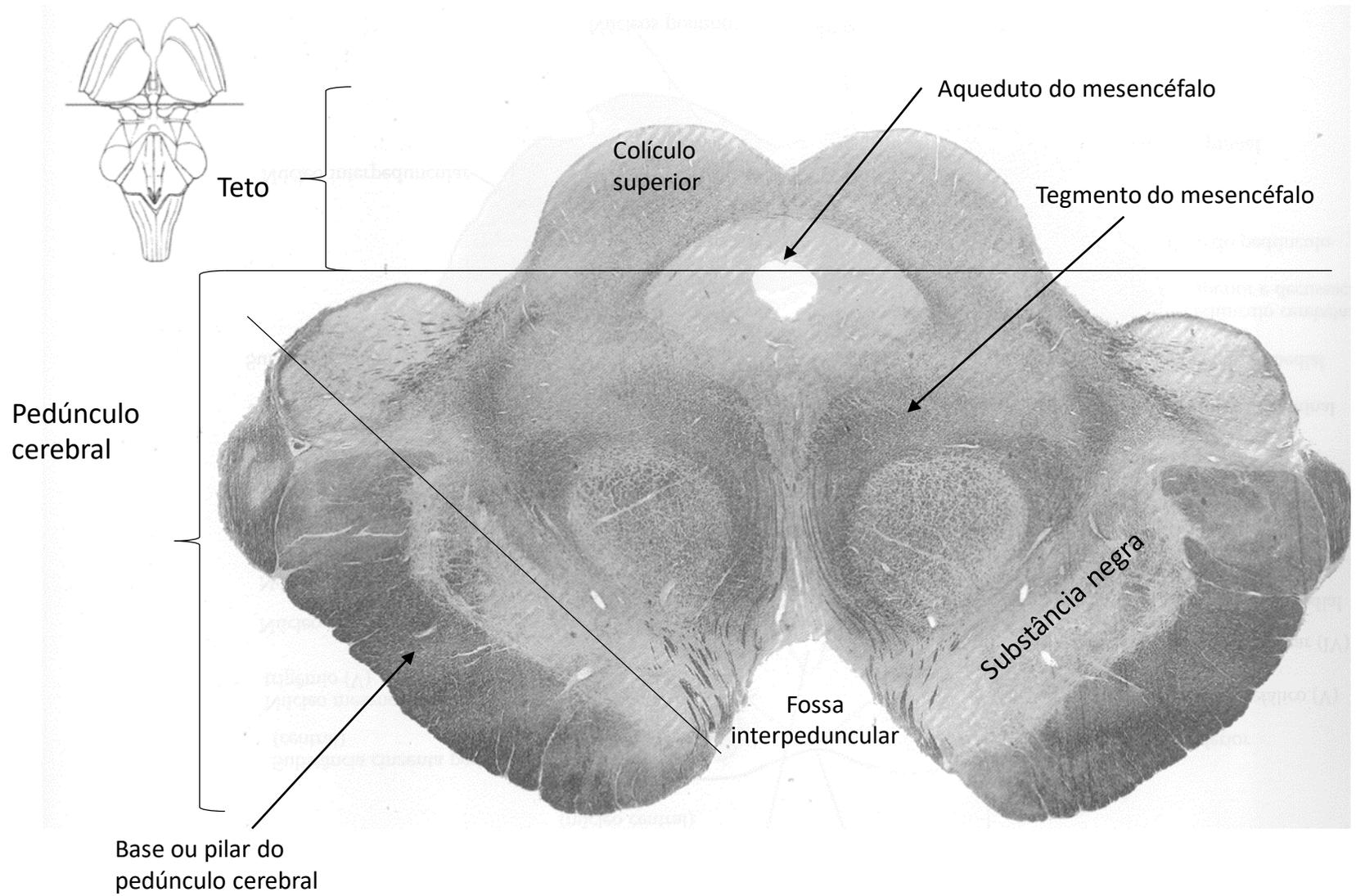




Anterior

Mesencéfalo cranial





Corte transversal do mesencéfalo cranial



Sulco central

Giro pós-central (áreas 3,1,2)

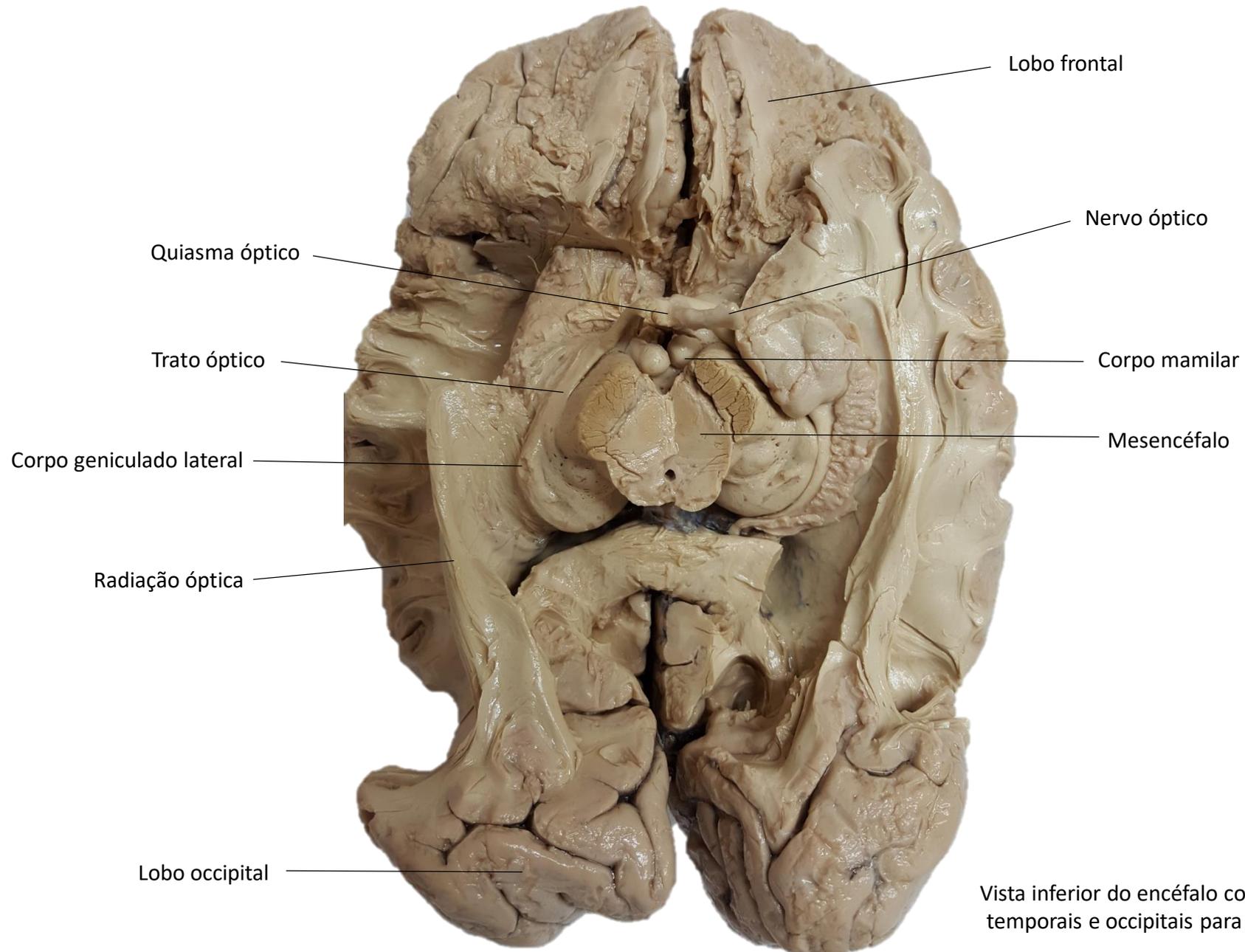
Fissura lateral

Vista lateral do encéfalo

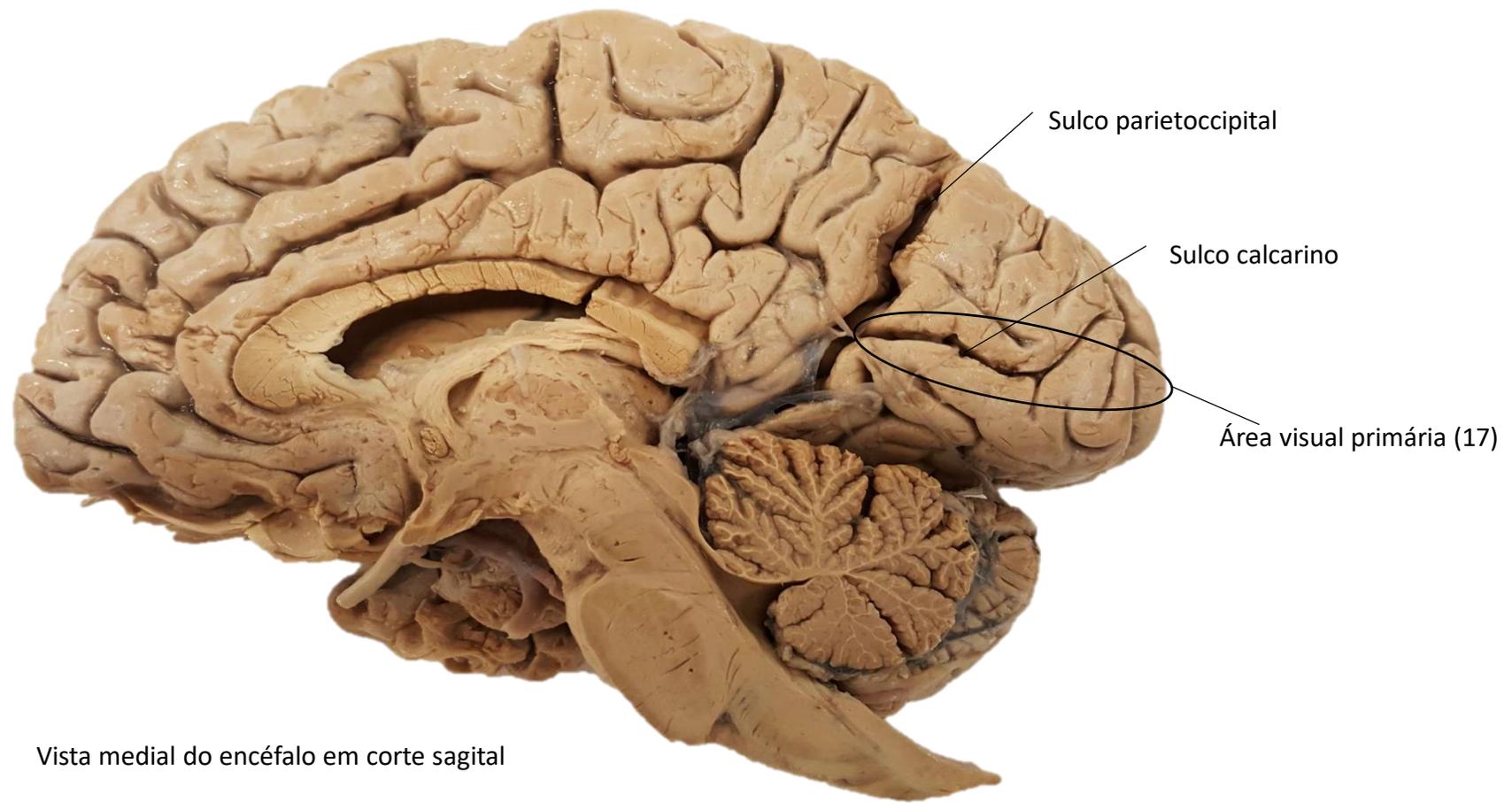
- Nervo óptico (II)
- Nervo oculomotor (III)
- Nervo troclear (IV)
- Nervo trigêmeo (V)
- Nervo abducente (VI)
- Nervo facial (VII)
- Nervo vestibulococlear (VIII)
- Nervo glossofaríngeo (IX)
- Nervo vago (X)
- Nervo acessório (XI)
- Nervo hipoglosso (XII)



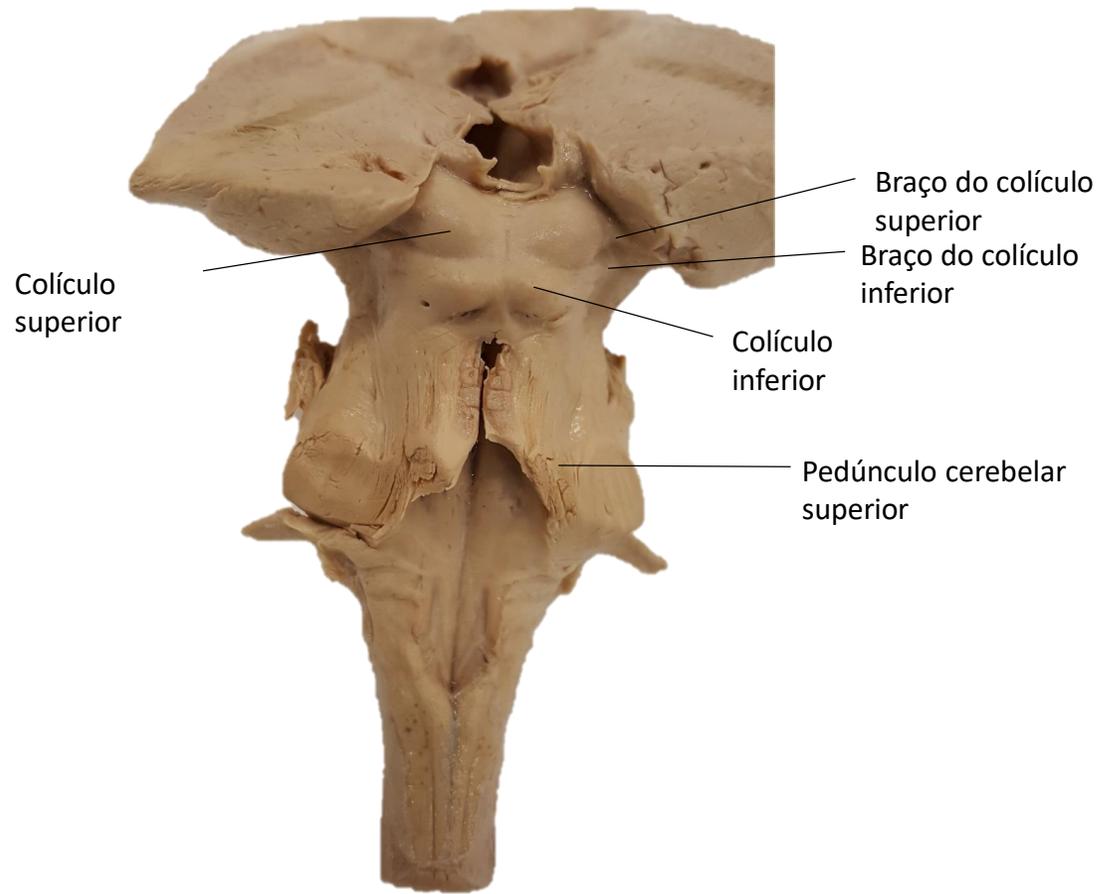
Vista inferior do encéfalo
(face anterior do tronco encefálico)



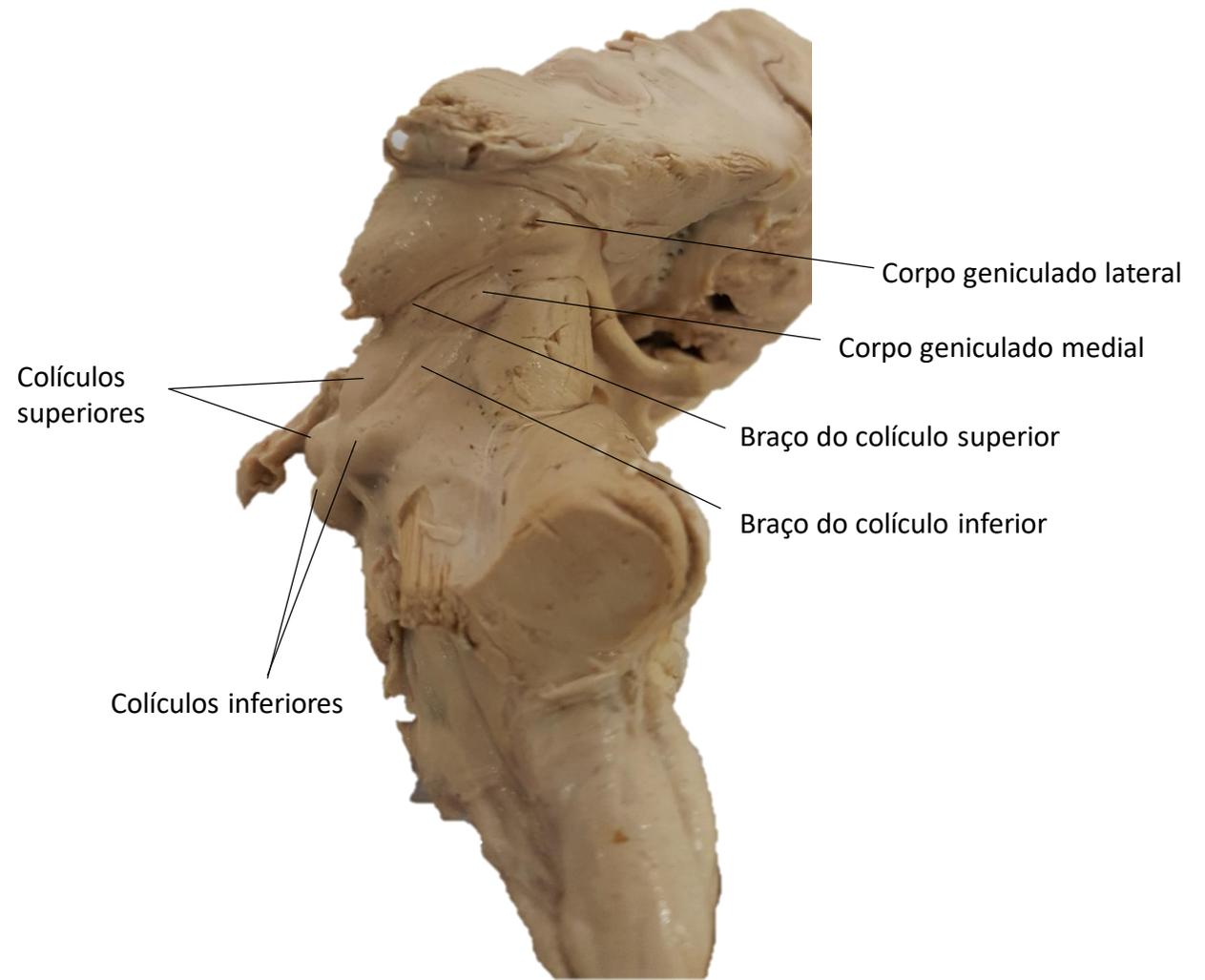
Vista inferior do encéfalo com dissecação dos lobos temporais e occipitais para exposição da via visual



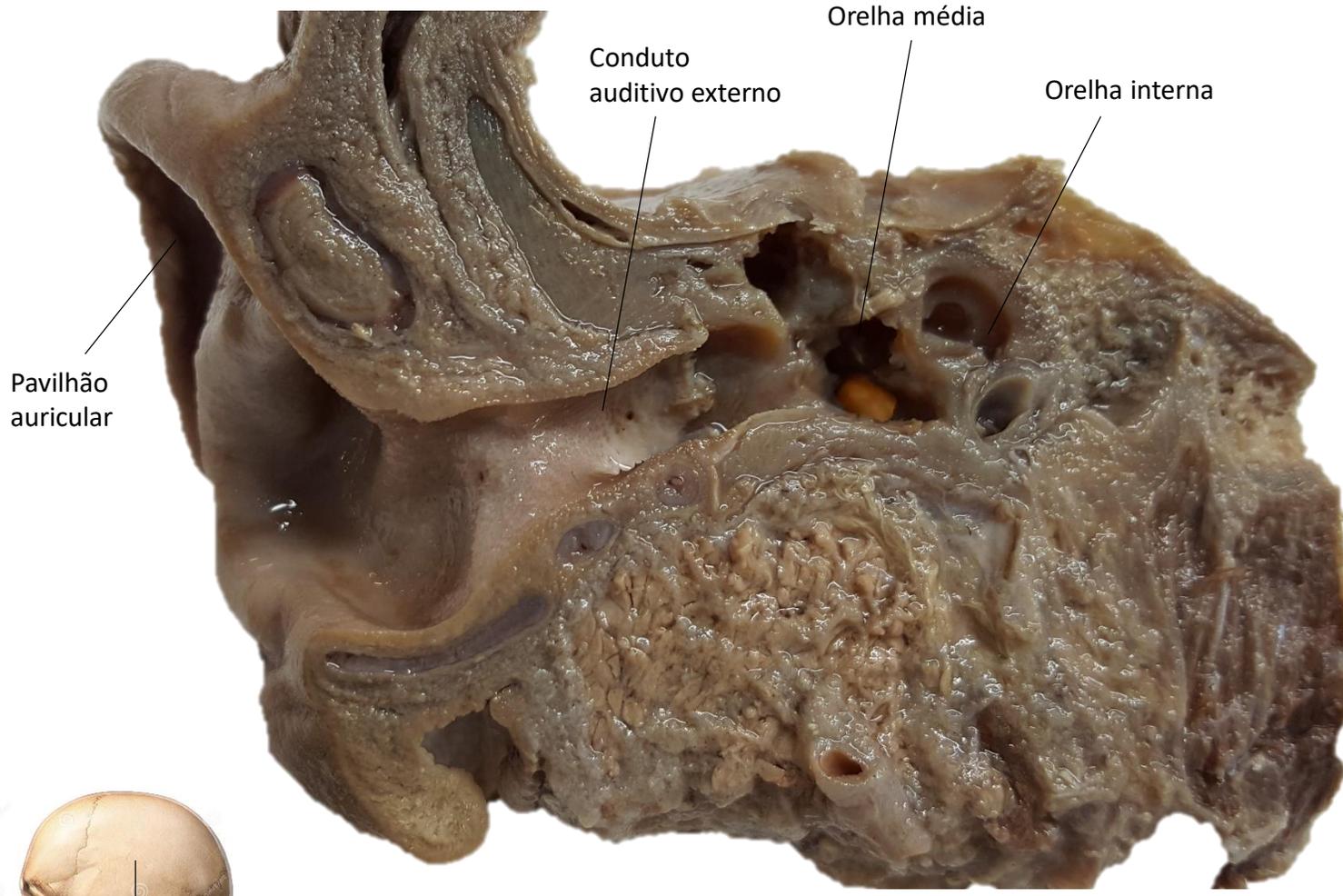
Vista medial do encéfalo em corte sagital



Vista posterior do tronco encefálico



Vista lateral do tronco encefálico



Pavilhão auricular

Conduto auditivo externo

Orelha média

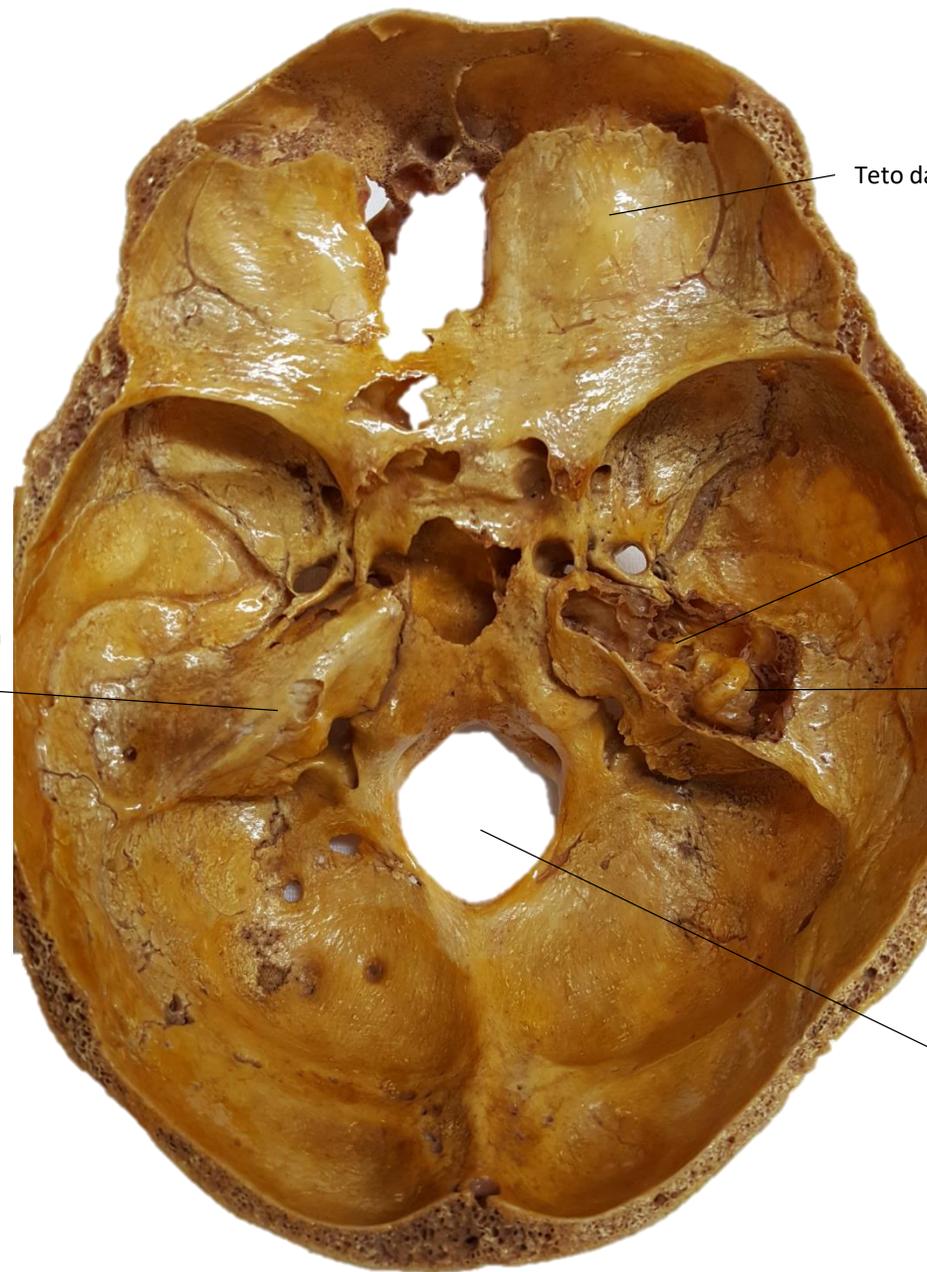
Orelha interna



Corte frontal da cabeça passando pelo conduto auditivo externo (osso temporal)



Ossículos da orelha média



Teto da órbita

Cóclea

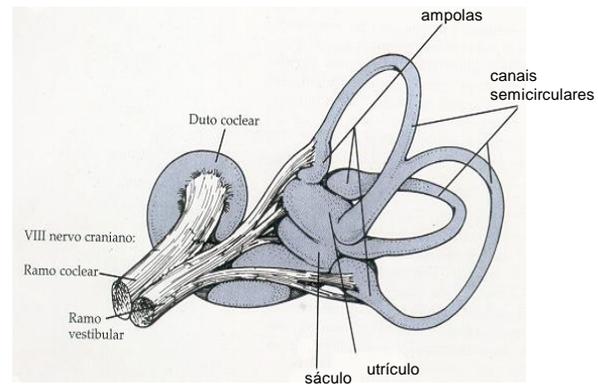
Canais
semicirculares

Forame magno

Porção petrosa
do osso
temporal

Vista superior da base do crânio

A parte petrosa o osso temporal foi aberta à direita para exposição do labirinto ósseo



ampolas

canais
semicirculares

Duto coclear

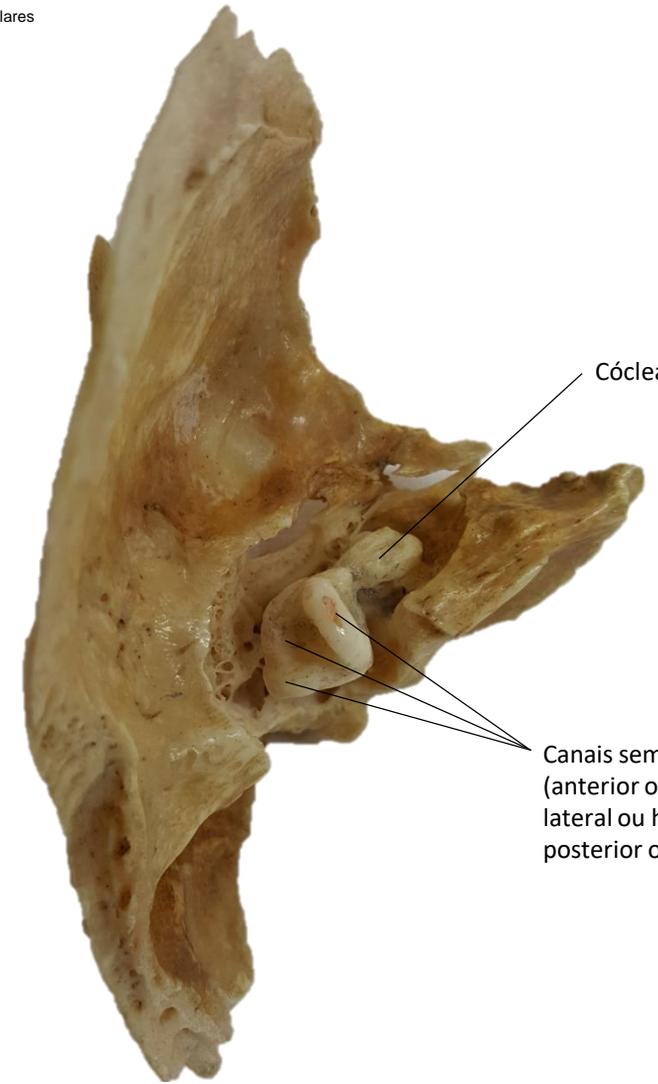
VIII nervo craniano:

Ramo coclear

Ramo
vestibular

sáculo

utrículo



Cóclea

Canais semicirculares
(anterior ou superior,
lateral ou horizontal e
posterior ou inferior)

Vista superior do osso temporal esquerdo

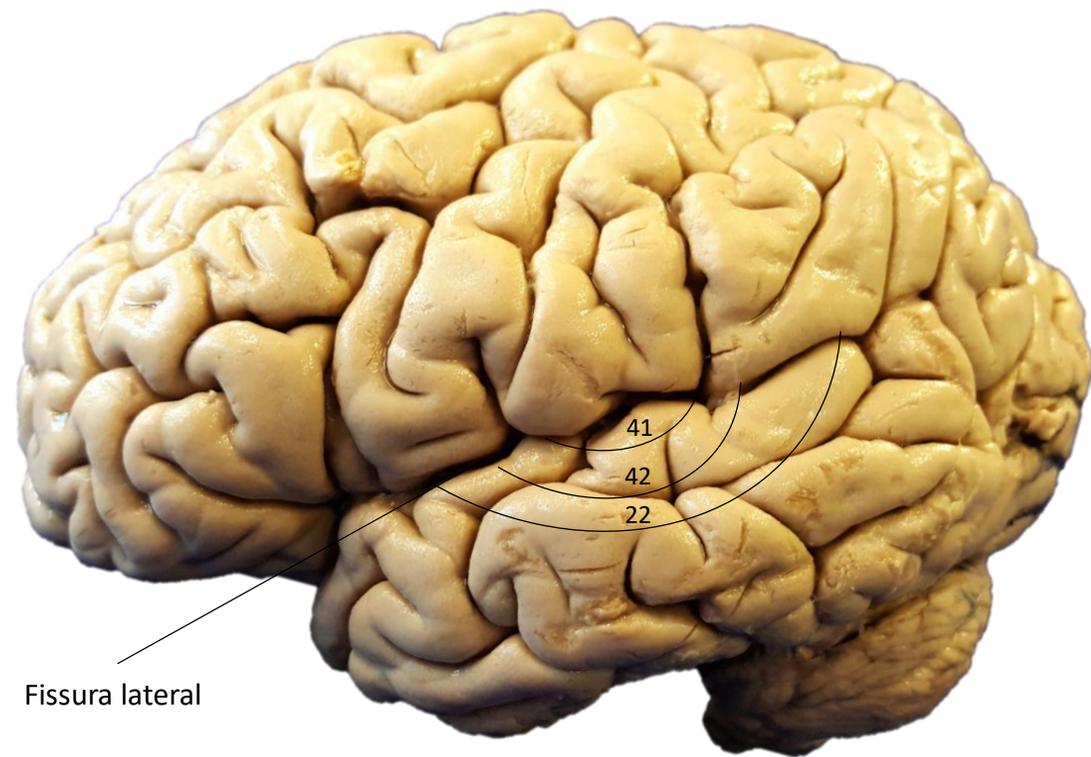
A parte petrosa foi aberta para exposição do labirinto ósseo



Vista lateral do encéfalo
(afastamento das bordas da
fissura lateral)

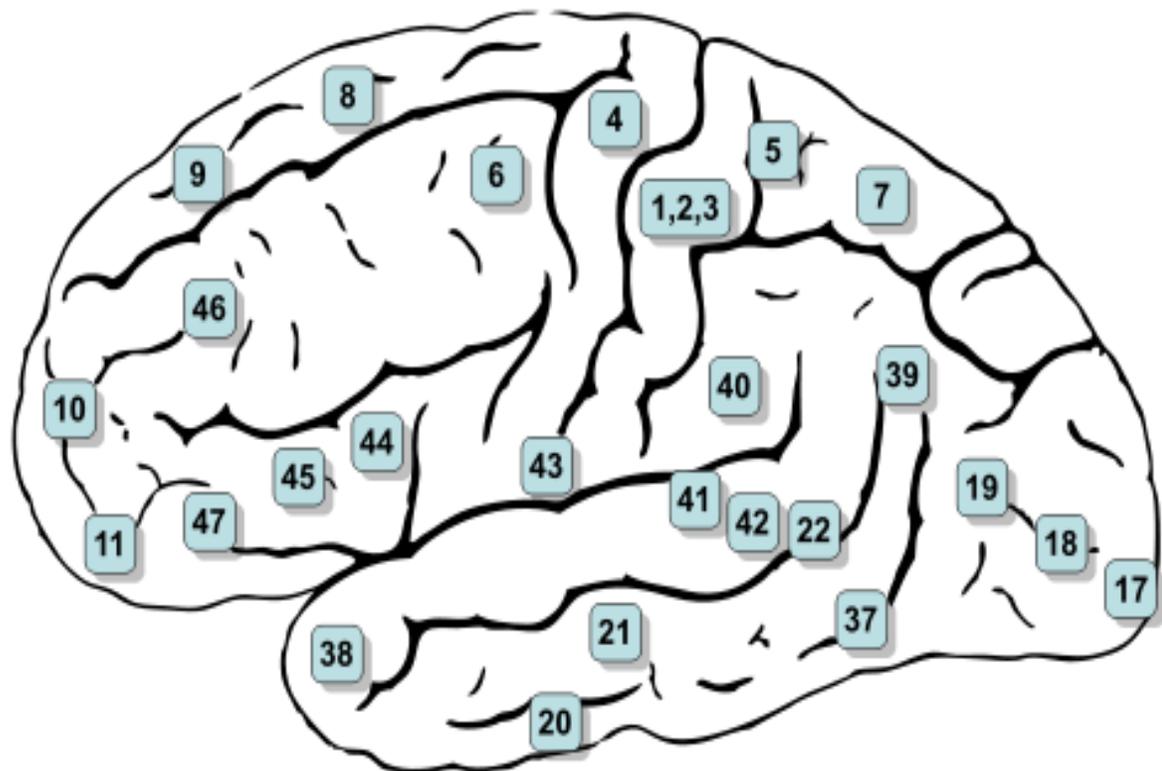
Córtex auditivo primário (área 41)

Áreas auditivas no lobo temporal

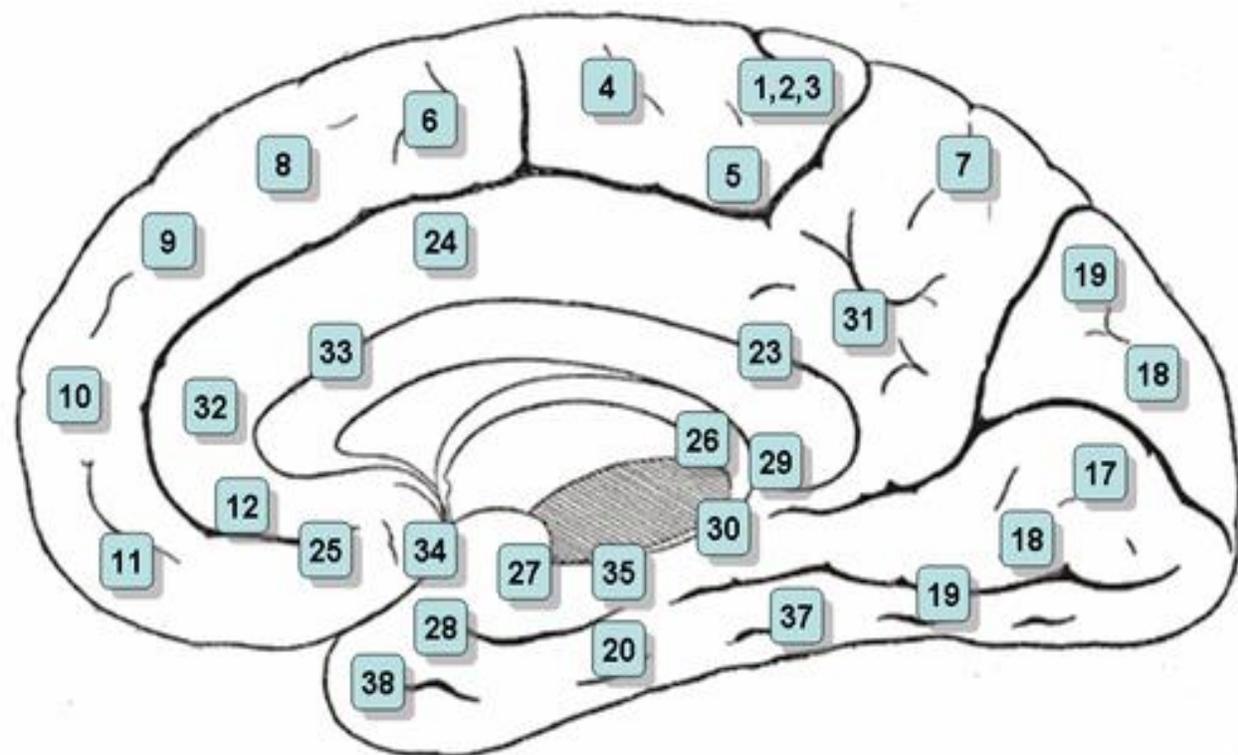


Fissura lateral

Vista lateral do encéfalo



Áreas de Brodmann – face lateral do cérebro



Áreas de Brodmann – face medial do cérebro



Vista lateral do encéfalo

Oração ao cadáver desconhecido:

"Ao curvar-te com a lâmina rija de teu bisturi sobre o cadáver desconhecido, lembra-te que este corpo nasceu do amor de duas almas; cresceu embalado pela fé e esperança daquela que em seu seio o agasalhou, sorriu e sonhou os mesmos sonhos das crianças e dos jovens; por certo amou e foi amado e sentiu saudades dos outros que partiram, acalentou um amanhã feliz e agora jaz na fria lousa, sem que por ele tivesse derramado uma lágrima sequer, sem que tivesse uma só prece. Seu nome só Deus o sabe; mas o destino inexorável deu-lhe o poder e a grandeza de servir a humanidade que por ele passou indiferente."

Karl Rokitansky (1876)

