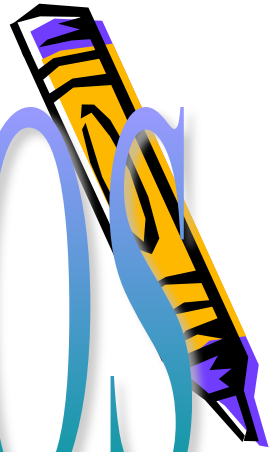
SISTEMUL NERVOS



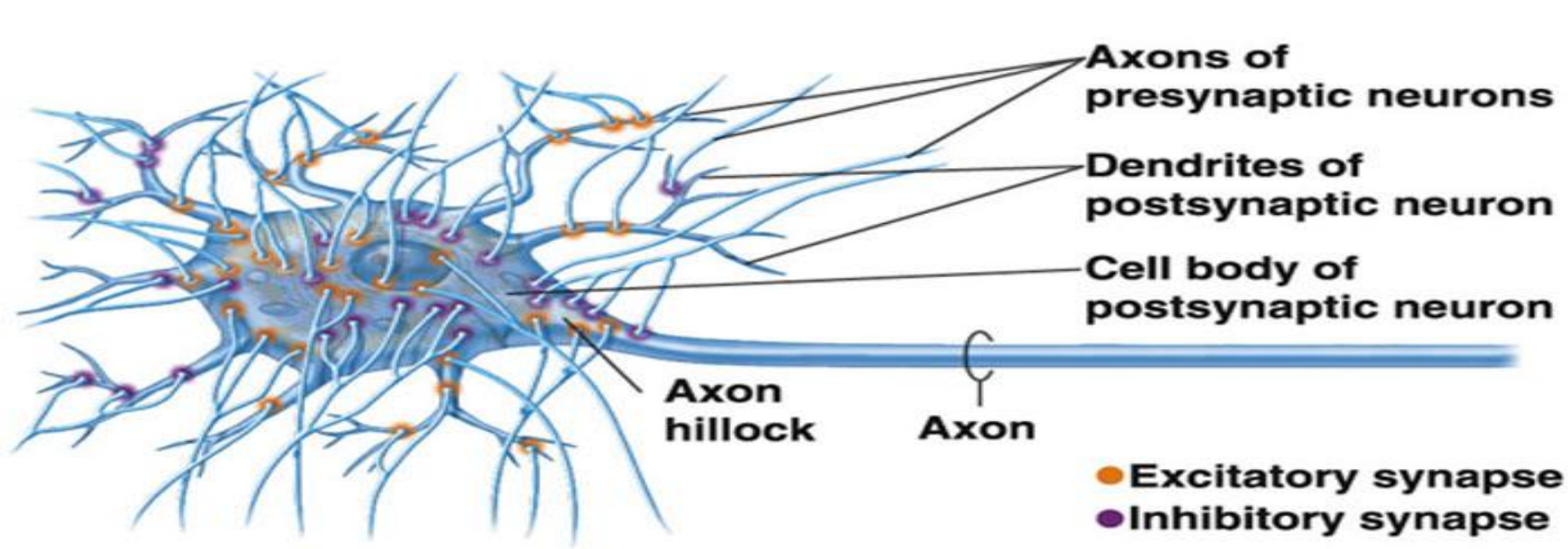
PROIECT REALIZAT DE GRUPA I
CLASA a XI a D, CNTV.

Claudiu : Localizarea, morfologia si anatomia organelor nervoase

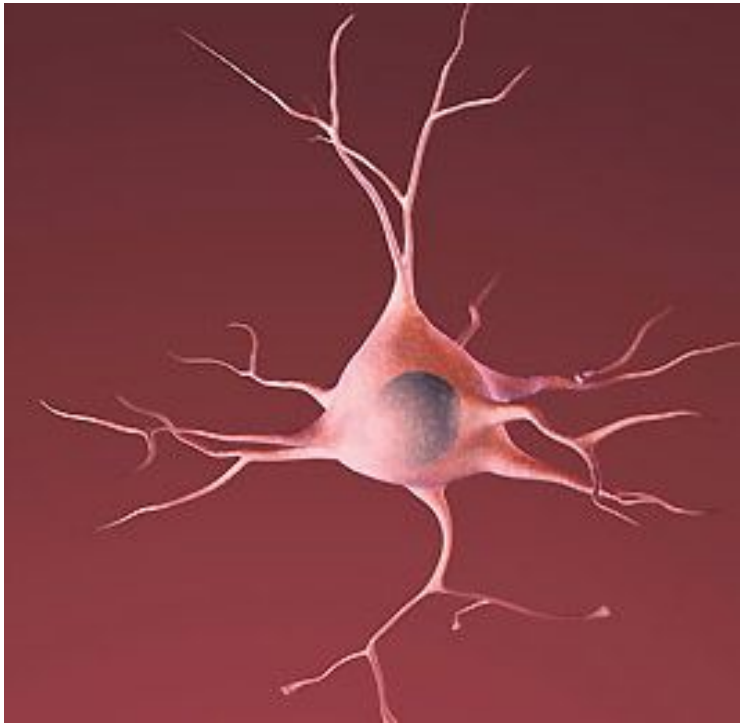
Lucia : Circuite neuronale

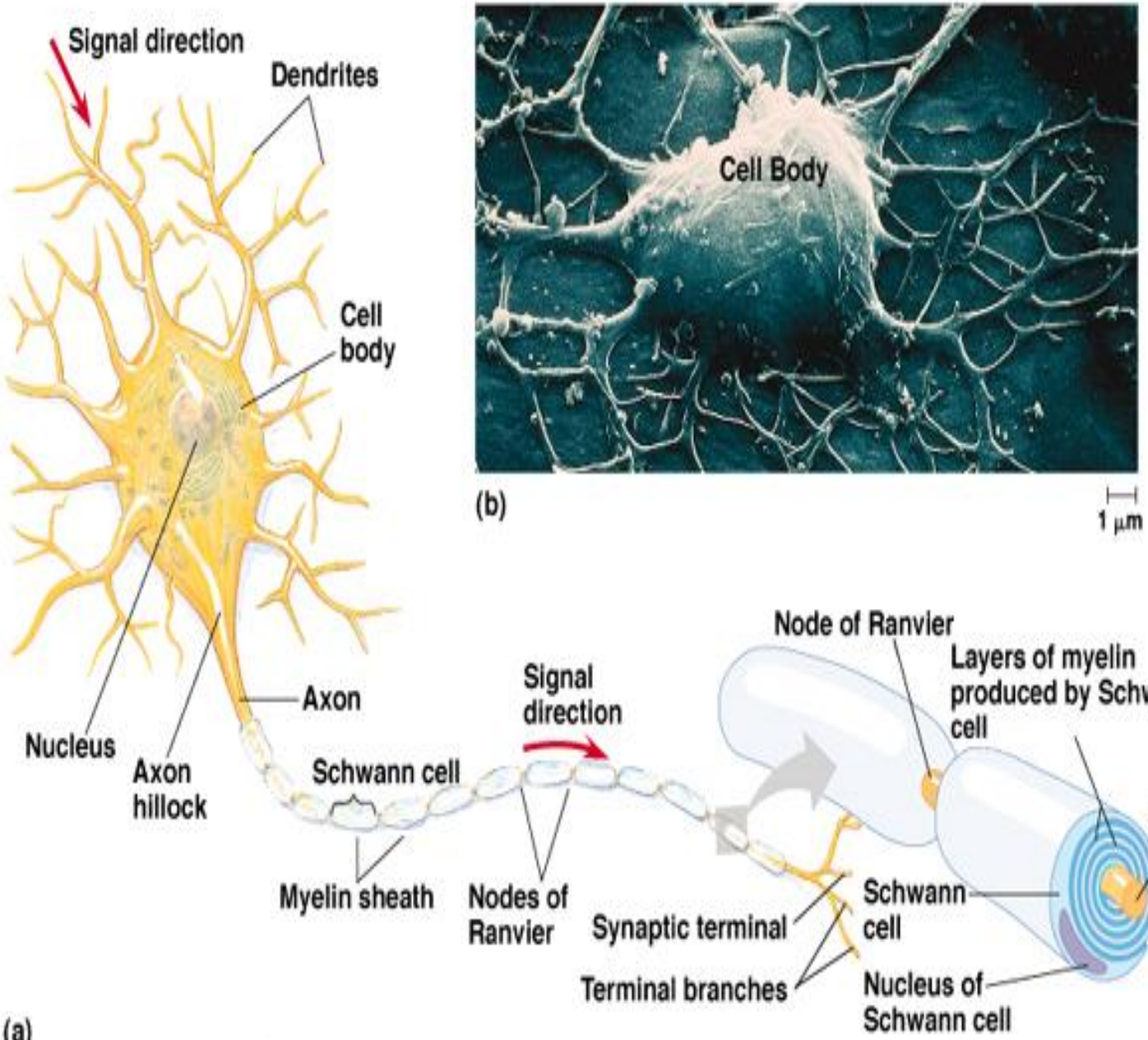
Adriana: Consecinte ale afectarii integritatii organelor nervoase

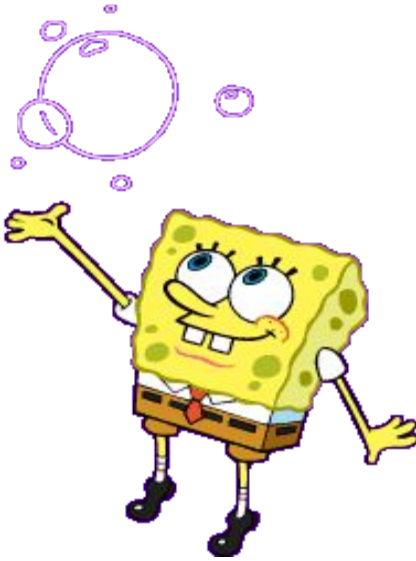
Localizarea, morfologia si anatomia organelor nervoase



Neuronul este unitatea morfo-functionala a sistemului nervos.







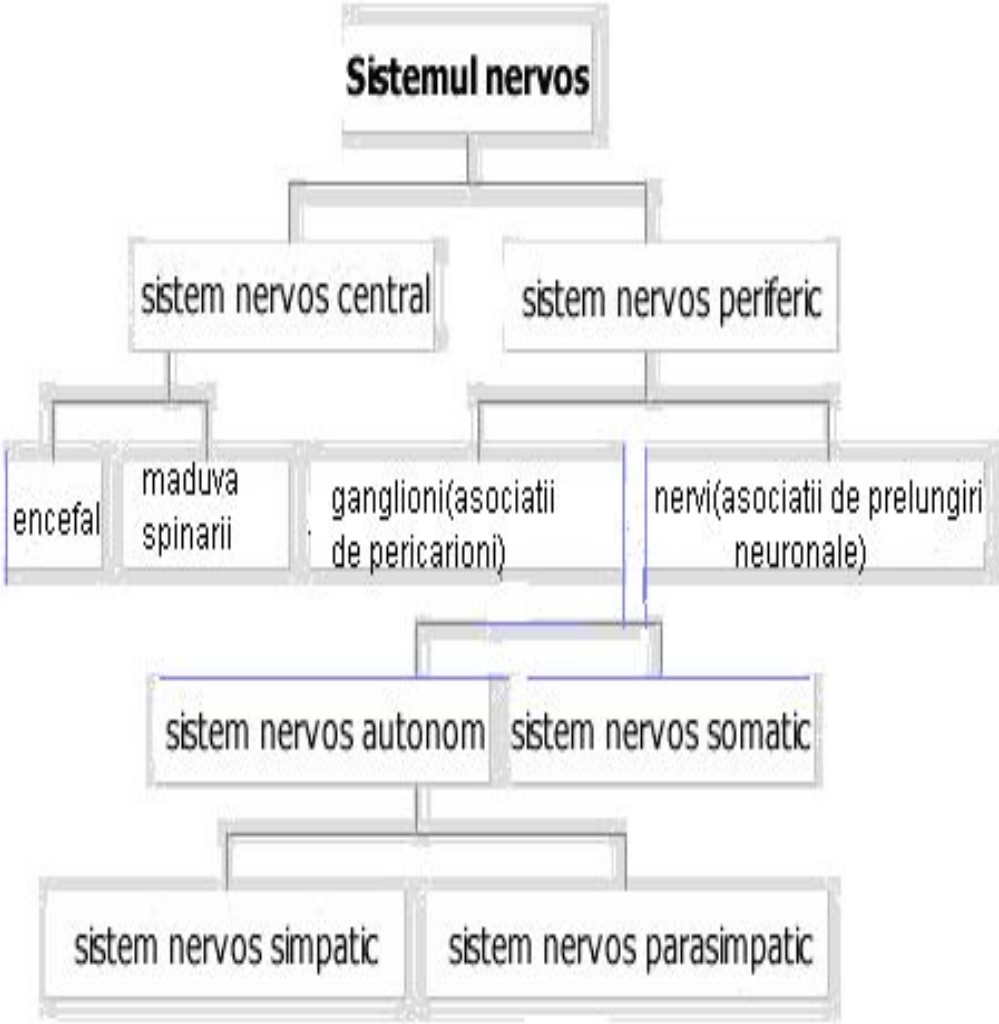
Sistemul nervos integreaza organismul in mediul sau de viata si coordoneaza activitatea organelor interne.

- In organele nervoase, neuronii formeaza retele imense, fiind conectati intre ei prin multiple legaturi sinaptice

Ce poti face cu cu 100 de miliarde de neuroni?

Asociatiile de neuroni formeaza structuri nervoase, organele sistemului nervos central si periferic.

Acestea au functii somatice si vegetative.

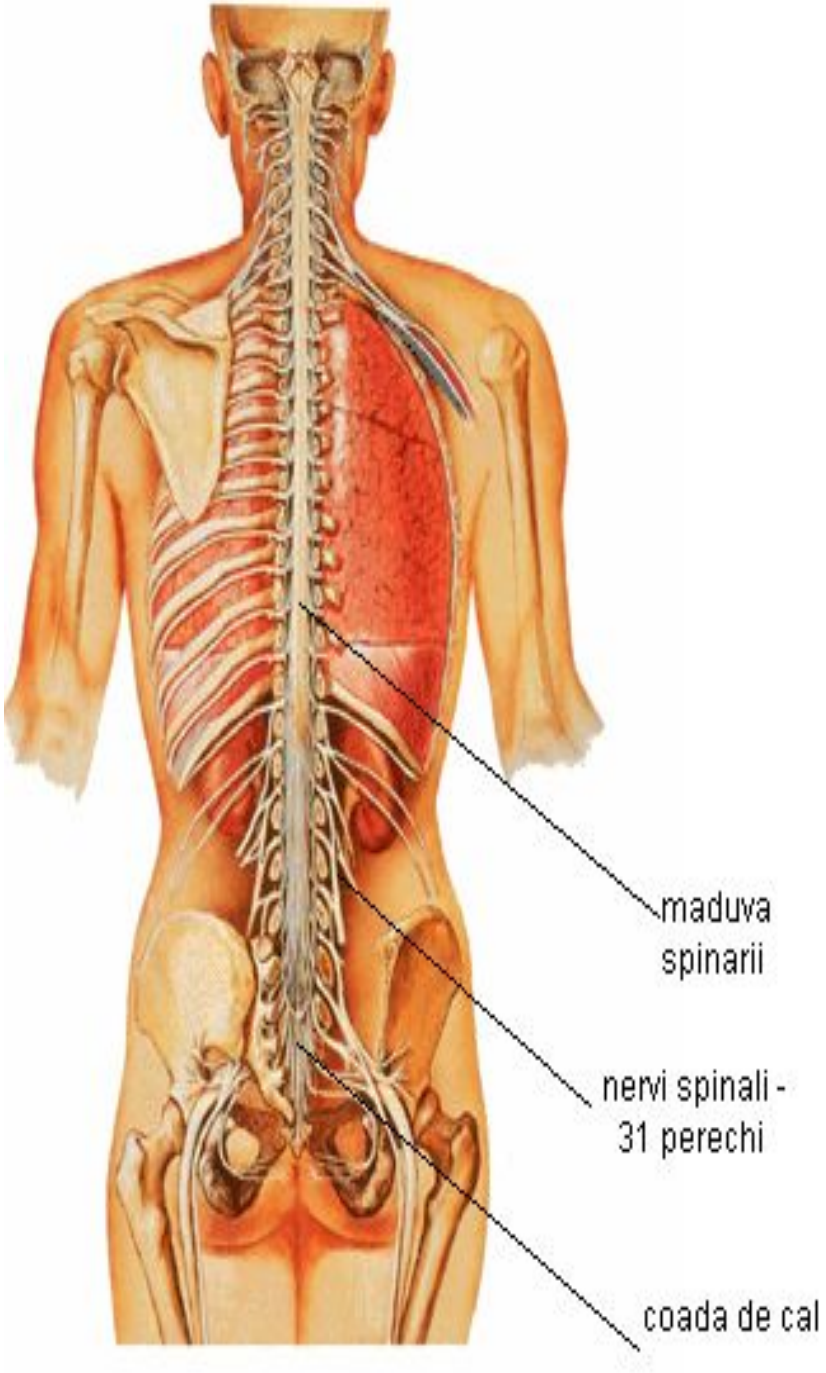


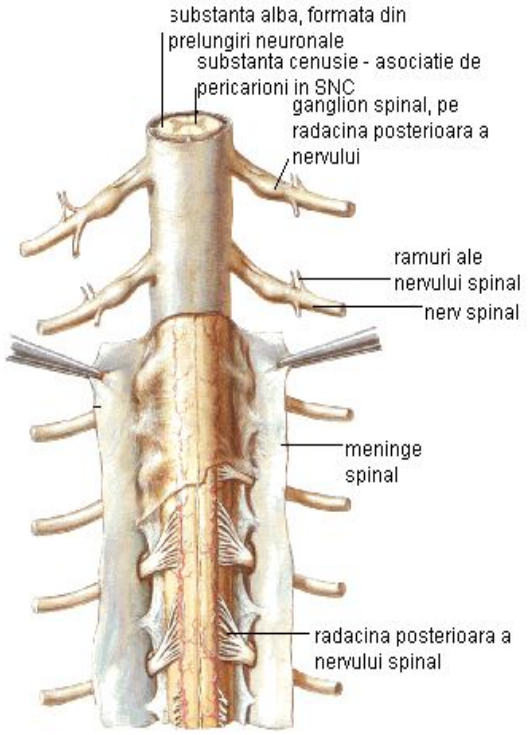
Maduva spinarii

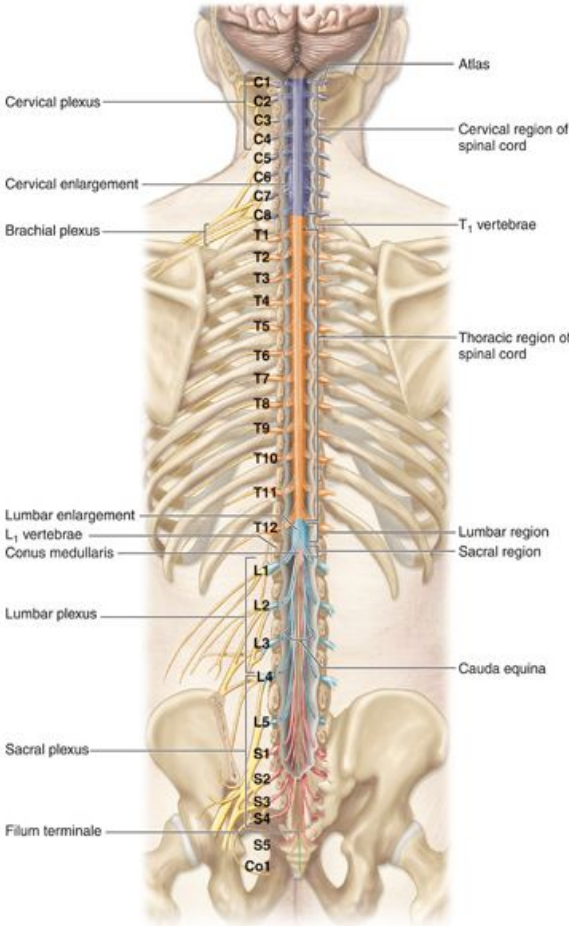
- se afla in canalul vertebral

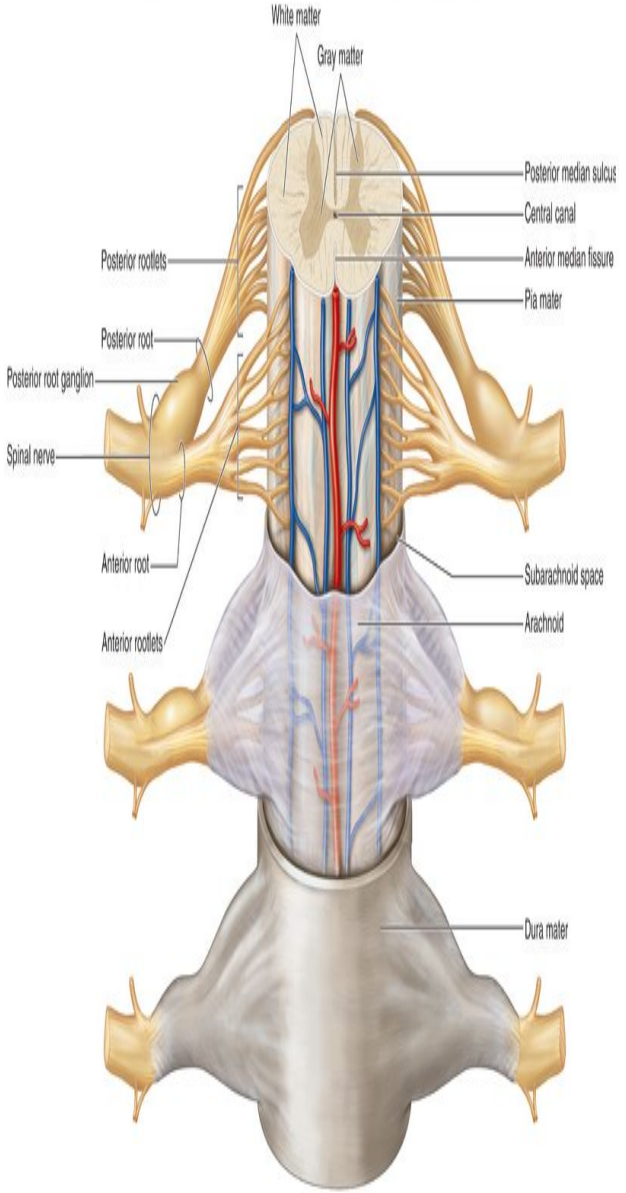
- este invelita de meninge,format din
  - duramater
  - arahnoida
  - piamater

- comunica cu receptorii si efectorii prin 31 de perechi de nervi spinali mixti.

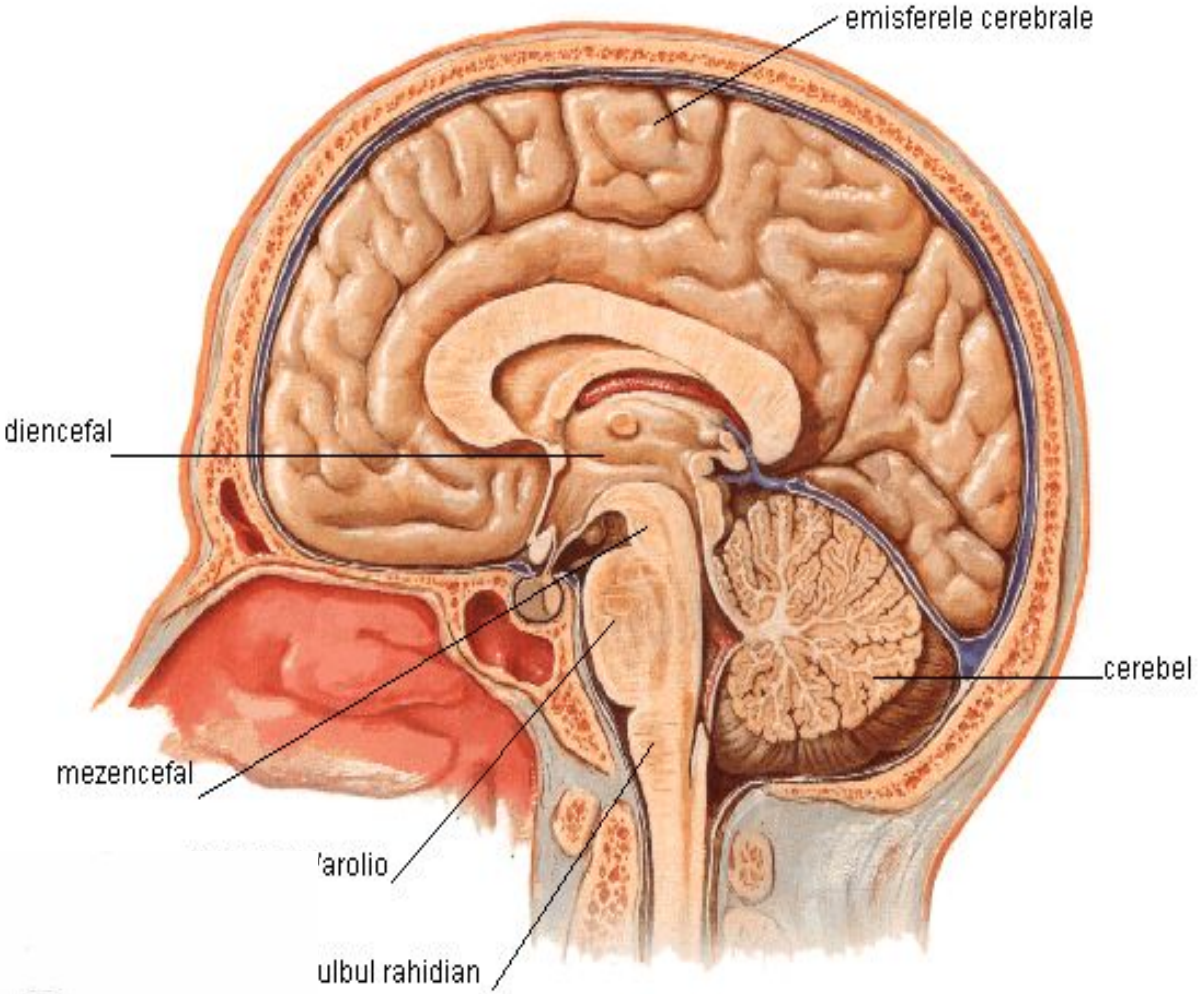



substanta alba, formata din prelungiri neuronale
substanta cenusie - asociatie de pericarioni in SNC
ganglion spinal, pe radacina posterioara a nervului
ramuri ale nervului spinal
nerv spinal
meninge spinal
radacina posterioara a nervului spinal


Atlas
Cervical plexus
C1
C2
C3
C4
C5
C6
C7
C8
Cervical region of spinal cord
Cervical enlargement
Brachial plexus
T1
T2
T3
T4
T5
T6
T7
T8
T9
T10
T11
T12
T_1 vertebrae
Thoracic region of spinal cord
Lumbar enlargement
L_1 vertebrae
Conus medullaris
Lumbar region
Sacral region
L1
L2
L3
L4
L5
Lumbar plexus
Cauda equina
Sacral plexus
S1
S2
S3
S4
S5
Co1
Filum terminale


White matter
Gray matter
Posterior median sulcus
Central canal
Anterior median fissure
Pia mater
Posterior rootlets
Posterior root
Posterior root ganglion
Spinal nerve
Anterior root
Anterior rootlets
Subarachnoid space
Arachnoid
Dura mater

Encefalul


emisferele cerebrale
diencefal
cerebel
mezencefal
'arolio
ulbul rahidian

- Toate organele nevraxului sunt formate din :

- substanta alba -implicata in conducerea nervoasa
  situata - periferic maduva spinarii
  - periferic si la interior in trunchiul cerebral si diencefal
  - la interior in cerebel si emisferele cerebrale

- substanta cenusie, ce asigura functia reflexa
  situata – la interior in maduva, trunchi, diencefal
  - periferic si la interior in cerebel si emisferele cerebrale

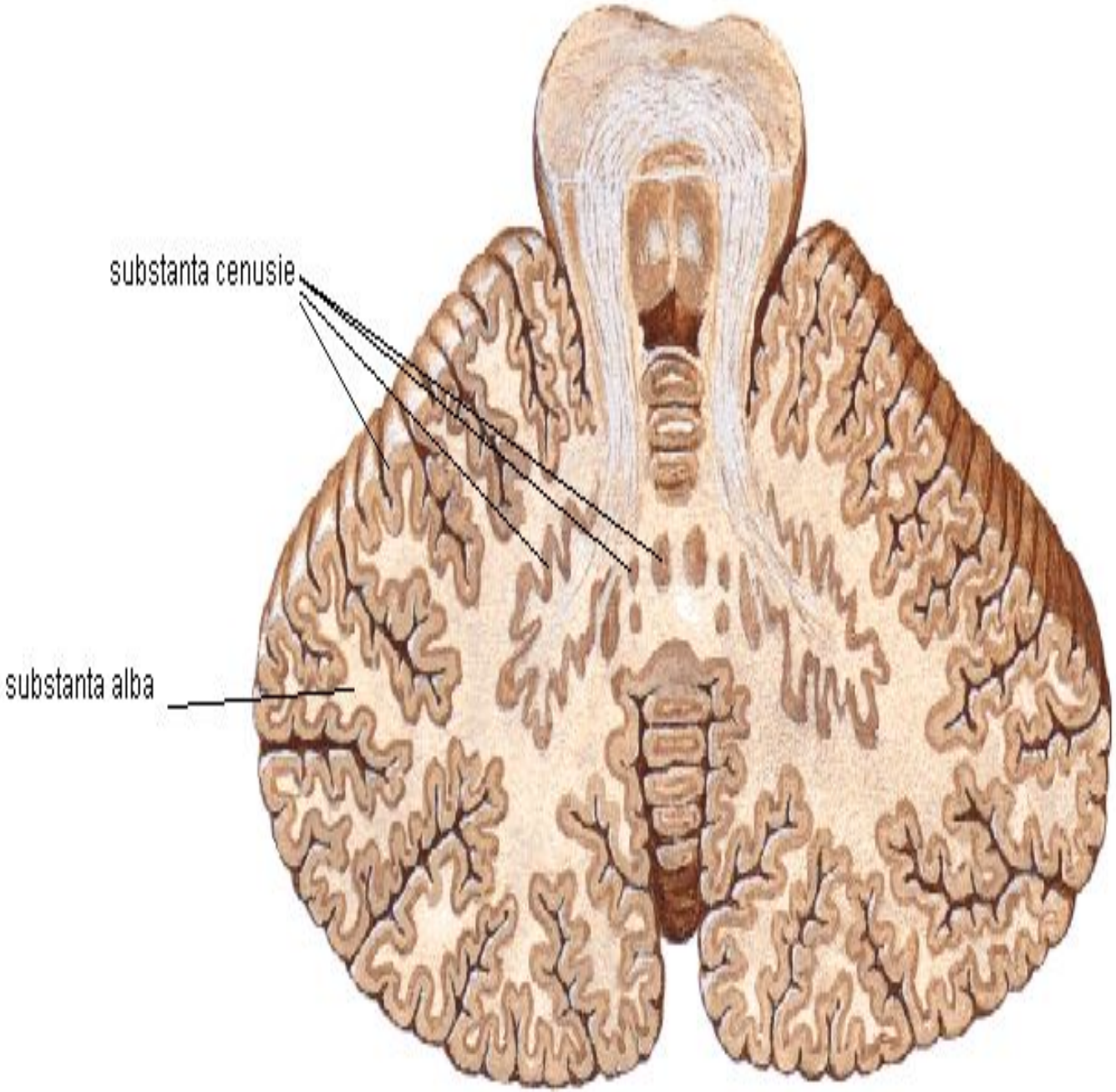
Măduva spinării

substanta cenusie, cu 3 perechi de coarne

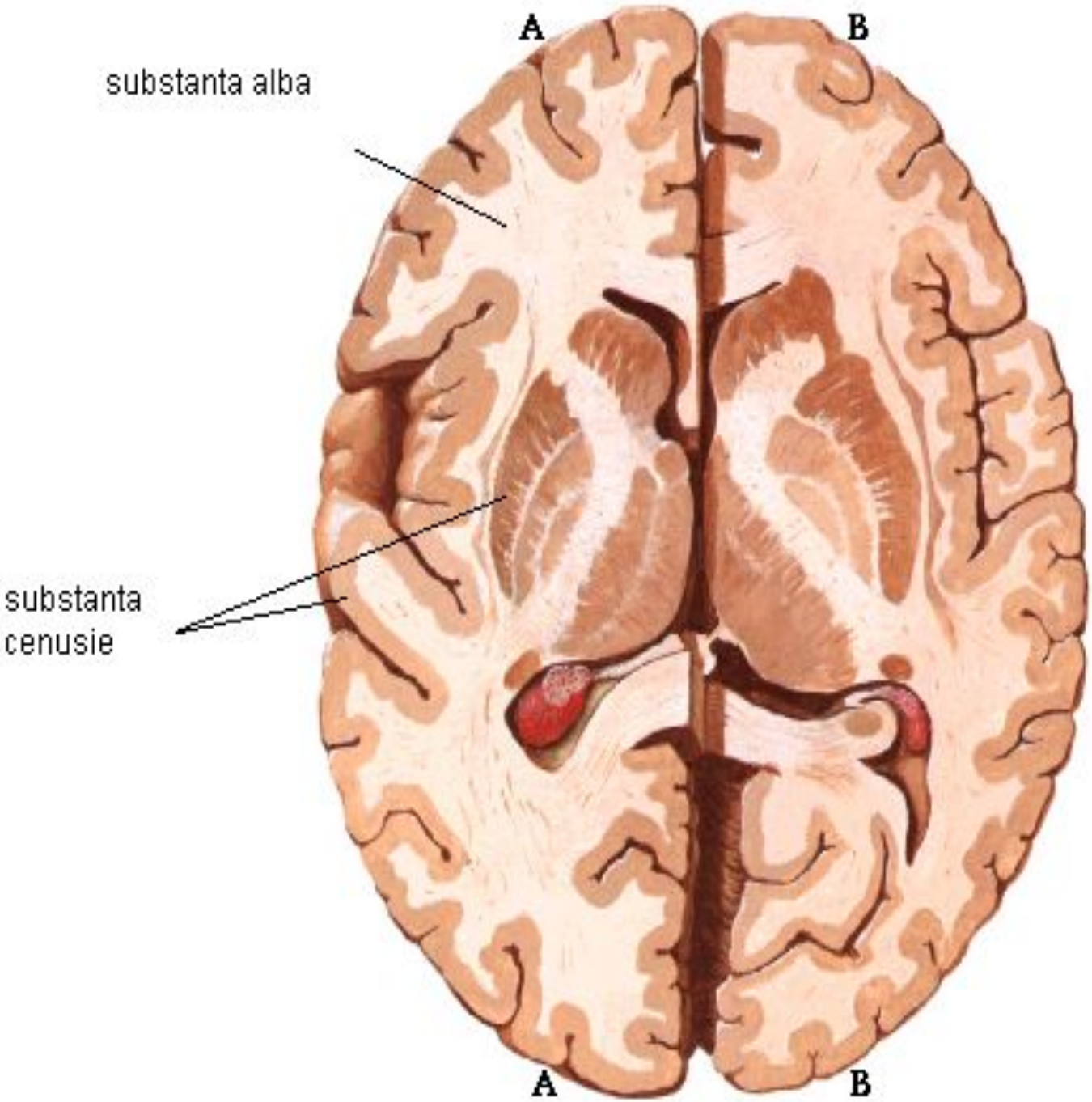
substanta alba, cu 3 perechi de cordoane

Trunchiul cerebral

Cerebel



Emisferele cerebrale



Sistemul nervos vegetativ

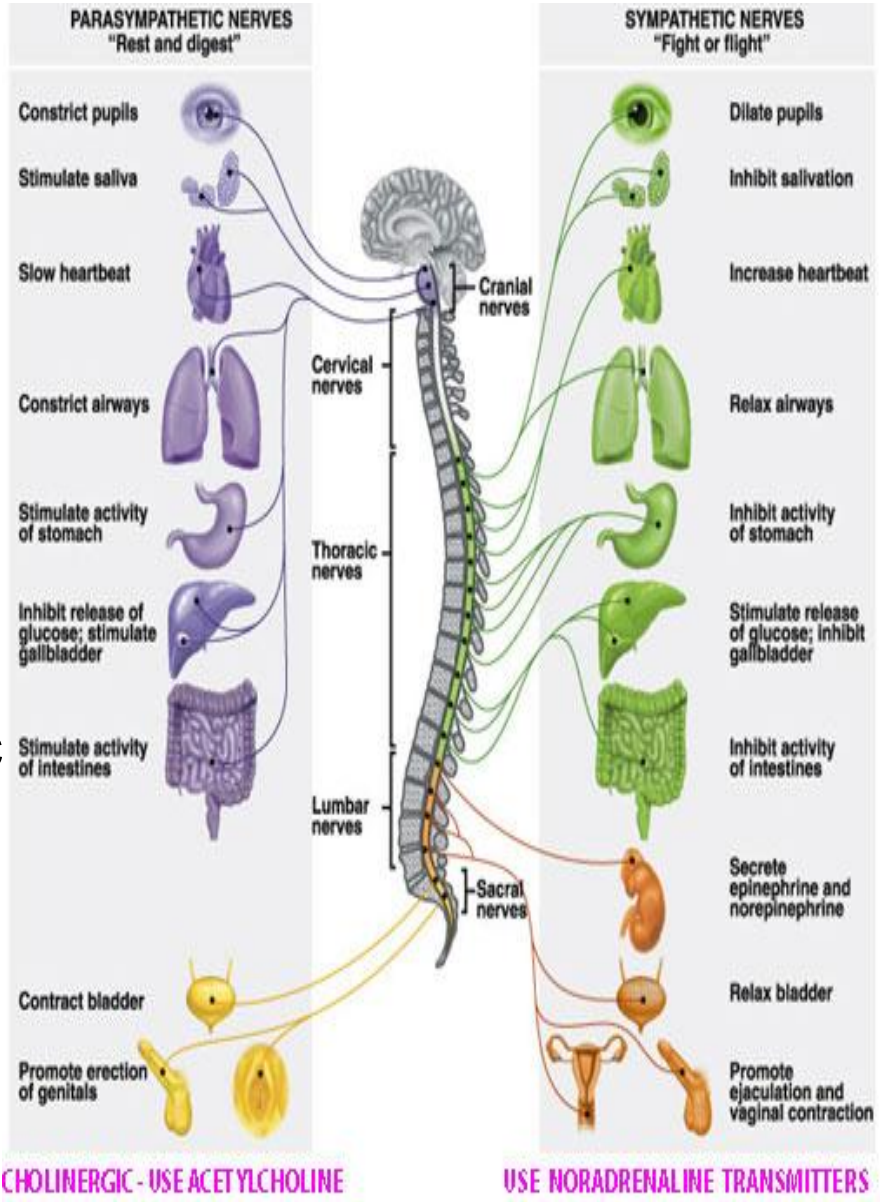
Are 2 componente: simpatica si parasimpatica.

Componenta periferica este reprezentata

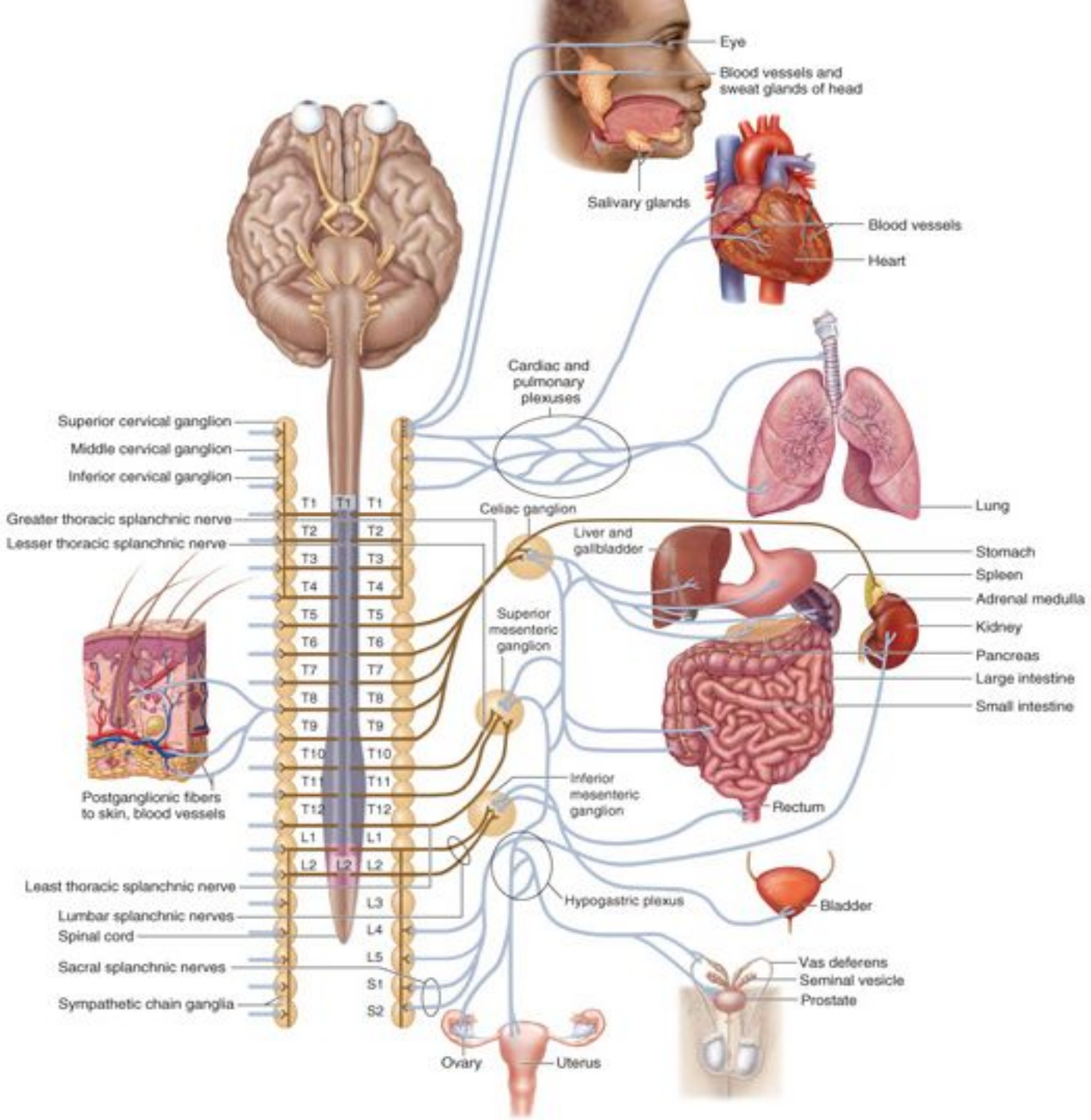
prin nervi vegetativi si ganglioni vegetativi.

Componenta centrala apartine :

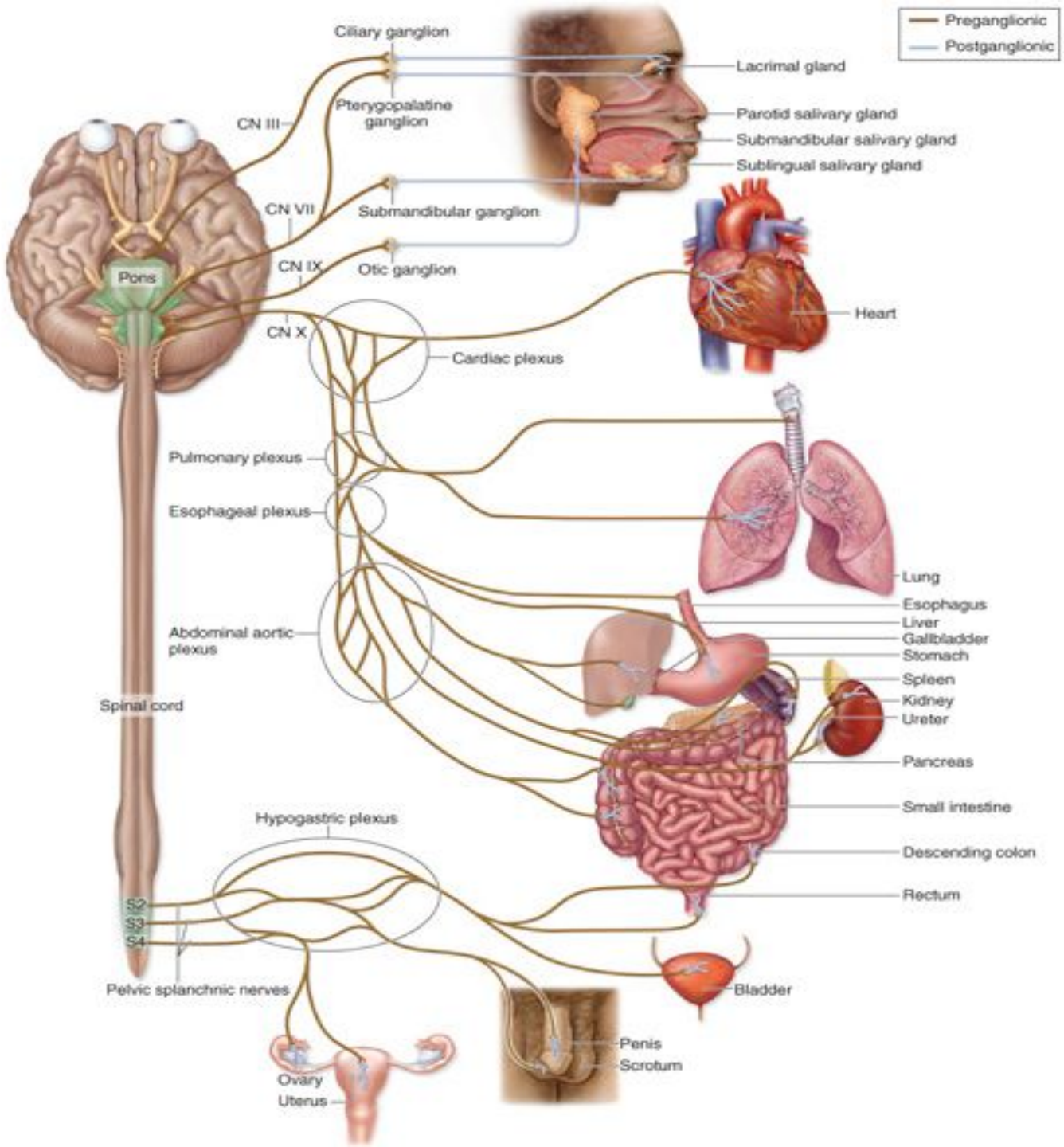
- maduvei $C_8 – L_2$ pentru simpatic
- trunchiului cerebral si maduvei $S_2 – S_4$ pentru parasimpatic



SNV Simpatic



SNV Parasimpatic



• Centrul de coordonare a activitatii SNV se afla in hipotalamus (diencefal), organ nervos ce functioneaza in stransa corelatie cu sistemul limbic al scoartei cerebrale.

Circuite neuronale

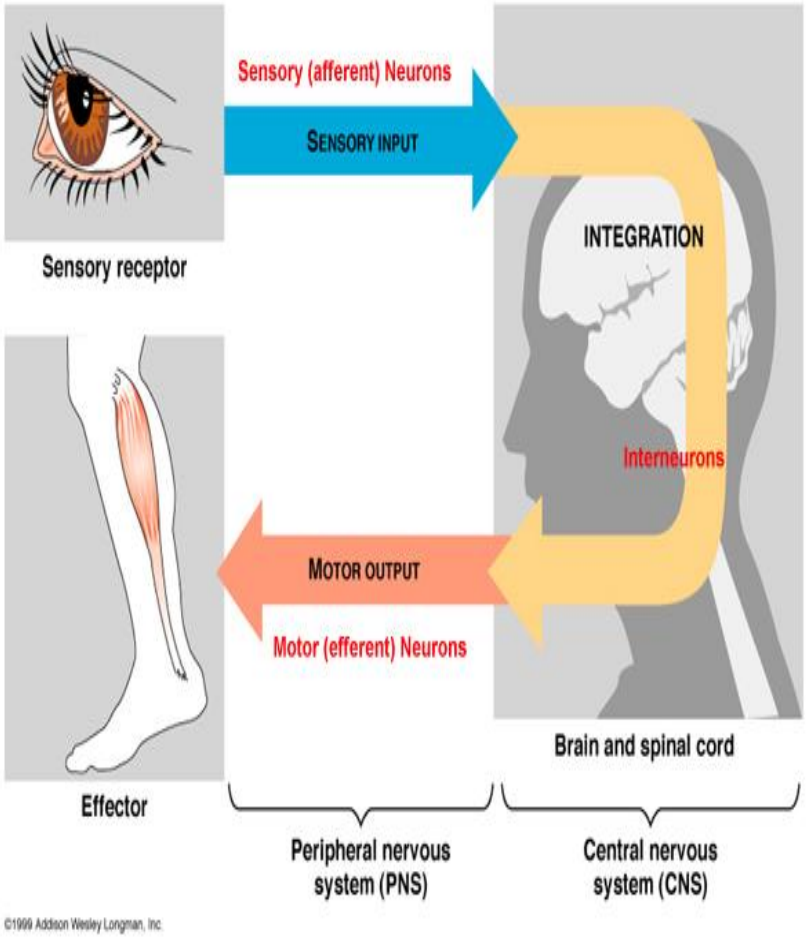
Circutele functionale neuronale sunt reprezentate de caile de substanta alba extra si intranevraxiale.

Caile extranevraxiale includ
31 de perechi de nervi spinali mixti
si
12 perechi de nervi cranieni:
3 senzitivi, 5 motori si 4 mixti.

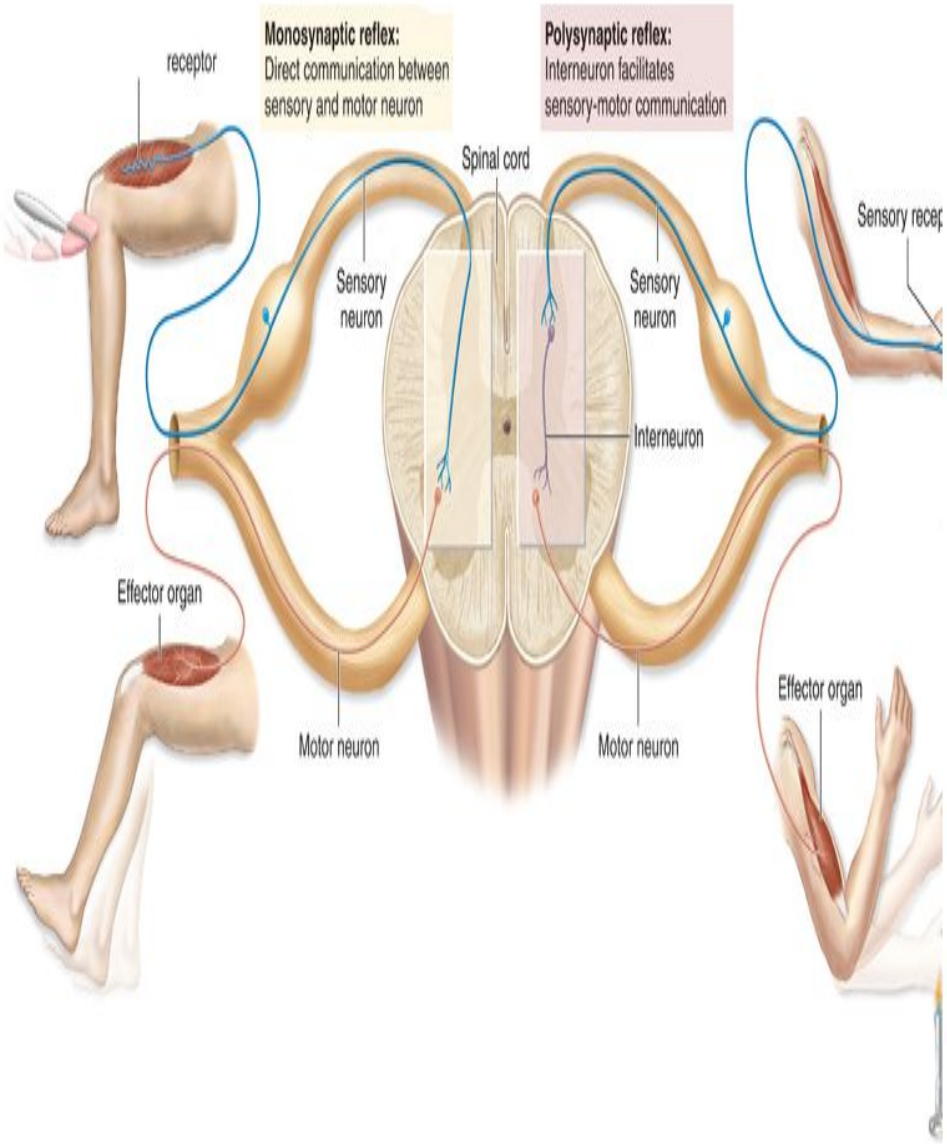
Nervii contin dendrite si axoni, protejati de tesut conjunctiv
si
conecteaza nevraxul cu receptorii si efectorii.

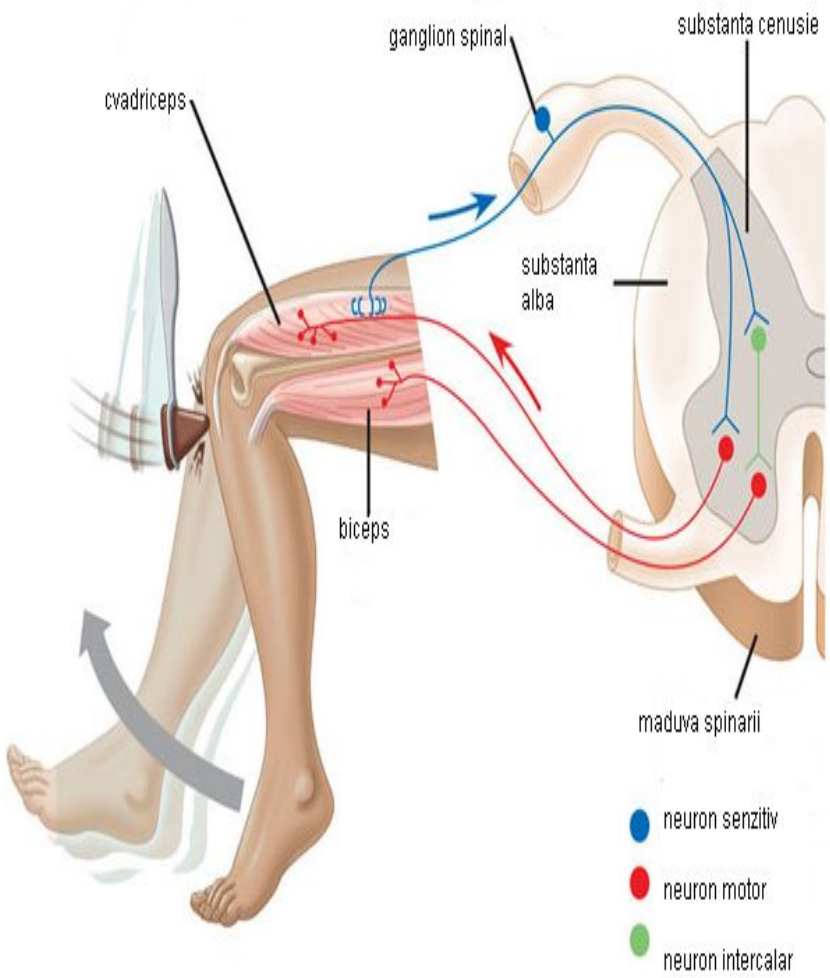
Arcul reflex este baza anatomica a actului reflex si include:

- Receptorul
- Calea aferenta(senzitiva)
- Centrul nervos intranevraxial
- Calea eferenta (motorie)
- Efectorul (muschi sau glanda)



Arcul reflex somatic

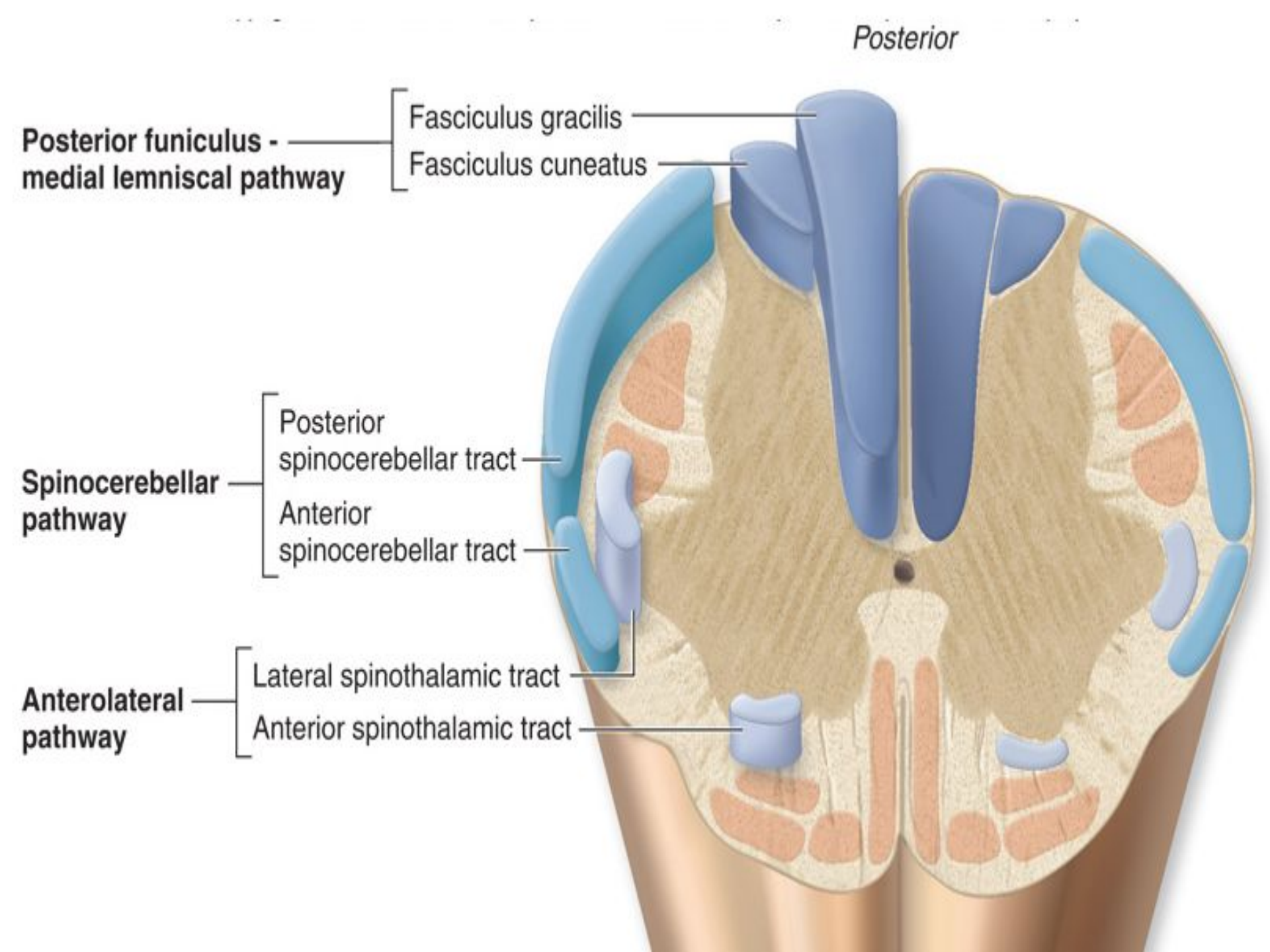




- Intranevraxial , circuitele neuronale sunt reprezentate de tracturile nervoase, ce formeaza cai:
  - scurte(de asociatie)
  - lungi(comisurale si de proiectie)

Caile ascendente sunt:

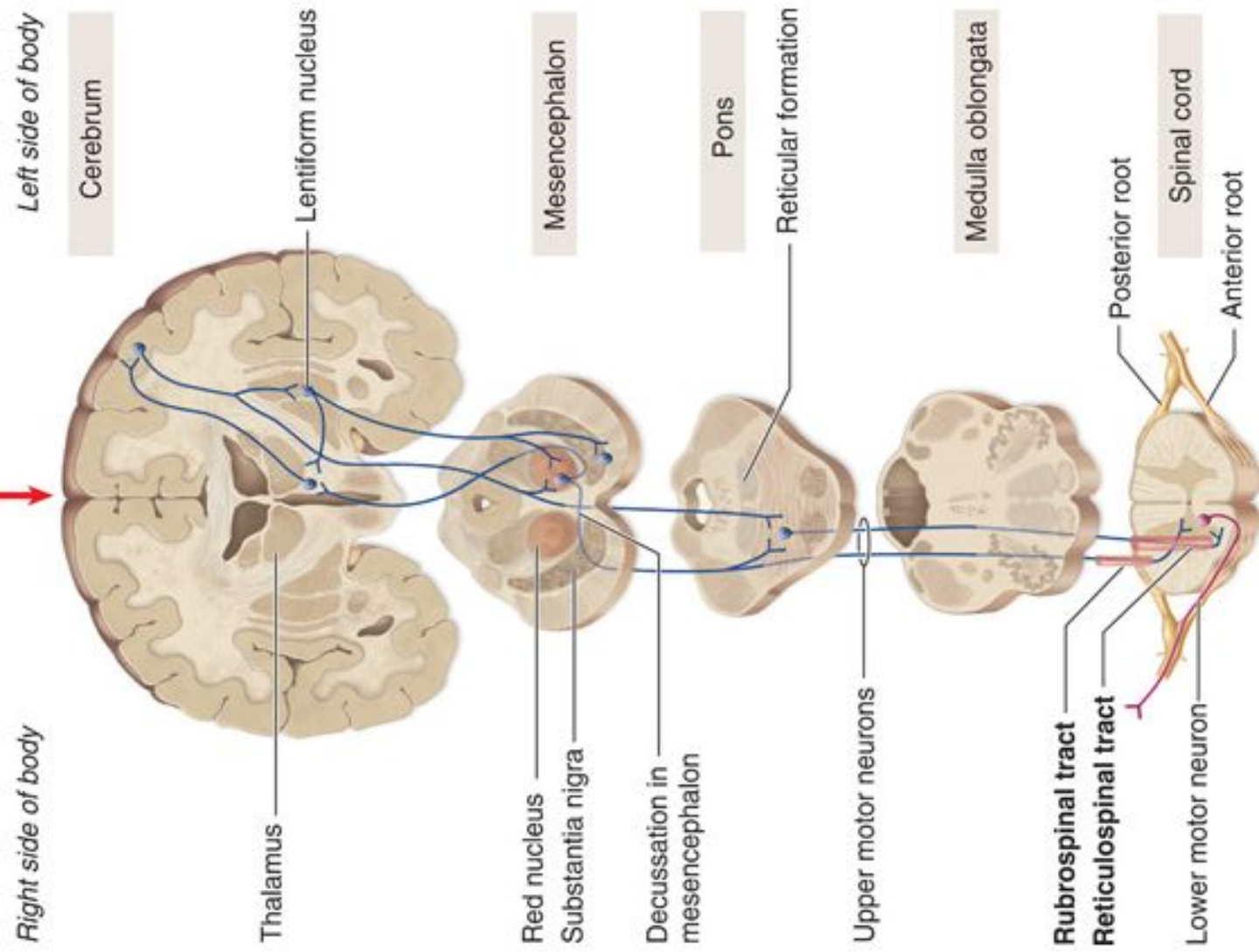
- Exteroceptive : tactile, termice, dureroase
- Proprioceptive : constiente si inconstiente
- Viscероceptive : spino-talamice sau in SR


Posterior
Posterior funiculus - medial lemniscal pathway
Fasciculus gracilis
Fasciculus cuneatus
Spinocerebellar pathway
Posterior spinocerebellar tract
Anterior spinocerebellar tract
Anterolateral pathway
Lateral spinothalamic tract
Anterior spinothalamic tract

extrapiramidale

si

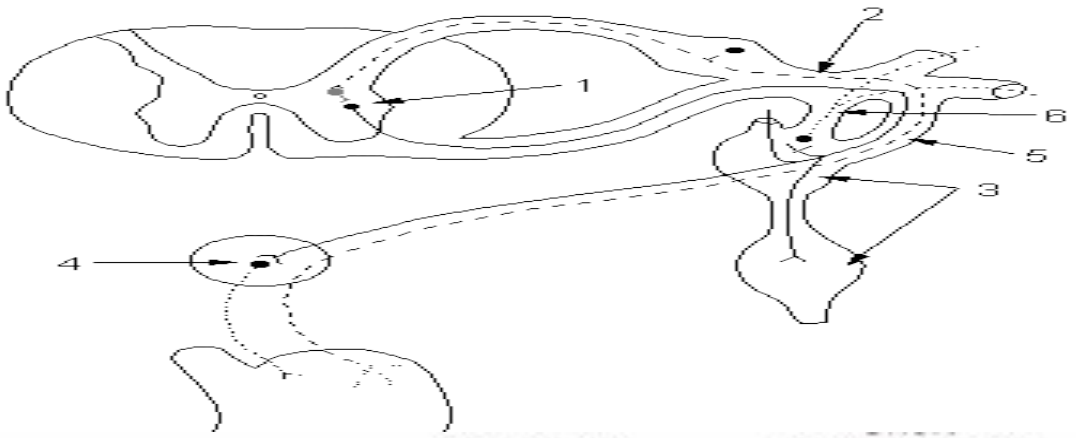
piramidale



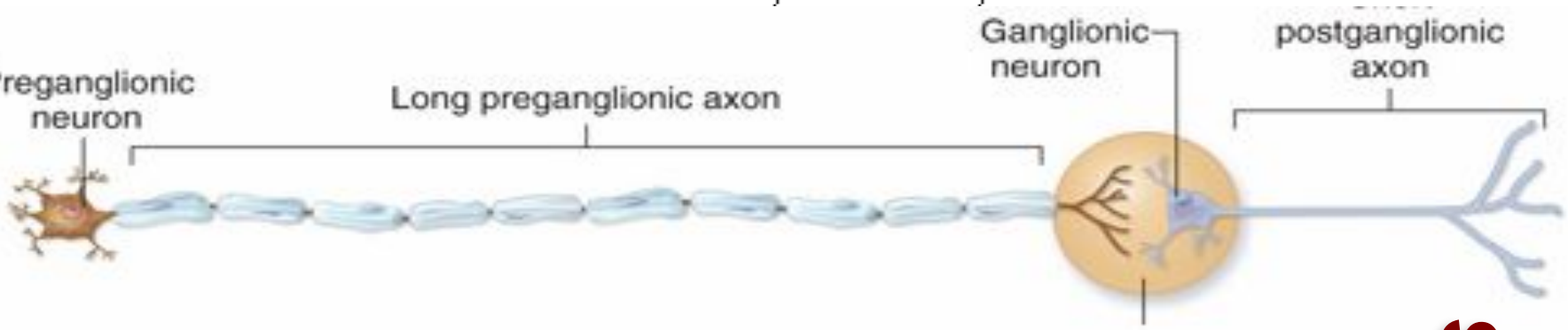
Cai descendente

Arcul reflex vegetativ

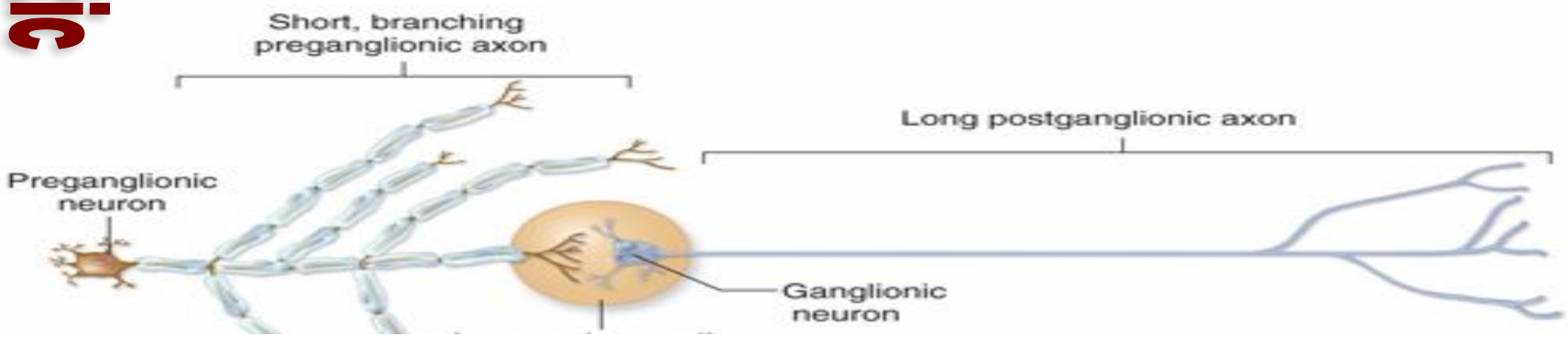
1. corn lateral,
2. nerv spinal,
3. ganglion paravertebral,
4. ganglion prevertebral,
5. ram comunicant alb,
6. ram comunicant cenusiu



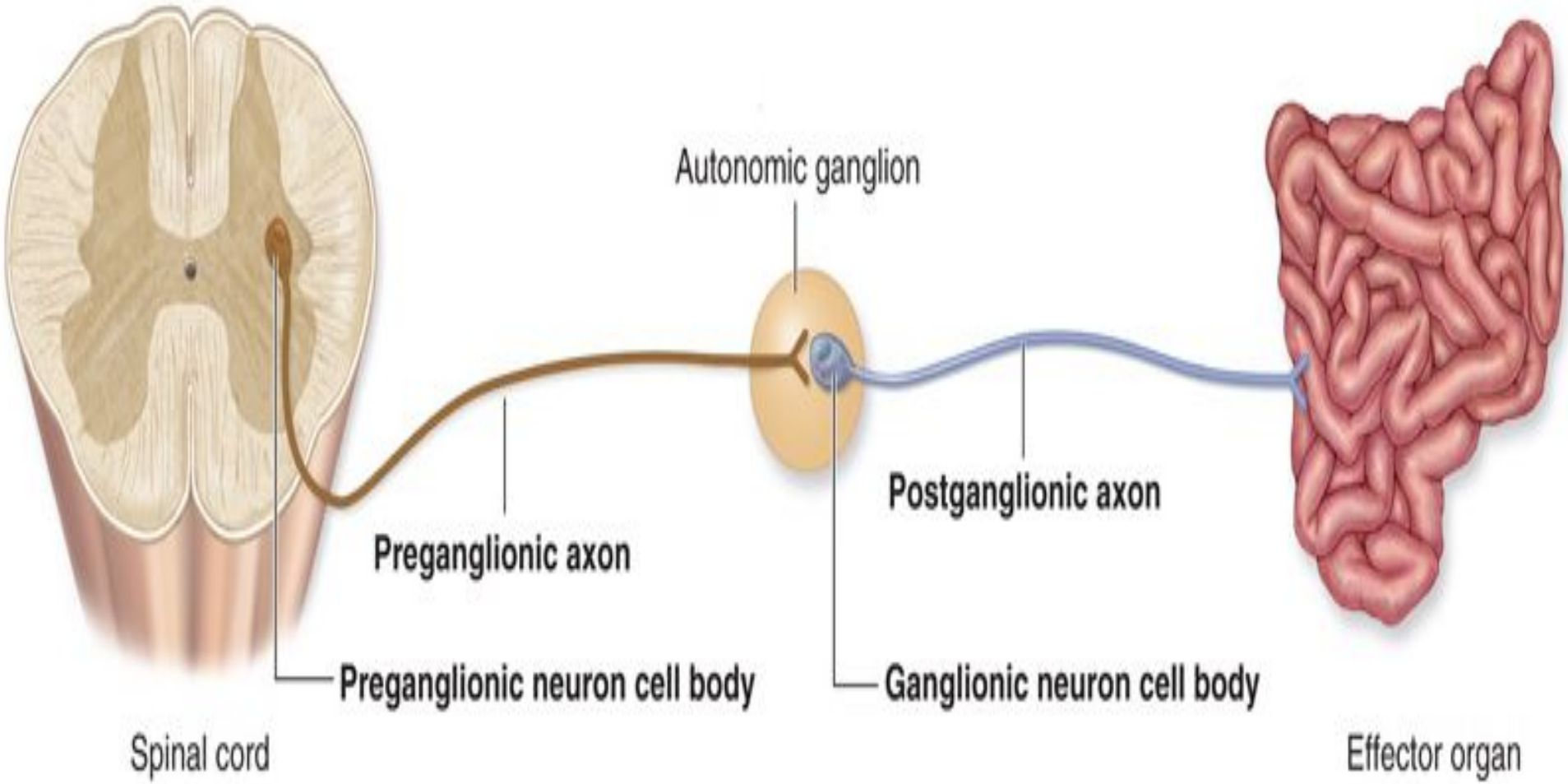
parasimpatic

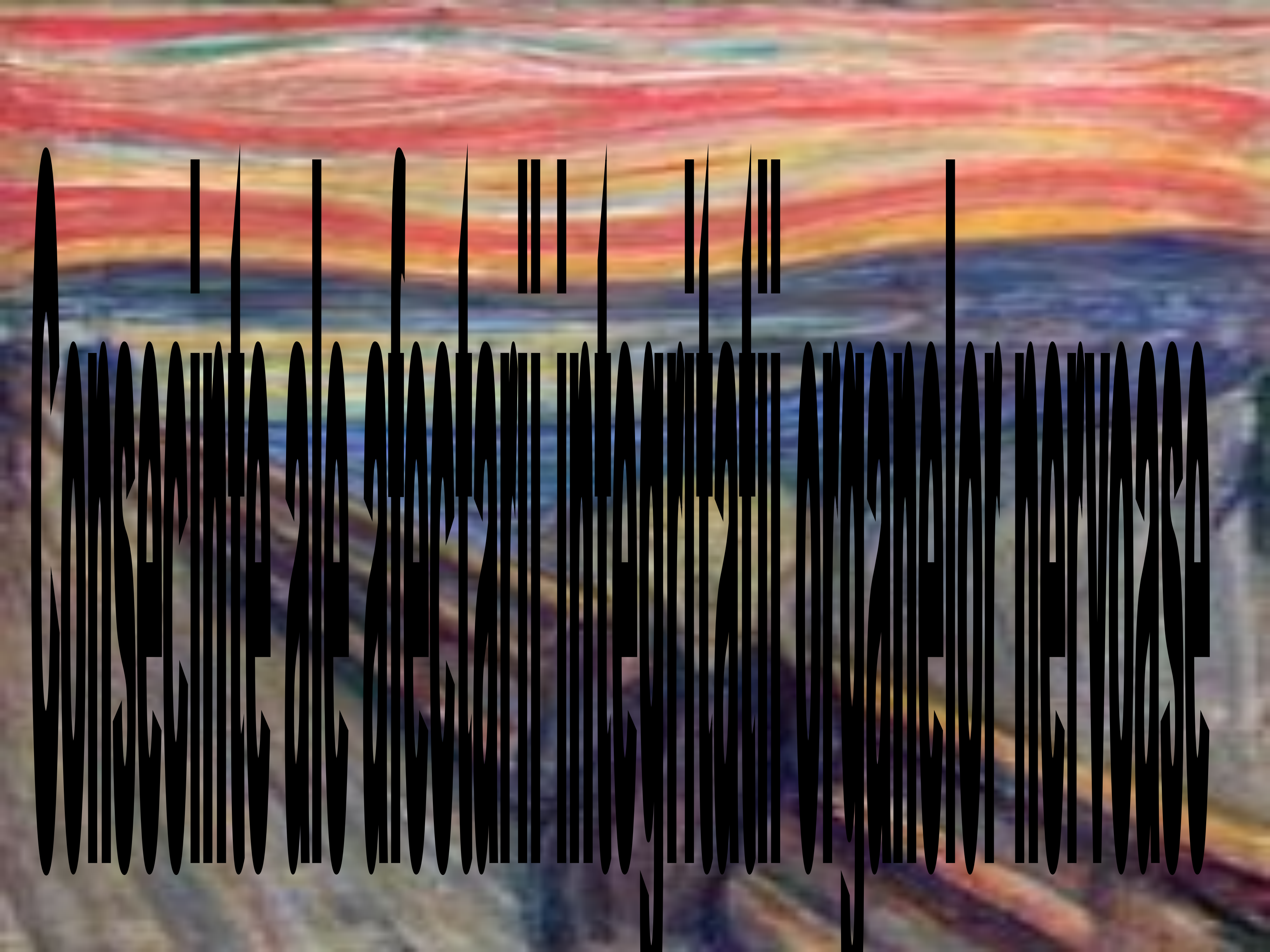


simpatic



Eferenta vegetativa simpatica





Consecinte ale afectarii integritatii organelor nervoase

100 de miliarde?

Alcoolul...

afecteaza creierul intervenind in activitatea centrilor care coordoneaza **echilibrul**, **perceptia**, **vorbirea** si **gandirea**;

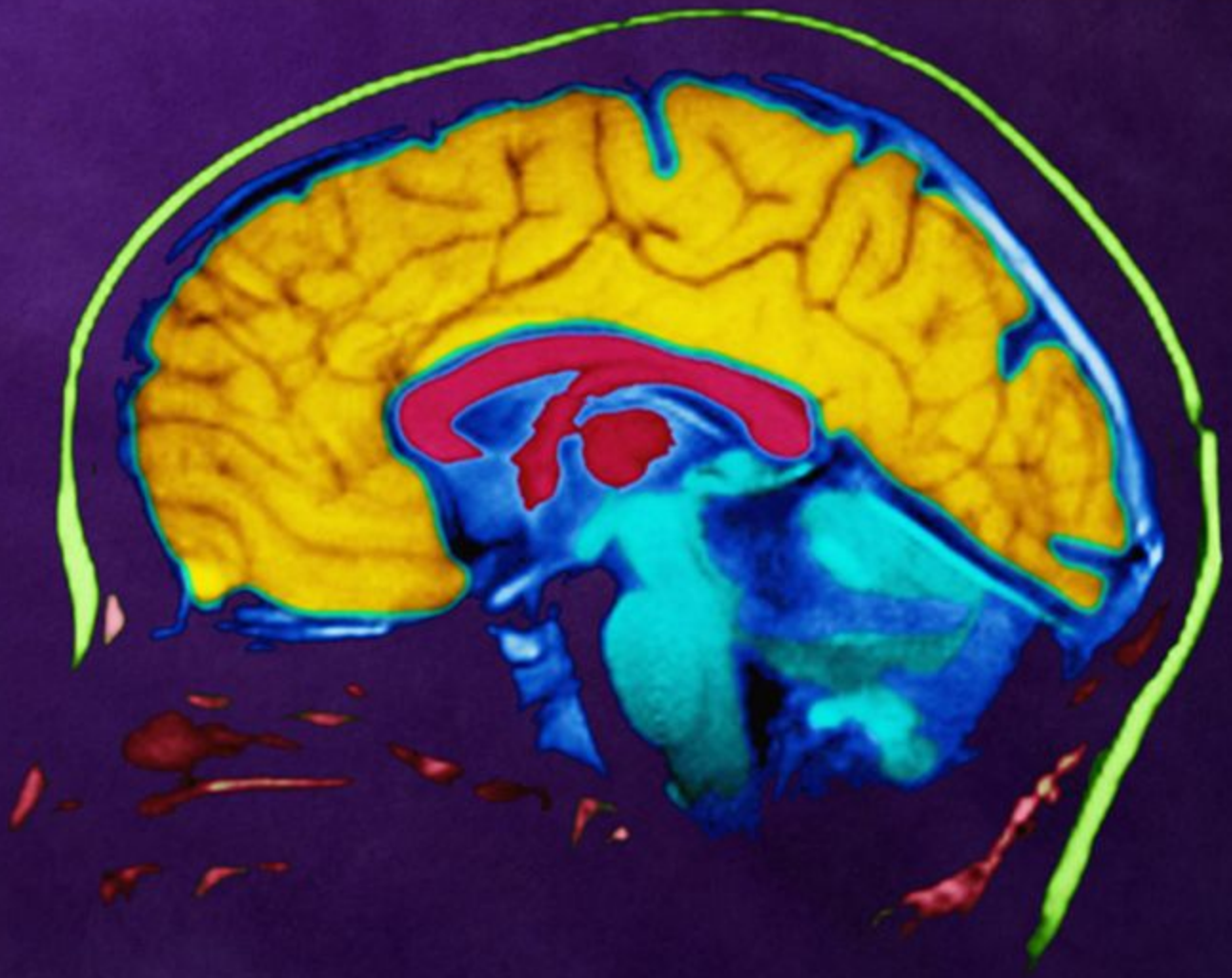
produce **dificultati in vorbire** si **erori in procesul de gandire**;

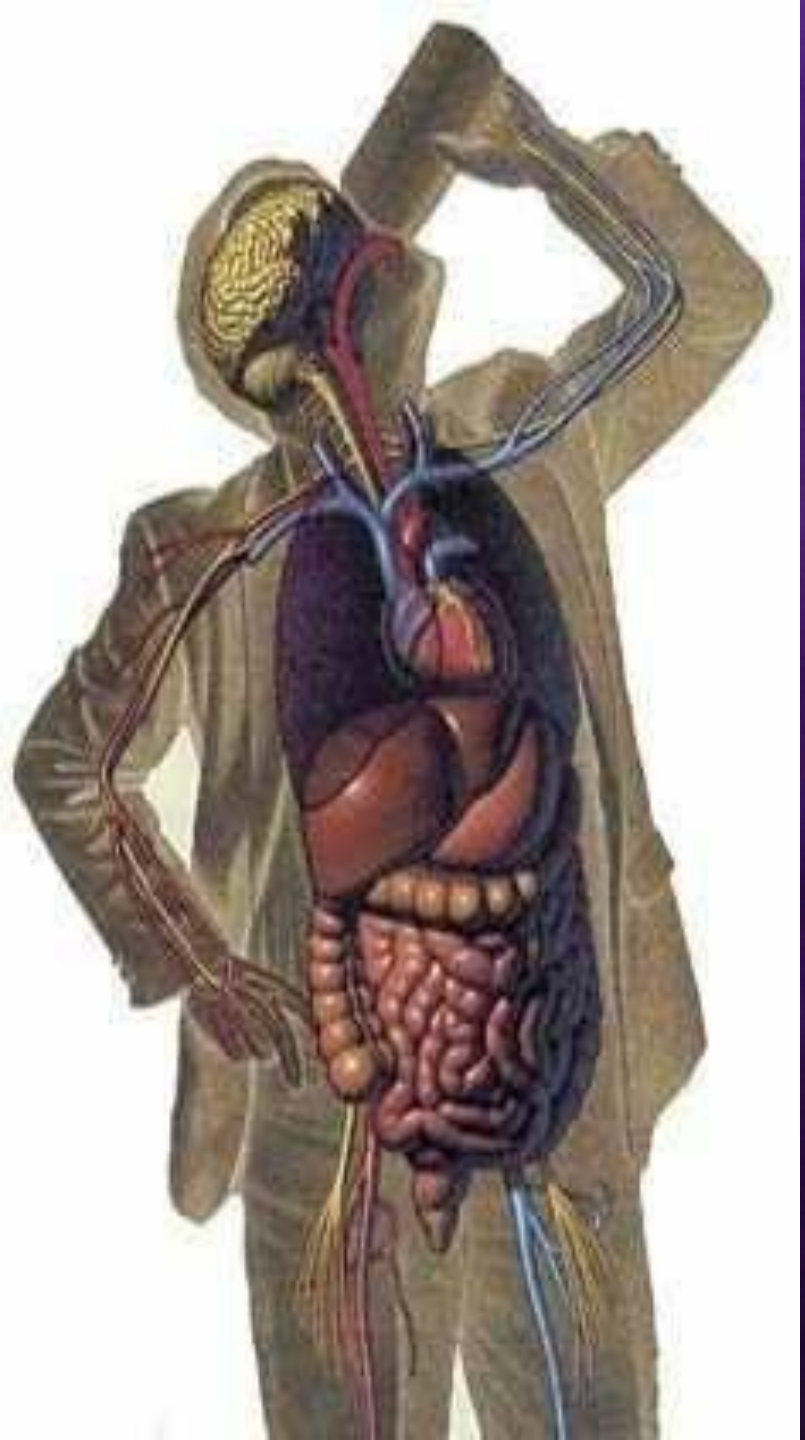
sunt afectati centrii coordonarii, aparand astfel "simptomele" clasice: **mersul impleticit**, **cazaturile**, ajungandu-se pana la imposibilitatea de a mai tine un chibrit aprins in mana;

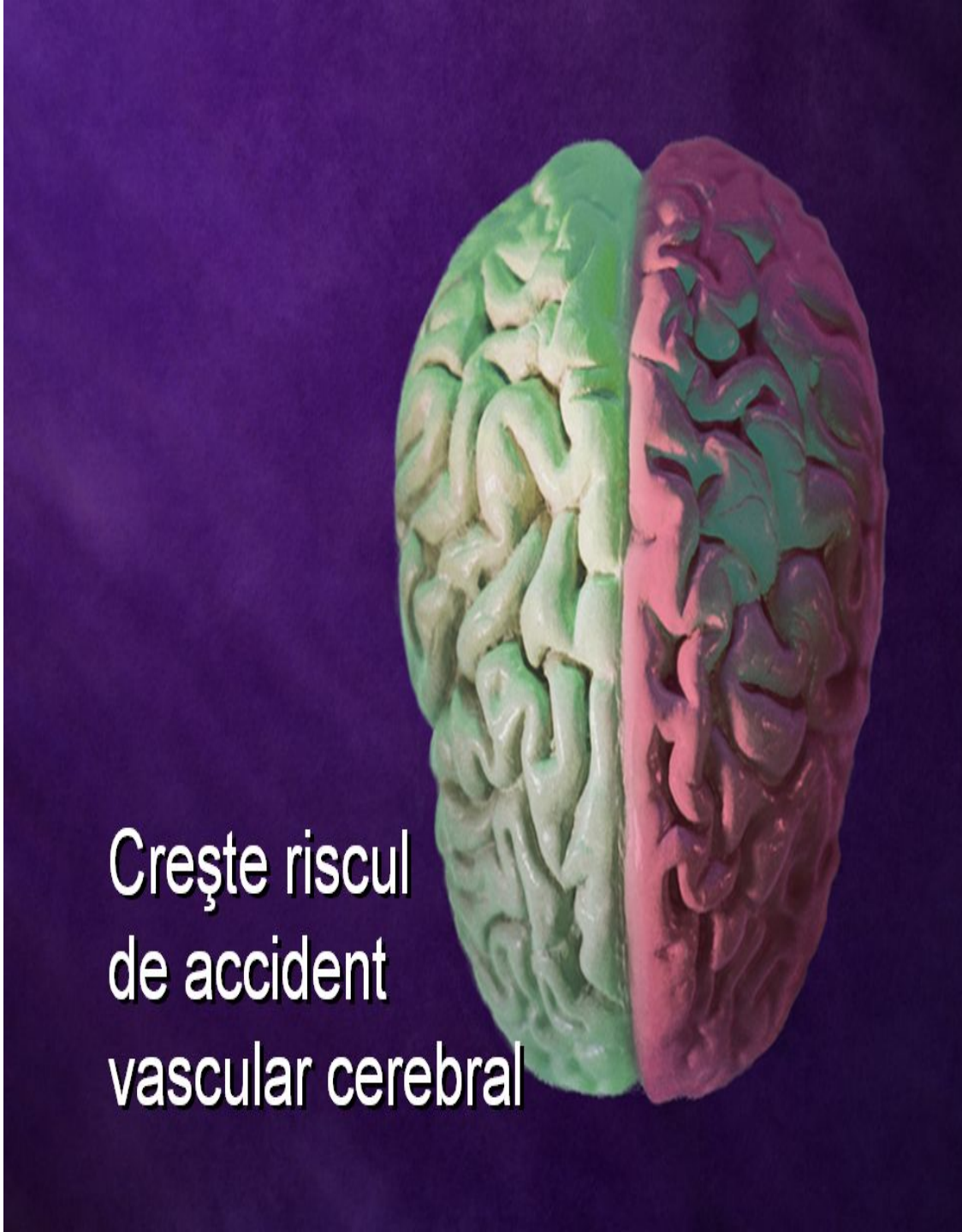
duce la **disparitia inhibitiilor**. Emotiile sunt exprimate mult mai usor, deoarece acea parte a creierului care ne ajuta sa ne controlam comportamentul este scoasa din functie sau se relaxeaza excesiv astfel incat emotiile devin exagerate.

daca se consuma indeajuns de mult alcool persoana **va adormi** sau, in cazuri extreme, **va intra in coma**.

Alcoolul este cunoscut ca având un efect depresiv, care scade acuitatea reflexelor sistemului nervos central







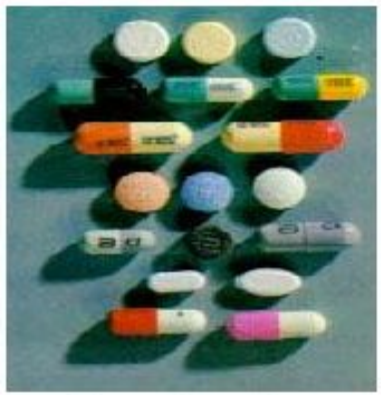
Creşte riscul
de accident
vascular cerebral


Produce
retardare
mentală

Sedativele

- **Riscurile abuzului:**
  - **>> apatie, lipsa trairilor emotionale;**
  - **>> slabirea creativitatii;**
  - **>> incapacitatea rezolvarii conflictelor;**
  - **>> pierderea simtului raspunderii;**
  - **>> manii, accese de furie, halucinatii, psihoze;**
  - **>> posibil, amplificarea starilor depresive.**

SEDATIVE ale sistemului nervos



Benzodiazepine

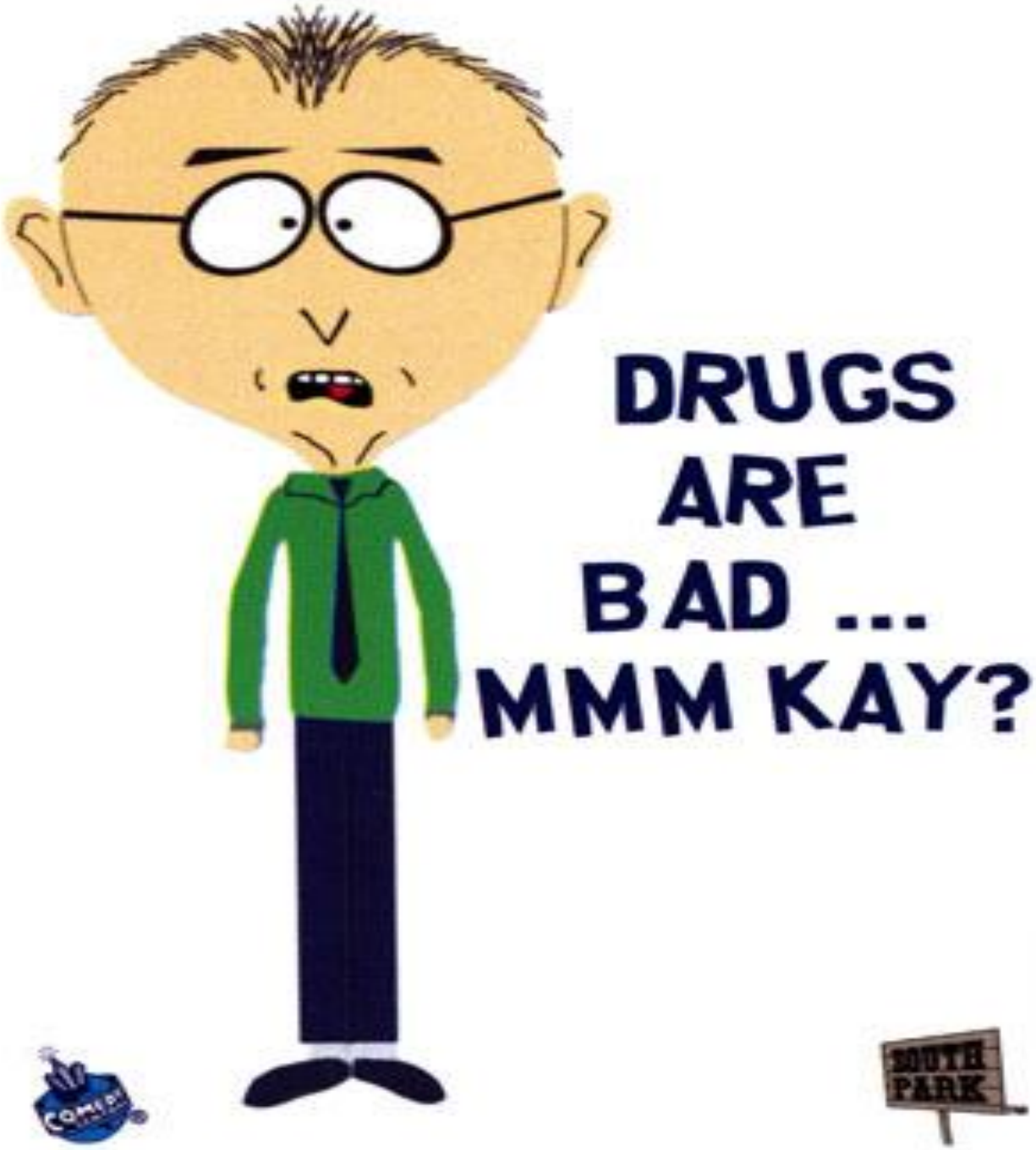
Methaqualona

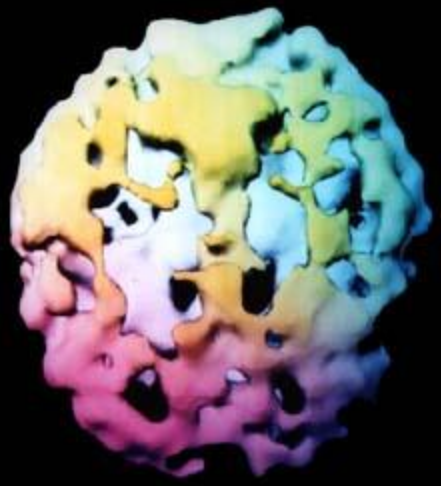
SEDATIVE si TRANCHILIZANTE ale sistemului nervos

Seconal

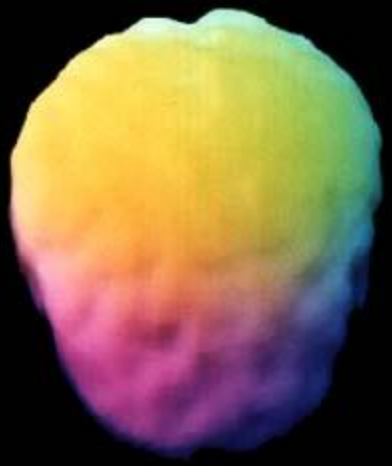
Rohypnol

Valium

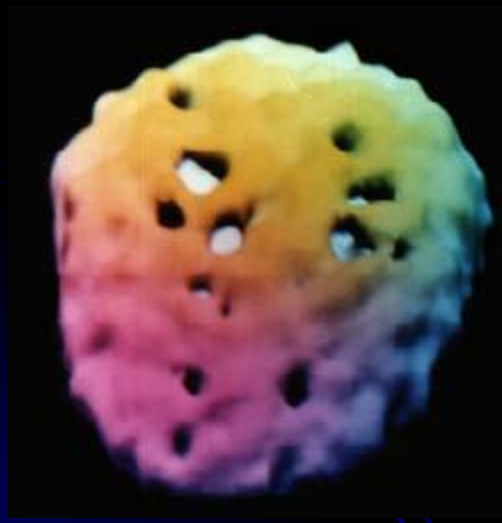

DRUGS
ARE
BAD ...
MMM KAY?
SOUTH
PARK



20 de ani de heroina

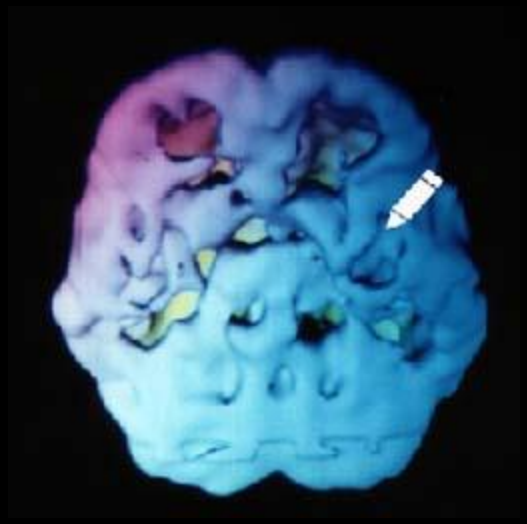


creier normal



2 ani de cocaina

25 de ani de abuz de acool



12 ani de marijuana

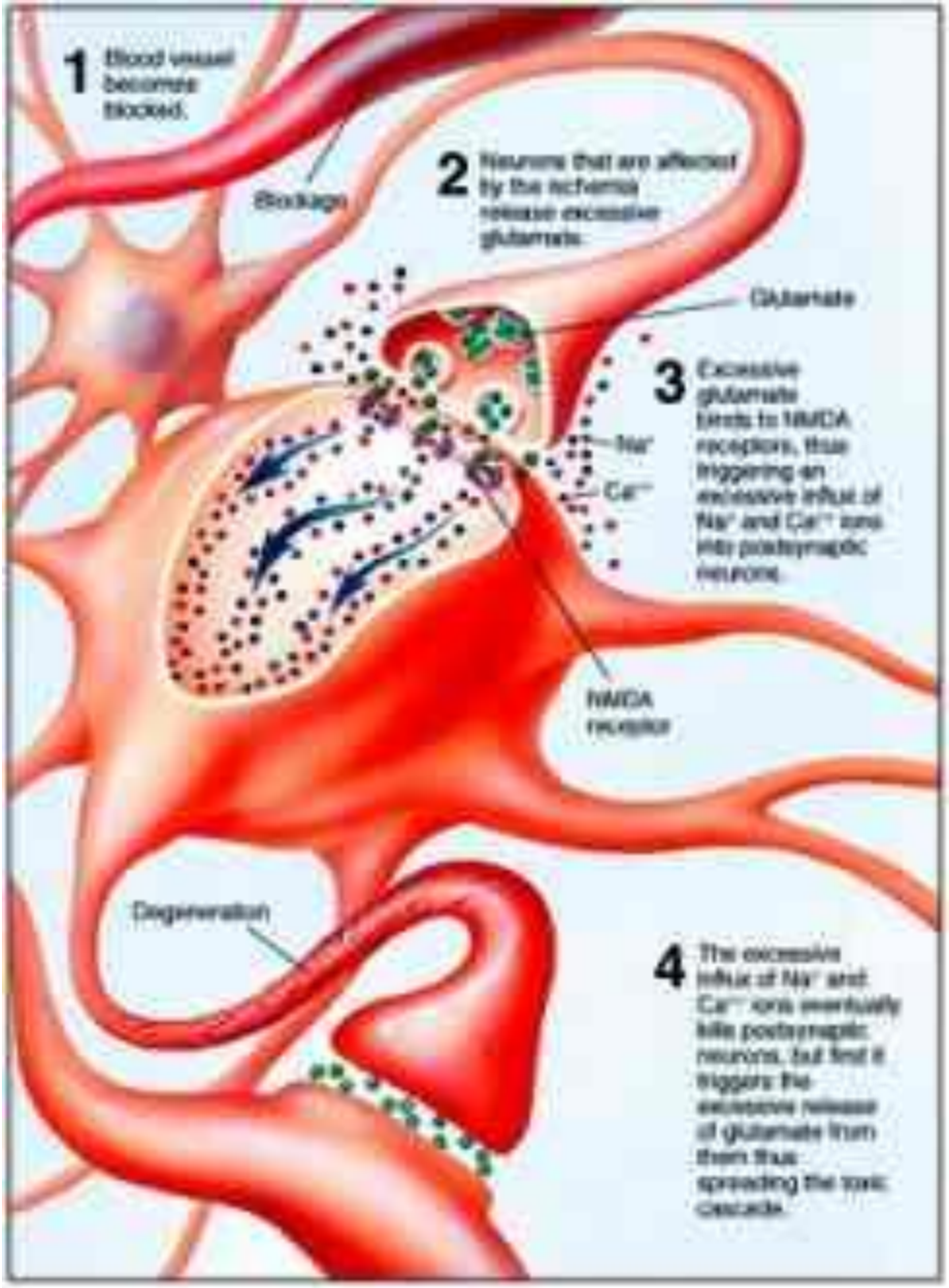
TEST

Afla despre cunoştinţele tale in materie de alcool, tutun si droguri
-chestionar –

Glutamatul monosodic ,
E 621, se foloseşte cel mai mult în alimentele fabricate artificial .
Rolul lui este de a da impresia creierului ca acel aliment este foarte gustos (o păcăleală).

Suprastimularea receptorilor (în creier sau în alte organe) duce la numeroase dezechilibre interne şi la probleme de sănătate .

Consumul de glutamat asociat cu aspartam amplifică de câteva ori problemele , la fel ca atunci când se consumă băuturi alcoolice amestecat.



Şocul indus de GLUTAMAT duce la "arderea" neuronilor din creier şi organe

A fost foarte interesant!