

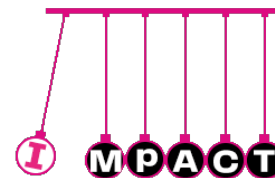


Impact Neuro-Urologie ICM, Décembre 2023



Service de Neuro-Urologie, Hôpital Tenon
Assistance Publique Hôpitaux de Paris
<https://service-neurourologie.jimdofree.com>

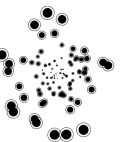
Groupe de Recherche Clinique en NeuroUrologie
GRC01 Sorbonne Université
<https://grc01-green.jimdofree.com>



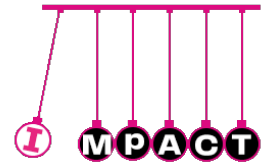
Diagnostic étiologique de l'hyperactivité vésicale neurogène



Pr. Gérard AMARENCO
gerard.amarenco@aphp.fr



"Diagnostic étiologique de l'hyperactivité vésicale neurogène"



Que signifie ce titre ?

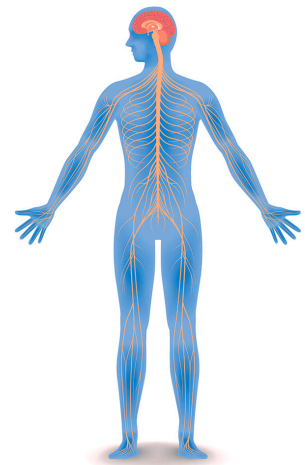
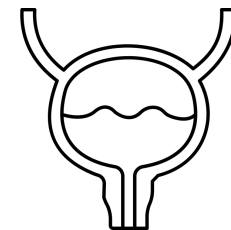


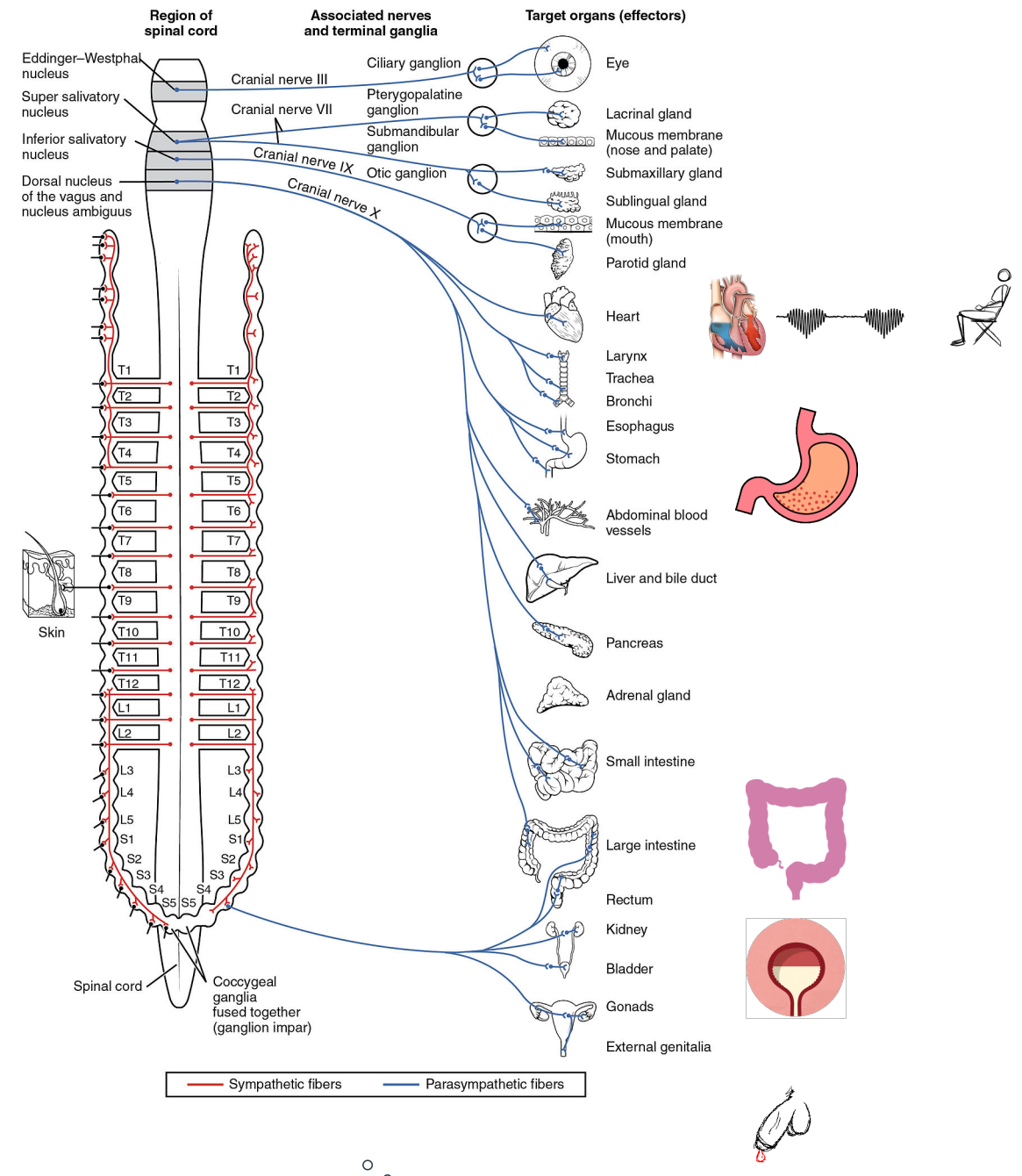
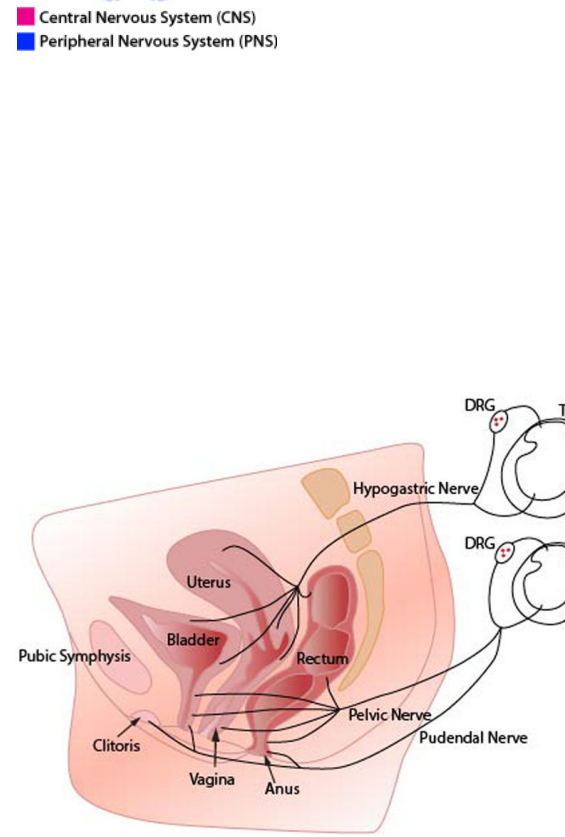
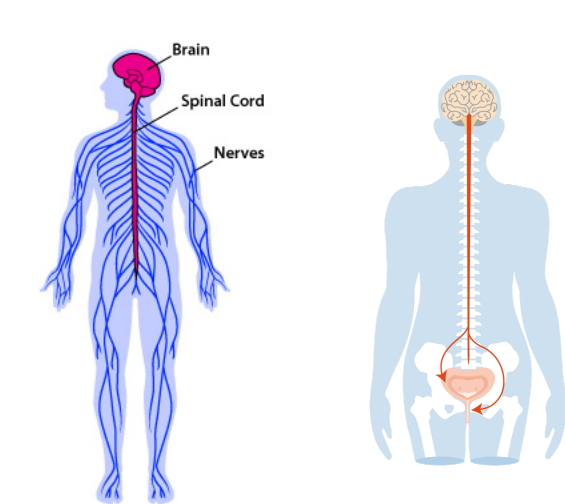
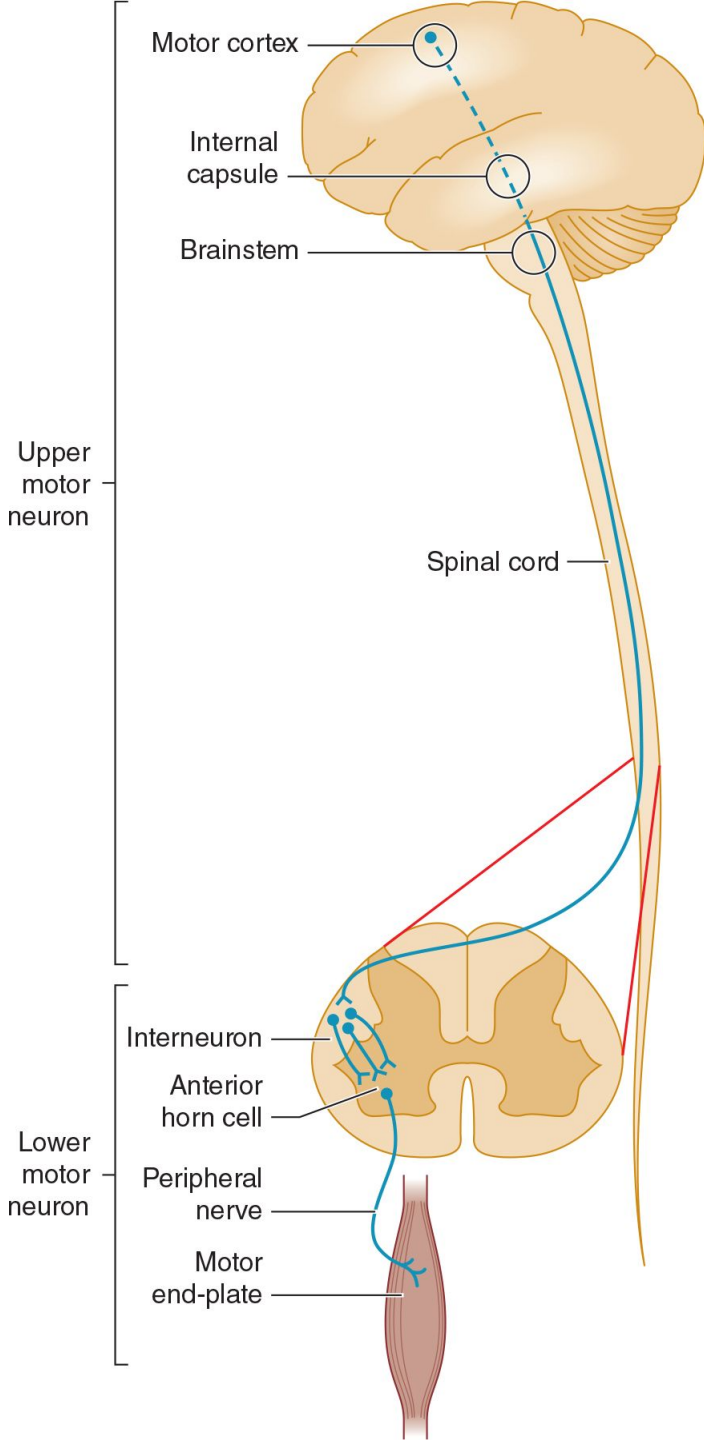
- que nous sommes dans le cadre d'une maladie neurologique connue et qu'il faille en préciser le niveau lésionnel ?
- que nous sommes dans le cadre d'une pathologie neurologique mais qu'il faille préciser la maladie ?
- que nous sommes devant OAB/OAD « révélatrice » et qu'il faille apporter des arguments pour une étiologie neurologique ?

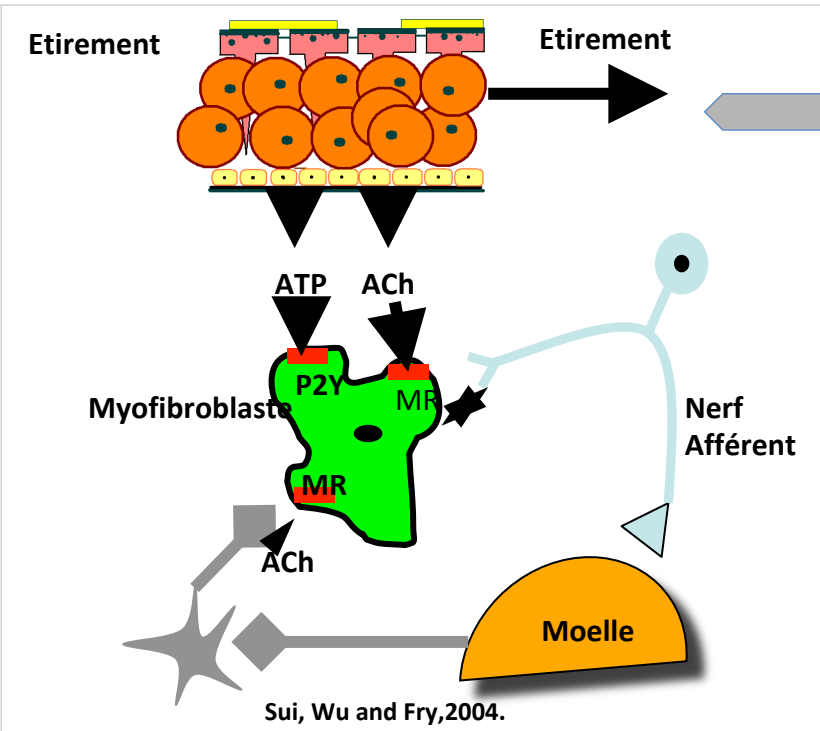
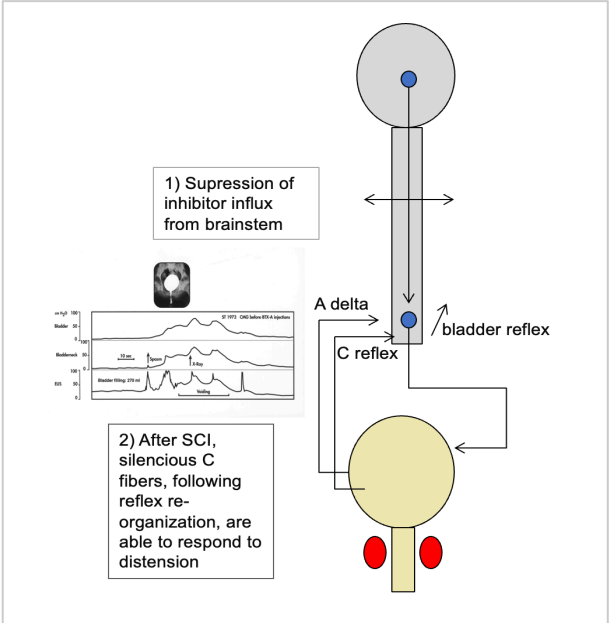
Comment faire ?



- Arguments cliniques
- Arguments urodynamiques
- Arguments électrophysiologiques
- Autres arguments



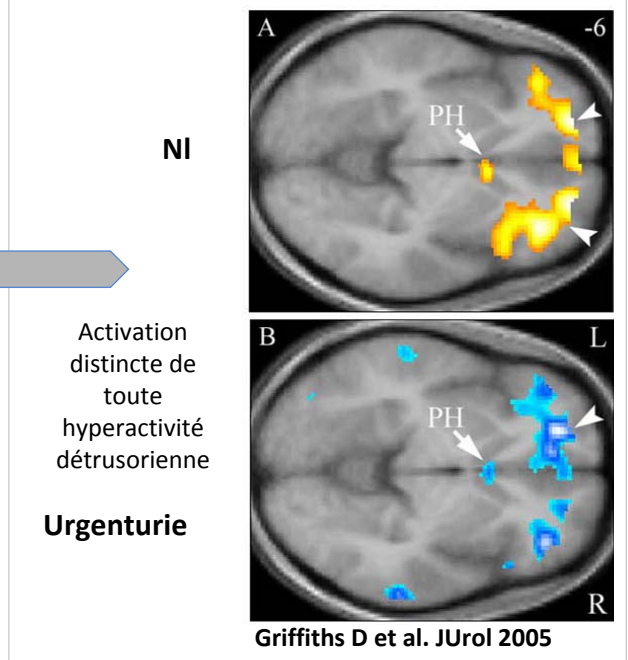




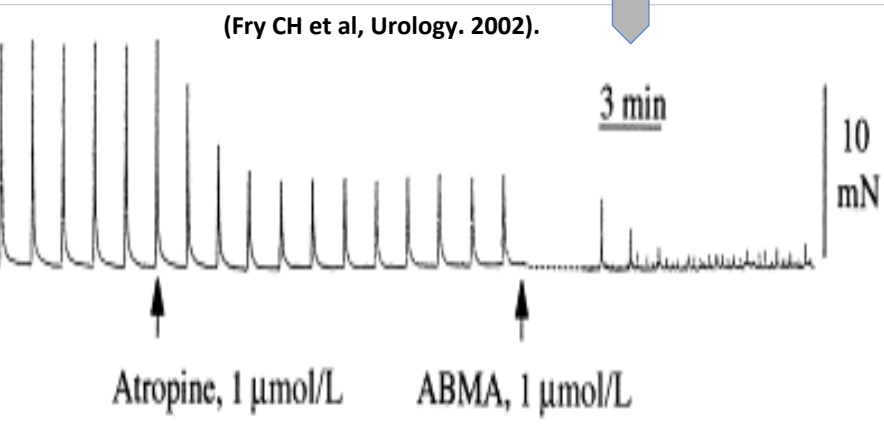
Urothélium :
Transduction d'un signal physique en signal chimique ;
expression de neurotransmetteurs

l'hyperactivité vésicale correspondant aussi à un traitement anormal du message sensoriel

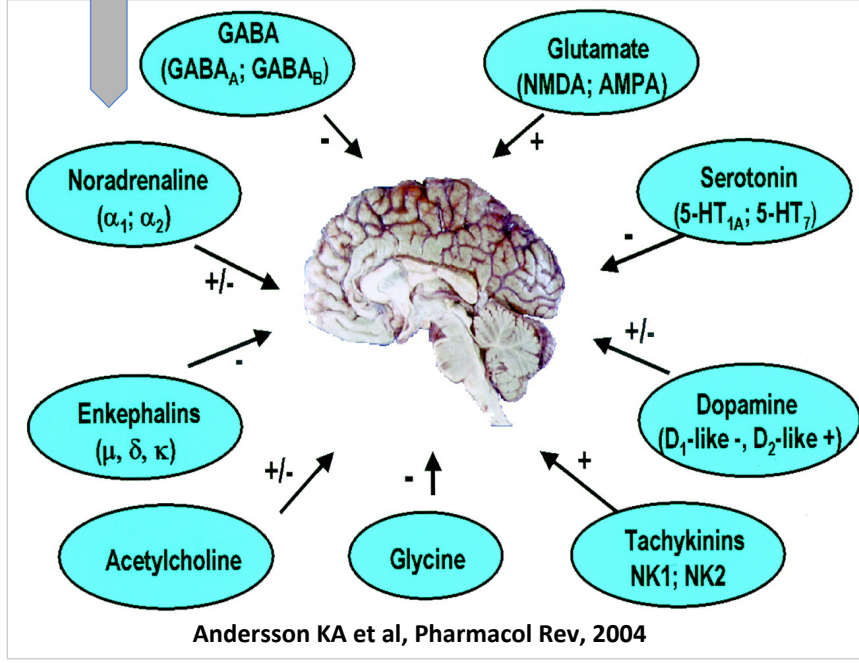
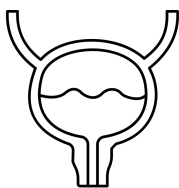
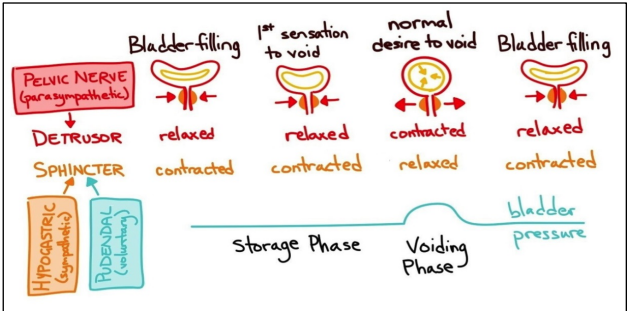
neuromédiateurs fixant des récepteurs au niveau cérébral exercent ± directement modulation du reflexe mictionnel



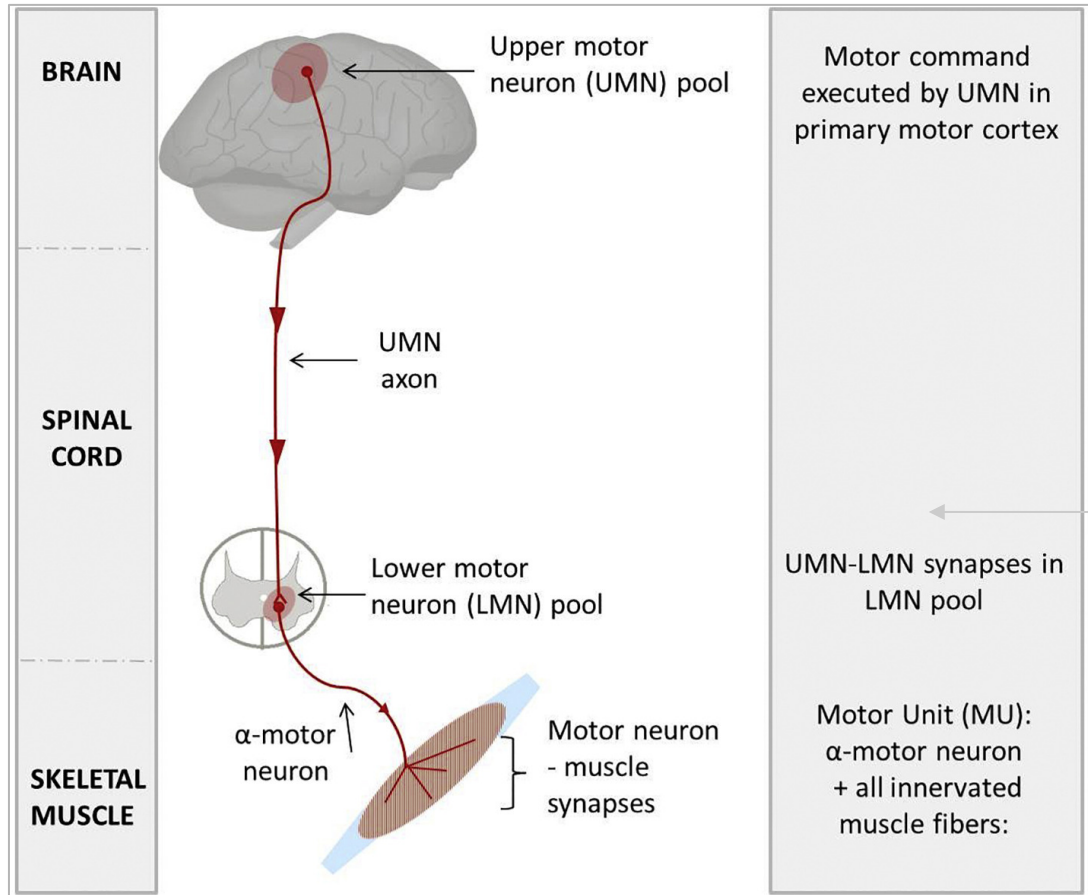
activité contractile spontanée du muscle lisse du détrusor chez l'hyperactif. Médiée par ATP



L'hyperactivité est une pathologie de la phase de remplissage



Etiologies of neurogenic bladder



Upper motor neuron lesions

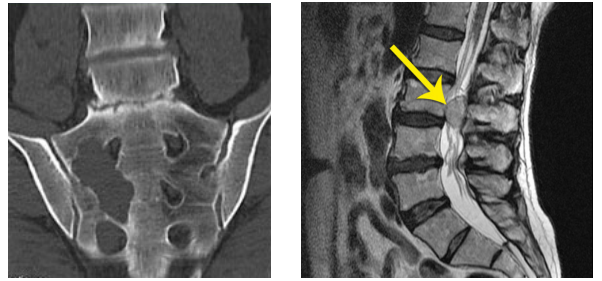
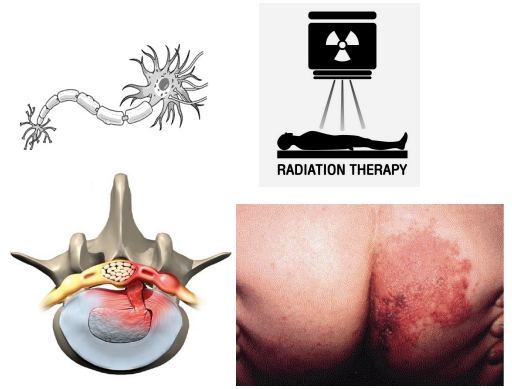
- Brain lesions :**
- stroke
 - Extra-pyramidal Sd
 - tumors
 - infectious (abscess, encephalitis,...)
 - trauma

- Spinal cord lesions :**
- vascular
 - trauma (SCI)
 - tumors
 - infectious (abscess, myelitis,...)
 - Multiple Sclerosis
 - arthrosis



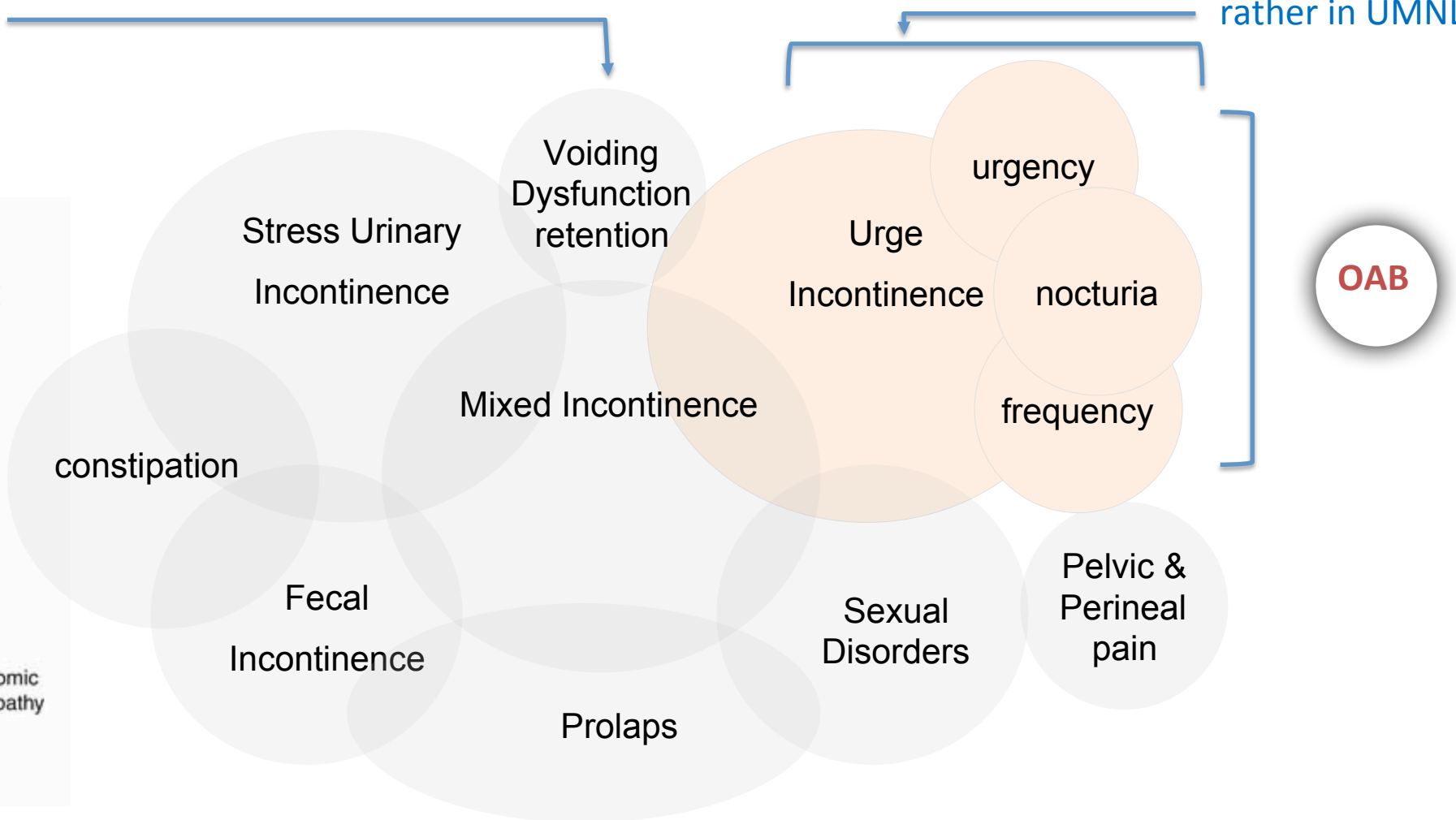
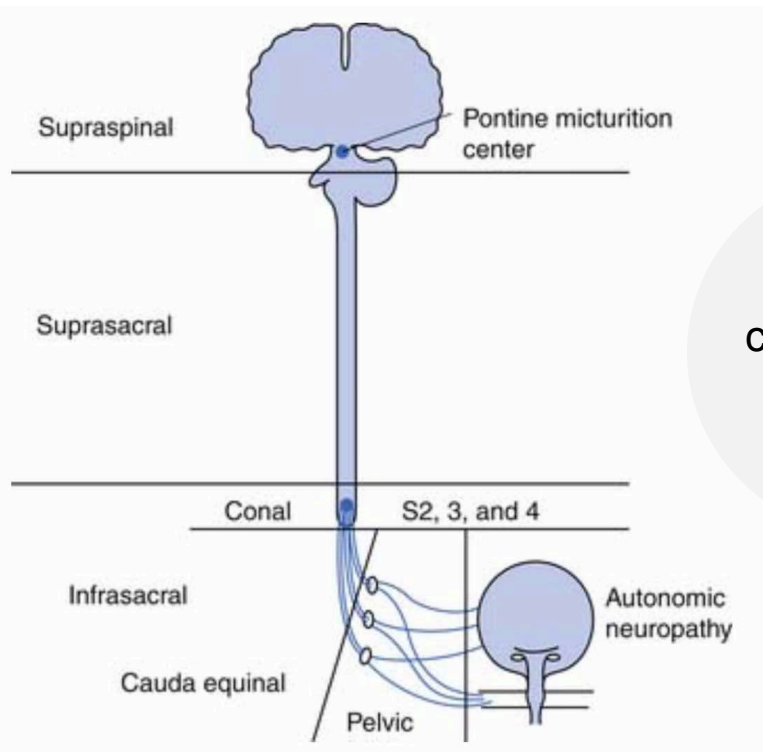
Lower motor neuron lesions

- Peripheral Σ (flacid paralysis, hypotonia, hyporeflexia, muscular atrophy)
- peripheral neuropathies (diabetes, ...)
- cauda equina / sacral plexus

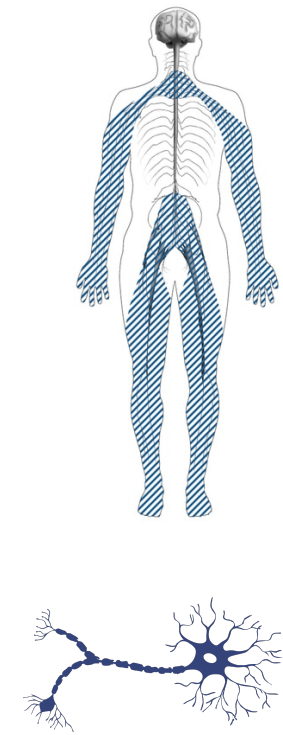
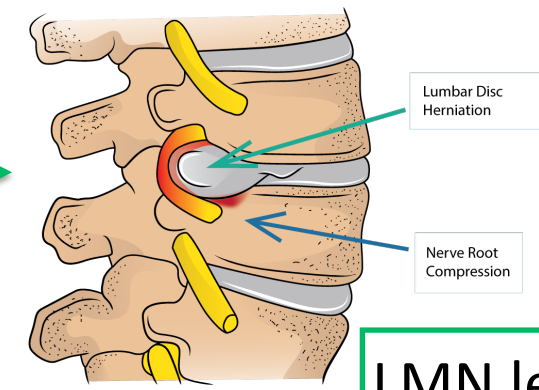
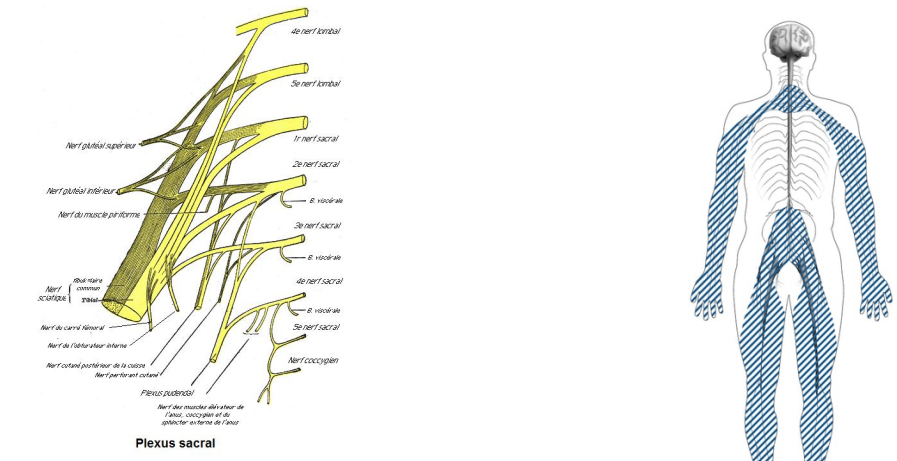
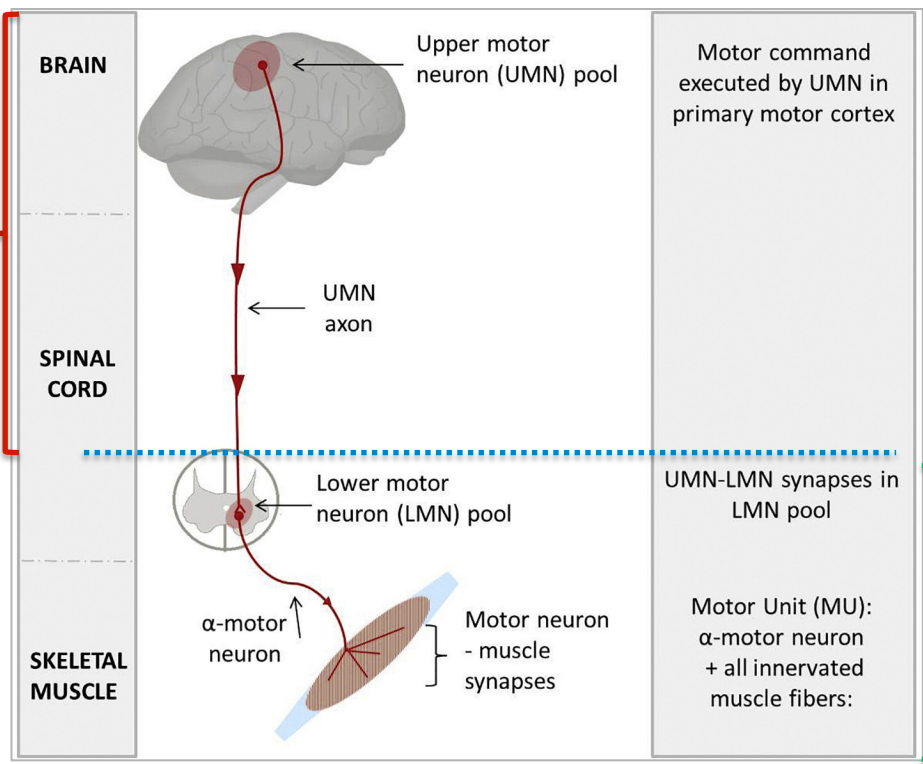


rather in LMNL

rather in UMNL

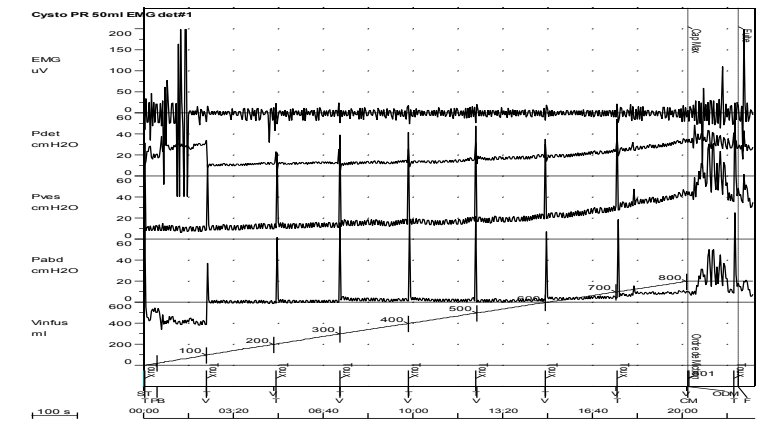
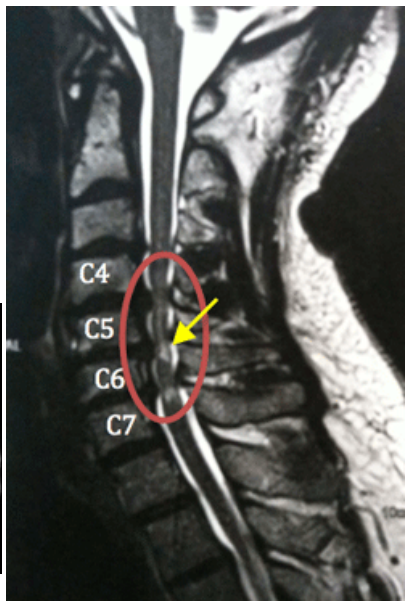
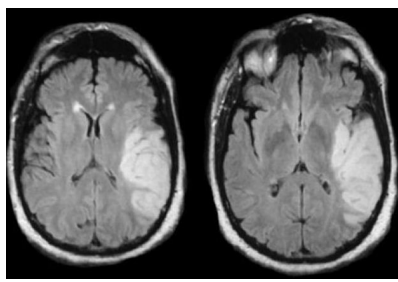
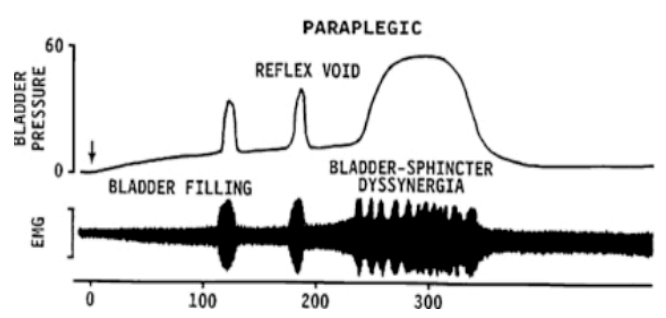
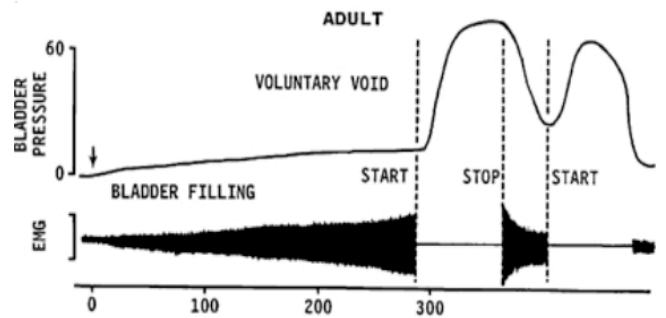


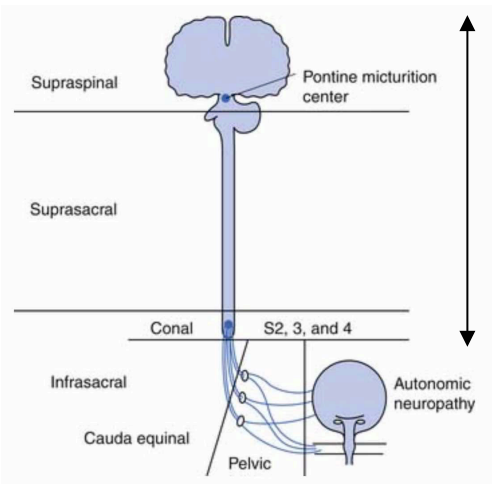
Urodynamic



**UMN lesions:
"automatic bladder"**

**LMN lesions:
"paralytic bladder"**



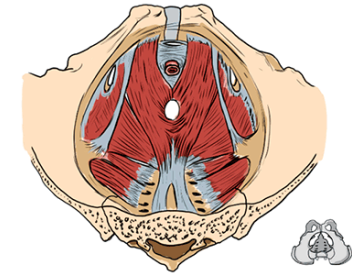


urinary symptoms

- OAB
- OAB + voiding dysfunction (if DSD)
- OAD
- OAD + DSD
- Rx bladder deformities

perineal muscles

- pain
- voiding dysfunction
- anal hypertonia



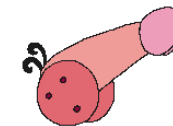
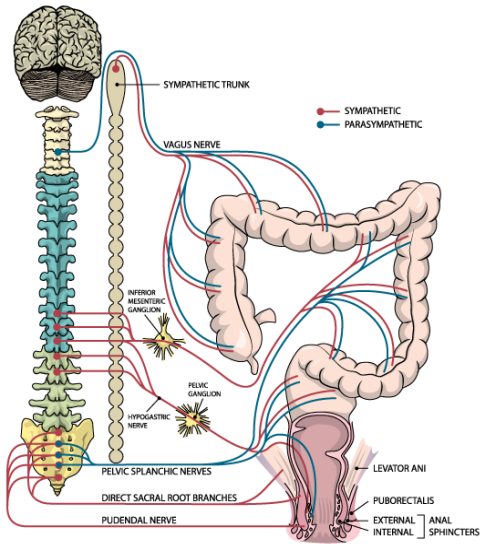
UMNL & OAB: associated symptoms

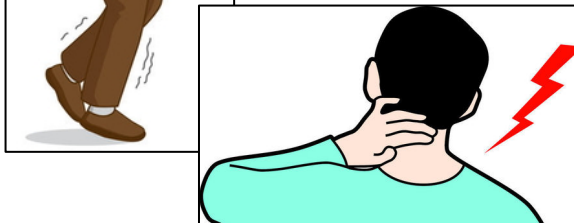
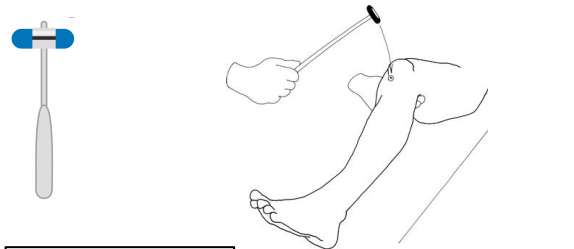
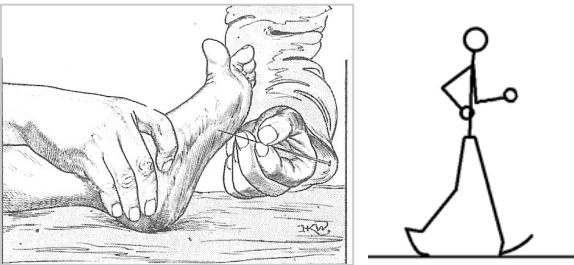
bowel symptoms

- obstructive constipation
- Urgency
- Fecal incontinence (active)
- ano-rectal dyssynergia
- Alt modulation rectoanal inhibitory reflex
- Rx : hypertonia pubo-Rect

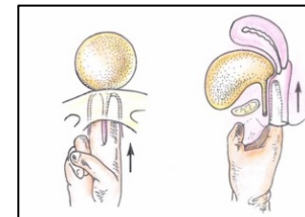
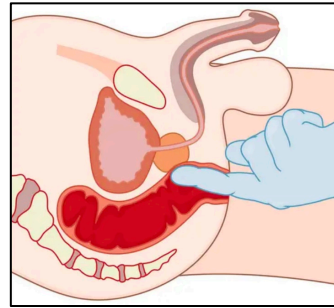
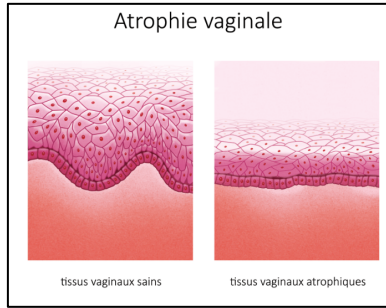
sexual disorders

- dyspareunia
- vaginismus
- UI per-coitale
- ejaculation alt





To eliminate:



peripheral lesion (LMNL)

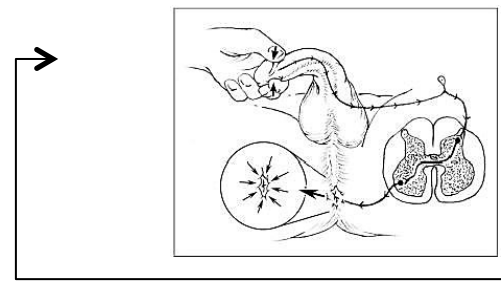
- Abolition of ankle reflex
- decrease muscle strenght of toes flexors
- alteration foot/leg (posterior face of the thigh) sensation
- loss of touch sensation on perineal aera
- abolition of the bulbocavernosus reflex
- anal tone decreased
- anal sphincter weakness

Clinical assessment

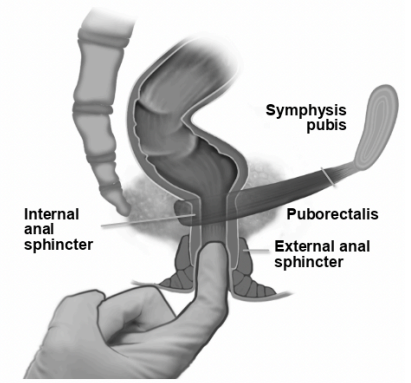


central lesion (UMNL)

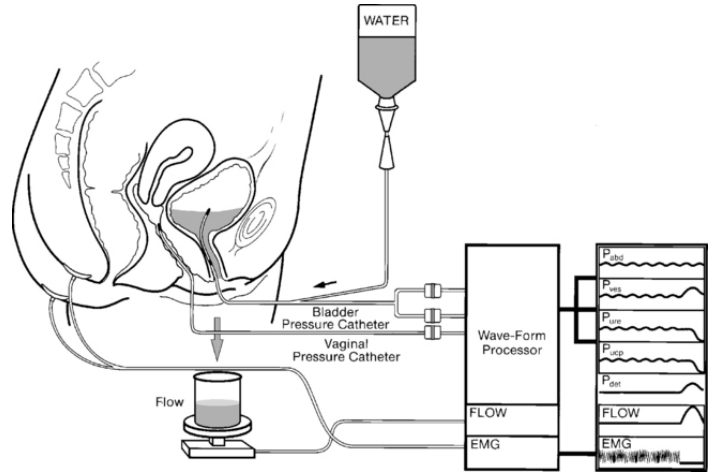
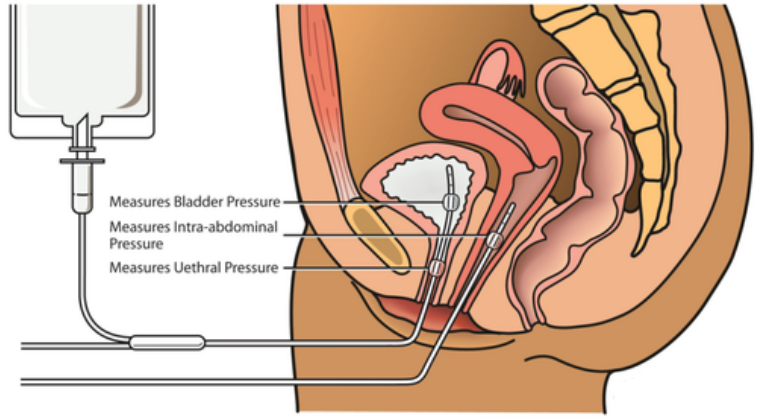
exaggerated Bc reflex

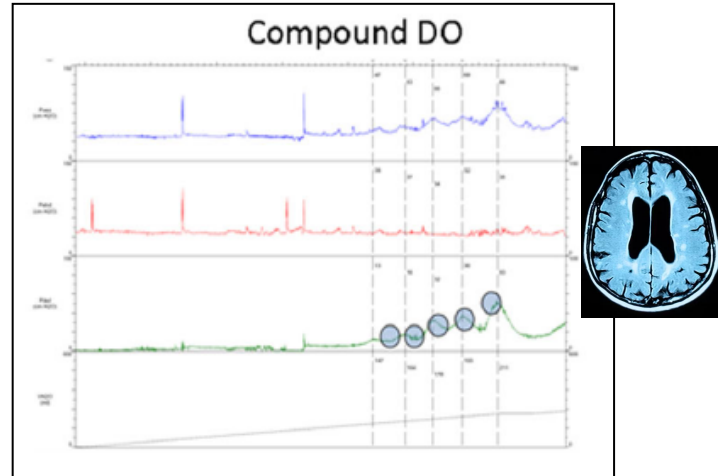
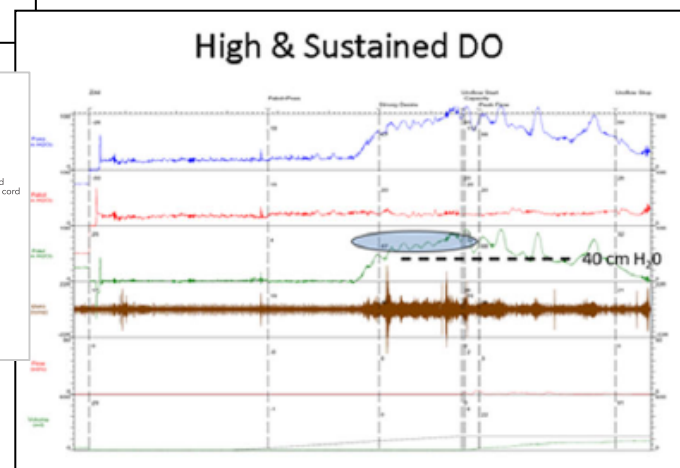
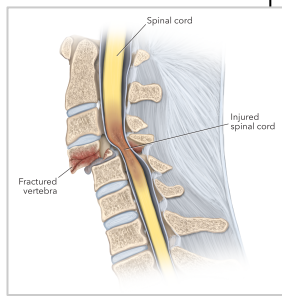
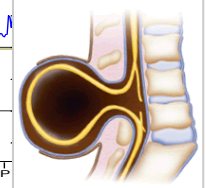
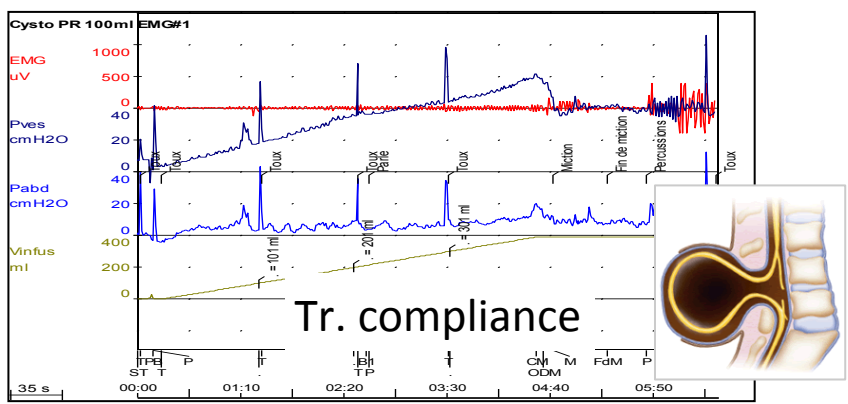
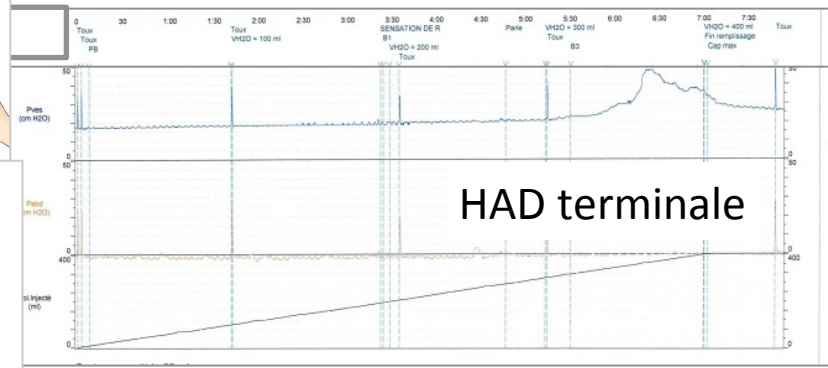
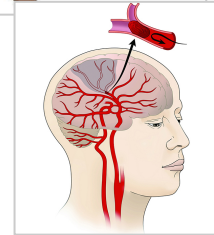
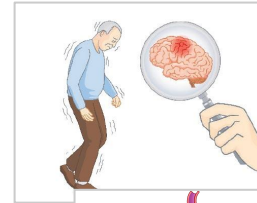
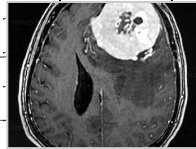
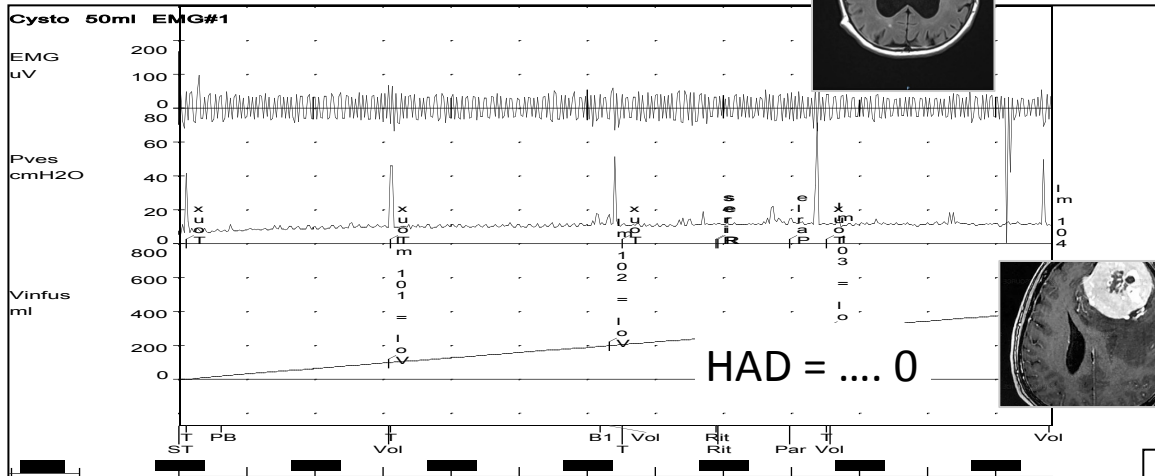
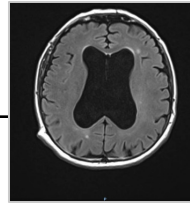
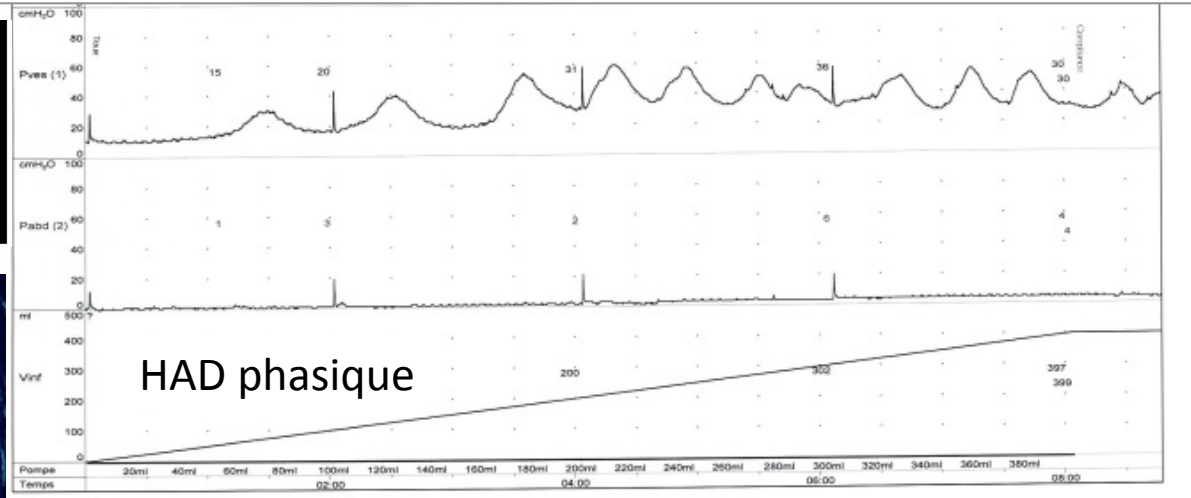
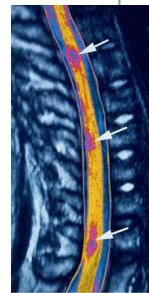
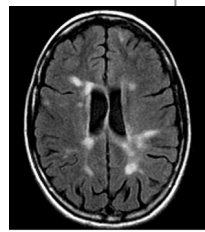
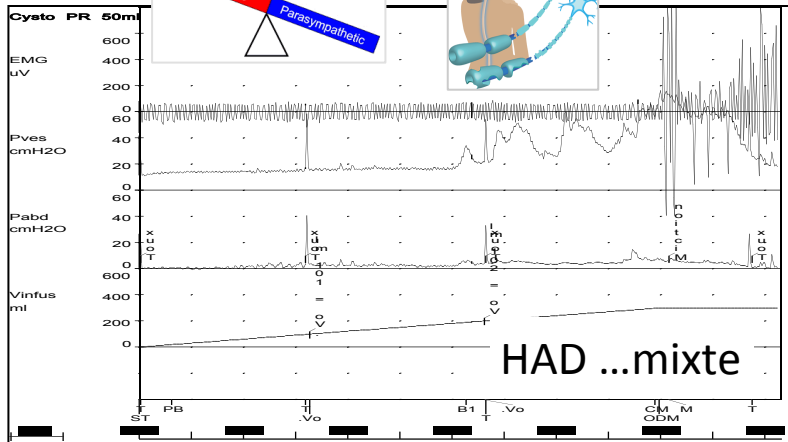
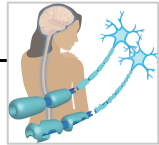
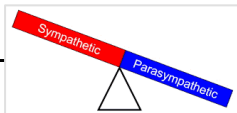


increased anal tone

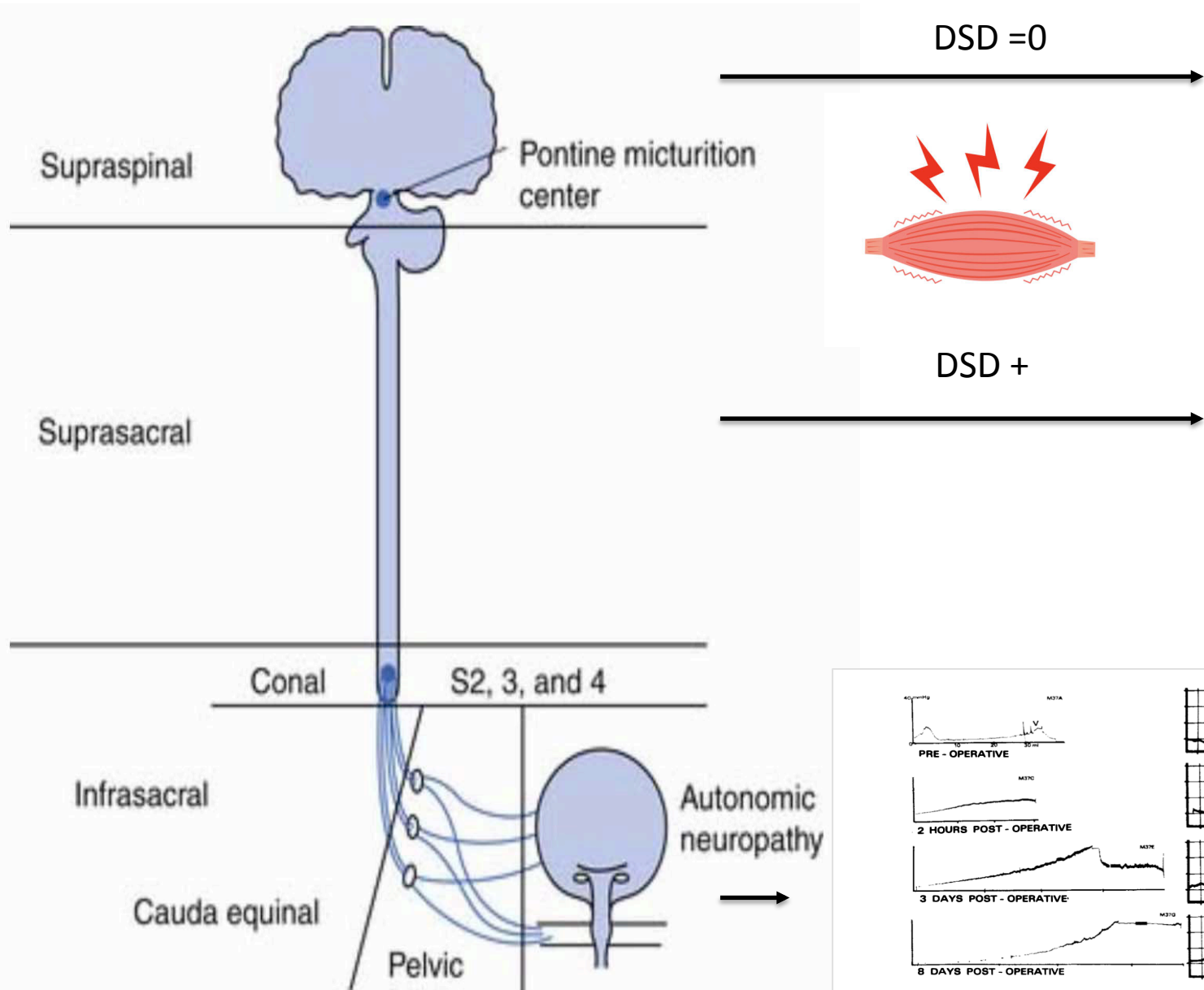


Urodynamic testing

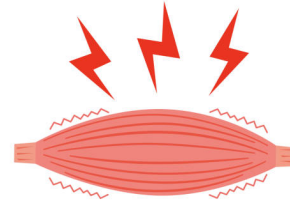




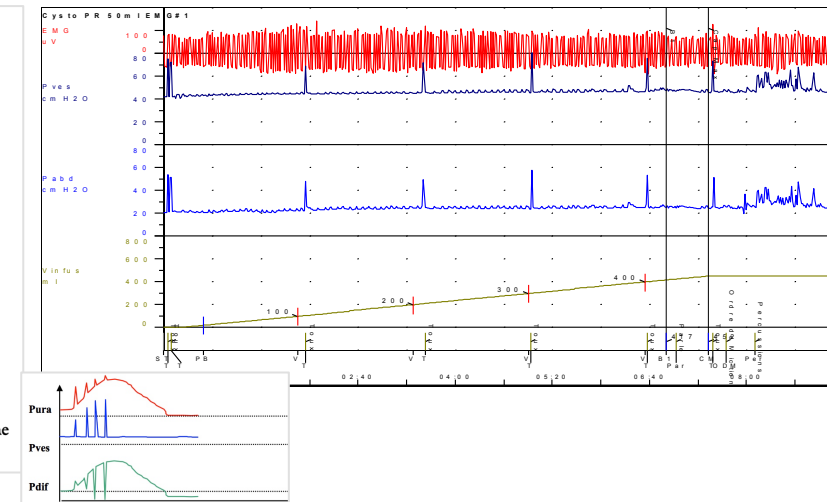
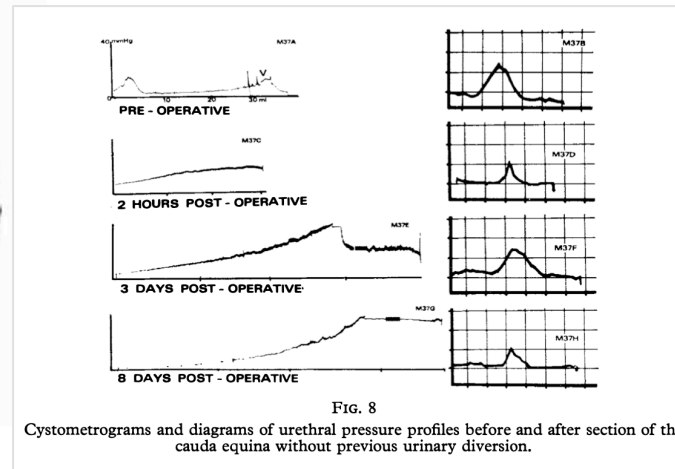
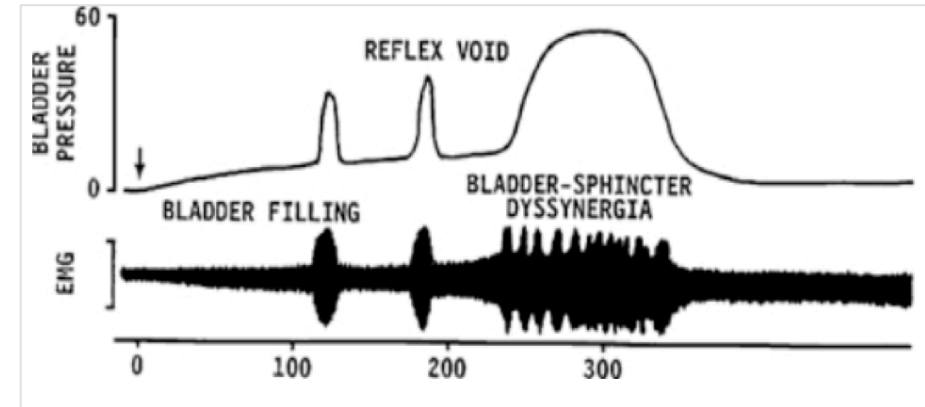
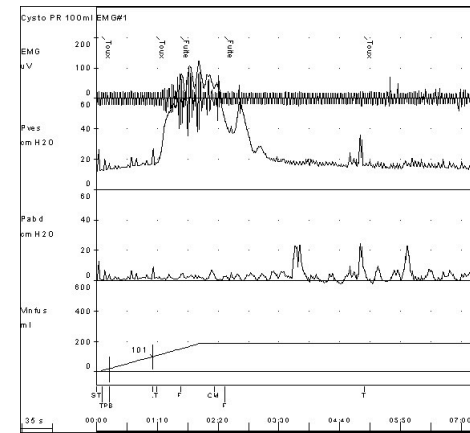
Lesion levels and urodynamics



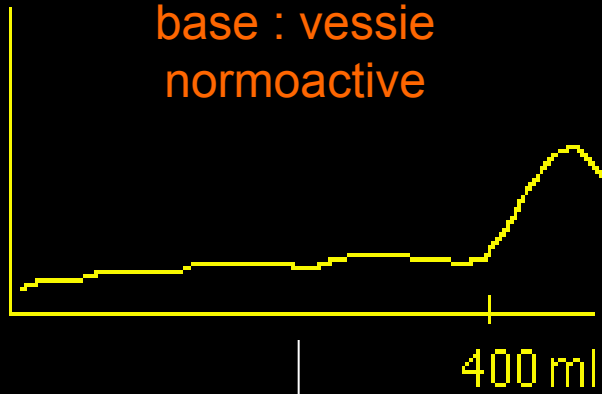
DSD = 0



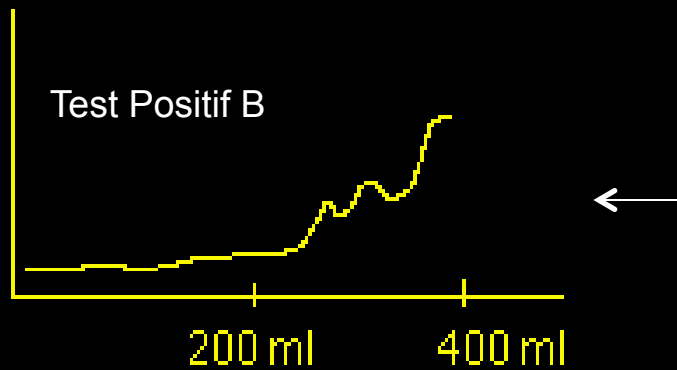
DSD +



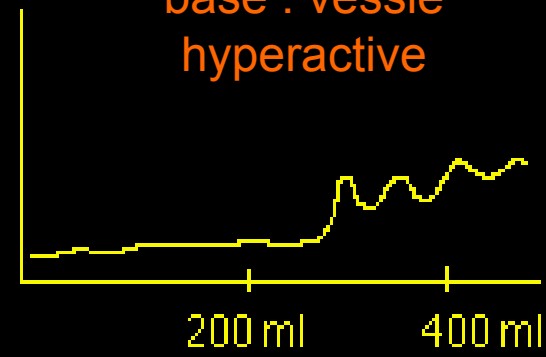
Cystomanométrie de base : vessie normoactive



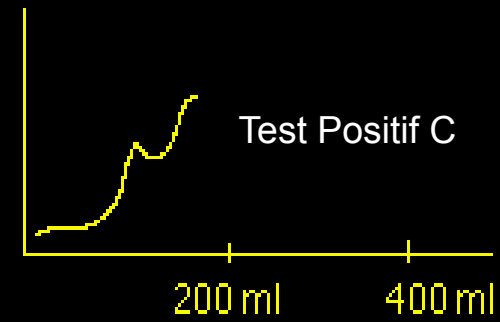
TEG ↓



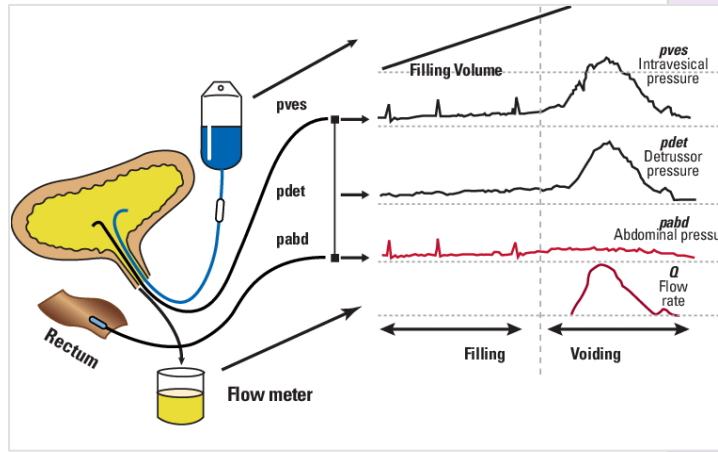
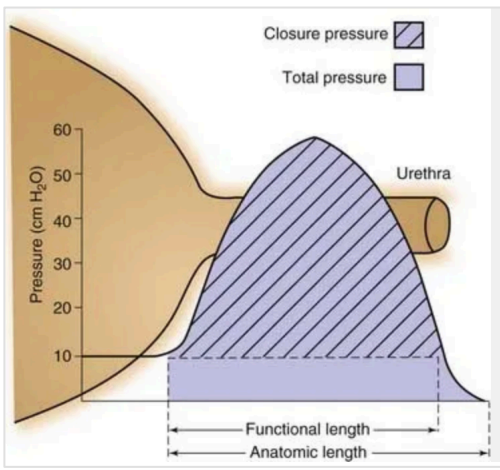
Cystomanométrie de base : vessie hyperactive



TEG →

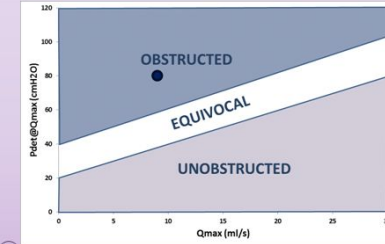


Ismael SS, Epstein T, Bayle B, Denys P, Amarenco G.
Bladder cooling reflex in patients with multiple sclerosis.
J Urol. 2000 Oct;164(4):1280-4.

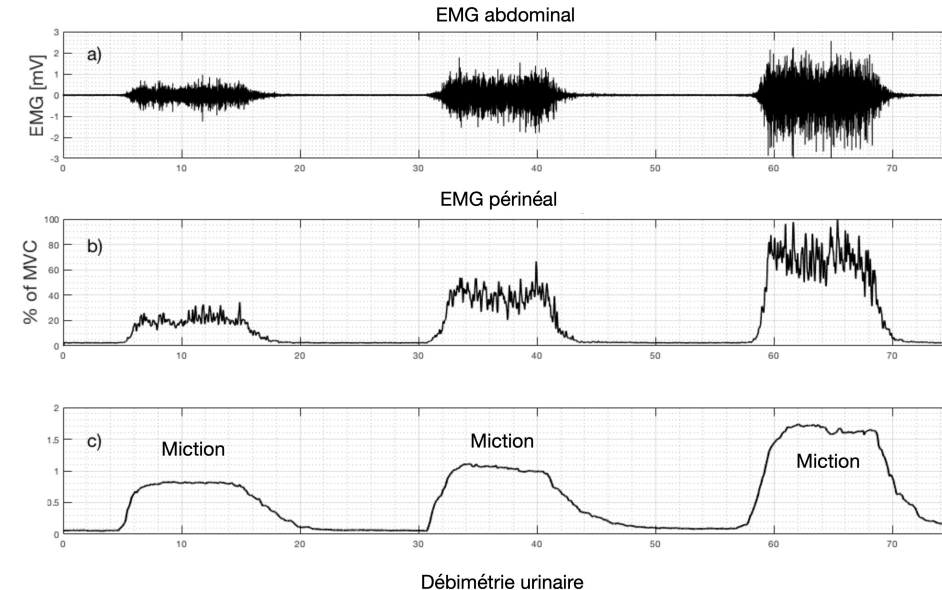
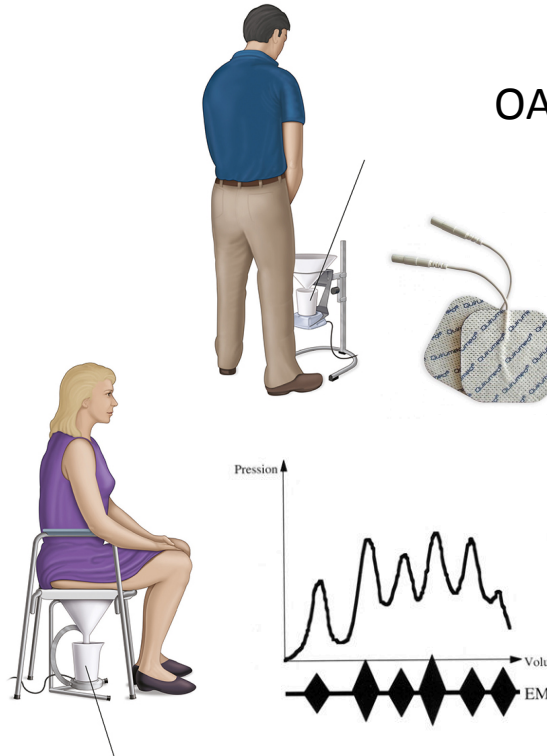
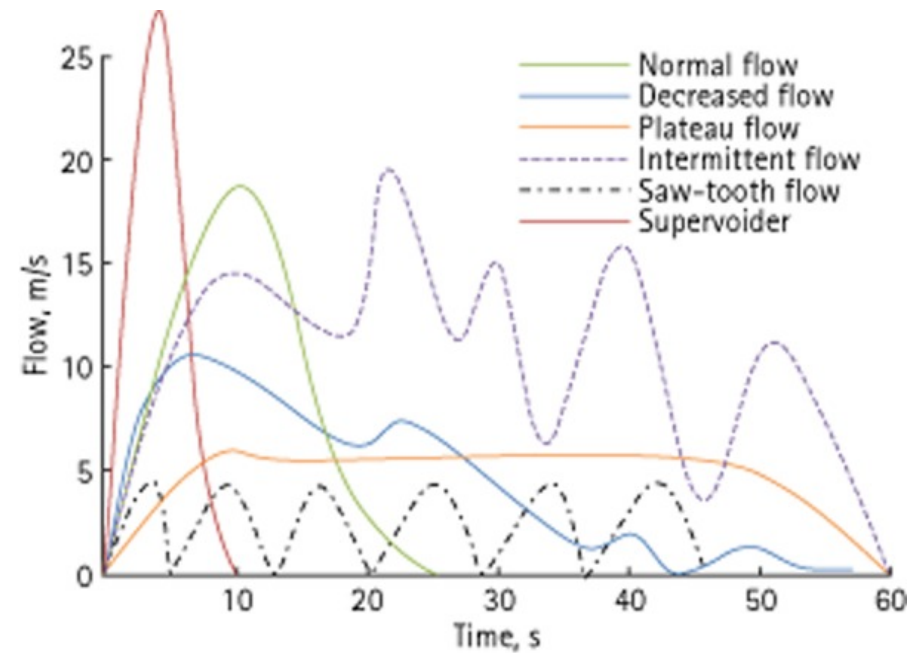


Bladder Outlet Obstruction Index

- o $BOOI = P_{det@Q_{max}} - 2Q_{max}$
- o $BOOI > 40$ Obstructed
- o $BOOI 40 - 20$ Equivocal
- o $BOOI < 20$ Unobstructed

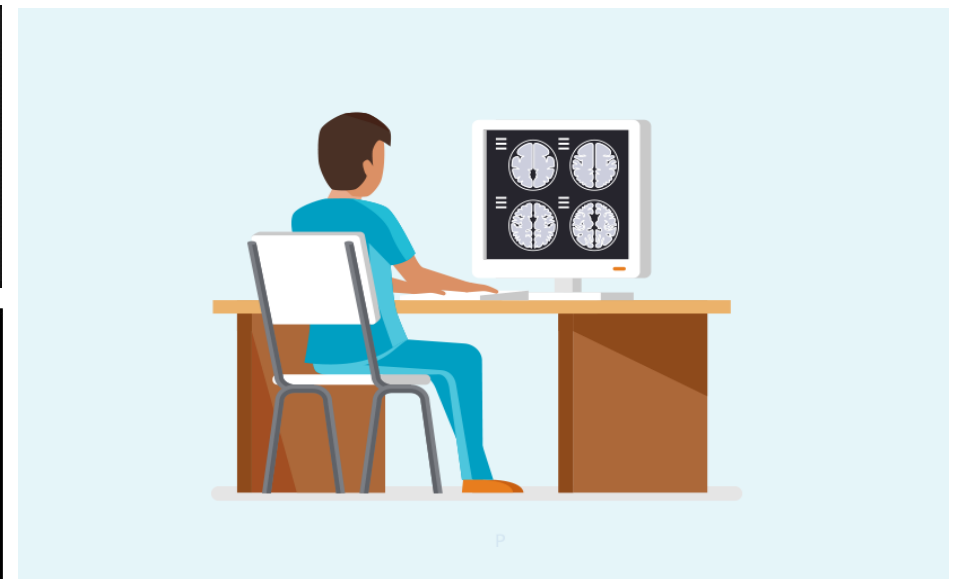
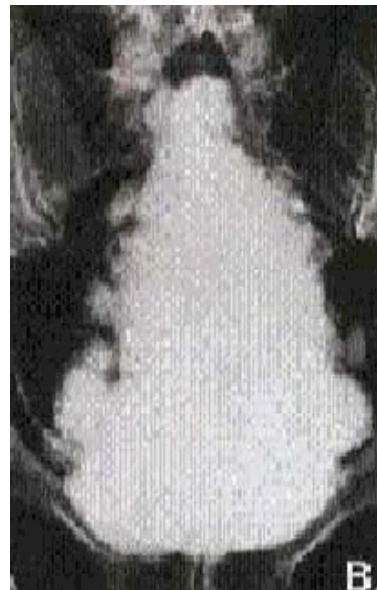
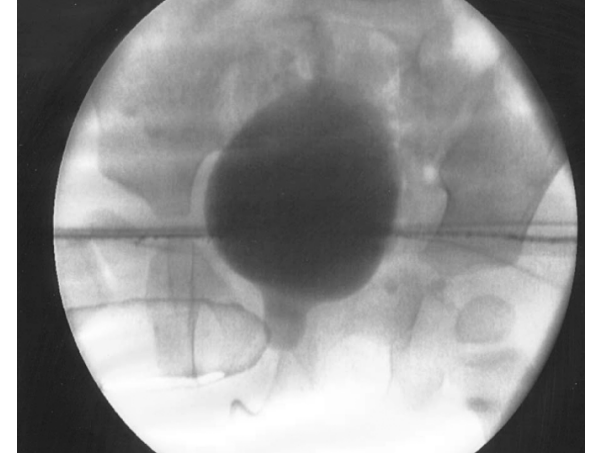
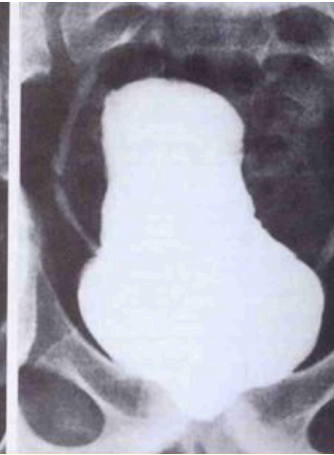
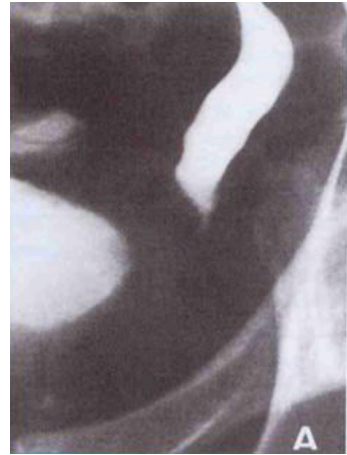


OAB/OAD peuvent être obstructives

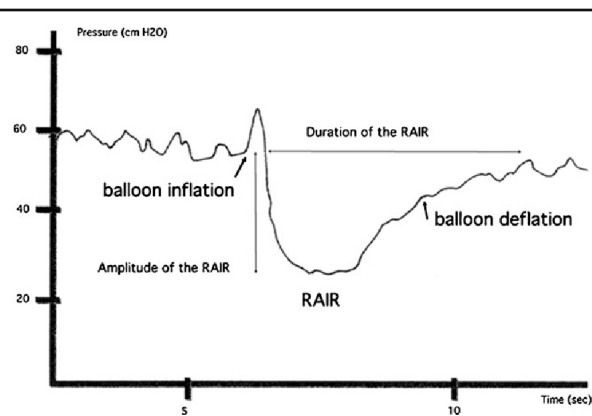
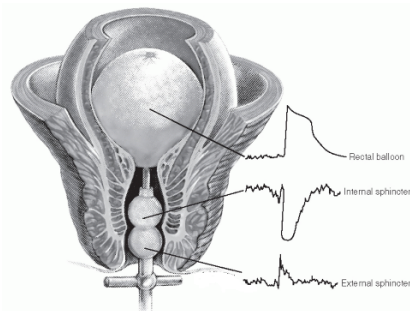
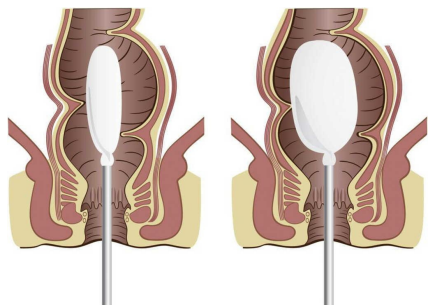




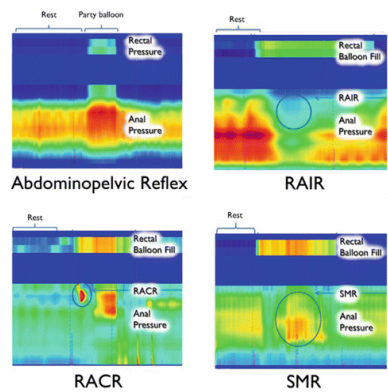
Radiologie : central ≠ périphérique ?



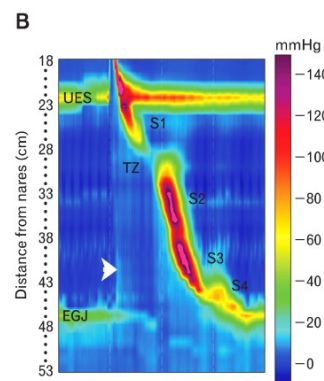
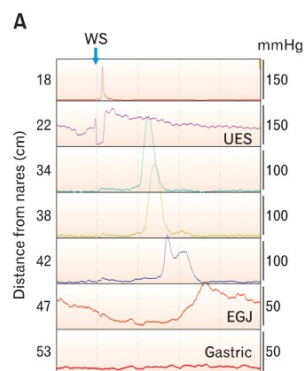
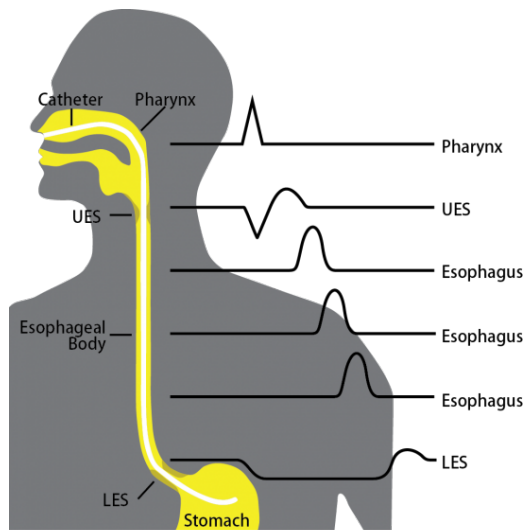
Manométrie ano-rectale



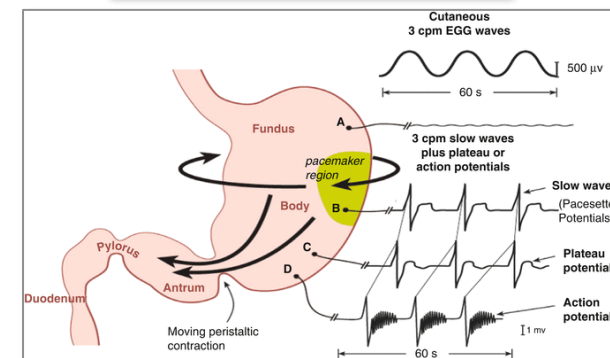
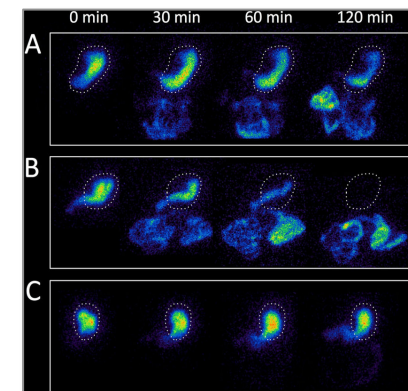
High Resolution Manometric Anorectal Reflexes



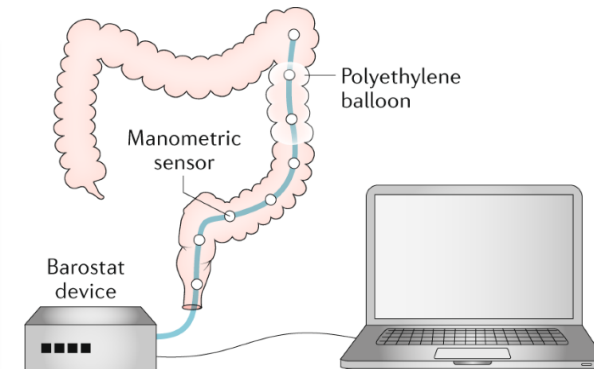
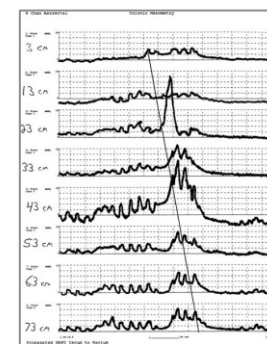
Manométrie oesophagienne



Scintigraphie gastrique



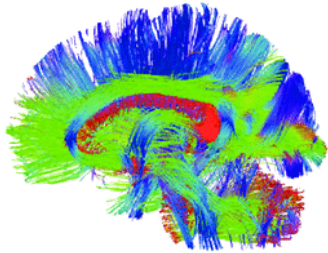
Manométrie colique



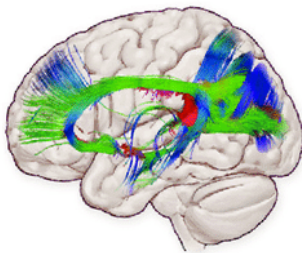


Connectome

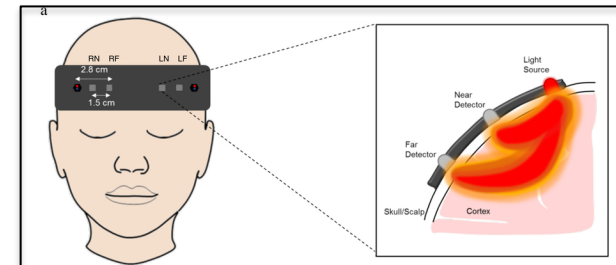
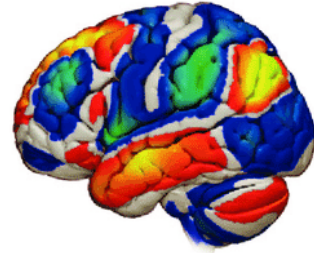
A Map of Anatomical Connectivity



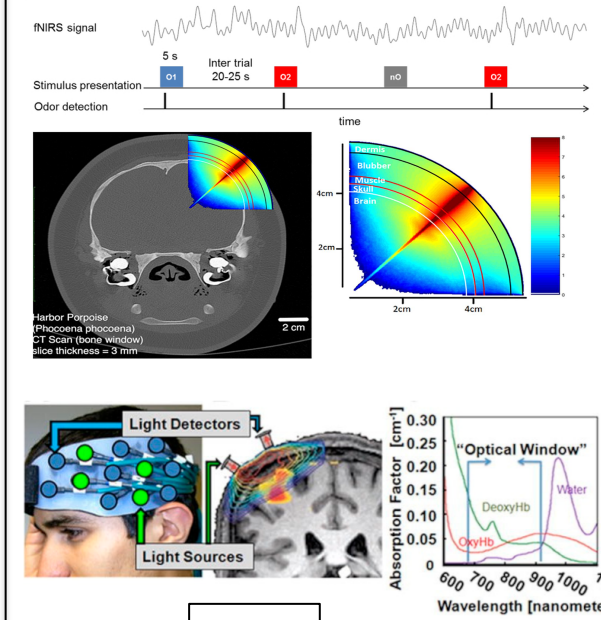
B Specific Fiber Tracts



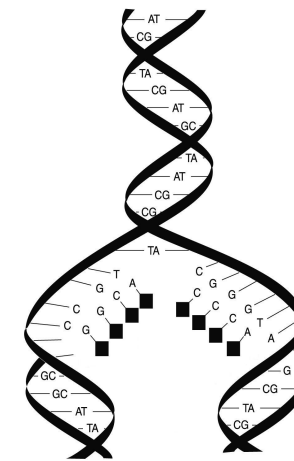
C Map of Functional Connectivity



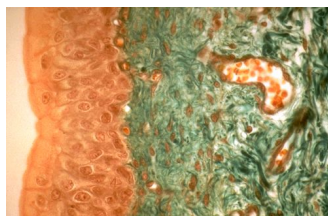
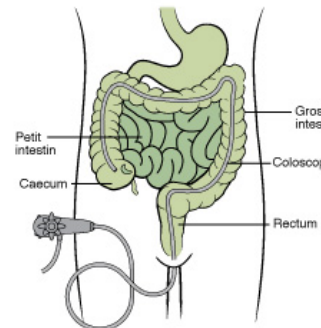
b



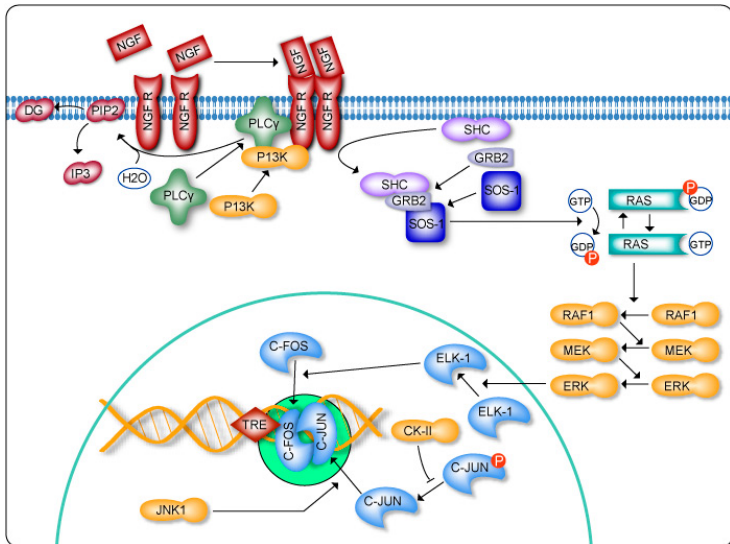
NIRS



Génomique



Histologie



Bio marqueurs vésicaux