Notes dr. A Albakeer +dr Ziad

General speaking:-

- Back pain:

  - know the **red flags** of back pain: (TUNA FISH): Trauma, Unexplained weight loss, Neurological symptoms "motor = weakness, sensory = sensory loss", Age >50, F "Fever Failure to improve by analgesics", IV drug user, Steroid use, Hx of cancer, other important red flags: trauma, night pain, urinary Incontinence.

  - Knowing the site of the pain and whether its radiating to the lower limb "uni-bi lateral, anterior or posterior compartment" -> remember the myotome and dermatome.

- Upper and lower motor neuron:

Upper motor neuron (UMN): the corticospinal tracts originate from neurons of the motor cortex and terminate on the motor nuclei of the cranial nerves and the anterior spinal horn cells "The pathways cross = **contralateral manifestation**"		lower motor neuron (LMN): the motor pathway from the anterior horn cell or cranial nerve via a peripheral nerve to the motor endplate. " no crossing = **Signs are on the same side as the lesion**."
Hemiparesis "brain cortex, brain stem lesions" and **paraparesis** " corticospinal tract"		**Anterior horn cell lesions, Spinal root lesions** "cervical and lumbar disc lesions" and **Peripheral nerve lesions**
Cord lesions result in **UMN signs below the lesion.**		**LMN signs at the level of the lesion** and unaffected muscles above the lesion.
Fasciculation	absent	Present
Muscle wasting	No	**yes**
Paralysis "tone"	Spasticity "hypertonia"	**Flaccid "Hypotonia"**
Clonus	Present	absent
Weakness	predominantly extensors in the arms, flexors in the legs.	
Reflexes "deep"	Exaggerated	**Lost**
Plantar reflex	Babinski's sign + "abnormal"	**Lost**

- Headache:
  - Causes include: compression, high ICP and meningeal irritation due to subarachnoid hemorrhage "rare complication of meningitis".

- Midbrain injury:
- Cauda Equina and Conus Medullaris Syndromes:
  آخر نقطتين ما ركز عليها لكن كانت من ضمن الحديث.

Conus medullaris	Cauda Equina Syndrome
Location: L1-L2 vertebral level Injury to sacral cord (S1-5)	**Location:** L2-Sacrum vert level Injury to lumbosacral roots
Causes: L1 fracture Tumors, gliomas Vascular injury Spina bifida, tethering of cord	**Causes:** L2 or below fracture/disc Sacral Fractures Fracture of pelvic ring Spondylosis
Signs and symptoms Normal motor function of lower extremeties,(unless motor S1-S2 involvement) Saddle anesthesia No pain Symmetric abnormalities Severe bowel, bladder, sexual dysfunction BCR may be present	**Signs and symptoms** Flacid paralysis of involved lumbar roots Areflexic LE Sensory loss in root distribution Pain Asymmetric High lesions spare bowel and bladder BCR often absent
EMG Normal	**EMG** root findings

- Base of skull fracture signs:
  - Raccoon eye, - CSF rhinorrhea, - CSF otorrhea, - battle sign, - hematotympanum, - bump.

Examination: https://www.youtube.com/watch?v=s9xfkbjrxTs

- Upper and lower motor neuron: position the pt.: sitting

Always compare and be organized.

A- Inspection: adequate exposure + sitting

- (skin" scars, swelling, pigmentation", wasting, deformities, tremor, unmoral posture, any devices,), fasciculation and involuntary movement.
- inspect all area from the front and the back.

B- Palpation = movement:

Always before you touch the pt. ask about any pain and explain what you are doing

1- **TONE**: https://www.youtube.com/watch?v=urDYKPOQx6c
- position the pt.: supine "best for LL", sitting otherwise.
- **spasm, flaccid, normal**
- **all joint of UL "shoulders, elbow, wrist" and LL "hip, knee, ankle", all movements "extension, flexion, adduction, abduction"**

في أغلب الفيديوات "مرة بسرعة ومرة ببطء"

2- **DEEP TENDON REFLEX: (0-4)**

expose the area "if u can" and compare both side

if you don't know the dermatome ..... حتحطِ نفسك في مواقف باااايخة

Deep Tendon Reflexes

0 = absent
± = present only with reinforcement
1+ = present but depressed
2+ = normal
3+ = increased
4+ = clonus

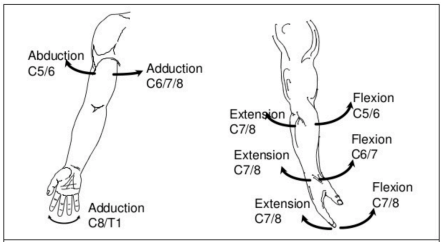
Muscle	Nerve	Root
Biceps	Musculocutaneous	C5, (C6)
Supinator	Radial	C6, (C5)
Triceps	Radial	C7
Patellar	Femoral	L3-L4
Achilles	Tibial	S1-S2

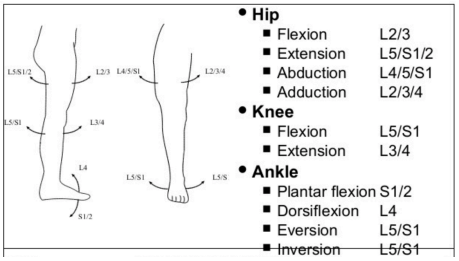
- Know how to do the knee reflex for pt. in supine position,
- In the ankle, a slight dorsiflexion done by u not by the pt. will help u to make the Achilles tendon more prominent.

3- **POWER: (0-5)**

Table 5
Muscle Strength Grading Scale (Oxford Scale)²

0/5	No contraction
1/5	Visible/palpable muscle contraction but no movement
2/5	Movement with gravity eliminated
3/5	Movement against gravity only
4/5	Movement against gravity with some resistance
5/5	Movement against gravity with full resistance





- **start distally and move proximally and always compare " جهة وجهة مو حركة حركة"**

a- **hand: -** grip "both hand at once", - finger "extension, flexion, adduction, abduction"
b- **wrist: -** extension, flexion,
c- **arm:** - support the biceps.
d- **Shoulders: -** extension, flexion, adduction, abduction.

- **In the lower limb do the big toe alone,**

C- Sensation: again dermatome " جيبوا قطن معكم ويفضل لو يكون مغلف علشان تورون الدكتور انكم نظيفين وعود اكسروه بعد قدامه !!! او ابرة الهمر "

- **هنا نفحص dermatome by dermatome مو جهة بجهة ، من اهم الأشياء لازم تشرح للمري كل آداة كيف بيكون إحساسها وجرب عليه قبل تطلب منه يسكر عيونه وتختبره علشان يعرف**

a- Fine touch, b- pin prick stimuli, c- proprioception "hold the joint not the end of the finger", d- vibration: tuning fork, e- clod and hot "u won't do it".

- **T4: the nipple, - T10: umbilicus.**

D- special tests:

a- **Babinski's sign:** up-> planter reflex+ , down-> normal.

b- **Clonus.**

- **Mental function:**

1- **Orientation:** اليوم ، الشهر السنة ، الوقت من اليوم " ليل ، نهار "

2- **Memory: long:** مدرسته وهو صغير **, short:** ٣ كلمات تقولينها لهم ونهاية المحادثة تسألينهم وش الكلمات ال٣ اللي قلتيها

3- **Speech:** كلام د. الغفم أفضل بكثير ، لانهم مديسن اكثر

4- **Calculation:**

5- **GCS:** لعبة السيرجري هذا الشيء محاضرة التراما افضل مكان ترجعون له

- **Cranial nerve:** هنا بذكر فقط الملاحظات وارجعوا انتوا عاد لتالي

1 **Olfactory: Ask hem if he can smell or if his smelling has ben changed recently, you can't test by anxious stimuli like alcohol swab or perfume.**

2 **Optic: pt. should be wearing his glasses**

- visual acuity: start by asking the pt. wither he can see your finger if not your hand if not use light.

- visual field: remember the defects like the one in the Medicine, * PCA stroke will spare the macula*

*** ur comparing ur field with the pt.'s field …. So u have to had a Normal visual field***

- **Optimal distant is a hand length, when doing the Ex ur hand should be in the middle.**
- **Ask them to cover only not to push their eye -> focus on ur opened eye ->Ex all the 4 Q, both eyes**

- fundoscopy: papillary edema -> raised ICP

- light reflex: - reaction: [direct and indirect (consensual response) = they have the same nucleus Edinger–Westphal nucleus (accessory oculomotor nucleus)] afferent= optic (here is the defect if both didn't react), efferent= oculomotor (here is the defect if only one eye didn't react)

- size: before and after, - symmetry: *asymmetry due to direct compression on the oculomotor nerve as a result of uncal herniation*, - shape: flat like cat eyes.

- Color: it has special cart, only know that in optic neuritis caused by MS pt. will have red desaturation -> comparing normal to abnormal, the abnormal eye will see the red with more saturation.

3 **Oculomotor: -** accommodation: ask him to see something far then bring something close to him eyes and ask him to see it او العكس الهدف هل بؤبؤ العين جالس يتوسع او يتضيق

- **H letter + cross**
- **To make sure that ur examining the whole field make sure when the pt. moves his eyes u don't see the sclera in the direction of movement, تعرفون لما نقول عينها تصل او تدخل كذا تأكدوا إن الجهة اللي باتجاها حركة العين ما تشوفون بياض العين**

4 **Trochlear: both movement and nystagmus "ask if he fells pain or diplopia",**

5 **Trigeminal: know the branches and the function,**

- **Examining the sensation "how to know if the pt. lies on you?" examine an area that is not supplied by the trigeminal "e.g. C2" and if she says she doesn't feel …. She is a lier.**

6 **Abducens:**

7 **Facial:**

-Facial symmetry, nasolabial fold, wrinkles, corners of the mouth,

-Test: anterior 2\3 of the tongue,

ارفع حواجبك، سكر عيونك " حاولي تفتحينها بيدينك الثنتين وحدة من فوق العين والثانية تحتها"، ابتسم" السيمتري"، انفخ " تنفخ -" كل الجهتين وانتي تختبرين كل جهة لحال لو فيه مشكلة ما راح تقدر تصكر فمها

-corneal reflex: afferent-> trigeminal "sensory", efferent-> facial "motor"

- special sensation, sensory "supplying also external ear", motor.

- Ramsay Hunt Syndrome, - Bell's Palsy.

8 **Vestibulocochlear:** أهم شيء لو اختبرتي إذن سكري الثانية
9 **Glossopharyngeal:**
10 **Vagus: - uvula-> deviate to the normal side if it was deformed, -gag reflex-> by using 2 tongue depressors (afferent= Glossopharyngeal, efferent= Vagus)**
11 **Accessory: inspection and movement of (trapezius and sternomastoid) and compare -> if ubnormal there will be shoulders drop.**
- **It is not a cranial nerve,**

12 **Hypoglossal:**

- **Cerebellum:**

from the head to the toe

A- Head: 1- eyes: nystagmus, H letter, 2- mouth: speech,
B- Upper and lower limbs:
1- **Tone and reflexes: do it or at least mention it, (hypo "ipsilateral" if there is a cerebellum lesion).**
2- **Finger to nose reflex: - tremor, - overshooting**
3- **Rapid alternative movement: (upper limb), no coordination if there is a cerebellum lesion.**
4- **Typing: for intension tremor,**
5- **Pronator drift:** اللي يدعي ويسكر عينه
6- **Heel to toe\shine:**
7- **Toe to toe:**
8- **Gait:**
9- **Proprioception: not specific only to differentiate between cerebellar and sensor "post column" ataxia.**

حتى لو ما استفدتوا ادعوا لأختكم المسلمة ... الله يوفقكم يارب ونخلص ثالث وننحاش من هالسنة الطويلة