

## CNS CORRECTIONS

# Anatomy

### Sheet 1

#### >>Page 1

last line Medulla + cerebellum + pons are related to a cavity called 4th ventricle  
(Explanation: The fourth ventricle is a diamond-shaped cavity located posterior to the pons and upper medulla oblongata and anterior-inferior to the cerebellum)

#### >>Page 2

Line 7 Tract or a pathway is a group of axons (ADD : in the CNS)  
(Because group of axons in PNS is called nerve)

#### >>Page 4

line 6 from bottom "so each muscle ... Maximus"  
Replace it with " regions in these functional areas are divided according to the accuracy of muscle movement, not on the size of the muscle, (e.g. although hands & tongue are smaller in size, they have very accurate patterns of movement thus occupy larger regions in area 4 than gluteus Maximus does."

#### >>Page 5

line 4 -- complex "area" : Complex movement  
line 5.. within frontal lobe OR YOU CAN SAY area 6) cause the 2 sulci bounds this area (both are right)  
line 7.. the doctor said it is in the back of the "middle" frontal gyrus.  
I checked from 3 different resources, area 8 (FEF) is in the superior frontal gyrus  
Bass ka2enno el doctor lamma wasafha he said it's "خلف" el middle frontal gyrus 😊  
" when we look on the brain superiorly it will prove this"  
-homeostasis recall from Endocrine system "regulation of PH, HR, BP, temp..."

### >>Page 6

Line 7 below the figure... please notice that the hypothalamus secretes releasing hormones as well as release-inhibiting hormones that stimulate or inhibit production of hormones from anterior pituitary

(1B) Hypothalamus >> & electrolyte balance & sleeping/wakefulness & body weight also it releases inhibitory factors to inhibit pituitary hormones secretions >> (ANTERIOR PITUITARY)

### >>Page 7

number 13 --> add "RECENT" memory.

### >>Page 9

line 2 from bottom, Delete the word peduncles in "pons peduncless"

### >>Page 10

Line 11... please notice that (11 putamen & 12 globus pallidus external segment & globus pallidus internal segment) ONLY these three parts are called lenticular or lentiform nucleus

### ***Sheet 2***

where it says "Remember we CAN'T find both sensory and motor on the same side" i think it should be --> we CAN find both

### ***Sheet 3***

#### >>Page 11

About the subdivisions of Lamina IX: the written descriptions of the Ventromedial and Dorsomedial groups are swapped out. It's supposed to be Ventromedial --> muscles of abdomen (FLEXORS) and Dorsomedial --> muscles of back (EXTENSORS)

PS the image on the same page has them written correctly

but another student said the image is wrong and what's written is correct

### ***Sheet 5***

#### >> page 8

it says "coordinate the movement of nerve 2 and 6," when it should say "coordinate the movement of nerve 3 and 6."

## **Sheet 6**

### **>>page 10**

line 3 ..it says "we cut the dorsal arteries" when it should say "we cut the dorsal ROOTs"

### **((sheet 4/5/6))**

in these sheets .. there were a lot of information about the alpha and gamma motor neurons that could be confusing

so consider the next as a correction if it was mentioned wrong in the sheets :

{Stimulation of gamma is easier and simpler than alpha by higher centers,  
Since gamma motor neurons are smaller than alpha motor neurons, they have lower threshold for excitability than the alpha motor neurons thus they are easily excited and have higher tonic discharge rates.}

يعني الجاما بتتحفز أسرع من الألفا .. هاي من وجهة نظر سيال عصبي وليس لها علاقة بسرعة الإنقباض.. ببساطة لأنه الفرق بسيطة جدا بينهم بسرعة التحفيز و مهمة .. و لكن العامل الأكبر المؤثر على سرعة الإنقباض هو كم (سينابس) تشابك عصبي في بين هالعصب والعضلة ؟ ؟ كل ما كانوا أكثر كل ما صار الإنقباض أبطأ، فبالنتالي:

But remember that, even though Gamma fibers are excited easily, they activate the muscle fibers indirectly (poly-synaptic), while alpha fibers do it directly (Mono-synaptic). As a result, Alpha fibers give faster but short lived contraction, while Gamma fibers give slow but long lived contraction. So to sum up:

for fast contraction: stimulate alpha.

For muscle tone: stimulate gamma.

For continuous contraction and a certain movement: stimulate both.

## **Sheet 7**

### **>>page 4**

shock stage .. it is the first hours that we will have at it flaccid hypotonia not the interval between hypotonia and hypertonia

### **>>page 7**

point 5. Absence of abdominal flexion reflex at (the side contralateral to the lesion side)

point 6. Absence of cremasteric flexion reflex at (the side contralateral to the lesion side)

### **>>page 12**

it says "Remember if the patient has a stroke in his Lt internal capsule his mouth angle will be shifted to the (RT)"

when it should say "Remember if the patient has a stroke in his Lt internal capsule his mouth angle will be shifted to the (LT)"

This is because the weakness arises in the muscles of the RIGHT of the lower part of the face (internal capsule is above the level of the midline crossing of corticobulbar fibers), which results in unopposed LEFT muscle function at pulling the mouth to their respective side (which is the LEFT).

>>**page 13**

If the patient has Rt monoplegia with dysphasia / Lt shifted eye pupil have( Lt )cortical lesion

>>**page 19**

its says "If the posterior parietal cortex (area 5+8)" when it should say "If the posterior parietal cortex (area 5+7)"

***Sheet8***

to clarify :

the corticopontocerebellar tract; I think it's worth noting that the tract enters the cerebellum via the middle peduncle but exits through the superior peduncle

***Sheet 16***

>>**page 8**

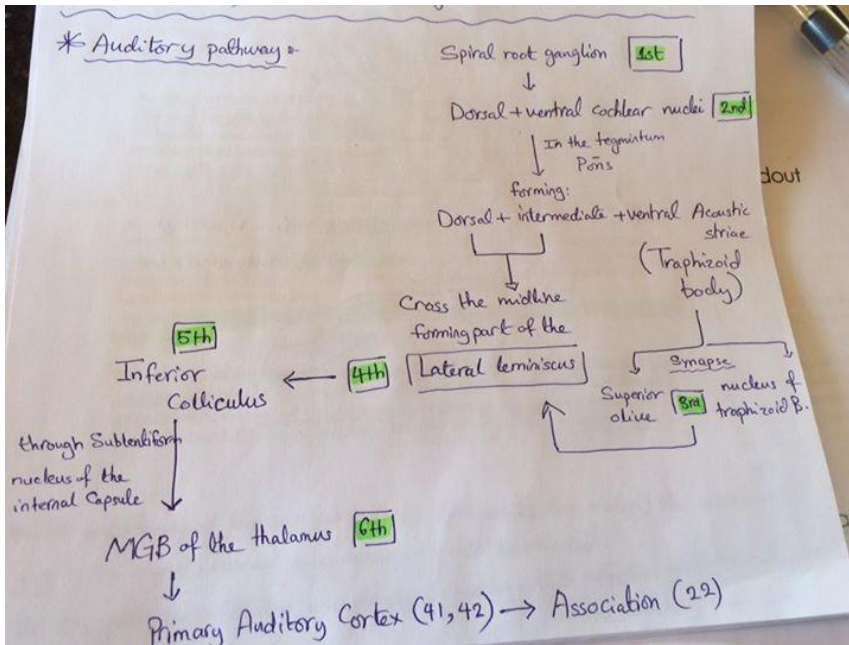
last paragraph.. line 7 "we've abducted the right eyeball "not left  
also rt.abducent in the pons and Lt. oculomotor in the midbrain (not the opposite )

>>**page 10**

In an MLF lesion the eye that undergoes nystagmus is the one that ABDUCTS not the one that adducts.

the LEFT eyeball will show nystagmus not the right

In the auditory pathway there were mistakes which are corrected in this picture,



Simple correction for this one; the auditory radiation projects through the sublentiform part of the internal capsule from the MGB to the auditory cortex and not from the inferior colliculus to the MGB

### Sheet 17

>>page 16

last word is not fibrillation .. it is fasciculation

Damage to the nerve--> injury action potential--> Fasciculation ( as the first LMNL sign).  
Later, fibrillation which can't be seen as twitching.

### Sheet 18

>>page 9

at the record the doctor called this case in facial palsy : Ramsay hunt Syndrome

### Sheet 19

>>page 14

Concerning fluent and non-fluent aphasia under examining an aphasic patient, it should be: Fluent aphasia->posterior lesion

Non-fluent aphasia->anterior lesion

## Sheet 20

### >>page 1

the 8th line from bottom .. delete the sentence : "the patient can read but can't understand what's read" .. the correct one is he has inability to read

### NOTE in the Handout

it is written that the thalamus receives sensation from everywhere except for the sense of smell , but now this is wrong .. now the thalamus receives from all

### Correction for the edited auditory pathway handout by fekra

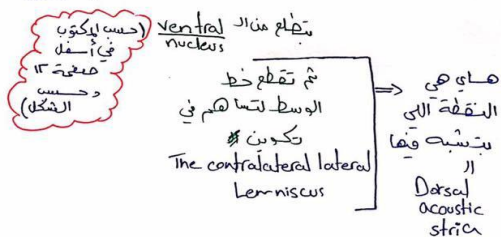
#### Correction

Edited handout for the Auditory Pathway.

Page 10,  
العمود الذي  
عاليه

~~△ The intermediate acoustic strica~~  
~~نفس الكلام في ال~~  
~~Dorsal~~

△ The intermediate acoustic strica



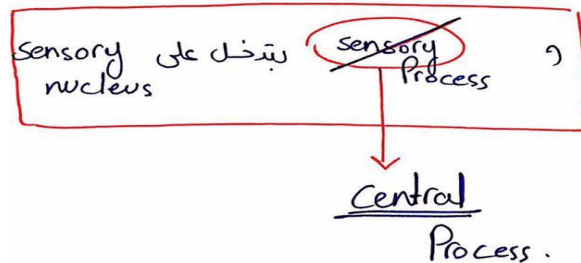
#### Correction

Cranial Nerves - Part (1)

Page 12

العمود الذي عاليه

آخر سطر



# **PHYSIOLOGY**

## **Sheet 4**

### **>> Page 1**

: reticulospinal tract supplies ipsilateral side of the body and it may supply the contralateral side as well. -this applies for both of its components medial and lateral-

### **>> Page 2**

: lateral vestibulospinal tract does NOT cross to the other side -i.e it supplies the ipsilateral side- while medial vestibulospinal supplies both sides (descends bilaterally).

Tectospinal tract descends to the contralateral side of the spinal cord.

### **>> Page 11**

: just add this note ; efferent fibers of the vestibulocerebellum may arise from the fastigial nucleus to the vestibular nuclei or they may arise directly from the vestibular nuclei;

According to doctor faisal.

## **Sheet 5**

### **>> Page 5**

line 6 ; remove the sentence ( this tract is bilateral), it is double crossed tract.

The explanation for this is found in the next page.

### **>> page 8**

Exposure to light\* and not to acceleration

## **NOTE**

these mistakes actually were mentioned in the record but we corrected it according to Dr. Faraj explanation

## **Sheet 12**

### **>> Page1**

Point 3 Merckle's disc...it's SLOWLY adapting

Point 4 Meissner's corpuscles...it's found in glabrous( non hairy) skin only

### >> page 5

replace the last 3 points with the next ones :

- as shown in figure 4, from the receptors, afferent neurons enter the spinal cord through the dorsal root ganglion, and before entering the posterior horn, they go 1-2 segments up or down ( the same happens in reflexes when the stimulus is pain) ·
- after entering the posterior horn, they synapse with the 2nd motor neuron and cross immediately anterior to the central canal to the opposite side.
- Fibers then ascend up to the thalamus ( VPL and intralaminar nuclei)

### **Sheet 14**

#### >> page 1

The localization of cold sensation is similar to that of fine touch...

the dr. has mentioned the previous sentence exactly but when I asked him about it he said the cold and warmth receptors concentrate in some areas more than others just as the fine touch where it concentrates in specific areas

dr. said this is not important. what is important to know is that in any area in our body the cold receptors would be more in number than the warmth receptors

### **Sheet 16**

#### >> page 7

the fourth point (this means that): the temporal half of the Left eye covers the RIGHT not the left half of the field and so the nasal half of the right eye.

### **Sheet 18**

#### >> page 4

The auditory cortex is tonotopically organized: The post. part recognizes the high frequency sounds that come from the BASE of the basilar membrane.

The ant. part recognizes the low frequency sounds that come from the APEX of the basilar membrane

### **Sheet 21**

page 11

about the proposed mechanism for long term memory, it results from relatively PERMANENT and not permeant anatomical and chemical changes



## **Sheet 22**

Page 2 ( transmitters):

Enkephalines: excitatory pentapeptides from PAG and periventricular areas that stimulate serotonin release from nucleus raphe magnus down in the tract , serotonin in turn ; stimulates inhibitory enkephalines release from spinal cord nuclei producing pre and post synaptic inhibition , blocking substance P action so pain relief >> it is the chemical analgesic system mentioned in sheet 13

# **pharma**

## **Sheet 2**

>>**page 11**

side effects of MAOI is orthostatic hypotension (this side effect is seen also in SARI and TCA not SNRI).

# **Micro**

## **Sheet 3**

>>**page 7**

it says that preexposure vaccine is given in 4 doses, change it to 3 doses (days 0, 7, 21) and NO dose in day 14.

# **Biochem**

## **Sheet 2**

>> **page 13**

Synthesis of glutamate by dehydrogenation NOT dehydration of ketoglutarate