# CNS Physio Summer Notes

كل الشكر والتقدير لصاحبة هذا المجهود الرائع، ربنا يجعل تعبها في ميزان حسناتها ويباركلها في علمها ووقتها ويفك كربها 💗

**Physio notes part 1 💌💌**

**lecture 1:-✅**

**McQ / SAQ Def of sensory receptors**

**McQ / SAQ function of receptors**

**McQ classification of receptors عناوين على الاقل**

**McQ pain receptors = nociceptors**

**SAQ Def of Muller law**

**SAQ / McQ Def of excitability**

**SAQ / McQ Def of receptor potential**

**McQ only receptors which depend on decreasing sodium influx and hyperpolarization is photoreceptors**

**SAQ mechanism of receptor potential**

**McQ maximal amplitude of receptor potention = maximal opening of sodium channels in receptor membrane = 100 MV**

**SAQ / McQ properties of receptor potential**

**SAQ / McQ Def of Weber Fechner law**

**McQ increasing intensity of stimulus increase rate of discharge by recruitment of receptor**

**McQ " to increase rate of discharge twice , you must increase intensity 100 times" this is called compression function of receptors**

**lecture 2 :-✅**

**SAQ/ McQ  Def of adaptation**

**SAQ compare between rapid adapting = phasic receptor and slow adapting= tonic receptors**

**McQ examples of rapid and slow adapting**

**SAQ mention importance of phasic receptor**

**SAQ/ McQ  Def of coding**

**SAQ / McQ Def of modality discrimination**

**SAQ / McQ labelled line principle**

**SAQ / McQ Def of intensity discrimination**

**SAQ / McQ peripheral / central mech of intensity discrimination**

**SAQ / McQ somatotopic map and law of projection**

**lecture 3 :-✅**

**McQ  Def of pain and significance**

**McQ pain receptors free nerve endings**

**SAQ Def of pain threshold**

**McQ distribution of pain receptors**

**SAQ mech of stimulation of pain receptors**

**SAQ compare between fast and slow pain**

**SAQ relations to cutaneous pain**

**SAQ Def of hyperalgesia**

**SAQ compare between 1ry and 2ry hyperalgesia**

**SAQ Def of deep pain**

**McQ causes of deep pain**

**McQ characters of deep pain .**
**McQ ممكن تيجي نظري لكن الاحتمال الأكبر**

**McQ causes of visceral pain**

**McQ characters of visceral pain**
**McQ ممكن تيجي نظري لكن الاحتمال الأكبر**
**SAQ Def of referred pain**

**McQ both viscus and somatic structure originated from the same embryonic segment**

**McQ examples of referred pain**

**SAQ convergence projection theory= why visceral pain is feeled in somatic area**

**lecture 4 :-✅**
**SAQ Def of pain control system**

**SAQ components of pain control system**

**McQ aim of pain control system is to prevent release of substance P**

**SAQ mention how enkephalin prevent release of substance P**

**SAQ enumerate types of endogenous opioids**

**SAQ mention types of opioid receptor and which type of endogenous opioids respond to each of them**

**SAQ types of gate theory**
**McQ spinal inhibition through acupuncture >> stimulate A delta fibers**

**McQ spinal inhibition through rubbing of skin >> stimulate A beta fibers**

**حفظ primary sensory area , secondary somatic sensory , somatic sensory association**

**lecture 5 :-** ✅
**McQ electrical synapse**

**SAQ compare between electrical synapse and chemical synapse ( fatigue , direction , velocity )**

**McQ physiological anatomy of chemical synapses**

**McQ most common among synapses >> axo-dendritic synapse**

**SAQ / McQ mech of releasing of neurotransmitter to synaptic cleft**
**اكتر McQ احتمال أنها تيجي**

**SAQ mention mech of cation ligand gated ion channels**

**SAQ mention mech of anion ligand gated ion channels**

**SAQ مهم جدا جدا mention mech of G-protein coupled receptors**

**McQ termination of synaptic transmission**

**SAQ what happens on stimulation of excitatory post synaptic potentials**

**SAQ what happens on stimulation of inhibitory post synaptic potentials**

**SAQ compare between characters of excitatory and inhibitory post synaptic potentials**

**SAQ enumerate general properties of synaptic transmission**

**McQ شرح one way conduction**

**SAQ Def and representation of synaptic delay**

**SAQ Def / cause / significance of synaptic fatigue**

**SAQ compare between short term potentiation and long term potentiation**

**McQ effect of hypoxia / ph / drugs on synaptic transmission**

**lecture 6 :-✅**
**McQ Def of reflex action / pathway of reflex action / afferent neurones**

**SAQ mention functions of afferent neurones**

**SAQ Def of interneurons**

**SAQ enumerate function of interneurons**

**SAQ Renshaw cells مهم جدا جدا**

**McQ efferent neurones**

**SAQ Def / pathway / significance of flexion withdrawal crossed extension reflex**

**SAQ enumerate properties of polysynaptic reflexes**

**SAQ Def / mech / significance of reciprocal innervation.**

**MCQ exception of reciprocal innervation**

**SAQ Def / cause of recruitment**

**SAQ Def / cause of after discharge**

**SAQ compare between motor tetanus and reflex tetanus**

**Physio notes part 2 💌💌**

**lecture 7:- ✅**
**SAQ Def of stretch reflex**

**McQ pathway of stretch reflex**

**McQ Def of muscle spindle**

**McQ structure of muscle spindle**

**McQ types of intrafusal muscle fibres**

**McQ afferent innervation of muscle spindle**

**McQ efferent innervation of muscle spindle**

**SAQ explain how stimulation of gamma motor neurones stimulates muscle spindle**

**SAQ compare between dynamic and static stretch reflex**

**SAQ enumerate function of stretch reflex / muscle spindle**

**SAQ Def damping function of muscle spindle**

**SAQ Def load reflex of muscle spindle**

**SAQ pathway of gogi tendon reflex / inverse stretch reflex/ lengthening reflex**

**SAQ what is Golgi tendon organ**

**SAQ mention significance of inverse stretch reflex**

**SAQ compare between stretch and inverse stretch**

**SAQ compare muscle spindle and Golgi tendon organ**

**SAQ Def / pathway of skeletal ms tone**

**SAQ enumerate functions of skeletal ms tone**

**lecture 8 :-** ✅
**McQ upper motor neurone and lower motor neurone**

**primary motor area**
**McQ site**
**McQ / SAQ representation**
**SAQ function , lesion**

**premotor area**
**McQ site**
**SAQ function , lesion**

**supplemental McQ**

**SAQ enumerate extra pyramidal tract**

**SAQ mention tracts of medial motor system / lateral motor system**

**McQ termination / innervation / concern of medial / lateral motor system**

**McQ origin / divisions of pyramidal tract**

**SAQ function of pyramidal tract**

**McQ origin of extra pyramidal**

**SAQ function of rubrospinal tracts**

**SAQ function of reticulospinal**

**SAQ function of  vestibulospinal**

**SAQ function of tectospinal**

**McQ functions / lesions of extra pyramidal system**

**lecture 9:-** ✅
**McQ most common site >> internal capsule**

**McQ main cause of internal capsule lesion is hemorrhage or thrombosis of lennticulostriate artery**

**SAQ contralateral paralysis in UNML**

**SAQ contralateral paresis in UNML**

**SAQ mechanism spasticity in UNML = mechanism of exaggerated tendon jerk and clonus**

**SAQ babiniski sign Def , causes**

**SAQ why no or minimal atrophy happens in UNML**

**McQ Electrical response in UNML >> CCC > ACC > AOC > COC**

**McQ sensory loss in UNML**

**McQ causes of LNML**

**SAQ explain why muscle atrophy occurs in LNML**

**SAQ compare between UNML , LNML according to ms atrophys and reason**

**McQ degeneration of motor neurones**

**SAQ flaccid paralysis in LNML**

**McQ denervation supersensitivity**

**SAQ compare between fasiculation and fibrillation**

**SAQ reaction of degeneration**

**SAQ enumerate functional changes in LNML**

**lecture 10 :-** ✅
**McQ semicircular canal : number , end , arrangement , coplanner , structure**

**McQ uricle and saccule**

**McQ vestibular hair cells**

**SAQ stimulation of vestibular hair cells**

**McQ orientation of hair cells in vestibular apparatus**

**SAQ enumerate functions of utricle and saccule**

**SAQ mech of detection of head absolute  position in space**

**SAQ role of macculae at the onset of acceleration**

**McQ role of macculae in constant speed**

**SAQ role of macculae at deceleration**

**McQ functions of s.c.c**

**McQ role of s.c.c without rotation s.c.discharge**

**SAQ role of crista with onset of rotation**

**SAQ role of crista at deceleration**

**SAQ enumerate effect of stimulation of SCC**

**SAQ Def / causes of vertigo**

**McQ nystagmus**

**SAQ significance of rotational nystagmus**

**SAQ cause of spontaneous nystagmus**

**McQ optokinetic nystagmus**

**McQ autonomic reactions >> motion sickness**

**lecture 11  :-** ✅
**McQ Def , site , structure , nuclei**

**SAQ mention how thalamus acts as a sensory relay station**

**McQ gating function of thalamus**

**McQ role of thalamus as sensory center >> crude touch and diffuse pain**

**SAQ enumerate functions of the thalamus**

**McQ motor function , association and integrations functions of thalamus**

**SAQ Def of arousal / wakefulness**

**SAQ Def of RAS**

**SAQ enumerate factors affecting RAS**

**SAQ role of sensory signal in RAS**

**SAQ role of feedback signal in RAS**

**SAQ role of neurotransmitter in RAS**

**SAQ role of RIA in RAS**

**SAQ role of drugs in RAS**

**lecture 12 :-** ✅
**McQ anatomically , functionally**

**McQ vestibulocerebellum**

**SAQ role of folliculonodular lobe / vestibulocerebellum in control of equilibrium**

**McQ lesion of vestibulocerebellum**

**McQ spinocerebellum connections**

**SAQ role of role of vermal zone in regulation of body posture**

**SAQ mention servocomparator function of paravermal zone**

**SAQ mention predictive and damping function of paravermal zone**

**McQ lesion >> vermal disorder >> inability to sustain upright posture**

**McQ connections of cerebrocerebellum**

**SAQ explain sequence planning of cerebrocerebellum**

**SAQ explain timing planning of cerebrocerebellum**

**McQ neo cerebellar syndrome >> hypotonia + asthenia + ataxia**

**McQ what happens in failure of damping function >> rebound phenomenon+ dysmetria ( ataxia)**

**SAQ what is meant by rebound / dysmetria / decomposition of complex movement / dysdiadochokinesia**

**lecture 13 :-** ✅
**SAQ mention components of basal ganglia**

**Pathways of basal ganglia :-**
**direct >> initiate movement**
**indirect >> inhibitory to cerebral cortex**

**SAQ mention internal connections of basal ganglia**

**McQ neurotransmitters of basal ganglia**

**SAQ enumerate function of basal ganglia**

**disorders of basal ganglia**
**الدكتور محددش اسئلة فيها هو قراها فقط فذاكروها احتياطي**

**Physio notes part 3** 💌💌

**lecture 14 :-** ✅
**SAQ enumerate functions of hypothalamus**

**SAQ mention role of hypothalamus in regulation of autonomic nervous system**

**SAQ mention role of hypothalamus in regulation of blood glucose**

**SAQ mention mechanism by which hypothalamus regulates blood glucose**

**SAQ mention role of hypothalamus in circadian rhythm**

**SAQ mention role of hypothalamus in osmalrity**

**McQ دول فقط النظري و باقي المحاضرة تيجي**

**lecture 15 :-** ✅
**SAQ enumerate functions of limbic system**

**McQ function of limbic system >> emotions and emotional behaviour**

**SAQ role of limbic system in control of feeding behaviour**

**McQ which nuclei responsible for feeding behaviour >> amygdaloid**

**McQ damage of amygdaloid >> hyperphagia**

**SAQ role of limbic system in fear and rage reactions**

**McQ amygdala responsible for protective emotional reactions**

**SAQ compare between fear and rage reactions**

**McQ somatic response of fear / rage**

**McQ autonomic response of fear / rage**

**McQ control of sexual function and reproduction occurs by >> limbic system and hypothalamus**

**McQ hypothalamus control which of the following in sexual behaviour >> onset of puberty and sexual function and activity**

**McQ effect of bilateral damage of amygdala on sexual activity >> hypersexuality**

**McQ effect of  removal of limbic cortex on sexual activity >> loss of interest in both sex**

**McQ which nuclei responsible for reward effect >> lateral , ventromedial nuclei of hypothalamus , amygdala , septal nuclei**

**McQ transmitter responsible for reward >> dopamine**

**McQ euphoric effect of cocaine occur due to >> increase dopamine activity in reward system**

**McQ nuclei responsible for punishment effect >> periaquiductal and periventricular**

**McQ damage of hippocampus >> anterograde amnesia**

**McQ limbic system ( hippocampus ) responsible for differentiation of signals into significant and insignificant**

**lecture 16 :-** ✅
**# area for analysis of body position**
**McQ site ,function**

**# area for analysis of written words**
**McQ site , function , lesion**

**# area for recognition of faces**
**McQ site , function , lesion**
**SAQ what is meant by prosopagnosia**

**# area for language comprehension**
**McQ / SAQ site , function , lesion**

**# prefrontal area**
**McQ / saq function , damage**

**McQ / SAQ define speech**

**McQ dominant hemisphere in right handed people is left side**

**McQ areas involved in language >> area for language comprehension , area for language expression**

**McQ areas for language comprehension >> Wernicke's**

**McQ area for language expression>> Broca's for reading , exner for writing**

**SAQ Def of aphasia**

**McQ most common cause of aphasia is vascular stroke in cerebral blood vessels**

**receptive aphasia**
**SAQ site of lesion and characters**

**McQ meaning of auditory agnosia >> inability to understand spoken  words**

**McQ auditory agnosia cause by lesion in >> auditory association area ( 22)**

**McQ meaning of visual agnosia >> inability to understand written words**

**McQ visual agnosia caused by lesion in >> visual association areas (18-19)**

**Wernicke's type receptive aphasia**
**McQ / SAQ site of lesion , characters**

**McQ failure to articulate speech caused by lesion in >> Broca's area (44-45)**

**McQ meaning of agraphia >> failure of writing**

**McQ agraphia caused by lesion in >> exner area (area 46)**

**SAQ Def motor aphasia**

**global aphasia**
**McQ / SAQ site of lesion and characters**

**lecture 17 :- sleep ✅**
**🔰 ال جزء ملحوظة memory محذوف**

**SAQ / McQ Def of sleep**

**SAQ /McQ compare between slow wave sleep and rapid eye movement**

**SAQ mechanism of sleep**
**1) initiation of NREM by raphi nuclei and nucleus solitarius**
**2) initiation of REM by REM on neurones**
**3) termination of REM by increasing serotenergic neurons in raphe nucleus**

**McQ transmitter of NREM >> serotonin**

**McQ transmitter of REM >> acetylcholine**

**McQ transmitter of termination of REM >> serotonin**

**يا مسهل خلاص هانت و نخلص نوتس الفسيو 🤕🤕**
**بصوا بصراحة لو عايزين نصيحتي أمسكوا كل محاضرة من ملفات دكتور عمرو بتاعة المراجعة و اقروا المحاضرة بفهم و بعدين احفظوا الاسئلة النظري اللي في النوتس**
**و بعد ما تخلصوا الملف كامل حلوا اسئلة دكتور قدري**