

CNS-Physiology

Archive

Lecture 1

Somatic Pain and
Thermal Sensation

Medical card

Name _____

Date of b _____

Gender _____

Address _____

Date of call _____

Sign _____

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Lecture 1

1. As per thermal sensations, one of the following is correct:

- A. Are evoked by all changes in environmental temperatures.
- B. Are evoked by stimulation of thermo- sensitive pain receptors.
- C. Are involved in regulating metabolic activities.
- D. Are transmitted by A beta sensory fibers.
- E. Are transmitted by A alpha sensory fibers.

Answer: C. Are involved in regulating metabolic activities.

2. Intermittent claudication is:

- A. Visceral pain.
- B. Deep pain.
- C. Cutaneous hyperalgesia.
- D. Colicky pain.
- E. Secondary hyperalgesia.

Answer: B. Deep pain.

3. As per hyperalgesia, one of the following is correct:

- A. It happens normally.
- B. Primary hyperalgesia is best explained by convergence- facilitation theory.
- C. Primary hyperalgesia happens because of threshold changes.
- D. Secondary hyperalgesia happens in the area of the inflamed skin.
- E. It never happens in local axon reflex.

Answer: C. Primary hyperalgesia happens because of threshold changes.

4. Inhibition of pain signals by tactile stimulation of a skin surface involves:

- A. Type A alpha fibers in peripheral nerves.
- B. Type A beta fibers in peripheral nerves.
- C. Type A delta fibers in peripheral nerves.
- D. Type C fibers in peripheral nerves.
- E. Autonomic sympathetic afferent fibers.

Answer: C. Type A delta fibers in peripheral nerves.

5. Reaction to pain includes all of the following except:

- A. Increased HR.
- B. Depression.
- C. Withdrawal reflexes.
- D. Stoppage of impulse discharge from nociceptors in chronic painful conditions.
- E. In severe type of pain, parasympathetic activity is stimulated.

Answer: D. Stoppage of impulse discharge from nociceptors in chronic painful conditions.

6. Primary cutaneous hyperalgesia:

- A. Develops in the normal skin region around the area of flare.
- B. Is an abnormal condition in the skin in which painful stimuli becomes more severe.
- C. Is due to changes in threshold of pain receptors.
- D. Is associated with throbbing type of pain.
- E. Is accompanied with normal skin color.

Answer: C. Is due to changes in threshold of pain receptors.

7. Pain sensation is:

- A. A pleasant sensation.
- B. Transmitted by Pacinian corpuscles.
- C. Due to over stimulation of other sensations.
- D. A pre- potent stimulus.
- E. Of a much lower threshold of excitation compared to other sensations.

Answer: D. A pre- potent stimulus.

8. About hyperalgesia:

- A. The pain threshold is lowered in secondary hyperalgesia.
- B. The pain threshold is increased in secondary hyperalgesia.
- C. The pain threshold is lowered in primary hyperalgesia.
- D. The pain threshold is increased in secondary hyperalgesia.
- E. It is not related to pain threshold changes.

Answer: C. The pain threshold is lowered in primary hyperalgesia.

9. One of the following is NOT a reaction following pain:

- A. Withdrawal reflex.
- B. Depression.
- C. Depression of transmission of pain along sensory pain fibers.
- D. Miosis of pupils.
- E. Increased HR.

Answer: C. Depression of transmission of pain along sensory pain fibers.

10. The sensation of temperature is signaled mainly by warm and cold receptors whose sensory fibers travel in association with the sensory fibers carrying pain signals. One of the following statements best characterizes the transmission of signals from warm receptors:

- A. Warm receptors are well- characterized histologically.
- B. Signals from warm receptors are mainly transmitted along slow- conducting type C sensory fibers.
- C. Warm receptors are located well below the surface of the skin in the subcutaneous connective tissue.
- D. There are 3 to 10 times more warm receptors than cold receptors in most areas of the body.
- E. Warm receptors relay in thalamus then to somatic sensory cortex.

Answer: B. Signals from warm receptors are mainly transmitted along slow- conducting type C sensory fibers.



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Lecture 2

Visceral Sensation
&
Referred Pain

Collected By :

Mohammad Mousa

1. Transmitters in pain control system include all the following, except?

- a. Serotonin.
- b. Acetylcholine
- c. Enkephalin
- d. Endorphins
- e. Dynorphin

Answers: b

2. Enkephalin blocks pain transmission by?

- a. Blocking the response of pain receptors to painful stimuli
- b. Slowing down transmission of pain impulses through synapses in the pain pathway
- c. Inhibiting the response of the cerebral cortical somatic sensory area to pain signals
- d. Blocking Ca^{++} channels in the pre-synaptic central terminals of pain sensory fibers
- e. Blocking Ca^{++} channels in the post-synaptic central terminals of pain sensory fibers

Answer: d

3. One of the following is a function of Endorphin?

- a. Major excitatory neurotransmitter
- b. Motivation
- c. Arousal
- d. Regulation of attention
- e. Act within pain pathways

Answer: e

4. Visceral pain is usually felt?

- a. Deeply in the diseased viscera
- b. In deep tissues close to the diseased viscera
- c. In skin areas that just overlie the diseased viscera
- d. In skin areas remote from the diseased viscera
- e. In skin area Showing phenomenon of hyperalgesia

Answer: b

5. Enkephalin is released by which of the following?

- a. Peri aqueductal gray matter
- b. Raphe magnus nucleus
- c. Peri ventricular nucleus

Answer: a

6. Which of the following is the basis for referred pain?

- a. Visceral pain signals and pain signals from the skin synapse with separate populations of neurons in the dorsal horn
- b. Visceral pain transmission and pain transmission from the skin is received by a common set of neurons in the thalamus
- c. Visceral pain signals are rarely of sufficient magnitude to exceed the threshold of activation of dorsal horn neurons.
- d. Some visceral pain signals and pain signals from the skin provide convergent input to a common set of neurons in the dorsal horn

Answer: d



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Lecture 3

Somatic sensation

Corrected By :

Ahmad Qawasmi

1. Gracile and cuneate tracts carry?

- a. Pain sensation
- b. Temperature sensation
- c. Fine (light) touch
- d. Motor pathway
- e. Extra pyramidal pathway

Ans:(c)

2. The pain and temperature sensation is carried through?

- a. Medial lemniscus
- b. Spinal lemniscus
- c. lateral lemniscus
- d. Dorsal lemniscus
- e. facial lemniscus

Ans: b

3 True about fine touch :

- A- stereognosis by giving familiar object
- B- tactile localization by 2 touch applied simultaneously

Ans: A

الأسئلة التالية هي أرشيف سابق وهي لا تتعلق بشكل مباشر مع المحاضرات السنة الحالية

1. Proprioceptive sensations include all the following, except?

- a. Position sense
- b. Equilibrium sense
- c. Movement sense
- d. Kinesthetic sense
- e. Muscle tension

Ans:(b)

2. Proprioceptors include all the following types of receptors, except?

- a. Muscle spindles
- b. Pressure receptors
- c. Vestibular receptors
- d. Joint receptors
- e. Thermal receptors deep

Ans:(e)

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Lecture 4

Spinal Cord Reflexes

Medical card

Name _____

Date of b _____

Gender _____

Address _____

Date of call _____

Sign _____

1. One of the following is NOT true about dynamic phase:

- A. Receptors are nuclear bag
- B. It is represented by tendon jerk
- C. It discharges in secondary afferent neuron
- D. Muscle fibers are stimulated at the same time
- E. It is stimulated by sudden stretch

Answer: C. It discharges in secondary afferent neuron.

2. All of the following would increase the discharge of central part of muscle spindle EXCEPT:

- A. Discharge of gamma motor neuron.
- B. Discharge of alpha motor neuron.
- C. Changes in muscle length.
- D. Stretching the muscle.
- E. None of the above.

Answer: B. Discharge of alpha motor neuron.

3. As per gamma efferent innervations of muscle spindle:

- A. It will cause an increase in discharges from peripheral part of muscle spindle.
- B. It will cause an increase in discharges from central part of muscle spindle.
- C. It supplies the central part of the muscle spindle.
- D. Its stimulation causes inhibition of the stretch reflex.
- E. Its stimulation contracts the central receptor part of the muscle spindle.

Answer: B. It will cause an increase in discharges from central part of muscle spindle.

4. The nuclear- bag fibers of muscle spindles are innervated by:

- A. A γ nerve fibers.
- B. A β nerve fibers.
- C. A δ nerve fibers.
- D. Ia nerve fibers.
- E. II nerve fibers.

Answer: D. Ia nerve fibers.

5. Muscle spindles:

- A. Are found in all skeletal muscles.
- B. Are found only in large skeletal muscles.
- C. Consist of small numbers of extrafusal muscle fibers.
- D. Consist of a large number of extrafusal muscle fibers.
- E. Consist of three types of intrafusal fibers.

Answer: A. Are found in all skeletal muscles.

6. The central ends of afferents from muscle spindles synapses with all of the following types of neurons EXCEPT:

- A. α - motor neurons of the same muscle.
- B. γ - motor neurons of the same muscle.
- C. Local interneurons.
- D. 2nd order neurons of ascending sensory pathways.
- E. None of the above.

Answer: B. γ - motor neurons of the same muscle.

7. All of the following according to dynamic stretch reflex are correct EXCEPT:

- A. Tendon jerk.
- B. Stimulated by sudden tapping on tendons.
- C. Receptors are nuclear bag.
- D. it discharges in flower spray fibers.
- E. it might be stimulated by sudden stretch.

Answer: D. It discharges in flower spray fibers.

8. The nerve supply of nuclear bag of muscle spindle is:

- A. $A\gamma$ nerve fibers.
- B. $A\beta$ nerve fibers.
- C. $A\delta$ nerve fibers.
- D. Ia nerve fibers.
- E. II nerve fibers.

Answer: D. Ia nerve fibers

الأسئلة التالية هي أرشيف سابق وهي لا تتعلق بشكل مباشر مع المحاضرات السنة الحالية

1. One of the following is NOT consistent with stretch reflex:

- A. Mytatic reflex
- B. Monosynaptic reflex.
- C. Polysynaptic reflex.
- D. All of the above are true.

Answer: D. All of the above are true.



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Lecture 5

limbic system

Medical card

Name _____

Date of b _____

Gender _____

Address _____

Date of call _____

Corrected By :

Sujood Abosror

CNS-Physiology

Archive

Lecture 5

limbic system

Medical card

Name _____

Date of b _____

Gender _____

Address _____

Date of call _____

Corrected By :

Sujood Abosror

1. Problem in Papez will cause?

Alzheimer's disease

للأسف مافي غير هاض السؤال على هاي المحاضرة
فهدول كم سؤال من chat gpt إذا في اشبي غلط او مو واضح انسو
السؤال تماما 🙏

2. The anterior and medial hypothalamic nuclei are associated with which autonomic effect?

- A. Sympathetic effects such as tachycardia
- B. Parasympathetic effects such as bradycardia
- C. Sympathetic effects such as hypertension
- D. Parasympathetic effects such as sweating

Answer: B. Parasympathetic effects such as bradycardia

3. Which nucleus of the hypothalamus is primarily involved in circadian rhythm regulation?

- A. Ventromedial nucleus
- B. Suprachiasmatic nucleus
- C. Lateral hypothalamus
- D. Posterior hypothalamus

Answer: B. Suprachiasmatic nucleus

4. Which structure in the limbic system plays a critical role in fear response?

- A. Cingulate gyrus
- B. Amygdala
- C. Hippocampus
- D. Septum

Answer: B. Amygdala

5. What happens to a monkey after bilateral amygdalectomy?

- A. Increased fear of snakes
- B. Total loss of appetite
- C. Approach snakes without fear
- D. Extreme aggression with minor stimuli

Answer: C. Approach snakes without fear

6. Which of the following is true regarding the feeding and satiety centers in the hypothalamus?

- A. The feeding center is located in the ventromedial nucleus.
- B. The satiety center is located in the lateral hypothalamus.
- C. Damage to the satiety center leads to hyperphagia and obesity.
- D. Stimulation of the feeding center causes cessation of eating.

Answer: C. Damage to the satiety center leads to hyperphagia and obesity.

7. Which limbic system structure is associated with maternal behavior?

- A. Amygdala
- B. Cingulate gyrus
- C. Hippocampus
- D. Orbito-frontal area

Answer: B. Cingulate gyrus

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Lecture 6

Movement control

Corrected By :

Malaak Al
Zaidaneeyen

1. Mainly pass and form the pyramids:

- a. Medial reticulo-spinal tract
- b. Lateral reticulo-spinal tract
- c. Vestibulo-spinal tract
- d. Corticospinal tract

Answer: D

2. Originate in the cerebral cortex and travel down to the brain stem or spinal cord?

- a. Upper motor neurons
- b. lower motor neurons

Answer: A

GABA main function?

- 1) main inhibitory
- 2) main excitatory

مكرر بشكل كبيرrrrrr

ويك!
أهذه عبادتك في
سبابك!
إذا ماذا أنت فاعل
في المسيح؟

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lecture 7

Arousal mechanism

Corrected By :

Raneem Bashtawi

CNS-Physiology

lecture 7

***Some questions from chat-gpt**

Which neurotransmitter is primarily released by neurons originating in the brainstem during the awake state?

- A) GABA
- B) Serotonin and norepinephrine
- C) Dopamine
- D) Acetylcholine

Answer: B

Orexins, involved in maintaining wakefulness, are produced in which part of the brain?

- A) Thalamus
- B) Cerebellum
- C) Hypothalamus
- D) Medulla

Answer: C

Narcolepsy is caused by a lack of:

- A) Dopamine
- B) Acetylcholine
- C) Orexins or their receptors
- D) GABA

Answer: C

The transition from sleep to wakefulness is mediated by:

- A) GABAergic neurons in the preoptic nucleus
- B) Monoaminergic neurons of the RAS
- C) Serotonergic neurons in the raphe magnus nucleus
- D) Cortical inhibitory pathways

Answer: B

The synchronization of alpha rhythms in an EEG is replaced by beta waves during:

- A) Deep sleep
- B) Light sleep
- C) Arousal or alerting response
- D) Relaxation with closed eyes

Answer: C

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lecture 7

In the EEG, low amplitude and high frequency waves indicate:

- A) Relaxation
- B) Deep sleep
- C) Alertness and cognitive activity
- D) Narcolepsy

Answer: C

In the reticular formation, the descending fibers are involved in:

- A) Enhancing sensory perception
- B) Inhibiting transmission in sensory and motor pathways
- C) Regulating consciousness
- D) Stimulating the thalamus

Answer: B

What characterizes alpha waves in an EEG?

- A) Frequency of 4-7 Hz, seen during light sleep
- B) Frequency of 8-13 Hz, seen in awake adults with closed eyes
- C) Frequency of 13-30 Hz, associated with alertness
- D) Frequency of 1-3 Hz, observed during deep sleep

Answer: B

Which EEG wave type is most associated with intense cognitive activity?

- A) Gamma waves
- B) Delta waves
- C) Beta waves
- D) Theta waves

Answer: A

The RAS receives collateral input from all the following systems except:

- A) Visual
- B) Auditory
- C) Olfactory
- D) Endocrine

Answer: D

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Lecture 8

Consciousness & sleep

Corrected By :

Malaak Al
Zaidaneeyen

1) Concerning sleep:

- a. It takes about 16 hours in old person.
- b. it takes about 8 hours in children.
- c. It takes about 6 hours in normal adults.
- d. Facilitated by fatigue and cold exposure.
- e. It shows circadian rhythm synchronized with daily dark light cycle

Answer: e

all the following CONSIST to declarative conscious EXCEPT:

- a. Body memory
- b. Short memoryc.
- Long memory

Answer: a

حكت مصطلح declarative بالريكورد و سلايدات قديمة

3)All of the following are INCORRECT related to Non-REM sleep except?

- a) Raphe-nuclei is the center of Non-REM sleep
- b) center of REM sleep is solitarius nucleus

Answer:a

سؤال مو موجود معنا بس انذكر تبييض السنوات الماضيه

4) One of the following is true:

- A- catecholamine drug increase RAS activity
- B- corticofugal decrease RAS activity
- C- sensory signal decrease RAS activity
- D- stimulation of sleep center increase RAS activity

Answer:a

5)Theories of sleep one of the following is true:

- A) Active theory seems to be the real mechanism of sleep.
- B) Passive theory seems to be the real mechanism of sleep.
- C) metabolic theory nhibition of the RAS by fatigue
- D)passive theory means inhibition of the RAS by signals discharged from certain centers.

Answer:a

مش معنا بس انذكر



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Lecture 9

Higher cortical functions

Corrected By :

Malaak Al
Zaidaneeyen

1) Exner area responsible of:

- A- vision
- B- auditory
- C- mathematical solving and writing
- D- speech

Answer: C

2) the cause of aphasia damage in which area ?

- a) Broca's
- b) Exner's
- c) premotor area
- d) wernicke's area

Answer:a

3) True about fine touch :

- A- stereognosis by giving familiar object
- B- tactile localization by 2 touch applied simultaneously

Answer: a

4) All of the following found in premotor area 6 ,except:

- A) Broca's area.
- B) Head rotation area.
- C) Hand skilled area.
- D) Exner's area45.
- E) Area 8 (frontal eye field)

Answer: B

Functions of Area 6

10 of 17

- 1-It initiates the gross movements.
- 2-It inhibits the stretch reflex & muscle tone.
- 3-It produces subconscious associated movements
- 4-It inhibits the grasp reflex.
- 5-It shares in controlling autonomic functions.

6-It contains specialized areas

- 1-Broca's area (word formation area, area 44).
- 2-Memory hand skills area: (Exner's area, area 45) .
- 3-Eye movement area (frontal eye field area, area 8) .

(It causes conjugate deviation of the eye to the opposite



Trunk & Axial
Muscles
(Posture)

في تضارب بين ال فسيولوجي والاناتومي.

رأي الاناتومي انه الجواب D لانه ما في رقم لل exner ولكن سلايد
ال فسيولوجي وضح عكس ذلك ولكن B هو الجواب الحرفي الوحيد الذي لم
يتواجد بالسلايد الخاص بالمحاضرة 9.

5) Which of the following is not found in the premotor area 6?

a. Supplementary motor area .

6) Which of the following is incorrect about motor area 4?

a. Muscles of mastication are found in the upper level .

b. Size of presentation depends on activity of the muscle after paralysis.

Answer: A

هذه المحاضرة اسئلتها يمكن أن تتداخل مع محاضرة الأناتومي 8 او 9

الطب الجراحة
لجنة

"إذا كانَ قلبي لا يُصاحبُ همّتي فما هو لي قلبٌ ولا أنا صاحبه."
تمت محاضرات الفسيولوجي بحمد الله تعالى
نسأل الله التوفيق والتمام