

Lecture 4

Sensory Receptors and Nervous System Quiz

- 1. What is a sensory receptor?**
 - a. A muscle that moves when stimulated**
 - b. A nerve ending that sends signals to the central nervous system**
 - c. A part of the brain that processes information**
 - d. A type of blood cell that carries oxygen**

- 2. How many main types of receptors are there in our body?**
 - a. Three types**
 - b. Four types**
 - c. Two types**
 - d. Five types**

- 3. What is action potential?**
 - a. The energy stored in muscles**
 - b. The strength of your bones**
 - c. Tiny bursts of electricity that send messages through nerves**
 - d. The amount of oxygen in your blood**

- 4. What happens during transduction?**
 - a. Messages travel from the brain to muscles**
 - b. Blood moves through the body**
 - c. Oxygen enters the lungs**
 - d. Stimulus is converted into action potential**

- 5. Which type of signals do sensory receptors send to the central nervous system?**
 - a. Efferent signals**
 - b. Mixed signals**
 - c. Afferent signals**
 - d. Random signals**

Sensory Receptors and Classifications Quiz

- 1. What is transduction in the nervous system?**
 - A. The movement of blood through vessels**
 - B. The conversion of a stimulus into an action potential**
 - C. The transmission of sound waves**
 - D. The process of digestion**

- 2. Which type of receptor responds to mechanical forces?**
 - A. Photoreceptors**
 - B. Thermoreceptors**
 - C. Mechanoreceptors**
 - D. Chemoreceptors**

- 3. Where would you find exteroceptors?**
 - A. In the muscles**
 - B. In the skin**
 - C. In the brain**
 - D. In internal organs**

- 4. Which of these is a special sense?**
 - A. Touch**
 - B. Pain**
 - C. Hearing**
 - D. Temperature**

- 5. What type of receptor helps us detect changes in temperature?**
 - A. Thermoreceptors**
 - B. Osmoreceptors**
 - C. Photoreceptors**
 - D. Nociceptors**

- 6. Which receptors respond to tissue damage?**
 - A. Chemoreceptors**
 - B. Nociceptors**
 - C. Mechanoreceptors**
 - D. Photoreceptors**

- 7. General senses can be found:**
 - A. Only in the brain**
 - B. Only in the skin**

- C. In multiple places throughout the body
- D. Only in the nose

8. Which sense is found in only one place in the body?

- A. Pressure
- B. Touch
- C. Taste
- D. Pain

9. What type of receptors respond to changes in chemical concentrations?

- A. Thermoreceptors
- B. Photoreceptors
- C. Mechanoreceptors
- D. Chemoreceptors

10. Interoreceptors are found in:

- A. The skin
- B. Internal organs
- C. The eyes
- D. The ears

1. What happens to a sensory receptor when a stimulus comes by?
2. What are graded potentials called when they are produced by sensory receptors?
3. What must happen for an action potential (AP) to travel to the central nervous system (CNS)?
4. Describe what adaptation means in the context of sensory receptors.
5. How does fluid re-distribution contribute to adaptation in sensory receptors?
6. What are the three types of sensory receptors mentioned in the text?
7. Why are tonic receptors important to monitor all the time?
8. Give an example of a phasic receptor and explain why it does not need to be monitored all the time.
9. How does the strength of a stimulus affect the receptor potential and the frequency of action potentials? What is meant by the term "receptive field"?

True or False Questions for Year 4 Students:

1. True or False: The strength of a stimulus can be reflected by the frequency of action potentials (APs).
2. True or False: The number of receptors that get stimulated does not affect the strength of the stimulus.
3. True or False: The amount of myelin on a nerve fiber affects the speed of action potentials.
4. True or False: A-delta fibers have a high velocity of action potentials because they have a high amount of myelin.
5. True or False: C fibers have no myelin and therefore have a very low velocity of action potentials.
6. True or False: Myelin is produced by Schwann cells in the central nervous system (CNS).
7. True or False: The labeled line principle suggests that each sensory receptor sends information to a specific area of the brain.
8. True or False: Temperature is one of the factors that can affect the velocity of action potentials.
9. True or False: A-beta fibers have a moderate amount of myelin and therefore have a low velocity of action potentials.

10. True or False: Regardless of how sensory receptors are stimulated, the brain perceives the information the same way.
11. Myelin is produced by Schwann cells in PNS | myelin is produced by oligodendrocytes in CNS.

Q/ Define each of the following:

- 1- A sensory receptor
- 2- Action Potential simulation (Aps):
- 3- Receptive field :
- 4-adaptation :
- 5- Transduction :

Q/Numerates sensory receptors according to type of stimulus? Respond for what?

Q/what the Mechanism of each of the flowing?

- 1- sensory receptor:
- 2- Mechanisms of adaptation:

Q/ Labeled line principle = regardless of how you stimulate the sensory receptors. the perception by the brain will be the same.why??