Sensory Receptors

by Sophia

WHAT'S COVERED

In this lesson, you will learn about the six different types of sensory receptors and discussing a little bit about the purpose of the sensory system. Specifically, this lesson will cover:

1. Defining the Sensory System

Our **sensory system** is a system that detects stimuli that we encounter around us and then converts them into a nerve impulse. These are then sent to the brain or spinal cord to produce a **sensation** (an awareness of a stimulus that you encounter) or **perception** (the understanding of what that sensation means).

BIG IDEA

If you think of any type of stimulus that you can encounter, a sensation is the detection of that stimulus, while perception is the understanding actually what the sensation means. For example, a baby might feel something soft against her cheek. Eventually, she will perceive that this sensation means that her mother is kissing her.

TERMS TO KNOW

Sensory System

A system that detects stimuli, converts it to a nerve impulse, and sends it to the brain to be interpreted.

Sensation

The awareness of a stimulus.

Perception

The understanding of a sensation.

2. Different Sensory Receptors

A stimulus will activate a receptor, and that receptor will convert the stimulus to a nerve impulse. Then that nerve impulse will travel to the brain and be interpreted or perceived. There are six different types of receptors found within the human body.

Types of Receptors	Purpose
Mechanoreceptors	The purpose of mechanoreceptors is to detect changes in pressure, position, and acceleration. If somebody were to tap you on the shoulder, the mechanoreceptors in your skin would detect that change in pressure, and you would be able to know that somebody was tapping you on the shoulder.
Thermoreceptors	As the name indicates, thermal means heat, so thermoreceptors can detect temperature. Many thermoreceptors are located within the skin and can detect both heat and cold.
Nociceptors	Nociceptors are free nerve endings that are found throughout our body, especially within your skin and various connective tissues, that help to detect tissue damage. If you were to prick yourself with a pin, nociceptors would be the receptors that are sensitive to pain. So you would feel the pain because of those types of receptors throughout your body.
Chemoreceptors	If you think of the word "chemo", it reminds you of chemistry or chemicals, so chemoreceptors detect chemicals that are dissolved in fluids or gases. Our sense of smell and taste are very prominent chemical senses of the human body. Chemoreceptors on our tongue or in our mouth allow us to taste the different foods that we're eating and chemoreceptors in our nose allow us to detect specific odor molecules within the air we breathe.
Osmoreceptors	If you think about "osmo", you might recall "osmosis", which is the movement of water. Osmoreceptors detect changes in water volume and the solute concentration of our body fluids. Changes in the solute concentration of our bodily fluids need to be closely monitored as they can change very rapidly. Osmoreceptors are both sensitive to increases or decreases in our body fluid composition.
Photoreceptors	"Photo" means light, so photoreceptors detect visible light. As you can imagine, these come into play, especially with the retina of your eyes. The two major types of photoreceptors in the eyes that detect different types of visible light are cones and rods.

TERMS TO KNOW

Mechanoreceptor
A sensory receptor that detects pressure, position and acceleration.

Thermoreceptor
A sensory receptor that detects temperature changes (hot and cold).

Nociceptor
A sensory receptor that detects pain.

Chemoreceptors
A sensory receptor that detects chemicals dissolved in liquids or gases.

Osmoreceptors
A sensory receptor that detects changes in water volumes and therefore changes in solute concentrations.

Photoreceptors
A sensory receptor that detects visible light.

SUMMARY

This lesson has been an overview of **the sensory system** and the six **different types of sensory receptors** throughout the body. Remember, the sensory system detects stimuli and converts them into nerve impulses.

Keep up the learning and have a great day!

Source: THIS WORK IS ADAPTED FROM SOPHIA AUTHOR AMANDA SODERLIND

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Perception
The understanding of a sensation.

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A sensory receptor that detects visible light.

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The awareness of a stimulus.

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