



# Touch

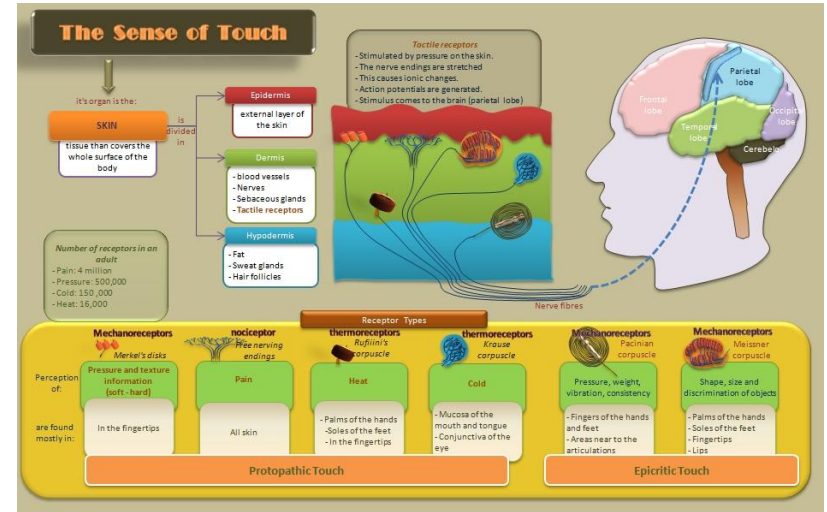
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## **Essential Question:**

How do we sense touch & sense our body's position/movement?

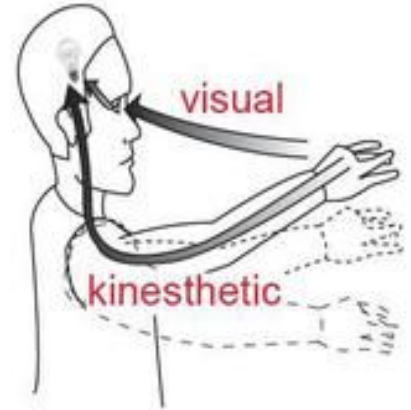
# Outline

- The sense of touch is a mix of senses with different specialized nerve cell endings within the skin.
- Certain spots within the skin are sensitive to different sensations, including pressure, warmth, cold, and pain.
- Through kinesthesia and the vestibular sense, our body can sense its own body movement and position.



# Vocab

**Kinesthesia:** system for sensing the position and movement of individual body parts



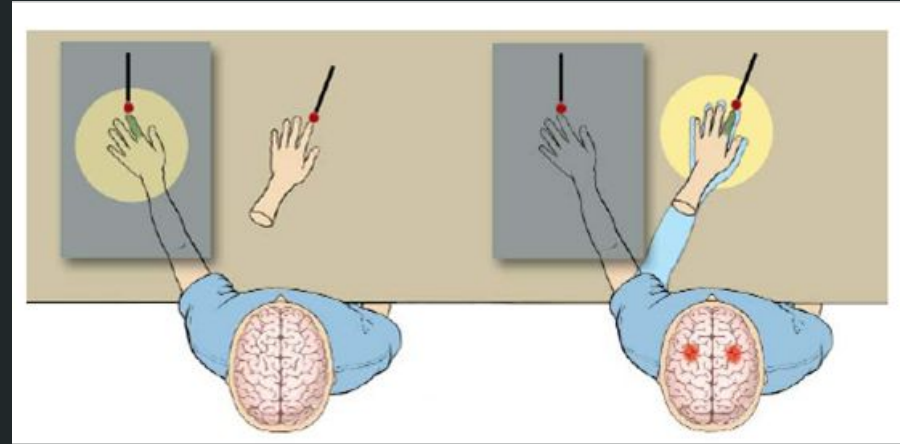
Movement Perception

**Vestibular Sense:** sense of body movement and position, including sense of balance



# Rubber-Hand Illusion

- Top down processing influences touch.
- One real hand and the rubber hand are visible to the participant in the experiment. The other hand of the participant, is hidden from view. Both the visible hand and the rubber hand are stroked. After a few minutes, the rubber hand is hit with a mallet.
- The person freaks out because they are deceived into believing that their rubber hand is their own real hand.



# Kinesthesia

- Ian Waterman, at the age of 19, contracted a rare viral infection that damaged his sense of light touch and body position/movement.
- Felt as if body was dead/not his.
- Had to learn to eat and drink-put increased focus on the limbs he needed to use, directing them accordingly.



- Sensors in joints, tendons, bones, ears, and skin enable one to be aware of their body movements and position.
- Try to close your eyes and plug the ears to be without sight or hearing momentarily. Can you imagine living without your senses?

# Vestibular Sense

- Sense of balance
- The semicircular canals and the vestibular sacs, which connect the canals with the cochlea, contain fluid that moves when the head rotates or tilts.
- This movement stimulates hairlike receptors, which send messages to the cerebellum at the back of the brain, thus enabling you to sense your body position and to maintain your balance.

If he stops, the fluid will still be moving in the ear, tricking the brain into thinking that he is still moving, when he indeed has stopped.



Aha!

# What did I learn?

1. The vestibular sense and kinesthesia allow one to be consciously aware of their bodily movements.
2. The feeling of touch is based on sensations of the body's most sensitive and largest organ, the skin.
3. Your brain can be tricked into perceiving that a foreign limb is it's own, exemplified in the Rubber Hand Illusion.

