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THE FIVE SENSES

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Introduction :

Humans have five main senses, which represent five tools that help them explore the surrounding world.

These senses include: the sense of touch, the sense of taste, the sense of hearing, the sense of smell, and the sense of sight."

"Humans have other senses beyond the commonly known ones, including the following: balance, deep sense, thermal perception, time perception, and pain sensation."

What does the word sense mean?

The word "sense" means any of the stimulating qualities, internal or external, that the body translates into sensations that can be perceived by consciousness .

Importance of the Five Senses

- Help us understand the world around us.
- Protect us from danger.
- Allow communication and interaction with others.
- Make our daily experiences richer and more enjoyable.
- Work together with the brain to give us a complete picture of our environment.

Touch (Somatosensation) – Sensory Nervous System

Touch (Somatosensation)

Sensory Nervous System

- **Receptors Location:**
  - Skin, muscles, and joints contain receptors for:
    - Pressure
    - Temperature
    - Pain
    - Vibration
- **Signal Pathway:**
  - Signals are transmitted through:
    - Peripheral nerves
    - Spinal cord
- **Medical Relevance:**
  - Sensory dysfunctions may occur due to:
    - Neuropathy
    - Spinal cord injuries
    - Infections
- **Key Terms:**
  - **Paresthesia:** Tingling sensation
  - **Analgesia:** Absence of pain
  - **Hyperesthesia:** Increased sensitivity

Touch

- Specialized neurons sense tactile information.

  They send it to the brain as sensations.

The Touch Sense Organ: Skin

- The skin is the largest organ with touch receptors.
- Helps us know touch and feel shape, texture, and temperature.

Problem

- Vitamin B12 deficiency and injuries cause loss of sensation.
- Stress may cause numbness, and skin diseases affect touch.

How it works?

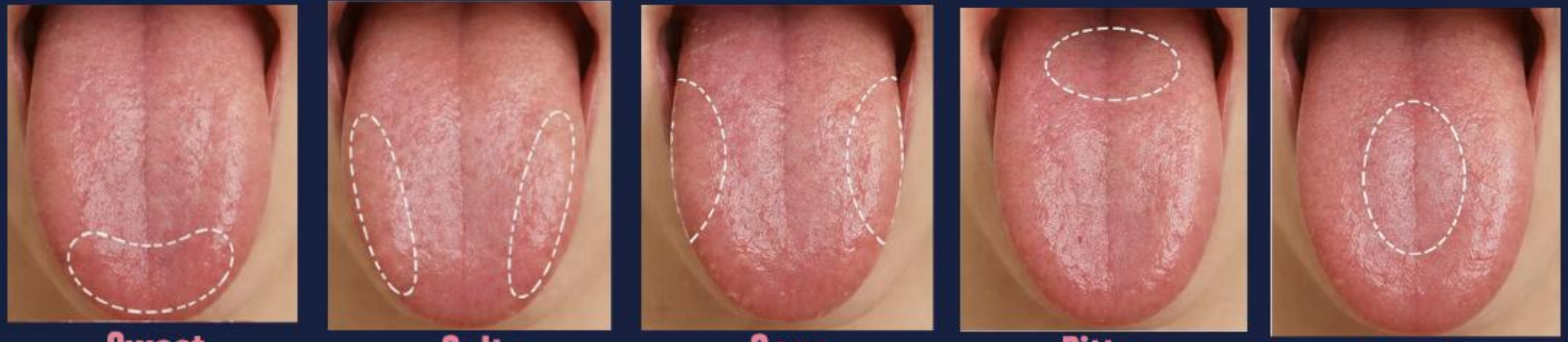
- Receptors send signals to the brain.
- Thermoreceptors detect temperature, mechanoreceptors detect forces.
- Signals are interpreted in the brain.

Taste (Gustation) - Gustatory System

The tongue contains taste buds that recognize flavors, sending signals to the facial (VII) and glossopharyngeal (IX) nerves.

Medical relevance: Taste disturbances can result from nerve damage, infections, or systemic diseases.

Key medical terms: Dysgeusia (distorted taste), ageusia (loss of taste), hypogeusia (reduced taste sensitivity).

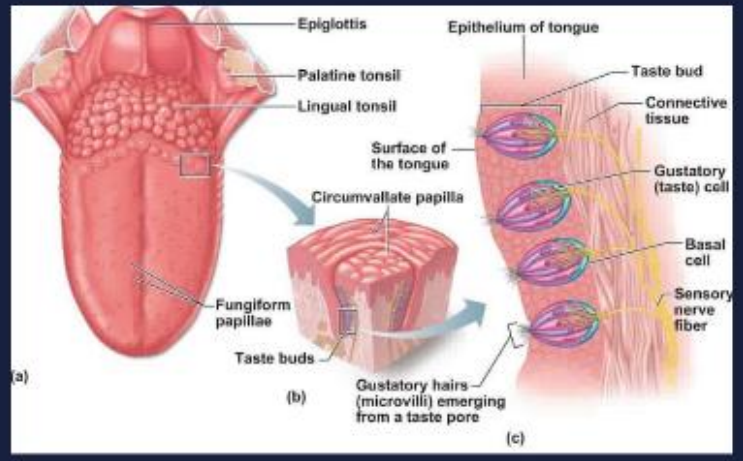


The Amazing Sense of Taste :-

The sense of taste allows us to enjoy and identify diverse flavors in food. Taste buds on our tongue detect five main tastes: sweet, sour,salty,bitter, and umami. Each taste provides important clues about what we eat. Sweetness indicates energy-rich food, while bitterness can signal toxins

How Does Taste Work?

Taste begins when food dissolves in saliva. The taste buds send signals to the brain, telling us what we're tasting. Smell also plays a big role in taste. Humans have around 10,000 taste buds



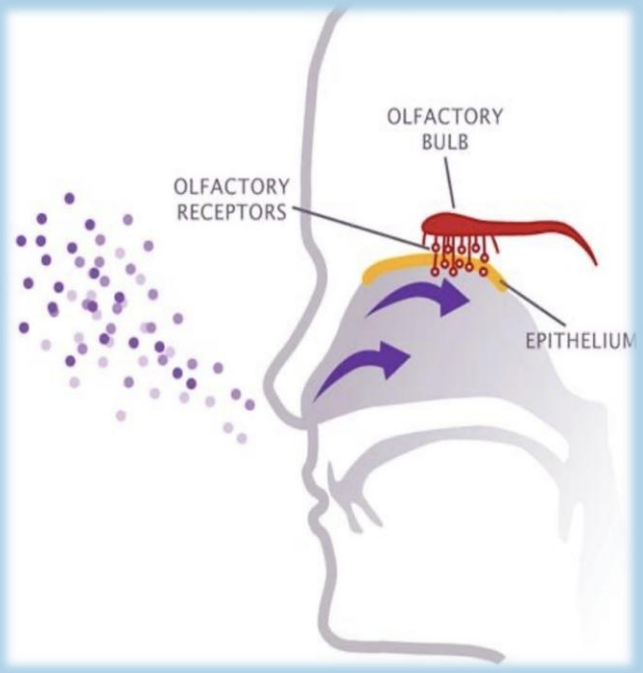
The sense of smell (olfaction)

It’s the ability to detect and recognize different odors using specialized receptors in the nose .

How does smell work ?

1. Odor molecules enter the nose with the air .
2. They dissolve in the mucus inside the nasal cavity .
3. They Bind to olfactory receptors found in olfactory epithelium in the top of nasal cavity (upper part of nose) .

1. Signals are converted into nerve impulses .
2. These signals travel to the brain , where the smell is identified .




w Smelling Works | Visible Body
the process of olfaction or smelling
begins with hairlike cyia that line the

Importance of smell :

1. Connect to memory and emotions .
2. Help to detect dangers (like smoke or chemicals) .
3. Smell plays a major role in flavor (taste) perception . When the smell is lost , taste become weaker .

Disorders of smell

- **Anosmia** : complete loss of smell
- **Hyposmia** : reduce ability to smell
- **Rhinorrhea** : nasal discharge (runny nose)

• Loss of smell can be an early sign of neurogenerative diseases like **Parkinson's** and **Alzheimer 's**

normal

Rhinitis

HEARING (AUDITION)
OTOLOGY

- One of the most important senses that helps humans communicate and understand their surroundings.
- The ear begins to develop in the fifth month of pregnancy, making hearing the first functioning sense in the human body.

HOW IT WORKS?

The ear captures sound waves and converts them into nerve impulses sent to the brain via the auditory nerve (cranial nerve VIII).

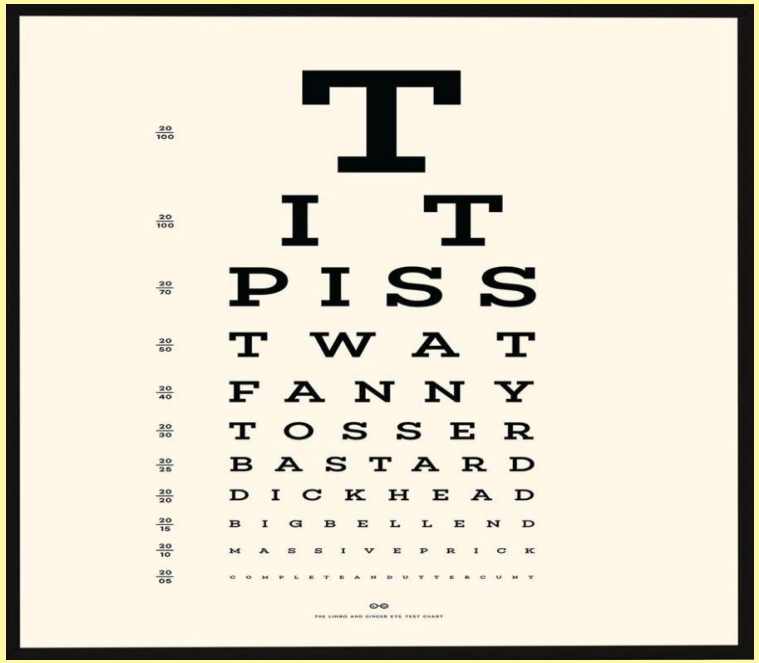
Parts of the Ear

1. Outer Ear: Includes the auricle (pinna) and the ear canal.
2. Middle Ear: Contains the eardrum and the auditory ossicles (malleus, incus, stapes).
3. Inner Ear: Includes the cochlea

Hearing Disorders

1. Temporary hearing loss
2. Permanent hearing loss
3. Tinnitus
4. Total deafness

The sense of sight is one of the five senses. It is the brain's ability, through the eye, to detect electromagnetic light waves in order to interpret the perceived image. It is also the sense that helps with vision.



How does the vision mechanism work?

The eye processes light and transmits it to the brain, which interprets it. When light
rays fall on the eye. they cause the image to be reflected, and then the retina
transmits the image to the brain, which is able to perceive it. This process occurs very
quickly, in fractions of a second.

What is the benefit of sight?

The eye sees objects, distinguishes colors and shapes, and detects light from darkness.

Let's test your eyes

What number do you see?

The structure of the eye:

The eye consists of several main parts, each of which plays an important role in the process of vision:

1. Cornea
2. Iris
3. Pupil
4. Lens
5. Retina
6. Optic nerve

EYE TEST

Red: You are normal.

Green: See a doctor.

Blue: **You're officially free to go home**

THANK YOU FOR YOUR ATTENTION