

Chapter 4(b) Sensation

by

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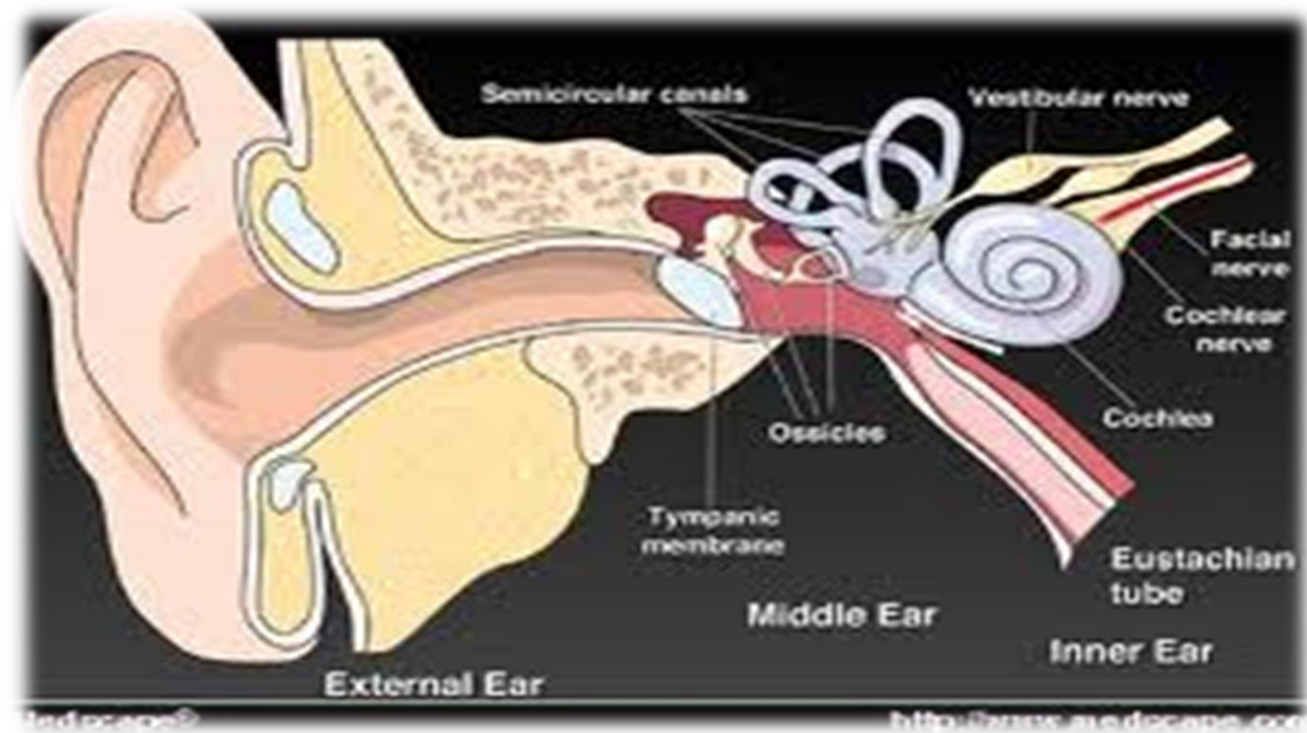
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I
LOVE
PARIS IN THE
THE SPRINGTIME

Paris in the Spring", **not** "Paris in **the the** Spring".

THE HUMAN EAR

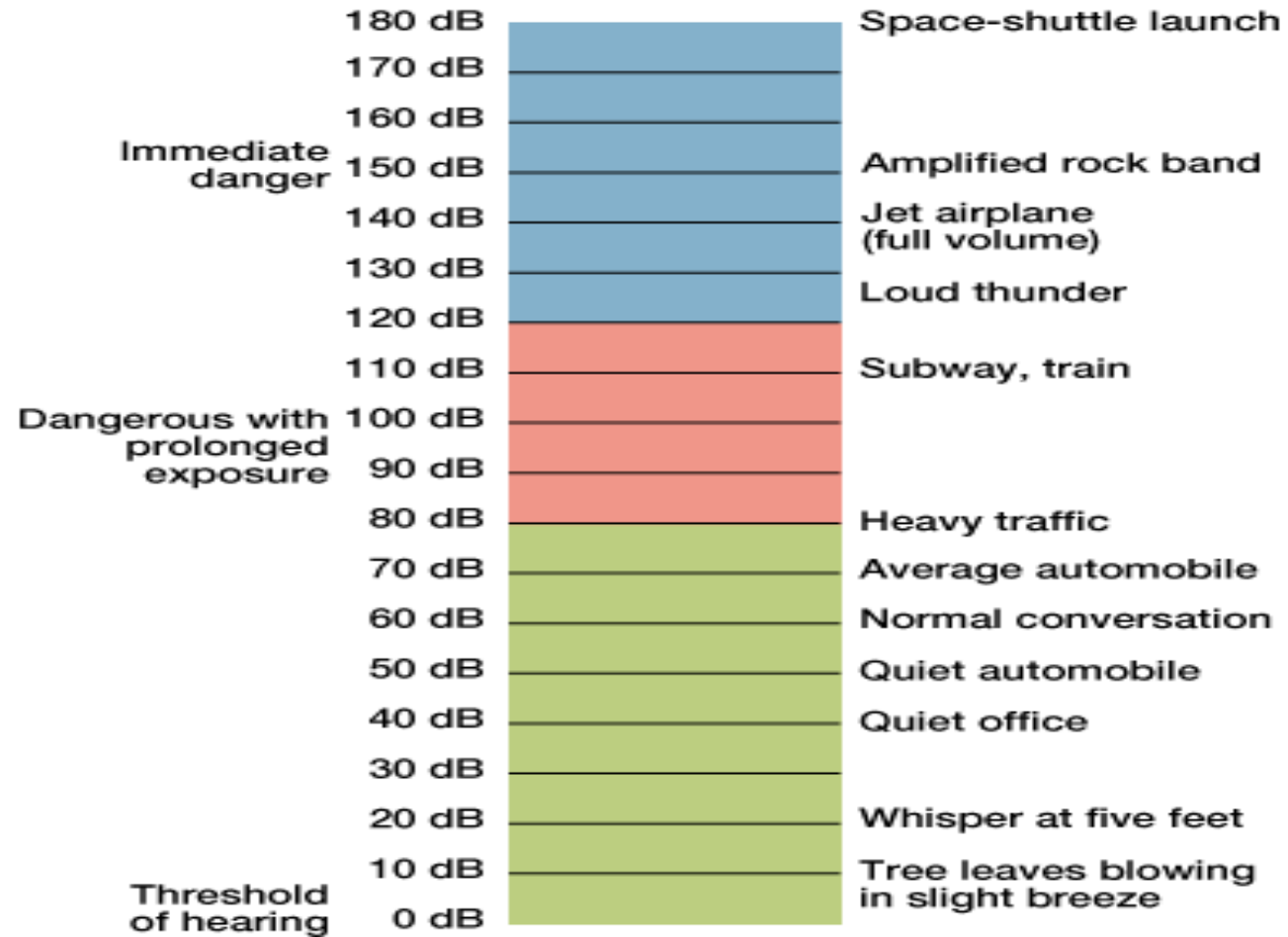


AUDITION

- Audition
 - The sense of hearing
- Frequency
 - The number of complete wavelengths that pass a point in a given time.
- Pitch
 - a tone's highness or lowness.
 - Depends on frequency.

- **Conduction Hearing Loss**
 - Hearing loss caused by damage to mechanical system that conducts sound waves to the cochlea.
- **Nerve hearing Loss**
 - Hearing loss caused by damage to the cochlea's receptor cells or to the auditory nerve.
 - ❖ Older people tend to hear low frequencies well but suffer hearing loss for high frequencies.

Common Sounds and the Noise They Produce



But!!!

- **Hearing is critical** because it not only affects ability to communicate but also the general capacity to perform other tasks. The critical variables in human hearing are audibility, intelligibility, signal-to-noise ratio, and noise annoyance.

What is smell?

- The nose is the organ responsible for the sense of smell.
- The smell receptors are sensitive to seven types of sensations that can be characterized as camphor, musk, flower, mint, ether, acrid, or putrid.

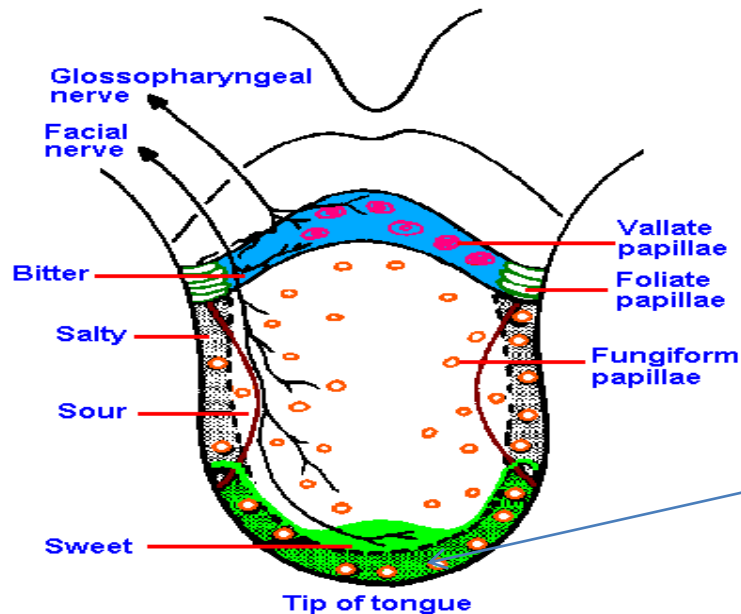
BUT !!

The sense of smell is sometimes temporarily lost when a person has a cold.

Taste

- The receptors for taste, called taste buds, are situated chiefly in the tongue, but they are also located in the roof of the mouth and near the pharynx.

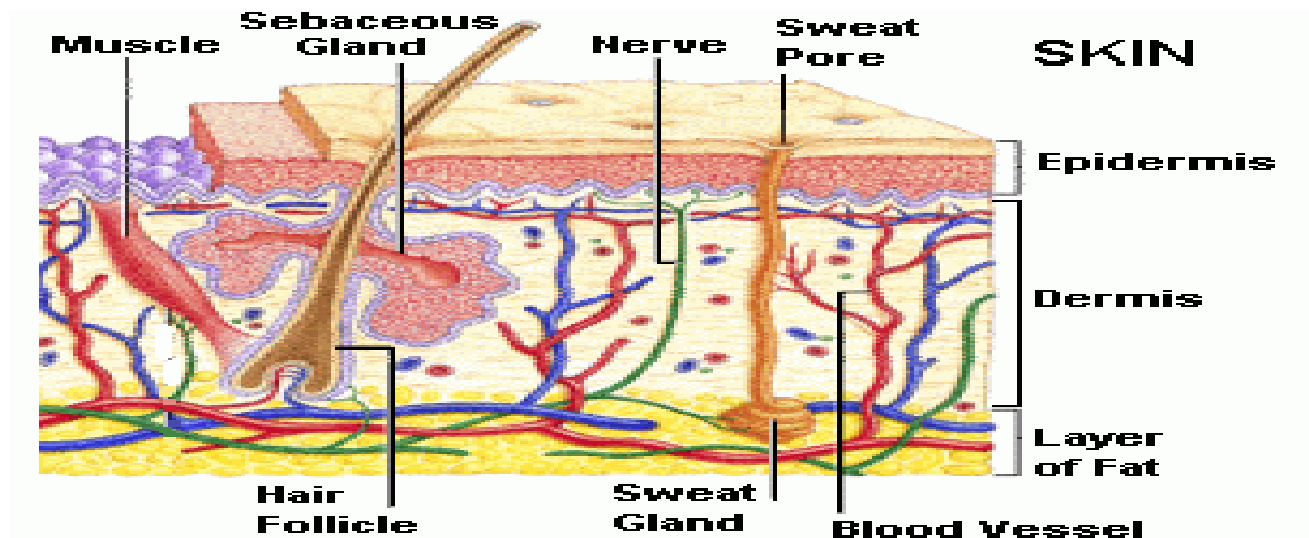
Children have more taste buds than adults do.



Taste buds have very sensitive microscopic hairs called microvilli. Those tiny hairs send messages to the brain about how something tastes, so you know if it's sweet, sour, bitter, or salty.

touch is sense?

- The sense of touch is distributed throughout the body.
- Nerve endings in the skin and other parts of the body transmit sensations to the brain. The fingertips and the sexual organs have the greatest concentration of nerve endings.



Muteness or mutism is an inability to speak.

Causes

- ❖ have problems with the parts of the human body required for speech (the throat, vocal cords, lungs, mouth or tongue)
- ❖ a person can be born mute, or become mute later in life as a result of injury or disease.
- ❖ trauma or injury of the brain

Coping with mutsism

- ❖ some mute patients have adapted with their disability by using machines that vibrate their vocal cords, allowing them to speak.
- ❖ learn sign language in order to communicate.

Deafness

Deafness is the inability to hear sound.

Causes

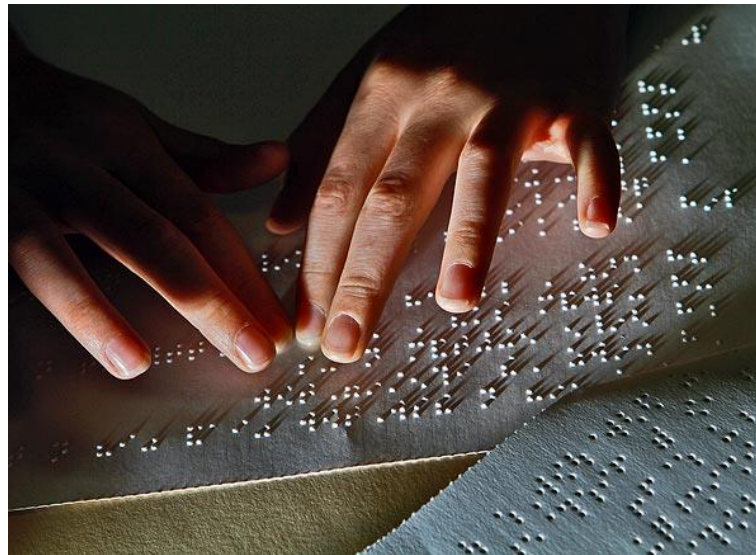
- **Aging**
- **Long-term exposure to environmental noise**
- **Genetic**
- **Disease or illness such as meningitis**
- **Medications**
- **Exposure to toxic chemicals**
- **Physical trauma**

Blindness

Blindness is the condition of lacking visual perception due to physiological or neurological factors.

Causes

- **Diseases**
- **Abnormalities and injuries**
- **Genetic defects**
- **Poisoning**



Anosmia

Anosmia is an inability to perceive odors.

Causes

- **blocked nose or infection**
- **death of receptor neurons in the nose**
- **brain injury**
- **genetic factors**

Ageusia

Ageusia is the loss of taste functions of the tongue, particularly the inability to detect sweetness, sourness, bitterness, and saltiness

Causes

- **Problems with the endocrine system**
- **Aging**

Conclusion

Without our basic physical senses: sight, smell, hearing, touch, and taste, we would be cut off from the outside world. Unable to see, we could no longer know the colour of a rose; unable to smell we would have no knowledge of the rose's perfume. If we could not hear, we would be unable to listen to music and would need to use sign language gestures in order to communicate with others. Without the ability to touch, we would not know the difference between a hot potato and a cold one. If our taste failed, we could not tell the difference between chocolate and vanilla ice cream. The eyes, ears, nose, mouth, and skin are therefore the body's major organs of perception. Damage to or obstruction of one of the organs of perception would entail a loss of ability to acquire sensory input from that particular organ. Through the body's main organs of perception, a human being encounters data such in chemical, wave, or other forms. However, sensations only contribute part of the information our brain needs to formulate a view of reality. Perception, or the process by which our brain processes sensory data, is equally as important as sensation. To perceive something means to interpret it, and not simply to sense it; perception helps human beings make important judgments about the world around them.