

OLYMPIC PHYSICAL EDUCATION COACHING CENTER TIRUPATTUR- VELLORE DISTRICT

Sense Perception

✓ Perception

It is the mental process by which the brain interprets and gives meaning to the information, which it receives from the sense organs.

✓ Sensation

It is the process by which our sense organs respond to a stimulus, It gives us form, shape, color, taste, smell and sound.



There is no perception without sensation

Senses

- Vision
- Kinesthetic
- Tactile

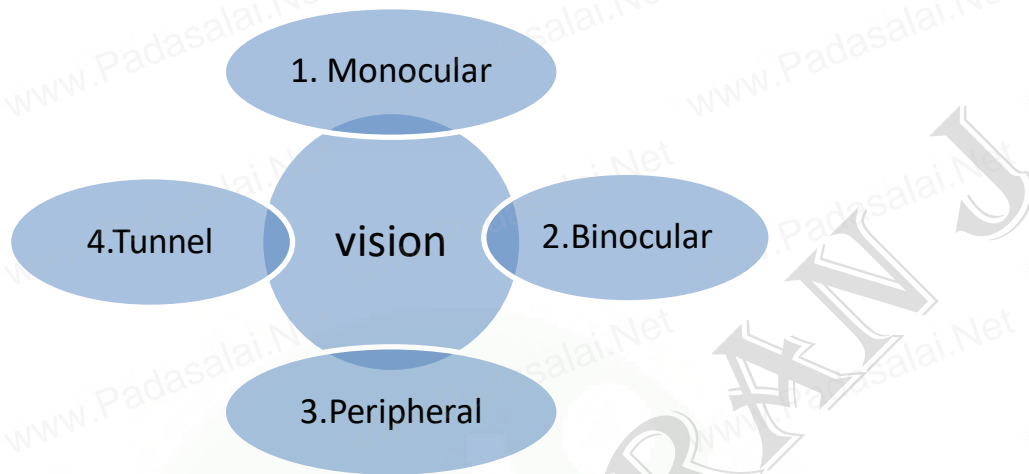
➤ Vision (Visual perception)

Visual perception includes tracking

- spatial awareness,
- visual acuity,
- visual memory,

- color brightness

- **Types of vision**



1. Monocular vision

Two eyes focus on an object and coverage at a greater angle, seeing with one eye tends to flatter things in the distance, which is called a “**monocular vision**” E.g Archery.

2. Binocular vision

Simultaneous vision with both eyes is the basis for depth perception, which is called as “**binocular**” vision

3. Peripheral vision

Ability of an individual’s to see to the sides while looking straight is called as “**peripheral vision**” e.g In basketball. While dribbling, the dribbler has to note the sides also in order to safeguard his ball.

4. Tunnel vision

A person who has got very limited peripheral vision is referred to have “**tunnel vision**”

- **Speed of vision**

The span of vision attention is measured by “**Tachistoscope**”

1. Span of apprehension
2. Pursuit of movements
3. General activity

1. Span of apprehension – The individual is ability to observe several objects in a short period of time and retain of knowledge of what has been seen.

E.g. observation game.

2. Pursuit movement – It is the ability of an individual to visually follow an object, which is moving bird.

3. General activity – Is a form of brightness discrimination which contributes to one's ability to see, to read or to take part in routine daily activities.

-This is very important for motor activities; this can be measured by the spell of eye chart. Wearing glasses or contact lenses can rectify defect

➤ **Kinesthetic sense**

It is the awareness of the position and the movements of the body and its parts as derived from the feelings of muscle, tendons, joints and other tissues.

Kinesthetic is consciousness of muscular movement and effort. When the special sense receptors in the muscles, tendons and joints (called as proprioceptors) are stimulated and the impulses pass through the posterior column of the spinal cord to the thalamus and finally to the somatic area of the cerebral cortex.

Three kinds of kinesthetic receptors are present

- Minute spindle shaped organs located in the muscles and joints
- Bulb-like corpuscles located in various tendons and areas surrounding joints.
- Global organs are located at the place where the tendons are attached to the muscles.

➤ **Tactile sense (perception)**

- The sense of touch
- Haptic perception
- **“Haptics”** → relating to the sense of touch, tactile(Greek word- haptikos –Mean – to –grasp –touch)
- Tactile sensation are experienced with the entire skin surface
- Tactile sensing plays an important role in object discrimination and manipulation

“The ability to differentiate between object of various shapes, size, weight and textures”

“Provides information about our environment”. E.g-hot, cold, smooth, rough.

“Provides feedback” E.g-when trying to lift an object, press buttons etc.

“The receptors from pressure lie deeper in the skin and for touch lie closer to the skin”

“The ability to distinguish a light grip from a heavy grip on an object is important in sport”

➤ **Auditory perception(sense restriction)**

Auditory perception includes auditory localization that is the ability to locate sound and figure – ground differentiation.

Figure- ground differentiation is the ability to pick out a meaningful sound from a background of noise.

Receptor types

Pain receptors - respond to tissue damage due to mechanical, electrical, thermal or chemical energy.

Thermo receptors- respond to temperature change as pressure or fluid movement, change usually deform the receptor.

Proprioceptors- sense changes in muscle and tendons

Baro receptors- in blood vessels, detect changes in pressure

Stretch receptors- in lungs – sense degree of inflation

Photoreceptors- respond to light – as little as one

Chemoreceptors- sensitive to chemical concentration of various substances

A sensation or perception occurs when the brain interprets the incoming nerve impulses

“symesthesia” – Tasting , colours etc.

Sensory adaptation – the only receptors that don't adapt are-pain receptors

Somatic senses

Exteroceptive – senses-changes at body surface

Proprioceptive – senses- change in muscles and tendons and body position.

Visceroceptive-senses-changes in viscera.The internal organs of the abdomen and thorax, specifically, the hollow organs such as intestines, bladder etc.

Touch and pressure senses

Free nerve ending – touch and pressure

Meissner's corpuscles – light touch receptors are connective tissue.

Pacinian corpuscles – heavy pressure and vibrations receptors are connective tissue.

Itch and tickle- receptors are free nerve endings

Semicircular canals – sense organs in the inner ear which contribute to equilibrium by responding to rotation of the head.

Wrong perception or errors of perception

“Perception “ is usually a reliable process, there are some instances when our perception actually misrepresents the world. Sometimes due to defect in sensory organs or due to feelings, emotions and bias, our perception may go wrong, we might imagine thing.

e.g A coil or rope looks like a snake in the darkness

Types of wrong perceptions

- **Anesthesia**

A complete inability to respond to sensory stimuli that is loss of sensitivity. It is generally caused by defective sense organ or effects of drugs.

- **Hyperthesia**

Sick persons often react violently (excessive response to stimuli) to slight noise and light. When we are fatigued we also become hyper sensitive to sound and odors

- **Paraesthesia** (False sensation)

Due to poor health and physiological imbalance a person might have sensations of smell or noise without any reason

- **ILLUSION**

Object are mis -interpreted. It is a mistaken perception.

- **Hallucination**

It is a false imaginary perception, even when there is no stimulus we perceive some figure due to fear or subjective conditions, Hallucination usually occurs when a person is emotionally disturbed psychologically upset or frightened.

- **Suggestion**

It is another error in perception; people feel a shock when they handle a electrical wire when there is no current passing through it.

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