

# PHS 212

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## Special Senses

Question; Write on the physiology of balance

Balance is mediated by the vestibular nuclei in the brain stem. The labyrinth (a part of the inner ear), is a major organ of our vestibular (balance) system, the three semicircular canals of the labyrinth is associated with sensing rotary motion, the three semicircular canals of the labyrinth is associated with sensing rotary motion, the brain senses the direction and speed of rotation of the head by the movement of fluid in the semicircular canals, balance is maintained by the interactions between the labyrinth and other systems in the body, such as the visual and skeletal systems,

The main inputs into the balance system are the:

- vestibular labyrinths
- visual system (eyes)
- somatosensory system, especially proprioception

The main outputs from the vestibular nuclei are:

- vestibulo-ocular:
  - ◆ permitting reflex eye movements related to posture
- vestibulo-spinal which supply:
  - ◆ anti-gravity muscles in the lower limbs
  - ◆ reflex arcs which control gait