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MECHANISM OF BALANCE

The semi-circular canals and the vestibule are concerned with balance. Any change of position of the head causes movement in the perilymph and endolymph, which bends the hair cells and stimulate the sensory nerve endings in the utricle, saccule and ampullae. The resultant nerve impulses are transmitted by the vestibular nerve which joins the cochlear nerve to form the vestibulocochlear nerve. The vestibular branch passes first to the vestibular nucleus then to the cerebellum.

The cerebellum also receives nerve impulses from the eyes and proprioceptors (sensory receptors) in the skeletal muscles and joints. Impulses from these three sources are coordinated and efferent nerve impulses pass to the cerebrum and to skeletal muscles. This results in awareness of body position, maintenance of upright posture and fixing of the eyes on the same point, independently of head movements.