Sayyed Hamed Fazeli et al., J Pain Relief 2018, Volume 7
DOI: 10.4172/2167-0846-C1-021

The role of vestibular information beyond control of posture

Sayyed Hamed Fazeli, Mohammad Akbari, Ismail Ebrahimi Takamjani and **Holakoo Mohsenifar**
Iran University of Medical Sciences, Iran

Introduction: Vestibular dysfunction is a common, diagnostically challenging condition. The importance of diagnosing and managing vestibular deficits is well established. These deficits are associated with falls, morbidity, diminished autonomy, and increased health care costs, especially among elderly individuals who are at increased risk for gait disturbances, balance disorders and bone fracture. There is absolutely no doubt about the existence of widespread cortical vestibular representations, interestingly, there is still a lack of knowledge about the functions these cortical vestibular networks are involved in and with what other networks they overlap.

Materials & Methods: A review of the literature was performed in three databases (PubMed, Google Scholar, and Science Direct). Article types included review articles, systematic reviews, randomized controlled trials, and case control series for human subjects, published in English. The search query included vestibular, pain, multisensory integration, body representation, body schema.

Results: The vestibular system is a multimodal sensory system that is involved in many functions including reflexes and perception and consciousness. Baseline assessment and monitoring of the vestibular apparatus in patients receiving medication for chronic pain or underlying neurologic disorders could be valuable in determining the need for vestibular rehabilitation balance therapy further neurologic examination, or diagnostic imaging.

Discussion: Chronic pain is associated with a range of disrupted bodily representations. Vestibular stimulation may alleviate pain by contributing to ameliorate the impaired body schema and help restore the body matrix. The vestibular system codes movements of the head, indicating a new relation between the body and the external world. The vestibular system participates in a form of sensory signal management, changing the balance between the various sensory systems as the relation between the body and the external environment changes. This sensory rebalancing may be a crucial element in the brain's capacity to reorient towards novel or salient features in the environment.

Recent Publications:

1. Smith P, Geddes L, Baek J-H, Darlington C and Zheng Y (2010) Modulation of memory by vestibular lesions and galvanic vestibular stimulation. Frontiers in Neurology 1:141.
2. Ferrè E R, Day B L, Bottini G and Haggard P (2013) How the vestibular system interacts with somatosensory perception: A sham-controlled study with galvanic vestibular stimulation. Neuroscience Letters 550:35-40.
3. Ferrè E R, Bottini G, Iannetti G D and Haggard P (2013) The balance of feelings: Vestibular modulation of bodily sensations. Cortex 49:748-58.
4. Pfeiffer C, Serino A and Blanke O (2014) The vestibular system: a spatial reference for bodily self-consciousness. Frontiers in Integrative Neuroscience 8:31.
5. Mast F W, Preuss N, Hartmann M and Grabherr L (2014) Spatial cognition, body representation and affective processes: the role of vestibular information beyond ocular reflexes and control of posture. Frontiers in Integrative Neuroscience 8:44.

Biography

Sayyed Hamed Fazeli studied BSc Physiotherapy in Semnan University of Medical Sciences and MSc at Iran University of Medical Sciences and graduated in 2011. He is currently a PhD candidate of Physiotherapy in Iran University of Medical Sciences, Tehran, Iran and works on chronic neck pain. His interest research themes mainly include: effectiveness of physiotherapy, chronic neck pain, vestibular, chronic pain and musculoskeletal disorders.

hamed_fazeli62@yahoo.com