Human anatomy and physiology

Author name

Affiliations

**1.**

Cranial nerves emerge directly from the brain and transmit information between the brain and other parts of the body, principally to and from areas of the head and neck. Cranial nerves are unique due to their emergence from the brain directly and are either sensory or motor in their function (Pearce, n.d.).

The 12 cranial nerves, number, and function are;

* The olfactory nerve (I): Smell.
* The optic nerve (II): Vision.
* The oculomotor nerve (III): This nerve controls the eye's movements.
* The trochlear nerve (IV): Superior oblique
* The trigeminal nerve (V): sensation and motor function
* The abducens nerve (VI): Lateral rectus muscle of the eye.
* The facial nerve (VII): This controls the muscles of facial expression.
* The vestibulocochlear nerve (VIII): Transmits sound and equilibrium information vis(Yoshino et al., 2016).
* The glossopharyngeal nerve (IX): This nerve receives sensory information.
* The vagus nerve (X): This is responsible for heart rate.
* The spinal accessory (XI): Muscles of the shoulder and neck.
* The hypoglossal nerve (XII): This nerve controls the tongue.

References

Pearce, J. M. S. (n.d.). *Naming the Cranial Nerves: a historical note*.

Yoshino, M., Abhinav, K., Yeh, F.-C., Panesar, S., Fernandes, D., Pathak, S., … Fernandez-Miranda, J. C. (2016). Visualization of cranial nerves using high-definition fiber tractography. *Neurosurgery*, *79*(1), 146–165.

**2.**

People may have motion sickness while traveling in vehicles or when riding on a roller coaster. This can be the result of an intersensory conflict between vestibular and visual stimulus. This kind of motion activates the vestibular system. The vestibular system consists of semicircular ducts and chambers that have receptors for equilibrium. The system is responsible for balance, motion as well as body position. It also has a function of gaze stability during motion. It determines the body orientation and minds the direction and speed resulting in maintaining human balance (Bertolini & Straumann, 2016). There is motion sickness as a result of a conflict between visual and vestibular signals. For example, such conflict can arise when you look out the side window of a moving vehicle. During this motion, the vestibular perceived motion is opposing to the movement perceived in the visual arena (Toschi et al., 2017).

References

Bertolini, G., & Straumann, D. (2016). Moving in a moving world: a review on vestibular motion sickness. *Frontiers in Neurology*, *7*, 14.

Toschi, N., Kim, J., Sclocco, R., Duggento, A., Barbieri, R., Kuo, B., & Napadow, V. (2017). Motion sickness increases functional connectivity between visual motion and nausea-associated brain regions. *Autonomic Neuroscience*, *202*, 108–113.