

Cervical Exploration For the Brain Injury Practitioner

Disclosure

- Nothing To Disclose

Cervical Structure

- The cervical vertebra and ligaments produce combined movements of rotation and lateral flexion with extension (Black, 2015)
- The mechanism of the sub-occipital segment eliminates unwanted movements, keeping the vertebral axes aligned so that the eyes remain horizontal for balance and better vision (Black, 2015)

Cervical Mechanics

- Flexion Of the Head and Neck Involves:
 - Full flexion of the atlanto-occipital (AO) joint
 - Flexion of the atlas on the dens
 - Full Flexion of all lower cervical vertebrae (Black, 2015)

Cervical Mechanics

- Extension of the Head and Neck Involves:
 - Extension of the AO joint
 - Extension of the atlas on the axis
 - Extension of all lower cervical vertebrae (Black, 2015)

Cervical Mechanics

- Rotation of the Head and Neck involves:
 - Rotation of the AO joint to the same side
 - Side bending of the AO joint to the opposite side
 - Rotation of the axis on the atlas to the same side
 - All lower vertebrae in rotation, side bending (lateral flexion) to the same side and extension (Black, 2015)

Upper Trapezius and Sterno Cleido Mastoid Muscles

- Two common muscles that are in constant tension, sometimes causing discomfort and compression in the neck, are the upper trapezius and the Sterno Cleido Mastoid (SCM)
- The Upper Trapezius and SCM are fast twitch muscles (Black, 2015)

Preferential Movement Thru Movement Of the Eyes

- The eye-head-trunk motion is linked to controlling gaze. (Black, 2015)
- The sup-occipital muscles are the righting mechanism of the head, to keep the focus of the eyes on point via the vestibular system. (Black, 2015)
- The superior colliculus plays a role in integrating sensory information into motor signals that help orient the head toward the stimulus. (Black, 2015)