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Facing Traumatic Brain Injury (TBI) Head On
An Introduction to the Cause and Effect of TBI

The purpose of this presentation is to provide an overview of the neurological and behavioral markers of an acquired disorder known as traumatic brain injury, including assessment and treatment, to support future speech-language pathologists to have a better understanding of this disorder's impact as well as treatment options.

TBI is defined as a disruption in the normal function of the brain that can be caused by an external force being exerted on the cranium which can include rapid acceleration-deceleration or an injury in which an object penetrates the cranium and enters brain tissue. Focal damage arises after an injury that coincides with contusion or laceration. Diffuse damage is generally associated with injuries that follow rapid acceleration-deceleration since the brain makes contact with opposing ends of the cranium, resulting in a coup and contrecoup injury. Aspects of TBI such as axonal sheering, changes in memory, cognition, emotional state, and ability to conduct activities of daily living make TBI one of the acquired disorders with the greatest injury related productivity loss.

Surgical treatment of TBI is limited, only truly being a feasible option immediately after injury. Deep brain stimulation (DBS) is a modern intervention method for those with severe TBI. It is an invasive procedure which requires placing electrodes within the cranium in order to reestablish stimulation to those areas.

Those with TBI often suffer from a wide variety of voice and speech disorders. Among the most commonly affected areas are articulation deficits and the development of dysphonia or even aphonia. It is also not uncommon for individuals to acquire dysphagia after TBI, which would require the attention of an SLP. Cognitive function is also frequently implicated after sustaining TBI, which SLPs are responsible for assessing.

Treatment modalities employed by SLPs when working with those with TBI vary. Cognitive rehabilitation is often utilized, which seeks to improve attention and concentration, visual processing, language, memory, reasoning and problem solving, and executive functions, but has also been shown to improve psychosocial function. Individuals with more severe TBI often have motor impairments as well as cognitive, making them good candidates for the use of an augmentative and alternative communication (AAC) method, which would be employed at the discretion of an SLP. Pragmatics is another area that SLPs would target for improvement.