White matter injury is an important contributor to long term motor and cognitive dysfunction after traumatic brain injury. During brain trauma, acceleration, deceleration, torsion, and compression forces often cause direct damage to the axon tracts, and pathways that are triggered by the initial injury can trigger molecular events that result in secondary axon degeneration. White matter injury is often associated with altered mental status, memory deficits, motor or autonomic dysfunction, and contribute to the development of chronic neurodegenerative diseases. The presence and proper functioning of oligodendrocyte precursor cells offer the potential for repair and recovery of injured white matter. The process of the proliferation, maturation of oligodendrocyte precursor cells and their migration to the site of injury to replace injured or lost oligodendrocytes is known as oligodendrogenesis¹.

1)

Takase H, Washida K, Hayakawa K, Arai K, Wang X, Lo EH, Lok J. Oligodendrogenesis after traumatic brain injury. Behav Brain Res. 2016 Nov 6. pii: S0166-4328(16)30726-4. doi: 10.1016/j.bbr.2016.10.042. [Epub ahead of print] Review. PubMed PMID: 27829126.

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