Toxic waste

After a brain injury, such as traumatic brain injury (TBI) or stroke, toxic waste can accumulate in the brain. This toxic waste is primarily composed of misfolded or aggregated proteins, such as amyloid beta and tau, which are normally cleared from the brain by the glymphatic system and other waste clearance pathways.

However, following a brain injury, these waste clearance pathways can become impaired or damaged, leading to the accumulation of toxic proteins in the brain. This can result in a variety of harmful effects, including inflammation, oxidative stress, and neuronal dysfunction or death.

The accumulation of toxic waste in the brain is thought to be a key contributor to the development and progression of neurodegenerative diseases, such as Alzheimer's disease and Parkinson's disease. Research has shown that individuals with a history of TBI have an increased risk of developing these conditions later in life, possibly due to the accumulation of toxic waste in the brain following the injury.

Efforts to develop therapies for brain injury often focus on preventing the accumulation of toxic waste in the brain, or promoting its clearance. This can be achieved through a variety of approaches, including the use of drugs that target specific waste clearance pathways, or by stimulating the glymphatic system through exercise or other means.