

ANIMATED RELEVANT ANATOMY OF A TRAUMATIC BRAIN INJURY

From: Medivisuals Medical & Legal Visuals. Used with permission. <http://medivisuals.com>

Narrator

In order to understand how TBIs occur one must have a detailed understanding of some areas of the brain as well as a basic understanding of the relationships of various significant structures of the brain to the head and skull. In this animation sequence the head and brain are sectioned through the left eye. The brain is surrounded in the skull by cerebrospinal fluid. This fluid helps protect the soft, friable brain from impacts with the hard jagged edges of the inner skull.

The brain is composed of gray matter and white matter. Gray matter consists of cell bodies. White matter consists of myelinated extensions of the cell bodies that communicate with other cell bodies. These extensions are called axons. The arteries that supply the brain penetrate the external surfaces of the brain and divide into smaller and smaller branches. Upon microscopic examination of the brain one can appreciate the relationship between the fragile axons as compared to the much larger and more resilient blood vessels.

Axons typically measure from one fourth of one micron to 10 microns in diameter, while the blood vessels in this area typically measure from 30 to 240 microns in diameter.