Traumatic brain injury (TBI) is caused by a sudden blow or jolt that interrupts the normal functioning of the brain. An estimated 75% of TBIs are considered mild or moderate; however, even these seemingly innocuous injuries have been linked to increased risk of Parkinson’s disease and dementia. Severe TBI can cause lasting damage ranging from consistent headaches to chronic and debilitating cognitive or movement impairment. TBI is a major cause of mortality in the United States, comprising 30% of injury related deaths. The very young, the very old, and military populations are most at risk of sustaining a TBI. Each patient’s symptoms and experience with TBI differs. Researchers are working to address the diversity of challenges that individuals with TBI can face, and more research is needed to better understand, prevent, and treat this high burden health threat.

**TODAY**

An estimated 5.3 million Americans are living with a TBI-related disability. Military personnel are at a higher risk for TBI than the general population; it is estimated that 11-23% of deployed U.S. military personnel experienced a probable TBI. There are nearly 57,000 TBI-related deaths each year in the U.S., including more than 2,500 children.

**Research Delivers Solutions**

**Decompressive surgery** (partial removal of the skull) is being pioneered as a means of reducing the risk of death in severe TBI patients. After TBI, there can be harmful pressure increases inside the skull because of brain swelling. In preliminary surgical trials, patients’ rate of mortality fell from nearly 50% to less than 27%.

Scientists have found that the immune system plays an important role in healing damaged brain tissue immediately after a TBI, including the removal of dead cells and debris. A long-term elevated immune response, however, may be harmful. This critical finding has helped evolve efforts to address TBI toward therapies that micro-target specific immune responses rather than blunting the entire immune response.

Mild TBI (mTBI) is the most common form of TBI affecting military personnel and while frequent blast exposure is a key risk factor, military-related mTBI can have a wide variety of causes from athletics and recreational activities to motor-vehicle accidents. Repetitive mTBI is an especially crucial area of concern and research, and the U.S. Department of Veterans Affairs has completed research showing that repetitive mTBI can cause chronic inflammation and reduce blood flow in the brain. Further research, however, has shown that the anti-inflammatory drug anatatine improves spatial memory and reduces harmful brain inflammation after repetitive mTBI.
Traumatic Brain Injury

Then. Now. Imagine.

THEN
In 2012, only 20 states had TBI surveillance systems in place to capture current and historical data on TBI, information needed to identify and develop successful interventions for at-risk populations.16

NOW
In 2018, legislation was signed into law authorizing the Centers for Disease Control and Prevention to create a nationwide database to track TBI, giving scientists and health care providers data that is critical to addressing TBI.10

IMAGINE
Full recoveries for patients with TBI.

Causes of TBI-related Emergency Department Visits, 20148

*As indicated in the citations, current data sources were used to compile this fact sheet; however, the best available statistics on TBI tend to be dated (2010-2014). Gaps in epidemiological and other data are among the research-related challenges surrounding TBI.5

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The Albert and Mary Lasker Foundation is a founding partner in this series of fact sheets. www.laskerfoundation.org

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