



# The Cost of Head Injuries to the Manufacturing Industry

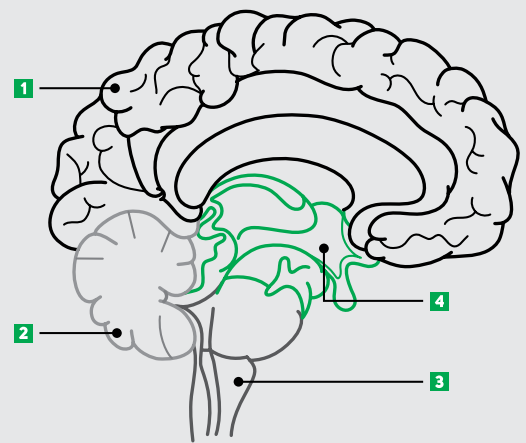
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# The Cost of Head Injuries to the Manufacturing Industry

Our head is the home of our most important asset, the brain. Therefore, ensuring that this is safe and protected is of the utmost importance for not only us, but also for the businesses that employ us too. In the manufacturing industry, every day is filled with hazards which can pose a significant threat to our health. Because of the sheer number of people involved in this industry, the differing approaches to health and safety and human error, sadly makes injuries inevitable. When a person sustains a head injury, this creates a ripple, effecting the person injured, the company they work for and all of the people in that person's life. To understand the true cost of head injuries to the manufacturing industry, we need to look into the effects of the injury itself, the financial ramifications for the person, business and economy, and also the role this plays in employee productivity and morale.

The brain is the control center for everything we do. This controls our emotions, senses, movement, reasoning and vital bodily functions. Basically, everything that is essential to our survival. This 3 pound gelatinous mass is comprised of four regions, the cerebrum, cerebellum, the brain stem and the diencephalon. Each of these regions are responsible for specific functions and this is achieved by transmitting information between the brain and body through neurons and nerve fibers. For protection, the brain is encased within the skull which comprises of incredibly hard bone along with cerebrospinal fluid and meninges which act as a cushion for the brain. Because the brain is responsible for everything that goes on in our body, any threat or damage can have major implications to our ability to function and ultimately our quality and length of life.



## Brain Regions

The brain is the control center for everything we do. This controls our emotions, senses, movement, reasoning and vital bodily functions. Each different region within the brain has a different role to play.

- 1 Cerebrum** - responsible for touch, vision, hearing, speech, emotions, learning and fine motor movements.
- 2 Cerebellum** - coordinating voluntary muscle movements and balance.
- 3 Brain Stem** - responsible for movement of eyes and mouth, relaying sensory messages, respiring, consciousness, cardiac function, involuntary muscle movement, sneezing/vomiting/coughing/swallowing.
- 4 Diencephalon** - helps to mediate sensations, manage emotions, sleep cycles and memory.

## Understanding Head Injuries

Head injuries most commonly occur as a result of motor vehicle accidents, trips/slips/falls, assault and child abuse. In workplaces, these are typically the result of walking into objects, objects falling from above, slipping and falling from height, tripping or falling. As a result of this, operators face sustaining head injuries in the following four key categories.

- **Concussions:** A traumatic brain injury (TBI) occurs when the brain is shaken hard enough that it bounces against the skull. This occurs from either direct impact to the head or from other regions which can create enough force to move the brain.
- **Contusion:** Bruising to the brain itself which can lead to bleeding and swelling in the brain.
- **Intracranial hematoma:** This is the general term to describe bleeding under the skull which can form a blood clot. Dependent on the location this will determine how this effects the person, these include, epidural, subdural and diffuse axonal.
- **Skull fracture:** A break in the skull bone. These include, linear, depressed, diastatic and basilar fractures.

Dependent on the type of injury that has been sustained and the severity of it, this will determine the onset of symptoms and how this will effect the person long term. For minor head injuries, symptoms may include headaches, lightheadedness, mild confusion, nausea and temporary ringing in the ears. If the head injury is more severe, then this may include all the mild symptoms along with loss of consciousness, seizures, vomiting, serious disorientation, abnormal eye movements, loss of muscle control, memory loss, mood changes and leaking of clear fluid from the ear or nose. Beyond these initial health risks, what is most frightening is the long term effects of head injuries that are experienced. These can create memory problems, complex personality changes, sensitivity to light and noise, sleep disturbances, depression and other psychological problems along with reduction in senses performance.

## Cost to Businesses

Aside from the traumatic experiences and debilitating life outcomes, workplace injuries come with a very costly price tag. In the United States alone, serious and nonfatal workplace injuries cost businesses nearly \$60 billion in direct U.S. workers' compensation costs per year.

In 2019 the National Safety Council (NSC) estimated that the economic cost to the nation to be around \$171 billion through wage and productivity losses and medical and administrative expenses. In 2019 the manufacturing industry reported a total of 9,270 head injuries that required days away from work and a total of 74 fatal head injuries.

For businesses, no matter how small an injury is, this creates a loss of productivity. At the very least, when someone is injured there is time that is tied up through treating the injury along with the associated documentation. If the injury is minor, then this may require basic medical treatment which takes the employee away from their work, along with a trained first aid employee. If the injury is more severe, then this means the operator will be away for even longer periods of time. In addition to this, employees may begin to question how much their businesses actually cares about their physical and mental wellbeing which can influence other worker's morale, negatively impacting their performance for their company.

The impact injuries have on people and the financial burdens created all highlight a very important message that needs to be heard; safety needs to be prioritized in the workplace. In order for this to happen and for there to be a real difference being made, workplaces need an environment where safety is encouraged and a normal part of the job. This starts with supporting employees through their training and can be as simple as identifying potential risk areas and the ways in which they are able to avoid and mitigate that risk. Or this could be through educating employees, so they understand the gravity of potential injuries and so they have the knowledge and want to make safe decisions at work. Another area is implementing PPE that exceeds the legal minimum requirements. This is a simple way to show the employee that their safety means more than money, as their lives are being invested in. For the manufacturing industry, this could be as simple as adding bump cap or hard hat protection as a preventative measure. Steps like this are critical in creating a supportive safety culture while also helping to reduce the risk of these injuries happening in the first place.

Far too many tragic and unnecessary head injuries are happening everyday across the manufacturing injury and this needs to change. You've only got one brain, and it's the most important organ in your body, so it is absolutely critical that we do everything we can do to protect ourselves when we are at work.





## Sources:

- Camarota, B. (2017, February 7). Do subconcussive hits have the same effect on the brain as clinical concussions? Retrieved from Good Shepherd Penn Partners: <https://www.inquirer.com/philly/blogs/sportsdoc/Do-subconcussive-hits-have-the-same-effect-on-the-brain-as-clinical-concussions.html>
- Columbia University. (2015). Head Injury. Retrieved from Columbia University Department of Neurology: <https://www.columbianeurology.org/neurology/staywell/head-injury>
- Concussion Legacy Foundation. (n.d.). Subconcussive Impacts. Retrieved from Concussion Legacy Foundation: <https://concussionfoundation.org/CTE-resources/subconcussive-impacts>
- Harvard Medical School. (2018, October). Head Injury In Adults. Retrieved from Harvard Medical School: [https://www.health.harvard.edu/a\\_to\\_z/head-injury-in-adults-a-to-z](https://www.health.harvard.edu/a_to_z/head-injury-in-adults-a-to-z)
- Hasner, S. (2017, November 24). Did You Hit Your Head at Work? Retrieved from Hasner Law: <https://www.hasnerlaw.com/hit-head-work/>
- Konda, S. (2016, March 21). Traumatic Brain Injuries in Construction. Retrieved from CDC: <https://blogs.cdc.gov/niosh-science-blog/2016/03/21/constructiontbi/>
- LHSFNA. (2014, October). Will Your Hard Hat Keep You Safe? Retrieved from Laborer' Health & Safety Fund of North America: <https://www.lhsfna.org/index.cfm/lifelines/october-2014/will-your-hard-hat-keep-you-safe/>.
- Mayo Clinic. (n.d.). Meninges. Retrieved from Mayo Clinic: <https://www.mayoclinic.org/diseases-conditions/meningioma/multimedia/meninges/img-20008665>.
- My Safety Sign. (n.d.). Do Hard Hats Save Lives? Retrieved from My Safety Sign: <https://www.mysafetysign.com/hard-hats-save-lives.aspx>
- NSC. (2020). Industry Profiles. Retrieved from Injury Facts: <https://injuryfacts.nsc.org/work/industry-incidence-rates/industry-profiles/>
- NSC. (2020 ). Work Injury Costs. Retrieved from Injury Facts: <https://injuryfacts.nsc.org/work/costs/work-injury-costs/>
- Office of Public Affairs. (2016, November 17). Concussions: How they can affect you now and later. Retrieved from University of Utah: <https://healthcare.utah.edu/healthfeed/postings/2016/11/concussion.php>
- Olson, A. (2013, November 4). A bump cap protects workers from knocks to the noggin. Retrieved from ISHN: <https://www.ishn.com/articles/97249-a-bump-cap-protects-workers-from-knocks-to-the-noggin>
- Smith, S. (2017, January 11). Businesses Spend More Than \$1 Billion a Week on Serious, Nonfatal Workplace Injuries. Retrieved from EHS Today: <https://www.ehstoday.com/safety/article/21917853/businesses-spend-more-than-1-billion-a-week-on-serious-nonfatal-workplace-injuries>
- Visible Body. (n.d.). The Human Brain: Anatomy and Function. Retrieved from Visible Body: <https://www.visiblebody.com/learn/nervous/brain>
- Vynorius et al. (2016, October 31). Lifetime Multiple Mild Traumatic Brain Injuries Are Associated with Cognitive and Mood Symptoms in Young Healthy College Students. Retrieved from NCBI: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5086577/>
- WebMD. (2020, August 22 ). Head Injury. Retrieved from Jump Start: <https://www.webmd.com/fitness-exercise/guide/head-injuries-causes-and-treatments#1>
- Zuckerman, C. (2009, October 15). The human brain, explained. Retrieved from National Geographic: <https://www.nationalgeographic.com/science/health-and-human-body/human-body/brain/#close>

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