

# FACT SHEET:



# ABIOS

Acquired Brain Injury Outreach Service

**Category:**  
Life After ABI  
- Personal Changes  
Physical

**Audience:**  
Person with an ABI;  
Families and  
Support Workers:  
and Professionals

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Reviewed Jan 2021

For review Jan 2022  
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## Understanding Chronic Pain and Traumatic Brain Injury

### Introduction

Chronic pain is an unpleasant, complex, and perceived experience that persists after physical healing has been achieved to the best of it's ability. Pain severity is influenced by a range of factors including emotion, attitude, culture, physiology and environment. You can experience chronic pain with no physical damage and you can have physical damage with no experienced pain. Pain is a very personal experience and all pain is real.

About 50% of people who experience a traumatic brain injury (TBI) report also experiencing chronic pain. Chronic pain is about twice as common in individuals with mild TBI or post-concussion syndrome compared to individuals with more severe brain injuries. Depression, Anxiety and Insomnia are all conditions that can make you more vulnerable to developing chronic pain in mild TBI.

### Key Pain Concepts

- Pain is the brain's way of protecting you. Some pain is good because it tells you when there is danger e.g., take your hand off the stove hot plate.
- The brain's natural tendency is to overprotect to keep us safe. This means our brain often sends out a pain output before there is physical damage. Sometimes the brain system become very sensitized, especially after a serious or long term injury.
- There are no pain sensors in body or brain. There are danger sensors that are activated and send danger signals to your brain for processing. These are interpreted by the brain which then may then send out a pain experience. This can happen with or without actual physical damage.
- Pain involves distributed brain activity. There is no one pain centre in the brain. It is a complex, connected network.
- Our brains are bioplastic which means that we change our protective system to turn down a sensitized and edgy system. Pain is treatable and recovery is possible.

## Pain and TBI

Due to the complexity of TBI, chronic pain can be challenging to assess and treat. Here are some considerations.

### Communication Changes

- People with TBI may not be able to describe the location, severity, or quality of their pain symptoms.
- Clinicians and family members may need to carefully observe the person with TBI for signs of pain when there are language barriers e.g., looking at body language and non-verbal signs of pain (grimacing, protective movements). Vital signs may also need to be monitored e.g., blood pressure, heart rate and temperature.

### Cognitive Changes

- Challenges in memory, planning, organisation, attention and flexibility may mean that treatment programs for chronic pain may need to be adapted.
- A support person may need to remind or prompt a person with TBI to stay on track with their treatment program for exercise and/or medication.
- Provide simple and clear written communication on the treatment plan.

### Physical Changes

- Depending on the type and nature of the injury, there may be periods of prolonged immobilization, fracture, prolonged coma, weakened musculoskeletal structures and/or spasticity that need to be considered in the treatment of chronic pain.
- Working closely with your treating doctor and/or physiotherapist is important.

- Fatigue is a very common symptom reported after TBI. You may need to consider both your cognitive as well as your physical level of fatigue and endurance in the treatment of chronic pain. You may need to go slower with your treatment program or take more breaks.

### Emotional/Behavioural Changes

- Changes in mood like depression and/or anxiety are common after a brain injury. They can make you more vulnerable to developing chronic pain or they can exacerbate your existing pain condition.
- Seeking treatment for any negative emotional changes after injury may greatly assist in treating your chronic pain condition.

### Sensory Changes

- Changes to sensation following TBI can impact on sensitivity to temperature (over sensitive or under sensitive) and the experience of sensations.



## Treatment

There are several different things you can do to help improve your chronic pain:

- Seek treatment from a trained health professional with experience in both chronic pain and brain injury. Often it can be beneficial to work with multiple health professionals e.g., physiotherapy, psychology and your general practitioner.
- Don't let pain become your focus. Keep doing what is important to you in life in an adapted way. You may not be able to do it in the same way or for the same amount of time, but it is very important to keep participating in life as much as you are able.
- Stay connected. There is often a desire to withdraw from your previous relationships and activities. Try to avoid this as much as possible and remain linked.
- Improve your sleep. If you are not getting the recommended 7-9 hours sleep per night, you may benefit from some sleep strategies. Talk to your doctor or psychologist about learning more.
- Seek treatment for any mental health problems e.g., depression or anxiety that may be exacerbating or contributing to your chronic pain
- Review your medication with a chronic pain specialist. The medication recommendations for different types of pain are different.
- Active strategies promote recovery. Become a leader in understanding your own pain experience and trying different strategies to help your recovery.

## References

- Mollaveva, T. et al., (2017). Concussion/mild traumatic brain injury-related chronic pain in males and females: A diagnostic modelling study, *Medicine*, 96(7)
- Seidel, B., & Freedman, M., (2017). Pain in the Traumatic Brain Injury Rehabilitation Patient in A. Carayannopoulos (Ed.), *Comprehensive pain management in the rehabilitation patient* (pp.41-52). Boston, MA: Springer.
- Mosely, L., & Butler, D., (2017). *Explain Pain Supercharged*. Adelaide, SA: Noigroup Publications.

## Other Resources

See other Acquired Brain Injury Outreach Service (ABIOS) Information sheets at <http://www.health.qld.gov.au/abios/>

### Organisations:

- **Pain Australia**  
<http://www.painaustralia.org.au>
- **Neuro Orthopaedic Institute (NOI)**  
<http://www.noigroup.com>
- **Chronic Pain Australia**  
<http://chronicpainaustralia.org.au>

