

Traumatic Brain Injury

Recovery information for moderate to severe injuries



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Definitions

He Whakamaramatanga

TBI	Traumatic Brain injury
GCS	Glasgow Coma Scale
PTA	Post Traumatic Amnesia
ACC	Accident Compensation Corporation

What is a traumatic brain injury?

He aha te pāmaemae ā roro?

Traumatic brain injury (TBI) is caused by an external force to the brain. A moderate to severe TBI involves a change in state of consciousness; TBI can lead to temporary and/or permanent changes in thinking, movement, emotions and communication. This can cause extensive tearing of nerve tissue throughout the brain. The brain messages are slowed or lost.

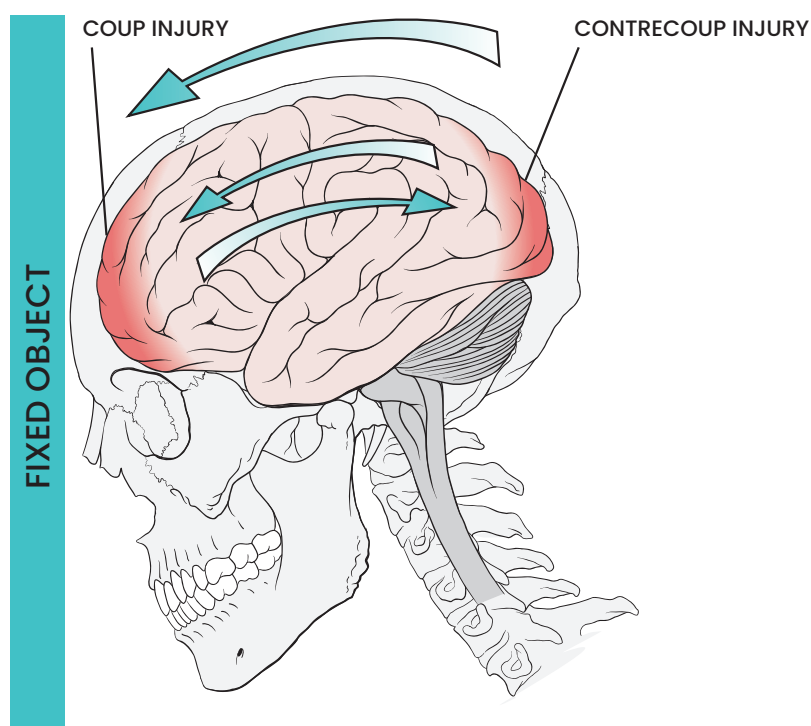
Examples: sport injuries, leisure activities, assault, motor vehicle accidents, whiplash, slips or fall, head knock etc.

TBI patients with moderate to severe injury could experience:

- temporary loss of consciousness
- loss of memory
- feeling disorientated
- feeling dazed
- confusion.

Loss of memory is called post traumatic amnesia (PTA). During this period, you may:

- feel confused
- act strangely
- have your attention span decrease
- fatigue easily
- feel irritable
- be easily over stimulated.



The brain

Te roro

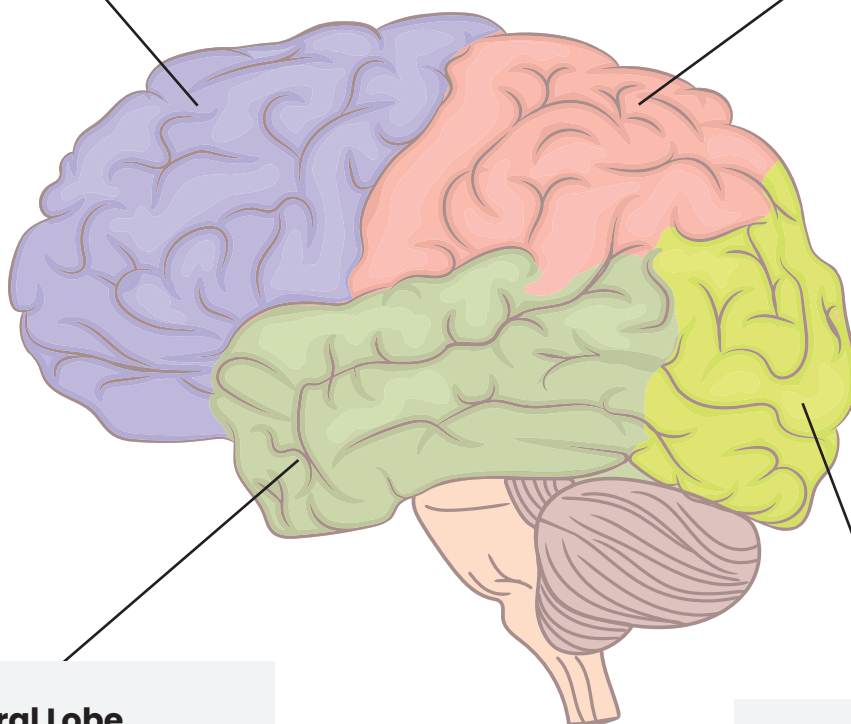
The brain has four cerebral hemispheres called lobes/taupae. Each lobe controls different functions of the body.

Frontal Lobe

Is the planning, thinking and organises, controls emotions and impulses.

Parietal Lobe

Tells left from right side, reading, recognises things by sight or touch.



Temporal Lobe

Forms new memories, orders things in your mind, categorises objects, understands sounds such as speech and music.

Occipital Lobe

Receives visual information, interprets colour, shape and distance.

Brain Stem

Controls vital life functions, breathing, heart rate, consciousness and ability to sleep.

Common symptoms

Tohu māiui

- Change in balance, strength and coordination
- Problems affecting speech, communication and swallowing
- Sensory changes including hearing loss, numbness and visual problems
- Reduced control over bowels and bladder
- Changes in attention, memory and cognitive functions
- Behavioural changes with emotions and social interactions
- Mood and psychological functioning
- Headaches, pain, dizziness, nausea and vertigo

Inpatient team assessments and treatments

Te aromatawai me te whakamātūtūtanga

The aim of rehabilitation/whakamaūtū is to improve your quality of life and function. Early rehabilitation/whakamatūtū should begin as soon as possible and is the process of bringing people back to health and wellbeing after injury through therapy. This may include providing compensatory strategies to lessen the impact of your symptoms.

The stages and severity of TBI are determined by assessments as no tool can determine a full picture of one's strengths and challenges. This could include health professionals who will assist you with your recovery at different stages dependent on your individual needs.

This could include:

- doctor
- nurse
- occupational therapist
- physiotherapist
- pharmacists
- complex discharge planner
- psychologist
- social worker
- speech language therapist
- ACC case manager.

During your recovery several assessments will be completed

Ngā aromatawai hei oti

Glasgow coma scale (GCS)	<p>GCS assesses patients according to three aspects of responsiveness: eye-opening, motor, and verbal responses. Initial test is completed soon after injury to set a baseline, with families playing an important role during this time.</p> <p>GCS assessment is completed frequently after first initial to determine any changes in consciousness.</p>
Initial interview	<p>Initial interview provides the health professionals with a complete picture of problems, concerns and limitations of you as the patient. All information gathered is used toward defining a treatment plan to get you back home safely and supported.</p>
Cognitive assessment	<p>Post traumatic amnesia (PTA) is assessed through the Westmead assessment- which reviews orientation (person/ place) and memory recall. This assists with guidance on the severity of TBI.</p> <p>Assessment includes areas of insight awareness, attention, memory, information processing, perception, self-monitoring, social judgement and complex problem solving.</p>
Physical assessment	<p>Physiotherapist, occupational therapist and speech language therapist complete individual assessment to review:</p> <ul style="list-style-type: none">• motor deficits – muscle weakness, abnormal muscle tone, range of motion and co-ordination• sensory deficits – visual, hearing loss, sensation and balance• physical symptoms – headache, fatigue, seizures and pain.• dysphagia (difficulty swallowing)• communication, language deficits, cognitive communication issues or word finding difficulties.• function – changes position, carrying, moving, walking and activities of daily living.
Behavioral and emotional assessment	<p>What we observe and review for:</p> <ul style="list-style-type: none">• emotional changes• initial• mood change• adjustment to problems• personality changes – aggressive outbursts, inappropriate behaviour, loss of motivation and engagement• mental health disorders should also be considered.

Recovery

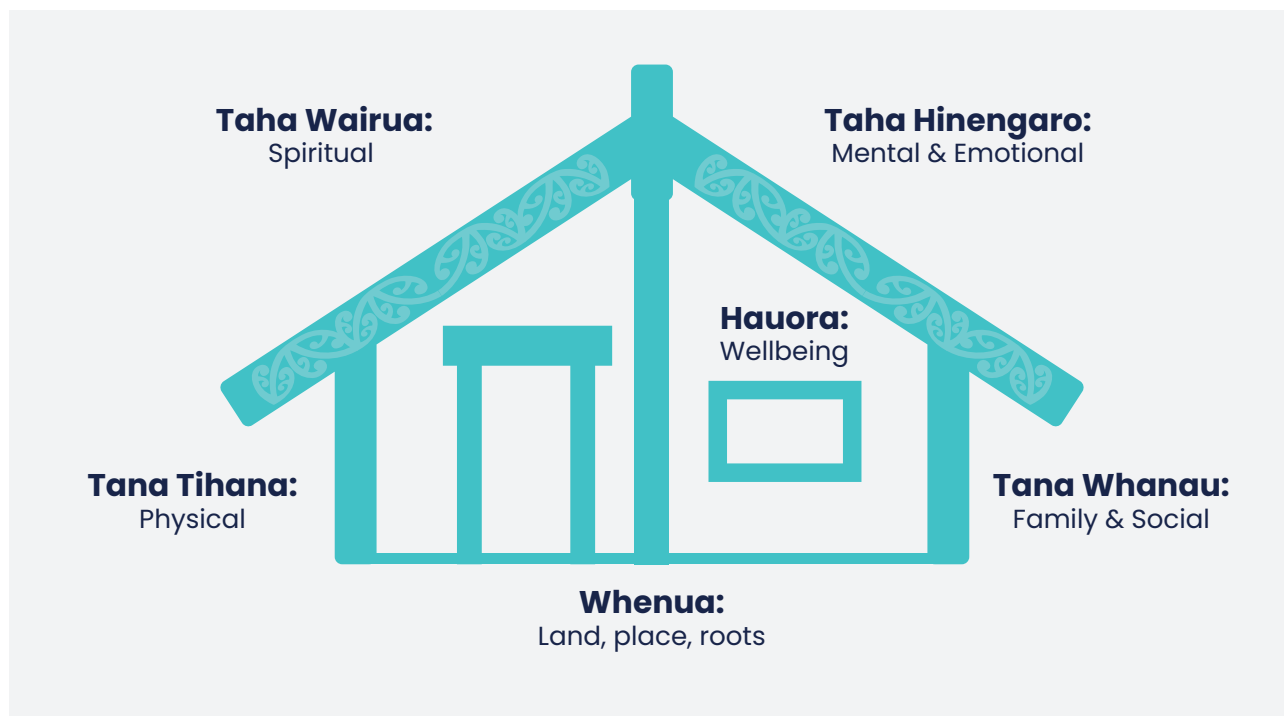
Te ruha noa

Stages of recovery is different for everyone who experiences a TBI. Length and outcome of each stage can be unpredictable, with no specific time frame.

A brain injury can affect you as an individual in many ways, during your recovery you may see different health professionals who will assist you with recovery. It is important to utilize family during this period with appointments and making sure the body is well rested before and after appointments.

Te Whare Tapa Whā

Te Whare Tapa Whā describes health and wellbeing as a whare (meeting house) with four walls and a foundation, that helps us identify where we need extra support.



The foundation is our connection with the whenua/land. A useful link below that has ideas that focus on each of the specific areas www.raise mentalhealth.co.nz/hinengaro.html

Management

Whakahaerenga

Pain relief

It is recommended the use of paracetamol or codeine for headaches, do not use aspirin or an anti-inflammatory pain reliever such as ibuprofen (NSAID). Any concerns please discuss with your doctor.

Driving

It is advised not to drive or operate heavy machinery until you have medical clearance.

Drinking/drugs

It is advised not to drink alcohol, take sleeping pills or recreational drugs as this can delay your recovery or increase complications following a head injury.

Please consult a counselor or a doctor for assistance if you believe you have an alcohol or drug problem. Free drug and alcohol phone number 0800 787 797.

Fatigue management

Te ruha noa

Fatigue is one of the most common symptoms following a TBI; it is a constant draining feeling of having no energy. It is important to recognise signs of fatigue as part of your rehabilitation and how to manage fatigue.

You may experience the following:

- decreased concentration, memory and ability to cope in social situations
- increased irritability, distractibility, depression and anxiety
- processing information may take longer and use more energy to complete tasks.
- a task which requires a lot of thinking and concentration will drain your energy faster, leaving you feeling fatigued.

Fatigue management is your starting point. Accepting and recognizing your limits and energy level will help with your recovery.

When managing fatigue consider 3 'P's

Hei whakaarotanga mōu

Prioritising

- Write out tasks you feel you must or need to do and what would happen if you don't do them?
- Number them in order of urgency/importance to you
- The list should include your therapy, social interactions, hobbies, interests and daily tasks.
- If you need assistance with any tasks, ask family or friends to assist. You are still recovering and asking for help is good and means you will have energy to complete other tasks.

Planning

- Plan your activities for your day and the week ahead
- Leave enough time to rest afterwards
- Identify the time of day you to do the activities
- Before starting a task think about how you will do it and for how long. E.g. sit down to complete the tasks, book appointments during least traffic (school runs), groceries shopping when there is no rush (week days and during school hours).

Pacing

- Take your time and stop before you are exhausted
- Spread the activities through the day or week
- Don't try and do all heavy activities at once, increase your time frame a little everyday
- Take regular breaks
- Use a timer to remind yourself to rest.

Rest / sleep

Okiokinga / moe

You may find yourself sleeping more than usual after a head injury. Sleep/moe is important during your recovery period and is recommended you getting adequate amounts of sleep/moe and mental rest to allow the healing process of the brain.

Lack of sleep can worsen your symptoms you're experiencing. Some symptoms can be:

- concentration difficulties
- headaches
- frustration.

Some essential tips to help with your recovery are:

- having a routine e.g. develop a ritual before bed to help wind down and relax such as taking a bath or listening to soothing music
- going to bed and getting up at the same time each day
- taking power naps during the day, but avoiding this in the later afternoon, using an alarm to make sure you don't sleep too long e.g. longer than 30 minutes
- use your bed for sleeping only, the recommendation is 8-10 hours of sleep per night
- reduce screen time because light from electronic devices such as phones, television or tablets can affect your sleep cycle
- to decrease stress and worry before bedtime you can use or have a notebook and write everything down
- do not have caffeine, nicotine or alcohol before bed.

Stress / anxiety management **Mate māharahara**

There are several different reasons for increased stress following TBI, some examples are below:

- frustration regarding your recovery
- financial hardship
- family problems
- other people's expectations
- your own expectations

It is important to recognise when you are stressed and why.

Once you have a why, then consider some solutions on how to reduce your stress, otherwise the stresses reduce your sleep patterns and take over your thought processing and can make your recovery time longer.

If you are unable to come up with a solution, ask for assistance from family/friends or ask if you can get assistance from ACC or counselling.

A useful link that assists with stress:

www.healthnavigator.org.nz/health-a-z/s/stress/

Behavioural / personality changes

Te whanokē

Following a TBI, you may experience changes in behavior, mood and personality.

Some changes of behavior are:

- frustration
- irritability
- losing your temper
- inflexible
- impulsive
- depression/anxiety
- changes in mood e.g. mood swings, emotional breakdowns, and lack of motivation
- change in their behaviour.

Things that can help:

- learn to recognise your triggers so you can avoid or manage them e.g. a certain time of the day, activity, loud or crowded environments
- listen to your family's feedback or concerns
- try and stay in a regular routine as this will make you feel more in control of your life
- ask for help if unsure
- make sure you do activities you enjoy
- find healthy outlets for anger such as exercise e.g. gym, outdoor walking
- find relaxation in a way you find most comfortable e.g. listening to music, reading, having a bath.

Sports

Hākinakina

Re-injury of the brain can be dangerous after a TBI if not fully recovered from the first injury. The most important goal after experiencing a head injury is avoid another.

Returning to sports, we recommend that you wait until you are no longer experiencing any symptoms and have full clearance from your doctor or concussion service. They will guide and support your return to sports and physical activity. Remember **if in doubt sit out.**

It is important that you gradually return to your usual daily activity bit by bit, so you don't place extra stress on your healing brain.

Gradual return to activity

Te pakari haere

Stage	Objective	Recommended Levels of Activity
No activity	Recovery	No or minimal activity physical and cognitive rest
Light	No return of symptoms Avoid stimulating environments and activities	Short periods of cognitive and physical activity Frequent short rests between/during activities e.g. walking
Moderate	Gradually increase activity levels and intensity	Increase duration and intensity of activities Return to light aerobic exercise Commence gradual return to work/study
Heavy	Return to full activities, decreasing rest periods as tolerated	Increase work hours/demand as tolerable Passing drills in ball games Avoid full contact sports
Normal	Full return to daily activities and routine without symptoms	Normal length and intensity of work, study, and leisure Full contact sports

Therapist

Kaituku haumanu

Physiotherapists are trained to provide appropriate interventions. Physiotherapists can assist with personalized exercise programs and will encourage self-management to build up your strength, improve coordination and control, static and dynamic balance, exertional tolerance/fitness levels and dual or multi-tasking.

Physiotherapists can help with:

- headaches
- neck pain
- vertigo or dizziness
- balance issues
- poor exercise/exertional tolerance.

If you experience dizziness or vertigo, please discuss these symptoms with the concussion service or your GP regarding a physiotherapist review.

Occupational therapy is a health profession that involves a process of assessments and interventions to identify specific treatment goals that are tailored to individual's needs, in order to encourage participation in activities of daily living.

Occupational therapy can help with:

- return to activities of daily living
- cognitive fatigue and retraining
- rehabilitation approaches may include equipment to ensure safety at home, work or school.

Once discharged from hospital a referral will be completed to ACC concussion clinic for follow up in the community. Our recommendation is to work with this team regarding your concerns and expectations.

Work mahi Study ako

You may need to take time off work / mahi or study / ako if you are having trouble concentrating or remembering things. Everybody is different, ACC have a return to work and school service and can guide you in regard to an appropriate plan.

Things to consider:

- Based on the significance of your injury it is important to not return to work or study too early as this can delay your recovery.
- Plan when you are going to return to work and the duration e.g. try and return with part time hours and light duties.
- Remember you are still recovering and will struggle with fatigue, memory, concentration and emotions. Know your limits, take breaks as needed and adapt your return to work/study hours.
- Avoid making major decisions and becoming involved in stressful situations until you feel you are ready
- You will require medical clearance to return to work or study.

Information for caregivers / family / relationships

He pārongo mā te whānau

The impact of the changes to mood and behaviour can affect friends and family members. It can take time to adjust to the changes so support each other through the process.

What can you do to help?

- Encourage independence. This will foster self-confidence and self-esteem while reducing the risk of resentment when unreasonable demands are not met
- Discourage over-dependence. Family should encourage the individual to do as much as possible, within the limits imposed by the TBI.
- Your family member may have a reduced attention span; keep instructions simple, short and to the point. When carrying out a new task give them time to process the information or instructions and time to carry out these tasks.
- Some tasks may need to be done in small chunks vs all at once, while recovering at home e.g. cooking meals, taking breaks between prepping and cooking.
- Setting boundaries. Yes, they have had a significant event however you can set boundaries regarding their behaviours, routines or requests. Tell the individual when they have behaved inappropriately but do so in a discreet and non-confrontational way.

For further support, please contact ACC or the GP as required and be honest about your feelings, struggles or worries so you as a family can get the best support to care for your loved one.

Warning signs

Ngā tohu whakatūpato

In early days of discharge, it is important to have a responsible adult who can monitor your symptoms for the first 48 hours. It is common to experience symptoms such as dizziness, blurred vision, headaches and memory in the first couple of days from discharge.

If you experience any of the following symptoms it is important to go to the emergency department or call emergency services immediately:

- loss of consciousness
- inability to be woken
- clear fluid coming out your ears or nose
- any weakness in one or both arms and legs
- loss of balance or problems walking
- increasing disorientation
- slurred speech
- unusual behaviour
- seizures.

My important contacts

Ngā hoapā hiranga

My health professional (e.g. doctor, physiotherapist)

Name:

Phone number:

My employment contact person (e.g. manager)

Name:

Phone number:

My ACC contact person (case manager)

Name:

Phone number:

Other contacts

Name:

Phone number:

Te Whatu Ora
Health New Zealand

TBI Discharge Booklet
Occupational Therapy Department, Te Whatu Ora Taranaki, Version 1, 2023.
Published: Communications Team