

## Module 4

# Understanding and managing cognitive changes after traumatic brain injury

Compiled by Kim Ferry  
Senior Neuropsychologist

Revised by Rebecca Bowen  
Rehabilitation Psychologist

Brain Injury Rehabilitation Unit  
Liverpool Hospital, Sydney

# Workshop overview

## Aim

This workshop provides information on how a traumatic brain injury (TBI) can cause changes in a person's cognitive functioning and offers strategies that can help to compensate for their difficulties.

## Rationale

A TBI can cause subtle or dramatic changes to a person's cognitive functioning. This in turn affects their ability to manage day-to-day tasks independently. Some people make a complete physical recovery and the only permanent disability they are left with is cognitive changes.

Cognitive changes can manifest in a person's inability to perform different activities as well as in their personality and behaviour. It is therefore important for those working with people with a TBI, to be aware of the cognitive sequelae (consequences) that can occur and what this could mean to the person and their carers.

It can be extremely challenging working with a person who has severe cognitive impairments. Another issue for workers may be that the person appears to be in good physical shape, and yet is unable to do even simple tasks without assistance. Awareness of these changes and appropriate compensatory strategies helps workers to interact more effectively with a person with a TBI.

## Outcomes

At the end of this session, participants should be able to:

- define Neuropsychology and the role of the Neuropsychologist
- recognise normal difficulties that may occur with memory, attention and concentration
- identify some of the common cognitive changes resulting from a traumatic brain injury
- list possible strategies to compensate for cognitive changes
- identify how the behaviour of a person with impaired cognitive functions might be misunderstood or misinterpreted by other people.

## Key strategies and concepts

This module provides information on cognitive changes following TBI. It uses discussion and analysis of case scenarios to help workers to come up with suitable strategies to manage such difficulties.

An underlying principal of this module is to offer workers knowledge and understanding about compensation and adaptation strategies, so they can better manage the changed capacities of the person with a TBI.

This module has a cognitive focus. There is some overlap with Module 5 where the focus is on behaviour changes after TBI.

This module encourages the presenter to take a strengths-based focus rather than deficit focus when talking about cognitive changes, impairments and sequelae.

## Evaluation

Some presenters may wish to evaluate the effectiveness of their training. For example, if the modules are provided as part of a training day, the organisers may want to evaluate the success of the program and the usefulness of this approach to the provision of the training.

A generic evaluation form has been provided in **How do I use this resource?**

This form is an example of how you may want to evaluate your training. It can be modified before you print it out, to make it specific to your training.

The evaluation can be completed at the conclusion of each module or at the completion of the training program (eg. several modules). The form can be distributed and collected by the presenter/s on the day, or returned by mail/email for feedback to a designated person to collate the responses for later feedback, to assist planning or to provide a training report (eg. as a Quality Assurance project).

The use of the evaluation tool will be specific to the type of training organised.

## Summary outline

approximately 2 hours

Content	Resources	Suggested Timing
Introduction to workshop	Blank overhead <b>HO 4.1</b> – Workshop outcomes <b>OH 4.1</b> – Workshop outcomes	5 minutes
Definition of Neuropsychology and the role of the Neuropsychologist	<b>OH 4.2</b> – Neuropsychology <b>OH 4.3</b> – Role of the Neuropsychologist	10 minutes
Personal experiences of memory, attention and concentration difficulties	<b>OH 4.4</b> – Cognition <b>OH 4.5</b> – Activity: Brainstorm personal difficulties with memory, attention, concentration	10 minutes
Cognitive changes following TBI	<b>OH 4.6 (a,b)</b> – Consequences of TBI <b>HO 4.2 (a,b)</b> – Consequences of TBI	20 minutes
Assessment of cognitive changes	Examples of assessment tools for groups to look at	15 minutes
Strategies to compensate for different areas of impaired cognitive functioning	<b>HO 4.3 (a-d)</b> – Understanding and managing cognitive changes following a TBI  Activity: Case studies <b>WS 4.1, WS 4.2, WS 4.3</b>  Activity: Strategies for Case studies <b>WS4.4, WS4.5, WS4.6</b>	30 minutes
Misunderstanding cognitive and personality changes	<b>OH 4.7</b> – Misunderstanding cognitive changes  <b>OH 4.8</b> – Consequences of TBI  <b>HO 4.4</b> – Consequences of personality and behaviour changes	20 minutes
Workshop outcomes	Use blank overhead and HO 4.1 from Introduction to review outcomes and refer group to HO 4.1 Collect completed Evaluation Forms (if utilised) Close	10 minutes

# Workshop outline

Resources	Content
	<b>Introduction</b> (5 minutes)
<b>HO 4.1</b> Workshop outcomes	
<b>OH 4.1</b> Outcomes	Welcome everyone and make introductions if necessary. Make sure the whole group is present.
Blank overhead	Ask participants their expectations of the workshop and write these on blank overhead. Keep for the conclusion section of the workshop.  Refer to the handout and use OH 4.1 to explain the purpose and focus of the workshop.
(Optional)	<b>Definition of Neuropsychology and the role of the Neuropsychologist</b> (10 minutes)
<b>OH 4.2</b> Neuropsychology	Define Neuropsychology as the study of the brain-behaviour relationship and areas of primary focus.
<b>OH 4.3</b> Role of the Neuropsychologist	This will lead to explanation of the role of the Neuropsychologist in assessment, feedback, and management of cognitive changes. Information can be discussed in more/less detail depending on presenter qualifications.
	<b>Personal experiences of cognitive difficulties</b> (10 minutes)
<b>OH 4.4</b> Cognitive functioning	Ask the group to share their own experiences of forgetfulness, difficulties paying attention or poor concentration. How do headaches (particularly migraines), illness, and fatigue affect their ability to perform regular duties?
<b>OH 4.5</b> My own cognitive processes	Ask them to remember what it was like to learn something new e.g. learning to drive or starting a new job – big things that required a lot of attention and the need to remember what they had been told.
(an overhead projector or whiteboard is required to supplement this overhead by writing up group answers)	Think about times of stress, anger, or feeling down. Try to establish an awareness of how even minor changes in cognitive efficiency can really make simple things challenging.

## Workshop outline continued

Resources	Content
<b>OH 4.6</b> Consequences of TBI <b>HO 4.2 (a, b)</b> Consequences of TBI	<b>Cognitive changes following a traumatic brain injury</b> (20 minutes) Discuss how traumatic brain injury is thought to cause global impairments due to the mechanics of how the injury is caused, as opposed to a localised or penetrating type of injury. Discuss how individual differences are also important (cognition, personality, coping style) as well as extent and location of the injury, and spontaneous recovery. Discuss some of the most frequently occurring cognitive sequelae of head injury and how individuals will vary in the type and severity of impairments they may have. <b>Exercise</b> Discuss each area encouraging participants to identify day-to-day tasks that could be affected by such impairments.
Copies of different neuropsychological tests for group to look at. Need to do own overheads for tests available.	<b>Assessment of Cognitive Changes</b> (15 minutes) (Optional when registered psychologist available as the presenter. If not reallocate time to discussion in following sessions.) Provide a brief overview of a neuropsychology assessment and how cognition is assessed. Mention rapport, clinical interview and history taking, corroborative history from others, clinical observation, and that it is a lengthy assessment. Talk about some of the tests used. Have examples of tests (consider uncommon examples) for the group to look at on an overhead. Explain their purpose. Be aware that this may not be appropriate if the members of the group will be undergoing these assessments in the near future. You may need to explain being 'test aware'.
<b>HO 4.3 (a–d)</b> Understanding and managing cognitive difficulties  Worksheets <b>WS 4.1, WS 4.2 and WS 4.3</b> (case studies)  Worksheets <b>WS 4.4, WS 4.5 and WS 4.6</b> (strategies)	<b>Strategies to compensate for different areas of impaired cognitive functioning</b> (30 minutes) <b>Exercise</b> Using OH 4.6, which lists cognitive changes, encourage the group to brainstorm and discuss different problems these changes could cause, as well as ways of managing each area of difficulty. Organise participants into three groups. Give each group a different case study worksheet and ask them to generate strategies for the cognitive difficulties the case presents. After this exercise, give each group the worksheet containing suggested strategies for the case study they have discussed. Ask them to compare the strategies they come up with, with the strategies identified in the worksheet. Have each group present their case study and strategies to the larger group.

## Workshop outline continued

Resources	Content
	<b>Misunderstanding of cognitive impairments and personality change</b> (15 minutes)
<b>OH 4.7</b> Misunderstanding of cognitive change	Discuss how a person with cognitive changes could be misunderstood as being deliberately difficult. Relate this to the individual's reduced insight and limited awareness of how they may contribute to a situation.
<b>OH 4.8</b> Consequences of TBI	Discuss how someone with a TBI may also be in a situation where their social network has depleted or disappeared, they have lost independence, and they may also have financial, accommodation and family concerns.
<b>HO 4.4</b> Consequences of personality and behaviour changes	They could be stressed, anxious or depressed, which could also impact upon their cognitive functioning. This may make it difficult for them to express their needs and concerns, which could mean they present as a frustrated or over-reactive person.
<b>Workshop Outcomes</b>	<b>Conclusion</b> (10 minutes)
Blank overhead with list of expectations (from Introduction to workshop)	Display the blank overhead with the list of participants' expectations of the workshop. Ask the group to reflect on their expectations and discuss whether these have been achieved.
<b>HO 4.1</b> Workshop outcomes	Use HO 4.1 to summarise workshop.
Evaluation forms	Ask them to complete the evaluation form (if utilised). Thank participants for their involvement!