# FACT SHEET:

## Category:
Behaviour

## Audience:
Professional

**For more information contact the Acquired Brain Injury Outreach Service (ABIOS)**

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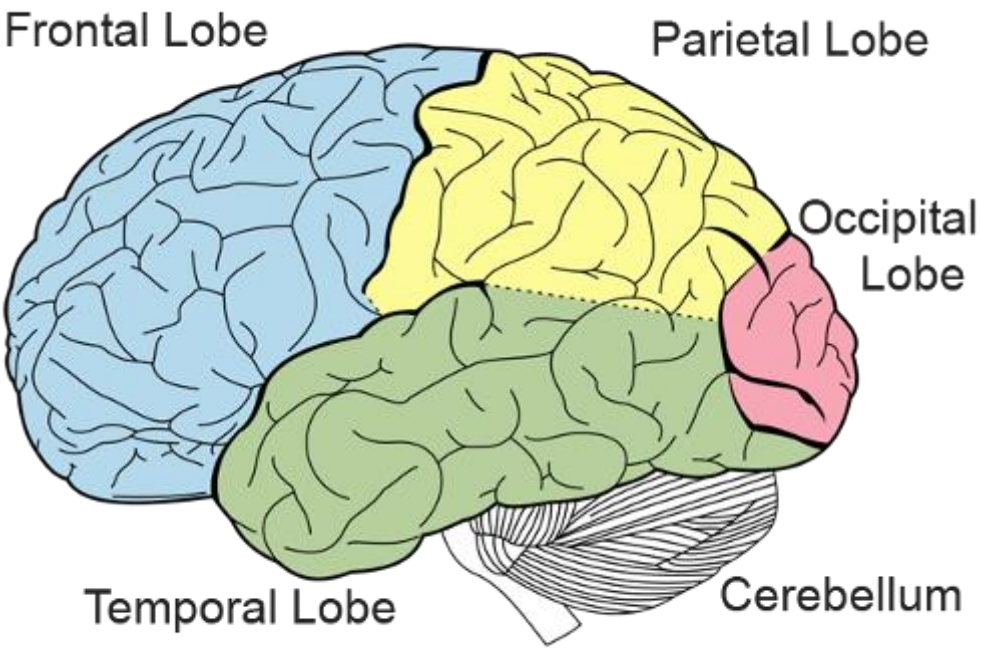
# Brain Functions and Changes in Behaviour

## Introduction

Changes in behaviour are common after acquired brain injury. Many areas of the brain can be affected by severe traumatic or vascular injuries, affecting a person's cognitive, physical, communication, and behavioural functioning. The following table may be of assistance in understanding the relationship between different areas of the brain, and changes in behaviour.



| *PART OF THE BRAIN* | *WHAT IS IT FOR?* | *POSSIBLE CHANGES IN BEHAVIOUR* |
|---|---|---|
| Frontal Lobe | Planning and Organisation | Decreased ability to organise information, ideas, or activities<br>Difficulty sequencing activities and behaviour<br>Unpredictable behaviour due to poor planning<br>May not complete activity or follow through<br>Frustration & irritability when things don't go to plan<br>Confusion about what to do and when to do things<br>Clutter and lost items |
| Frontal Lobe | Initiation of behaviour | Low motivation & activity levels<br>Apathy or lack of interest<br>Difficulty following through to complete tasks & activities<br>May get easily bored and frustrated |
| Frontal Lobe | Self awareness and self monitoring Insight and adjustment | Impaired social awareness and judgment<br>Reduced motivation to change behaviour<br>Lack of awareness of errors<br>Lack of awareness of impact of own behaviour on others<br>Poor awareness of emotions in self or others, so inability to self manage emotions |
| Frontal Lobe | Flexibility in thinking & behaviour | Concrete thinking<br>Difficulty thinking of alternative ideas or behaviour<br>Rigidity in ideas & behaviour, difficulty shifting or changing behaviour<br>Argumentativeness<br>Irritability with others<br>Low frustration tolerance |

| *PART OF THE BRAIN* | *WHAT IS IT FOR?* | *POSSIBLE CHANGES IN BEHAVIOUR* |
|---|---|---|
| Frontal Lobe | Thinking, reasoning & decision making | Misunderstanding of what others do or say<br>Difficulty with logical reasoning and problem solving – coming up with more than one option<br>Difficulty working out solutions to practical & social problems<br>Poor judgment<br>Impulsive decision-making<br>May take longer to make decisions |
| Parietal and Temporal Lobes | Use of language to communicate with others<br>• verbal<br>• written | Misunderstanding communication<br>Misinterpretation of social communication and cues so may respond inappropriately<br>Difficulty understanding others can lead to irritability, anger, frustration<br>Difficulty expressing ideas, feelings, preferences<br>Difficulty regulating voice tone, volume, rapid rate of speech - may seem irritable, angry |
| Temporal Lobe | Memory & new learning<br>Remembering tasks, instructions, events<br>Remembering own & others behaviour | Forgetting to do things<br>Forgetting conversations, instructions, decisions that have been made<br>Difficulty learning new tasks or behaviours<br>Difficulty following through with behavioural change<br>Misperception, confusion or memory loss – can lead to suspiciousness & paranoia<br>Frustration with effort, difficulty or failure |
| Parietal Lobes | Spatial awareness<br>Perception & location of objects and persons in space<br>Understanding of own body in space and perceptual processing of information | Confusion or uncertainty<br>Lack of trust & confidence in self, others and environment<br>Effort & energy required for ADL leads to<br>• fatigue and tiredness<br>• frustration/irritability<br>Misperception of sensory information – can lead to suspiciousness & paranoia |

| *PART OF THE BRAIN* | *WHAT IS IT FOR?* | *POSSIBLE CHANGES IN BEHAVIOUR* |
|---|---|---|
| Cerebellum and Brain Stem | Regulation of arousal and alertness | Sleep regulation<br>Control of physical functions and mobility<br>Sleep disorders<br>Tiredness or fatigue<br>Sensitivity to noise, light, heat, cold, fatigue – can lead to irritability, low frustration tolerance<br>May lack interest and motivation in previously enjoyed activities or interests |
| Limbic System | Perception and understanding of emotions and mood of<br>• self<br>• others<br>Regulation of emotional state | Emotional lability or rapid mood changes<br>Lack of empathy or responsiveness to others emotions<br>Egocentricity or focus on self -may seem self-centered<br>Impatience or low tolerance of others<br>May want needs met immediately and have difficulty waiting<br>Irritability & anger<br>Anxiety & depression |

## Resources

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