

The Brain and Behaviour*

Everything we do requires a different part of the brain to function – often at the same time. Damage to the brain, will impact whatever function that part of the brain controls. At a very high level, the brain has two cerebral hemispheres: the dominant side of the brain is on the left in most people; the non-dominant side is on the right. A small strip down the centre controls movement. The left side moves our right arm and leg. The right side moves our left arm and leg. The rest of the brain controls our behaviour and all that makes us human: our thinking, emotions, behaviour and personality. Our brain is a highly complex organ, and when it is damaged – whether by injury or disease – this will impact our abilities, emotion and behaviour. Understanding how damage to different parts of the brain impact behaviour, can help inform our response.



* This is based on the video, 'Brain and Behaviour' by Dr Helen Creasey.

“SYNTHESIS OF SYMPTOMS”: Symptoms can all add together to result in a behaviour. It may be that the brain is “deceiving” the person so that they are not able to see their behaviour as problematic and may misunderstand what others do. For example, if a carer points out that a plastic covering should be taken off food before it is placed in the oven, the person may not see they have done anything wrong.

Area of brain damaged	Common effects on behaviour	Examples
<p>Temporal lobe [Memory]</p> <p><i>Verbal memory</i> – from dominant side of brain (left)</p> <p><i>Visual memory</i> – from non-dominant side (right)</p>	<p>Unable to remember words that are spoken, read, seen or heard</p> <p>(Note. Frequently recalled memories are usually more easily remembered, e.g. names/faces of those close to us)</p> <p>(Memory)</p>	<p>A person forgets:</p> <ul style="list-style-type: none"> • people and events • recent memories – quickly lost. In time, longer-term memory may also be affected
<p>Dominant Parietal lobe [Analytical & logical centre]</p>	<p>Unable to use language (speech, writing and reading) to communicate</p> <p>Unable to calculate</p> <p>(Communication / Calculation)</p>	<p>A person has difficulty:</p> <ul style="list-style-type: none"> • saying what they want to say • naming common objects • understanding what is said • doing maths/ handling money • balancing cheque book
<p>Non-Dominant Parietal lobe [Spatial location (geography) centre – 3-D centre]</p>	<p>Unable to locate position of self, others or objects in space</p> <p>(Spatial awareness)</p>	<p>A person has difficulty:</p> <ul style="list-style-type: none"> • knowing how to get somewhere • locating the car in the car park
<p>Both Parietal lobes</p>	<p>Unable to recognise things</p> <p>(Agnosia)</p>	<p>A person is unable to recognise:</p> <ul style="list-style-type: none"> • people or objects e.g. knife & fork • surroundings e.g. their house, area
	<p>Unable to carry out planned or learned patterns of movement – purposive movements</p> <p>(Apraxia)</p>	<p>A person has difficulty:</p> <ul style="list-style-type: none"> • putting clothes on in correct order • using appliances, e.g. stove, car • putting tablecloth on the table • following instructions (although may do if they decide to do it)
<p>Frontal lobe – Lateral [Executive centre]</p>	<p>Unable to plan or organise</p> <p>Unable to learn new things</p> <p>(Planning / Learning)</p>	<p>A person:</p> <ul style="list-style-type: none"> • goes to the shops without money • doesn't dress appropriately but believes they have • is unaware of uncleanliness of the house
<p>Frontal lobe – Medial [Executive centre]</p>	<p>Unable to start an action “Starter motor” not working</p> <p>(Initiation)</p>	<p>A person appears:</p> <ul style="list-style-type: none"> • apathetic & unmotivated • unable to comprehend
	<p>Unable to stop once starting or saying something</p> <p>(Perseveration)</p>	<p>A person repeats questions, statements and actions</p>
<p>Frontal lobe – Orbitobasal [Executive centre]</p>	<p>Unable to keep on track and control social behaviour</p> <p>(Regulation)</p>	<p>A person can be:</p> <ul style="list-style-type: none"> • easily distracted • wander • talk over others
<p>Limbic region [Connecting system]</p>	<p>Unable to connect behaviours, emotions and memories</p> <p>Vegetative functions: eating, sleeping</p> <p>(Connection)</p>	<p>A person can:</p> <ul style="list-style-type: none"> • have angry responses • make accusations of stealing • experience disruptions to sleep / eating patterns