Brain Anatomy

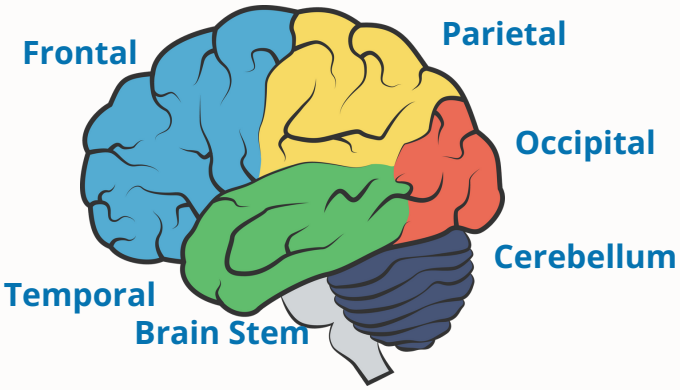
- Made up of two halves known as the **Cerebral Hemispheres**, collectively known as the **Cerebrum.**
- Covered in a thick layer of brain tissue which is known as the **cerebral cortex.**
- Cerebral cortex consists of folds of tissue (gyri) and valleys (sulci). These folds increase the surface area of the cerebral cortex allowing for a larger neural network area which means that the brain can function at a higher level/process more information.

- **Right Hemisphere** controls movement on the left side of the body. Controls non-verbal and spatial skills like following directions, problem solving, drawing, and recognition of objects and people. Right sided damage may cause problems with following directions, solving puzzles, Drawing, recognising objects, recognising people, movement on the left side of the body.
- **Left Hemisphere** controls movement on the right side of the body, regulates language and speech, including speaking, writing, listening and reading. Damage may cause problems with understanding language, producing language, reading, writing, movement on the right side of the body.

Sourced from ACC8319 Concussion Education Sheet

·There are four lobes in each Cerebral hemisphere with main sulci dividing the lobes.

- The **Frontal Lobe** sits at the front of the brain/skull. It is involved with voluntary movement, and higher cognitive functions like rational thought, decision making and planning, judgement and inhibition, concentration, memory, organisation, self-awareness and word formation (expressive language). It is also the hub for behaviours, emotions and personality.
- The **Parietal Lobe** sits behind the frontal lobe and above the temporal lobe. It processes sensory information and is involved in attention and representation of the space around us. The left parietal lobe recognises speech and words. The right parietal lobe is responsible for visual and spatial recognition including shapes, and body orientation when moving.
- The **Temporal Lobe** sits below the parietal lobe. It processes auditory information and is involved in learning and memory. It distinguishes sounds and smells, has a role in visual perception, organisation and planning and processing emotions and behaviours. This is where long term memories are stored.
- The **Occipital lobe** sits at the back of the brain/skull it is responsible for visual perception and processing information like patterns, shapes and colour. It is where we form visual memories.



- The **Brain Stem** connects the cerebrum to the spinal cord. It carries information from the brain to the body and from the body to the brain. This is where the Cranial Nerves are located, these are 12 sets of paired nerves that control our "life functions" things such as breathing, blood pressure, heart rate, sweating, digestion, arousal and alertness. They also control the eye, facial and mouth muscles, playing a role in eye movements, chewing, swallowing and speaking.
- The **Cerebellum** sits below the Cerebrum and behind the upper part of the Brain Stem, the cerebellum acts as a relay station receiving and fine tuning information, co-ordinating sensory perception and motor output. It is involved with balance and co-ordination, posture, visual perception, skilled motor activity, and speech. It contributes to cognitive functions related to attention and language; and stores memories of practiced movement eg cycling, walking.