

# Neurosequential Development



The **brain stem** develops in utero. It is the lower extension of the brain where it connects to the spinal cord. Neurological functions located in the brainstem include those necessary for survival (breathing, digestion, heart rate, blood pressure) and for arousal (being awake and alert, sleep cycle). It is responsible for basic attention, arousal, and consciousness



The **cerebellum** helps us to know where our body is in space. This helps with our posture and balance, and helps us to not fall over and to control our movements. The word cerebellum comes from the Latin word for "little brain." It is located just above the brain stem and toward the back of the brain



The **diencephalon** mainly develops after birth. It is made up of the Thalamus and the Hypothalamus and sorts out messages coming into the brain and sends them out. It uses hormones to send signals to the body to tell the body what it needs e.g. food, water, love.



The **limbic lobe** is the part of the brain that helps us attach an emotion to a thought or memory. This part of the brain is particularly involved in emotions of fear and anger and develops mainly after birth.



The **amygdala**, the 'smoke detector' of the brain, is mature at birth, processes & stores implicit memories while the **hippocampus**, matures between 2-3yrs of age, provides context to memories & embeds them into long-term memory



The **cerebral cortex**, is the largest part of the brain. Its associated with higher brain function such as thought and action e.g. Reasoning, Logic, Judgement, Voluntary movement



The **pre-frontal cortex** is responsible for executive functions such as judgement, reasoning and self awareness. Final part of the brain to mature in one's mid 20's.