Understanding ADHD

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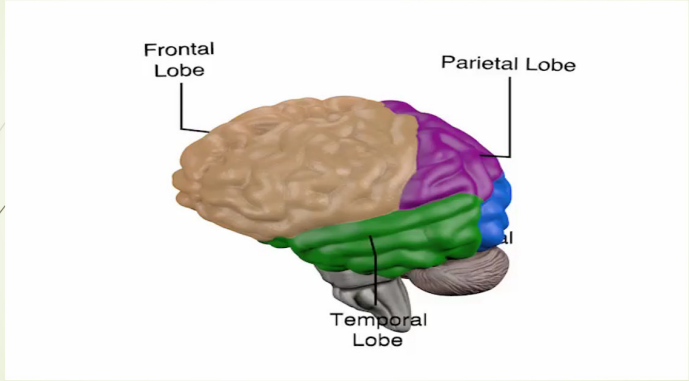

THE BRAIN

- **The frontal lobe** is located at the front of the brain and is associated with reasoning, motor skills, higher level cognition, and expressive language. Damage to the frontal lobe can lead to changes in sexual habits, socialization, and attention as well as increased risk-taking.
- **The parietal lobe** is located in the middle section of the brain and is associated with processing tactile sensory information such as pressure, touch, and pain. A portion of the brain known as the somatosensory cortex is located in this lobe and is essential to the processing of the body's senses. Damage to the parietal lobe can result in problems with verbal memory, an impaired ability to control eye gaze and problems with language.
- **The temporal lobe** is located on the bottom section of the brain. This lobe is also the location of the primary auditory cortex, which is important for interpreting sounds and the language we hear. The hippocampus is also located in the temporal lobe, which is why this portion of the brain is also heavily associated with the formation of memories. Damage to the temporal lobe can lead to problems with memory, speech perception, and language skills.

THE BRAIN, continued

- **The occipital lobe** is located at the back portion of the brain and is associated with interpreting visual stimuli and information. The primary visual cortex, which receives and interprets information from the retinas of the eyes, is located in the occipital lobe. Damage to this lobe can cause visual problems such as difficulty recognizing objects, an inability to identify colors, and trouble recognizing words.
- **The cerebellum** helps control posture, balance, and the coordination of voluntary movements. This allows different muscle groups in the body to act together and produce coordinated, fluid movement.
- The limbic system is comprised of four main structures: the **amygdala**, the **hippocampus**, regions of the **limbic cortex** and the **septal area**. These structures form connections between the limbic system and the hypothalamus, thalamus and cerebral cortex. The hippocampus is important in memory and learning, while the limbic system itself is central in the control of emotional responses.

ATTENTION DEFICIT DISORDER

- Dysexecutive syndrome
- Often with hyperactivity, childhood to puberty; statistics show more males than females
- When intelligence is high, person can cope for much longer, until sheer demand causes dysregulation
- Frequently, imbalance of sensory integration system is a contributing factor
- One side of frontal lobe is often smaller than the other
- Runs in families – may be along the anxiety, panic, sensory, autism line due to shared brain areas
- Highly creative, out of the box thinking, but tough within a rule-governed environment (school, army)

ATTENTION DEFICIT DISORDER

- Many have low muscle tone, lean head on hands at table, sigh, resist prolonged resistance activity; prefer short bursts, multiple tasks, stimulation – this results in low endurance
- Actively seek out "fast twitch" muscle activity, eg, soccer
- Some self-medicate with alcohol, speed, pot, certain food textures (ice cream, or crunch)
- Can concentrate and attend well with beloved, exciting, or novel activities
- Can easily go into trance, eg computer, phone or TV

ATTENTION DEFICIT DISORDER

- **Exercise, especially resistance, paired with balance and memory**, enhances executive functioning; "turns on" the brain, innervates association areas
- Rhodiola Rosea, up to 200 mg max per day, pref by 3pm – flower from Siberia, Scandinavia, researched and utilized by Soviet military – enhances focus, wellbeing – always first check with your MD prior to taking supplements!
- Intuiniv
- Adderal
- Focalin
- Ritalin
- Stimulants often paired with anti-depressant or anti-anxiety medication

The vestibular – proprioceptive – gross motor coordination – memory quartet

- Focus, attention, concentration, mood, energy are usually maximized when preceded with the quartet, eg yoga tree pose while reciting something from memory; doing planks while reciting something from memory.
- This quartet also improves a "low tone" child's endurance tolerance.
- The quartet revives a tired, yawning student because of the "total mind/body" component; it awakens the passive brain!
- The quartet helps "re-set" the brain when there are dominant areas causing negative behavior, i.e., poor impulse control, fidgeting, distractibility, yawning, leaning head on hands in class.
- 5 mins before school; 2-3 times during the day if possible; immediately upon arriving home from school; immediately before homework/studying/exams.

Using the Senses

- ❑Visual Cueing, eg planner, post-its, color dots
- ❑Cognitive Interrupts, eg phone flashes text, fitbit
- ❑Auditory Cueing, eg phone beeps
- ❑Tactile Cueing, eg vibration
- ❑Olfactory Cueing, eg essential oils