

#### MASTER COGNITIVE AGILITY AND PERFORMANCE

#### WITH DR. DREW PIERSON

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### **UNDERSTANDING BRAIN WAVES & FUNCTION**

- Consider the overall state and architecture of the brain.
- Different brain frequencies have specific roles and functions.
  - Alpha frequency is crucial for physical activities and performance.
    - Alpha is a predecessor for sensory experience and a "bridge" to get out of fight or flight mode.
      - Imperative for both bliss and flow states.
      - People with PTSD often have suppressed alpha waves and struggle to get out of fight or flight mode.
    - Alpha is a brainwave frequency ranging from 8 to 12 cycles per second.
    - Alpha waves are initially seen in the back of the head during meditation or in altered states and then move toward the front.
  - Delta frequency is associated with sleep and brain injuries when overproduced.
    - Delta frequency influences other brain frequencies' firing and control.
    - Having high delta levels indicates poor brain functioning and can be labeled as a "blue brain."
- Too much high beta frequency (>30 cycles per second) can lead to anxiety and decreased efficiency.
- Gamma frequency is associated with bliss, insight, and creativity.

# **EXPLORING STATES OF CONSCIOUSNESS**

- Theta frequency is present during dreaming and absorbing information in childhood.
- Theta and alpha theta states can be used for emotional regulation and trauma resolution.
- Calmness and balance are important for optimal brain function and performance.
- A SMR (sensory motor rhythm) of 12-15 Hz is important for consistency and effectiveness under stress.
- Switching between states of consciousness quickly is crucial for control and efficiency.
- Maintaining a state of flow is important for activities like golf or driving.

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### **ENHANCING BRAIN FUNCTION & COMMUNICATION**

- Couple synchrony training with alpha waves can create a sense of flow and connection.
- Practicing heart rate variability (HRV) and alpha training can improve teamwork and communication.
  - Military and executive groups have seen improved communication and idea flow with HRV and alpha training.
  - Shutting down alpha inhibits openness to new ideas.
- Brain mapping is done before starting any neurofeedback training.
- Analyze metrics such as power, connectivity, asymmetry, and coherence during brain mapping.
- High-functioning individuals often have an overactive prefrontal cingula, which can be controlled through training.
- Neurofeedback training involves visual, auditory, and tactile feedback.

## **TRAINING THE BRAIN**

- Frequencies in the brain are constantly present, but dominance, balance, and communication between networks and nodes are important.
- Training leads to efficiency and easier access to desired states.
- Training is like muscle memory, where familiarity leads to ease in performing a task.
- Pulse PEMF therapy can be effective for chronic conditions, while acute conditions require higher power levels.
  - Using too much power during PEMF therapy can lead to negative side effects.
  - Different devices are used for head and body PEMF therapy.
  - Mats emitting 10 Schumann frequency can improve mitochondrial function.
- Transcranial electrostimulation can treat conditions like anxiety and OCD.
  - tDCS can reduce activity in certain areas of the brain.
- Age, environment, and stress can contribute to brain degeneration.
- Optimal brain activity occurs when the body is balanced and warmed up.
  - Sleep is crucial for optimal brain function, and deprivation negatively impacts attention, processing speed, and creativity.
  - Mitochondria and energy metabolism are important for brain function.

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### **TECHNOLOGY AND TOOLS TO IMPROVE BRAIN FUNCTION**

- Cranial electrical stimulation, pulse electromagnetic fields, and photobiomodulation enhance brain function.
- Photobiomodulation can slow down the progression of conditions like dementia and Alzheimer's.
- Focus on the cerebellum and its communication through the vermis.
  - Training this communication improves mood, reduces addictive behaviors, handles stress, and increases resilience.
- HRV training and coherence training can increase Alpha waves in the brain.
  - Increased Alpha waves affect people's reactions and make them feel more positive towards you.
- Certain frequencies of theta in the prefrontal cortex have healing effects on others.
  - Training these frequencies can enhance healing abilities and positively impact others.

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