



A Comparison Between Neurofeedback Focus Training as in BRYM and Mindfulness Training

Neurofeedback Focus Training

- **Goal:** To improve sustained attention, focus, and self-regulation by teaching individuals to control their brainwave activity. While it can indirectly impact working memory by improving focus, its main goal is optimizing cognitive control and attentional processes.
- **Methods:** Neurofeedback relies on real-time brainwave monitoring. For focus training, the emphasis is usually on increasing beta wave activity (associated with alertness and concentration) and decreasing theta wave activity (linked to inattention or daydreaming). The participant uses visual or auditory feedback to adjust their brainwave patterns, improving focus and cognitive control.
- **Brain Engagement:** Neurofeedback targets different areas, including the prefrontal cortex and broader attentional networks, helping users regulate states of focus and attention. It influences neural circuits that govern concentration and task engagement.

Example: A person using neurofeedback might see a visual representation of their brainwaves. When they successfully concentrate, the image becomes clearer, signalling that they're achieving the desired brain state.

Mindfulness Training

- **Goal:** To cultivate a state of present-moment awareness without judgment, often reducing stress and improving emotional regulation, attention, and cognitive flexibility. Mindfulness training aims to enhance self-awareness, focus, and emotional resilience.
- **Methods:** Mindfulness training typically involves techniques like meditation, breathing exercises, and body awareness. Practices such as focused attention meditation, where individuals focus on their breath or a particular sensation, train the mind to stay present and not get distracted by thoughts. Mindfulness-Based Stress Reduction (MBSR) or Mindfulness-Based Cognitive Therapy (MBCT) are structured programs that teach mindfulness practices.



- **Brain Engagement:** Mindfulness engages several brain regions, including the prefrontal cortex, anterior cingulate cortex (ACC), and insula, which are involved in self-regulation, attention, and emotional processing. Over time, mindfulness has been shown to increase grey matter in these areas, helping with sustained attention, emotional regulation, and stress management.
- **Example:** A typical mindfulness practice might involve focusing on the breath. When the mind wanders, the person gently brings their attention back to the breath, thus training attentional control and self-awareness.

Summary of Differences

- **Technological vs. Internal Practice:** Neurofeedback relies on external feedback from brainwave measurements to guide behavior, while mindfulness is a self-guided, introspective practice based on internal awareness.
- **Immediate Feedback vs. Long-Term Practice:** Neurofeedback gives instant feedback on brain activity, whereas mindfulness involves gradual improvement through consistent practice and awareness of thoughts and emotions.
- **Brainwave Optimization vs. Present-Moment Awareness:** Neurofeedback focuses on achieving specific brainwave patterns, while mindfulness emphasizes being present without trying to change or optimize brain states directly.

In summary, neurofeedback focus training is more about direct brain-state control via real-time technological feedback, whereas mindfulness training is about cultivating awareness and attention from within, through self-guided mental practices. Both can enhance focus, but they do so in fundamentally different ways.