**Day-to-Day Individual Alpha Frequency Stability Correlates with Trait Anxiety**

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The individual alpha frequency (IAF) has previously been identified as a unique neural signature within the 8-12 Hz alpha frequency band. However, the day-to-day stability of this feature is unknown. To accomplish this, we recruited mentally healthy participants to record data at home using a mobile electroencephalography (EEG) device. Resting-state recordings of all participants using a high-density (HD) EEG were also collected. We found that the IAF extracted from the mobile EEG device was comparable to that of location-matched HD EEG electrodes. Furthermore, we observed that IAF values were stable over one month for both EEG devices. Interestingly, exploratory analyses revealed a relationship between IAF day-to-day stability and trait anxiety and behavioral inhibition. We also note that the IAF varies across the scalp and although the mobile EEG device did not use electrodes where the global IAF was observed, these values were strongly correlated. Altogether, these results show that mobile EEG devices are useful for studying IAF stability, day-to-day IAF instability reflects increased anxiety and behavioral inhibition, and that the IAF value varies across brain regions.