A Protocol Integrating EEG and Mobile Technology Data: The Emotion-Based Impulsivity in Bipolar Disorder (EBI-BD) Project

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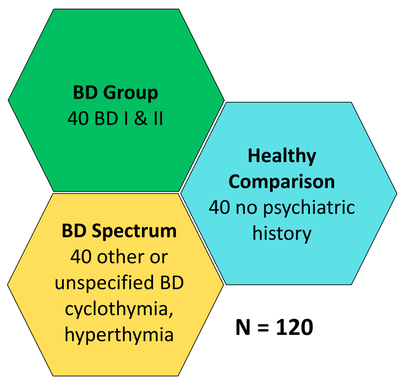
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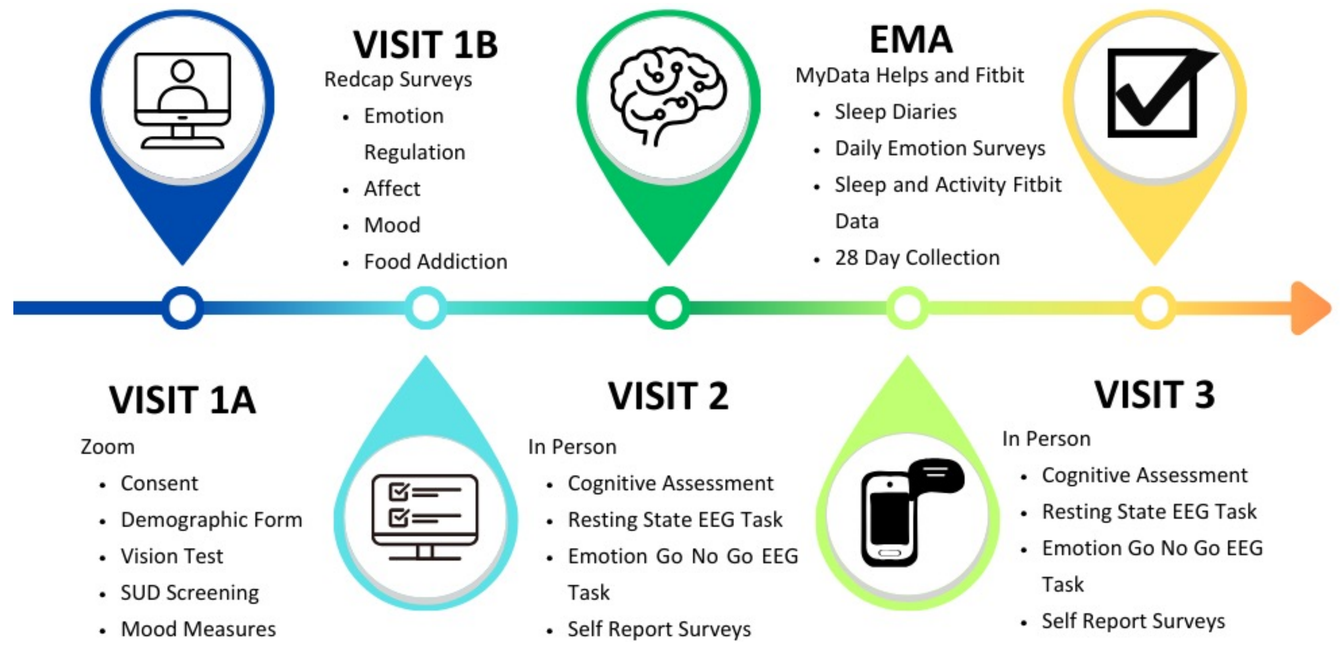
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Introduction

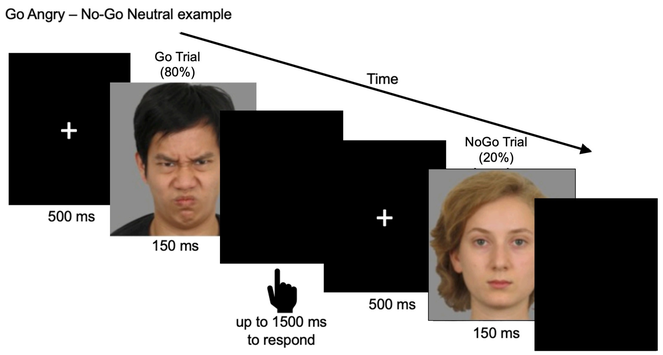
Emotion-based impulsivity is defined as poor response inhibition in the face of high-arousal emotions (1,2). This is a core feature of bipolar disorder (BD) and can predict illness onset and development (3). This dynamic "if-then" process is best captured as it unfolds in daily life across affective contexts (4,5). Data collected from wearables (Fitbit) and ecological momentary assessment (EMA) allows for the real time evaluation of these instances. In this study, we aim to identify electrophysiological biomarkers of emotion-based impulsivity in BD by linking neural EEG data and mobile technology data (Fitbit, EMA). We hypothesize that individuals with BD will show **reduced neural synchrony** during affective inhibition which will be associated with **greater emotion-based impulsivity** in daily life over the preceding month.

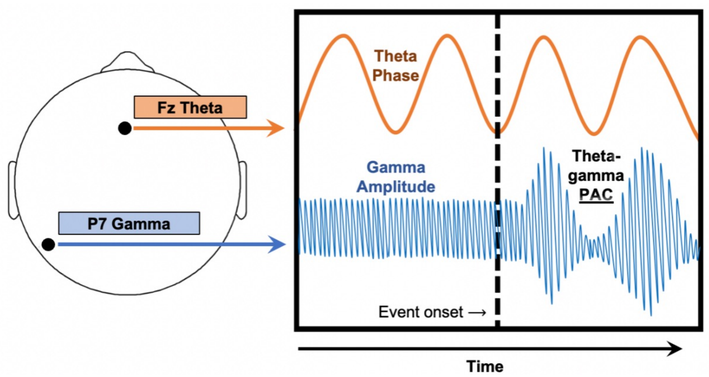
Methods





Aim 1: Use EEG to identify electrophysiological biomarker of affective response inhibition in BD



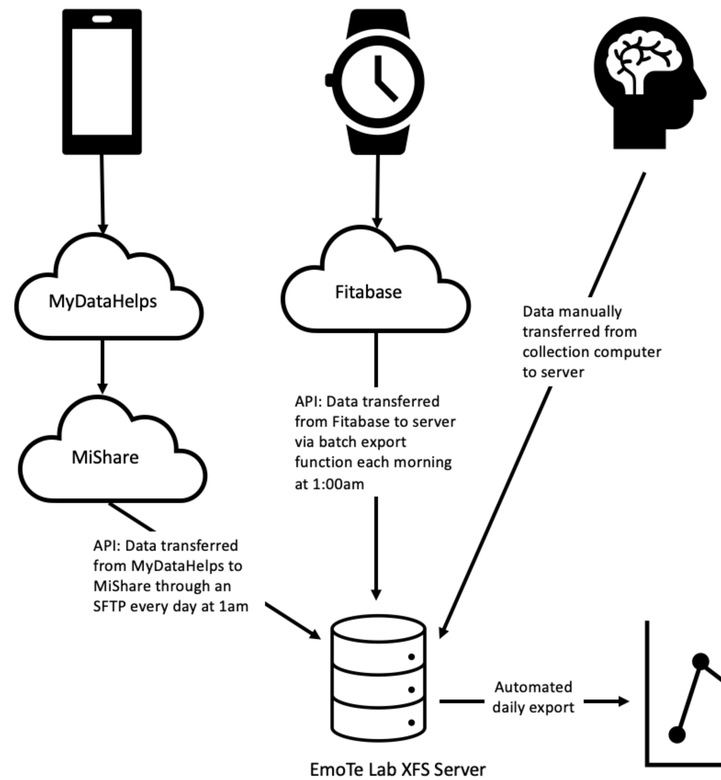


Aim 2: Assess whether this biomarker predicts real-world emotion-based impulsivity and symptoms





Data Pipeline



Acknowledgements

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