Anticipatory anxiety (AA) is one of the most basic components of anxiety. Research has highlighted the importance of the anterior temporal and prefrontal cortices during periods of AA within healthy male control subjects. The temporal nature of cortical activations however, has not been investigated. Two studies were conducted employing steady state visually evoked potentials (SSVEP) to investigate the temporal profile of cortical activations during AA, and the effects of anxiolytics upon these activations. In study one, 26 healthy right-handed (RH) males completed the AX continuous performance task (CPT) during a relaxed condition and whilst anticipating electric shocks to the dorsal right hand (anxious condition). In study two, 16 RH males completed a four-week double blind placebo controlled study investigating the acute effects of a benzodiazepine (alprazolam 1mg), a 5HT1A agonist (buspirone 5mg) and a selective serotonin reuptake inhibitor (citalopram 20mg) upon AA. Subjects reported significantly increased anxiety whilst anticipating shocks. This was associated with significant alterations in SSVEP, driven primarily by increased SSVEP latency, within the left prefrontal and anterior temporal regions $t(2,25)=3.12$, $p<0.005$, and significant SSVEP latency decreases and amplitude increases within occipital regions $t(2,25)=3.48$, $p<0.005$. Occipital SSVEP latency decreases were sustained throughout the anticipatory period. Results suggest that AA related regional cortical activity is differentially modulated by these anxiolytics. Results also add further support for the involvement of anterior temporal and prefrontal regions during AA.

Citation: