

Heritability of background EEG across the power spectrum  
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We estimated the genetic, shared environmental, and non-shared environmental contributions to individual differences in the EEG power spectrum using two different methods: aligning individual spectra on peak alpha power and non-aligned. Nineteen-lead background EEG, eyes closed, was registered from twins and siblings from 142 MZ and 167 DZ twin families, totalling 760 subjects. We calculated power spectra with 29 bins of 1 Hz ranging from 1.0 to 30.0 Hz. Heritability ranged from 0.50 to 0.89. Generally, heritability was highest around alpha peak frequency, slightly lower towards theta and delta, and decreasing with increasing beta frequency. Peak aligned spectra did not produce different estimates than non-aligned. Shared environmental contributions were low (<0.20) and mostly restricted to beta frequencies. We conclude that, across the scalp and most of the frequency spectrum, individual differences in adult EEG power are mainly determined by genetic factors.

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