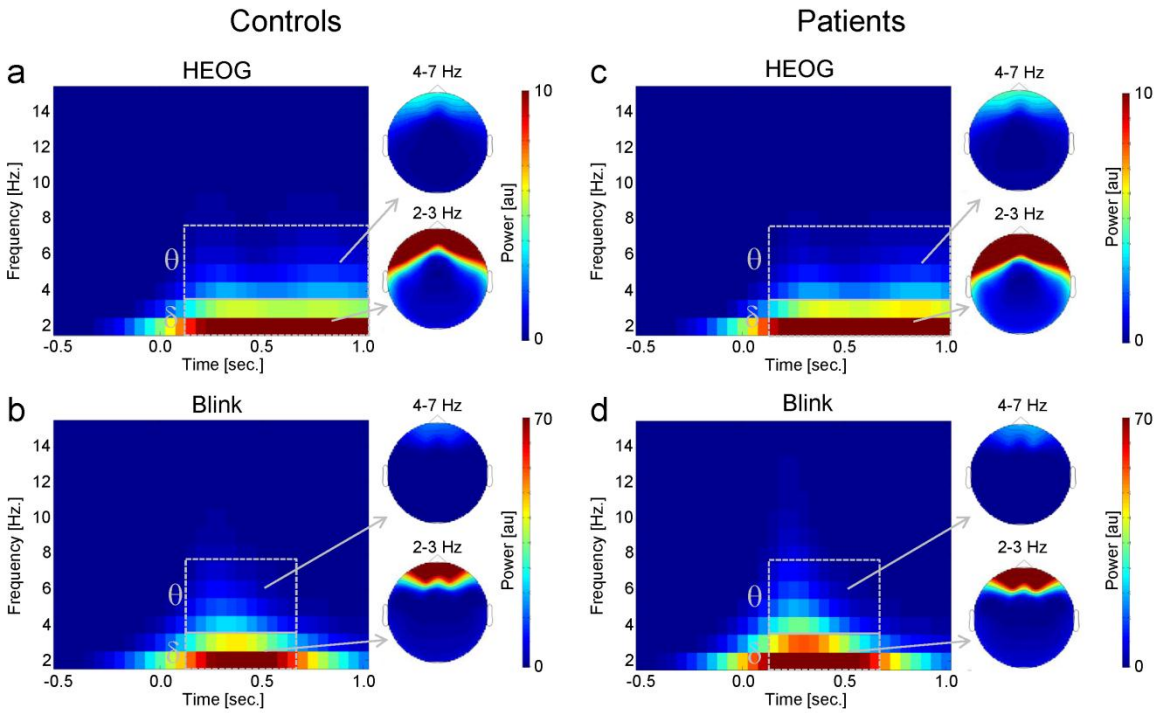
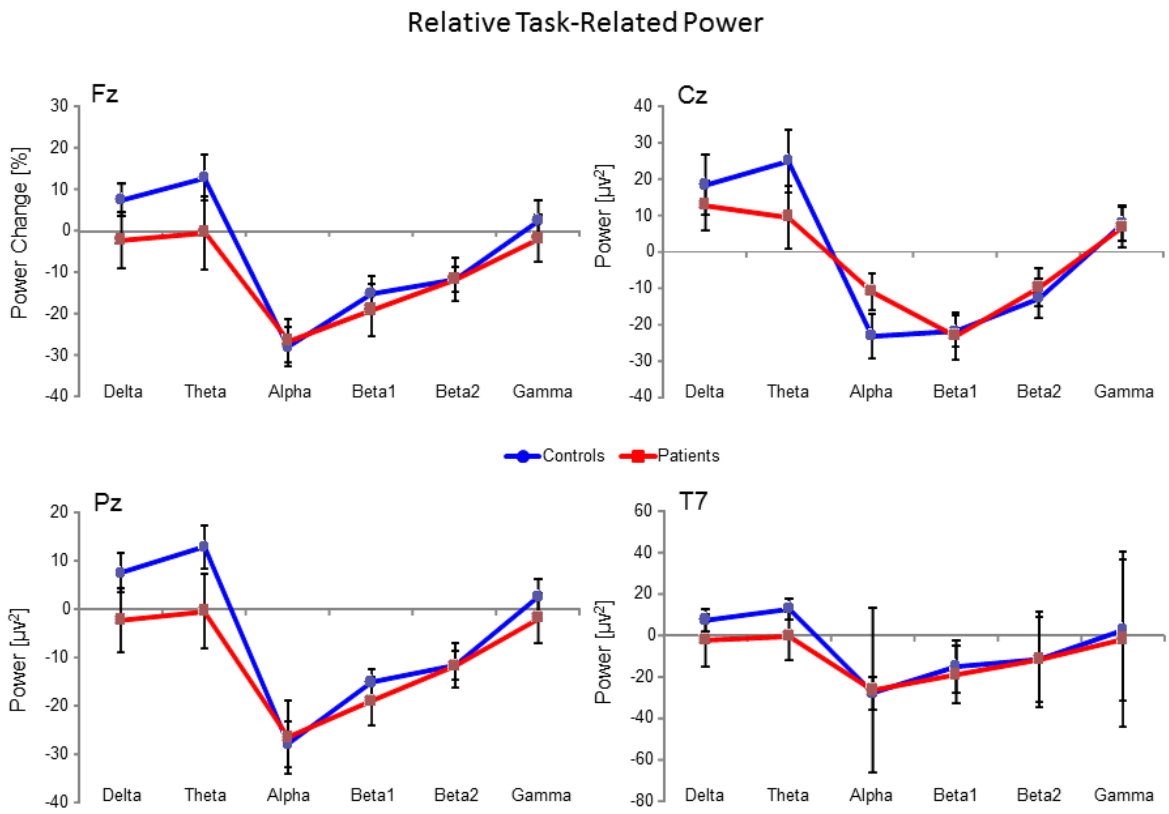
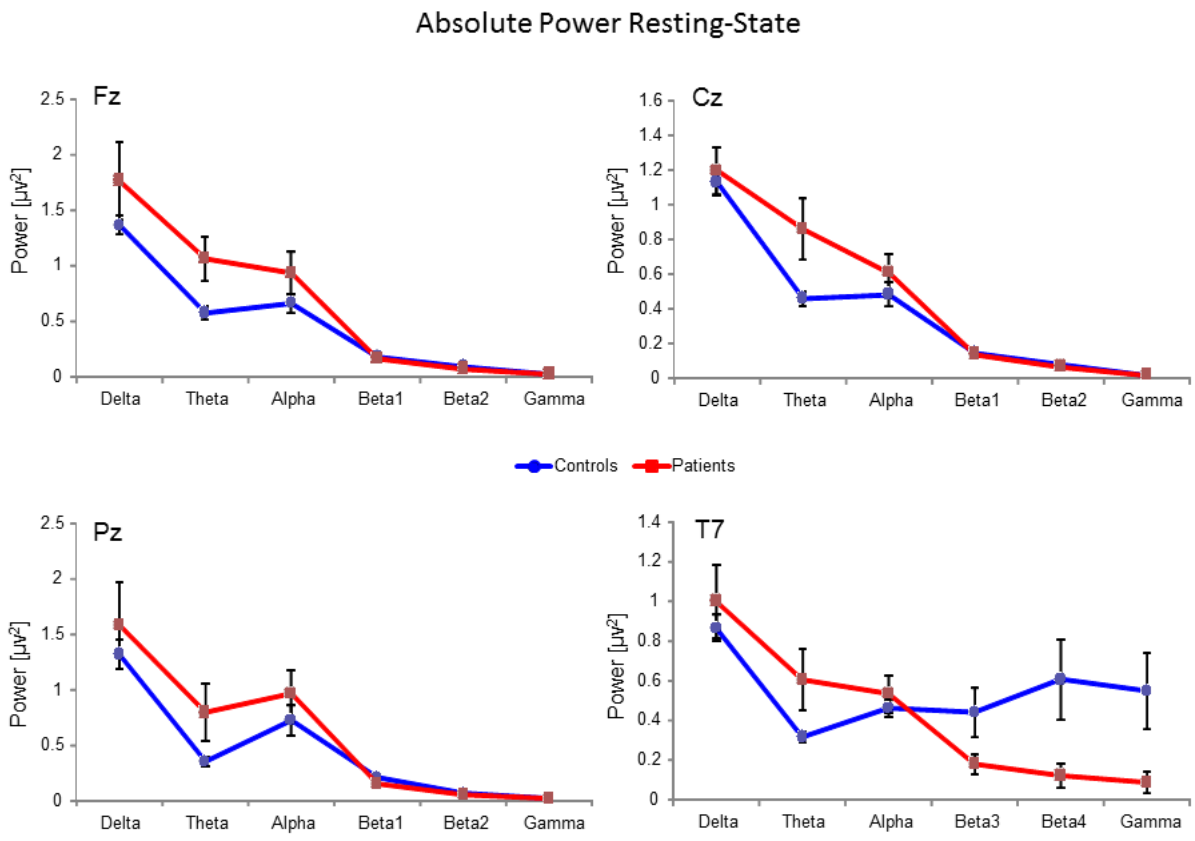


Supplementary Figure 1. For a control analysis, the EEG during voluntary eye-movements was recorded prior to the experiment. During this task the subjects were cued to blink, or to make smooth eye-movements to the left, and to the right, as indicated by arrows on the computer screen. For each condition (left, right, blink) 20 trials were collected. EEG data evoked by these voluntary eye-movements is shown here. Time-frequency plots of power as evoked by (a) horizontal eye-movements (HEOG) and (b) blinks are shown for controls, and patients (c-d). The adjacent topographies are shown for the selected time-frequency windows (dashed lines). This figure demonstrates that eye-movements induce much stronger artifacts in the delta, than in the theta frequency band. Additionally, eye-movement artifacts show an exclusive frontal topography. Note, that patients and controls show highly similar time-frequency and topographical eye-movement patterns.



Supplementary Figure 2. Relative change in task-related power (% from resting-state) is shown for controls (blue) and patients (red) for three midline electrodes (Fz, Cz, an Pz) and a left temporal electrode (T7). The error bars indicate mean standard errors.



Supplementary Figure 3. Absolute power during resting-state is shown for controls (blue) and patients (red) for three midline electrodes (Fz, Cz, an Pz) and a left temporal electrode (T7). The error bars indicate mean standard errors.