FACTS ABOUT E E AND BRAIN

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LV Prasad Eye Institute

Indo-German Lab of LVPEI

The development of oscillatory and aperiodic resting state activity is linked to a sensitive period in humans

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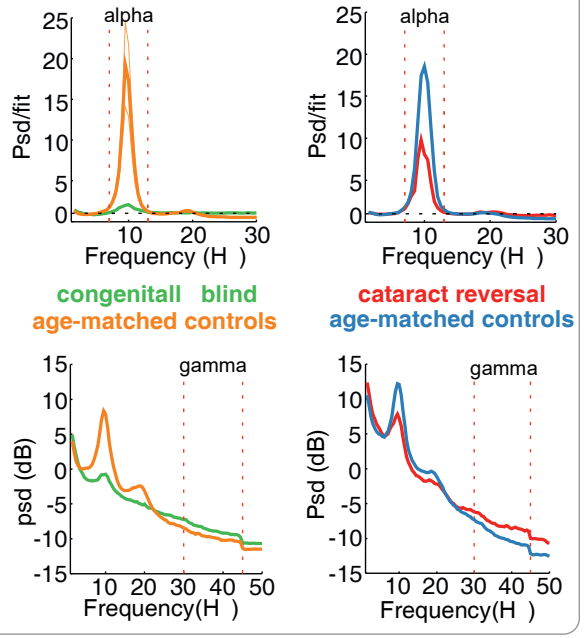
Panels display the average EEG power spectra of each group during rest. The top panels demonstrate a reduction in alpha power for congentially blind and congenital cataract reversal individual compared to control groups. The bottom pannels show an increase in gamma power in these groups when compared to normally sighted controls.



- Alpha (7 – 13 Hz) and gamma (>30 Hz) oscillations in the human electroencephalogram have been linked to long- and short-range communication in the brain, respectively.
- Permanently congenitally blind individuals showed reduced alpha but increased gamma activity during rest.
- Individuals who regained their sight after congenital blindness due to bilateral cataracts, displayed a similar altered resting state profile as permanently congenitally blind humans.
- These findings suggest that the development of typical feedforward-feedback processing the brain requires early visual input during a sensitive period. Prevailing alterations of the excitatory-inhibitory balance in visual cortical networks might interfere with visual recovery post cataract surgery.

Full text here:
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Child Sight Institute