

Neurophysiological measures to assess cognitive functioning in neurofibromatosis type I.

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Propositions:

1. Even in the absence of neuropsychological changes, eye-tracking tasks, transcranial magnetic stimulation (TMS), and visual evoked potential (VEP) paradigms can reveal subtle changes in human sensory cortex function and can be used to monitor clinically relevant deficits related to the sensory cortex. (*this thesis*)
2. Reduced cortical plasticity measured with TMS and VEP paradigms are relevant as markers for underlying deficits in cognitive functioning and can confirm preclinical findings. (*this thesis*)
3. Both fatigue and motivation have to be considered as relevant parameters in the understanding of attention deficits in adults with neurofibromatosis type I (NFI). (*this thesis*)
4. TMS protocols with a research purpose should be optimized by standardizing the history of neural activity to control for fluctuations in cortical excitability caused by covariables other than the stimulation. (*this thesis*)
5. Neurophysiological measures can be valuable to evaluate potential treatment impact on cognitive deficits in patients with NFI. (*this thesis*)
6. Progress in clinically relevant translational research is highly dependent on a multidisciplinary approach and the interaction between pre-clinical and clinical disciplines.
7. Scientific conclusions depend on interpretation and scientific context and should not only be based on a p-value < 0.05 . (Wasserstein *et al.*, 2019. Moving to a World Beyond "p < 0.05")
8. Gut health is a leading factor in mental health: "Anyone who suffers from anxiety or depression should remember that an unhappy gut can be the cause of an unhappy mind." (Giulia Enders, Gut)
9. Clear and objective communication of only the key messages and scientific findings concerning COVID-19 minimize suspiciousness and emotional responses among the general public.
10. Positive thinking advanced by mind exercise has mental health benefits, including reducing stress.
11. "The fact that people most affected by climate change are no longer some imagined future generation but young people alive today, will give us the impetus to turn this tragedy into triumph." (2021, Sir David Attenborough)