

⁴ Australian National University, John Curtin School of Medical Research, Canberra, Australia

* Corresponding author.

Introduction Neuroimaging studies of attention-deficit/hyperactivity disorder (ADHD) have revealed structural deviations of the corpus callosum in children and adolescents. However, little is known about the link between callosal morphology and symptoms of inattention or hyperactivity in adulthood, especially later in life.

Objective We aimed to further expand this understudied field by analyzing a large population-based sample of 280 adults (150 males, 130 females) in their late sixties and early seventies.

Methods We applied a well-validated approach capturing the thickness of the corpus callosum with a high regional specificity at 100 equidistant points. In addition to correlating point-wise callosal thickness with ADHD symptom measures within the whole sample, we tested for sex interactions.

Results There were significant sex interactions with respect to measures of inattention and hyperactivity, with follow-up analyses revealing significant negative correlations in males (see Fig. 1 – Top). In contrast, there were positive correlations with respect to hyperactivity only in females (see Fig. 1 – Bottom).

Conclusion A thinner corpus callosum may be associated with fewer fibers or less myelination. Thus, the negative correlations, as observed in males, suggest an impaired inter-hemispheric communication necessary to sustain motor control and attention, which may contribute to symptoms of hyperactivity, impulsivity and/or inattention. The functional relevance and underlying mechanisms of the positive correlations, as detected in females, remain to be resolved.

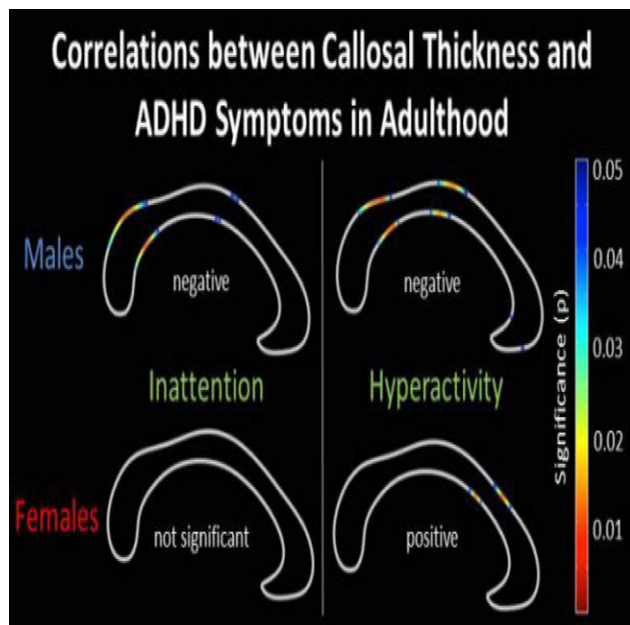


Fig. 1

Disclosure of interest The authors have not supplied their declaration of competing interest.

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Gamma band dysfunction in patients with schizophrenia during a Sternberg Task: A wavelet analysis

D.D. Marasco^{1,*}, G. Di Lorenzo², A. Petito¹, M. Altamura¹, G. Francavilla¹, L. Inverso¹, A. Bellomo¹

¹ Laboratory of Neurophysiology, Department of Clinical and Experimental Medicine, Section of Psychiatry, University of Foggia, Foggia, Italy

² Laboratory of Psychophysiology, Department of Systems Medicine, University of Rome "Tor Vergata", Rome, Italy

* Corresponding author.

Background Increasing body of evidence suggest that patients with schizophrenia (SCZ) present dysfunction of the gamma band oscillations (GBO) during cognitive tasks. The current study aimed to explore the GBO activity in SCZ during a Sternberg task.

Materials and methods Twenty-eight chronic stabilized SCZ and 18 healthy controls (HC), were recruited. Ongoing EEG was recorded during the execution of the Sternberg task. Continuous EEG data were band-pass filtered (1–100 Hz) and corrected for eye blink and muscle artefacts by ICA. For each subject, the event-related-spectral-perturbation (ERSP) and the inter-trial-coherence (ITC) were computed at the Pz channel only for those stimulus-locked segments containing correct responses. GBO wavelet analysis was performed with two different increasing cycle ranges (3 to 5.8 and 12 to 22.6; frequency range: 30–90 Hz), to obtain the best information about temporal and frequency dynamics. Student's t test (with multiple comparisons FDR correction) was used to compare the groups.

Results During the maintenance phase (4000 to 4600 ms after the stimulus onset), SCZ presented a significant increase, respect to HC, in low GBO activity (range: 30–50 Hz;). In the other phases of the Sternberg task (encoding, probe presentation and response periods), no significant difference in GBO was observed between SCZ and HC.

Conclusions These findings are in line with the evidence that GBO dysfunction in SCZ is present during selective phases of the working memory task. Future studies have to clarify the role of GBO dysfunction on the cognitive performance and the clinical utility of selective GBO modulation during cognitive rehabilitation.

Disclosure of interest The authors have not supplied their declaration of competing interest.

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Sweet and bitter taste perception in anorexia nervosa: A functional MRI study

A.M. Monteleone^{1,*}, F. Esposito², A. Prinster³, E. Cantone⁴, A. Canna³, F. Pellegrino¹, M. Nigro¹, R. Amodio¹, U. Volpe¹, F. Di Salle², P. Monteleone²

¹ Second University of Naples, Department of Psychiatry, Naples, Italy

² University of Salerno, Neuroscience Section, Department of Medicine and Surgery, Salerno, Italy

³ National Research Council, Biostructure and Bioimaging Institute, Naples, Italy

⁴ Federico II University, ENT Department, Naples, Italy

* Corresponding author.

Introduction Taste perception is a complex phenomenon modulated by different factors, such as taste receptors and memory brain circuits. The palatability of the food, that activates the central reward pathways, also plays an important role in taste perception. It means that taste is able to influence the choice of food and then eating behaviour.

Objectives It is well known that people with anorexia nervosa (AN) have a lower sensitivity to reward stimuli and recent stud-