developed individual MRI-driven computational head model. This study was aimed to evaluate the inter-rater reliability of the anatomical landmarks in the computational head models.
Twenty brain MR images were reconstructed with computational head models. An expert technician trained three investigators unfamiliar with performing 10-20 EEG system. The training was comprised of the anatomical landmarks and the electrode location measurement in 10-20 EEG system. After that, the investigators localized the landmark (nasion, inion, left and right pre-auricular notch points) for each model. The ICC (the absolute reliability) analyses were performed using SPSS version 28.0. The ICC(2,3) for nasion point was 0.386, The ICC(2,3) for inion point was 0.224, and The ICCs(2,3) for left pre-auricular notch and right pre-auricular notch were 0.756 and 0.665, respectively.
This study investigated the reliability of the anatomical landmark location by novice investigators in the computational head model. The results suggest excellent ICCs for the localization – left and right preauricular notch points, however, the ICCs for the nasion and inion localizations were a poor. This is because, compared to other landmarks, the locations of nasion and inion were difficult to find in the computational model. Since the poor reliability of the points could affect the variability of the anterior-posterior electrode montages, it is necessary to develop a method to accurately localize the landmarks in the computational model. Understanding the factor of variability could advance the electrode localization methodology and contribute to reducing the variation of tDCS clinical effects.
Keywords: tDCS, landmark reliability, electrode placement, electrode montage

P1.061

EFFECTS OF CEREBELLAR TDCS ON GLYCOMETABOLIC CONTROL

Natale Maiorana [1], Roberta Ferrucci [1,2], Francesca Pecori Giraldi [3], Michelangelo Dini [1], Matteo Guidetti [1], Alberto Averna [1], Tommaso Bocci [1,2], Franco Folli [3,2], Alberto Priori [1,2]. [1] *Aldo Ravelli Research Center for Neurotechnology and Experimental Brain Therapeutics, University of Milan, Milano, Italy;* [2] *ASST-Santi Paolo e Carlo University Hospital, Milano, Italy;* [3] *University of Milan, Milano, Italy*

Abstract
Background and aims: The cerebellum is involved in motor, cognitive and glycometabolic control, as well as being a key structure in the pathophysiology of Parkinson's disease and psychiatric pathologies. It has been shown that cerebellar functions can be modulated by transcranial direct current stimulation (tDCS). The present research aims to study the effects of cerebellar tDCS on glycometabolic variable/glucose.
Methods: 14 healthy subject were recruited (6 Female; aged 25-55). We delivered cerebellar anodal, cathodal (2 mA, 20 minutes) and sham tDCS, in three separate sessions at intervals of at least 1 week. In each session, glucose was evaluated before (baseline T0), during (online: after 10 minutes T1, after 20 minutes T2) and 10 minutes after the end of the tDCS (T3), using a self-monitoring glucose sensor system.
Results: Anodal cerebellar tDCS significantly decreased glucose scores by about 2.57% at T1 [(mean±SD) T0 vs T1: 79.96±16 vs 77.90±13.47; p=0.04] while cathodal and sham cerebellar stimulation left it unchanged (p>0.05).
Conclusion: These results suggest that anodal cerebellar tDCS can reduce glucose in healthy subjects, thus arguing for a role of the cerebellum in glycometabolic process. Besides helping to understand the glucose processing, the possibility of modulating glucose by cerebellar tDCS might be relevant for developing novel therapeutic approaches to treat diabetic patients.
Keywords: tDCS, Cerebellum, Glycometabolic control

P1.062

ELECTRIC FIELD DISTRIBUTION IN DEEP BRAIN STRUCTURES DURING TRANSCRANIAL DIRECT CURRENT STIMULATION (TDCS) WITH EXTRACEPHALIC MONTAGES: A COMPUTATIONAL STUDY

Matteo Guidetti [1,2], Federico Ragazzo [2], Alberto Averna [1], Tommaso Bocci [1,3], Natale Maiorana [1], Alberto Priori [1,3], Anna Maria Bianchi [2], Marta Parazzini [4]. [1] *Aldo Ravelli Research Center for Neurotechnology and Experimental Brain Therapeutics, University of Milan, Milan, Italy;* [2] *Polytechnic of Milan Department of Electronics Information and Bioengineering, Milano, Italy;* [3] *ASST-Santi Paolo e Carlo University Hospital, Milan, Italy;* [4] *Institute of Electronics Computer and Telecommunication Engineering National Research Council, Torino, Italy*

Abstract
Background and aims: Insights from computational models have suggested that transcranial direct current stimulation (tDCS) with extracephalic montages and cervical transcutaneous spinal direct current stimulation (tsDCS) might induce noteworthy E amplitude in deep brain structures. Here, we compare the trend of electric field (E) distributions in 4 regions of interest (ROIs - grey matter, hippocampus, thalamus and mid-brain) during tDCS with extracephalic montages.
Methods: Sponge electrodes ($\sigma = 1.4$ S/m, 25 cm^2, 1 mm of thickness) were modelled with a conductor ($\sigma = 5.9 \times 10^7$ S/m) over the surface and a uniform electrical potential (± 1 V). The following montages (according to 10–20 system) were tested: I) Anode over Cz, C3 and C4; cathode over right deltoid; II) Anode over Cz, C3 and C4; cathode over the tenth thoracic vertebra. As outcome variables, we considered: the "peak" (99th percentile), the median, the 25th and 75th percentile of the E amplitude distribution in the ROIs; the percentage of area of hippocampus, mid-brain and thalamus where E amplitude was greater than 25% (V25), 30% (V30), and 50% (V50) of the peak in the grey matter for the same simulation. All the values considered were normalized to the 99th percentile of E in the grey matter for each montage.
Results: Both montage I) and II) revealed values in the deep structures comparable to grey matter, with normalized peak values around 70% of cortical ones. Also, percentual volumes were similar in both conditions for hippocampus (V25 = 100%; V30 ≅ 100%; V50 ≅ 35%), thalamus (V25 = 90%; V30 ≅ 80%; V50 ≅ 20%) and mid-brain (V25 = 85%; V30 ≅ 60%; V50 ≅ 20%).
Conclusions: Our results suggest that tDCS with extracephalic montages might warrant further exploration in the context of non-invasive deep brain stimulation (NDBS).
Keywords: computational modeling, transcranial direct current stimulation, Non invasive deep brain stimulation

P1.063

APPLICATION OF REPETITIVE TRANSCRANIAL MAGNETIC STIMULATION TREATMENT BENEFITS LANGUAGE PERFORMANCE IN ALZHEIMER'S DISEASE: A CASE STUDY

Georgia Roumpea [1], Katarina Marjanovič [1], Tjaša Mlinarič [2], Zvezdan Pirtošek [2], Jure Bon [3], Christina Manouilidou [1]. [1] *University of Ljubljana Faculty of Arts, Ljubljana, Slovenia;* [2] *University Medical Center, Ljubljana, Slovenia;* [3] *University Psychiatric Clinic of Ljubljana, Ljubljana, Slovenia*

Abstract
We investigated the effect of rTMS on production of simple and derived words, and lexical decision in an individual with mild-AD. Previous studies report action and object naming improvement, while deverbal forms (agent "*reader*" and process "*reading*" nominalizations) have not been examined. Moreover, to our knowledge, the effect of rTMS on accuracy and reaction time (RT) on lexical decision task (LTD), as well as accuracy on production by derivation, is addressed for the first time in the rTMS in AD literature. Intervention: high-frequency rTMS over the DLPFC bilaterally (5/sessions × 3/weeks). Evaluation: baseline, post-treatment, 2-weeks post-treatment. Materials: Picture-naming: 20 × 3 (verbs, agent-nominalizations, process-nominalizations), 30 nouns; LDT: 234 words, 234 non-words; Derivation-task: 30 × 3 (verbs, agent-nominalizations, process-nominalizations). Tasks: picture-naming, production by derivation, online and offline LDT. Participant: female, mild-AD Slovene-speaker, age:75, MMSE:25. Results: Increased naming accuracy immediately post-treatment (92%, p= .021) and 2-weeks post-treatment (97,5%, p= <.01) compared to baseline (80%). Agent (75% vs. 95% vs. 95%) and process (60% vs. 90% vs. 100%) nominalizations were the most improved categories, while slight differences were observed in verbs (95% vs. 90% vs. 95%) and nouns (90% vs. 93% vs. 100%). On derivation-task (96% vs. 92% vs. 97%) and