



## Unveiling Cortical Plasticity Induced by Transcranial Direct Current Stimulation in Patients with Chronic Pain via Paired-Pulse Transcranial Magnetic Stimulation

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### Introduction

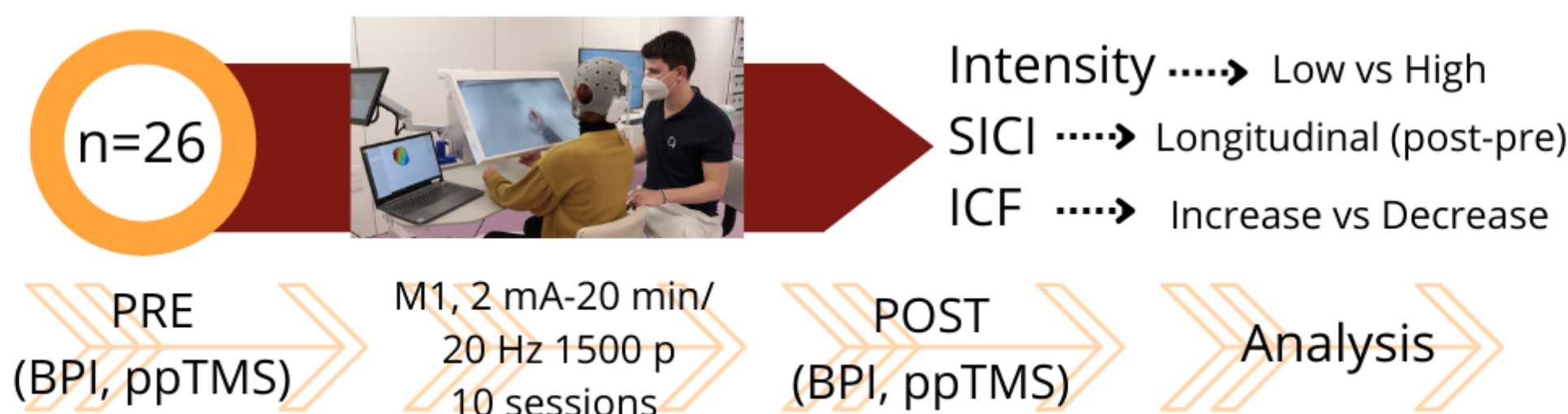
Transcranial direct current stimulation (tDCS) has emerged as innovative approach for managing chronic pain (CP), highlighting the need to identify reliable biomarkers of treatment response. Paired-pulse transcranial magnetic stimulation (ppTMS) shows promise as a potential marker to assess cortical excitability changes. Two key measures derived from ppTMS are short-interval intracortical inhibition (SICI) and intracortical facilitation (ICF).

### Aim

This study aimed to explore the interaction between pain intensity levels and tDCS-induced cortical plasticity changes.

A two-way ANOVA analyzed differences in SICI (post-pre) with fixed factors: ICF group and pain intensity in pre- and post-treatment evaluations.

### Methodology



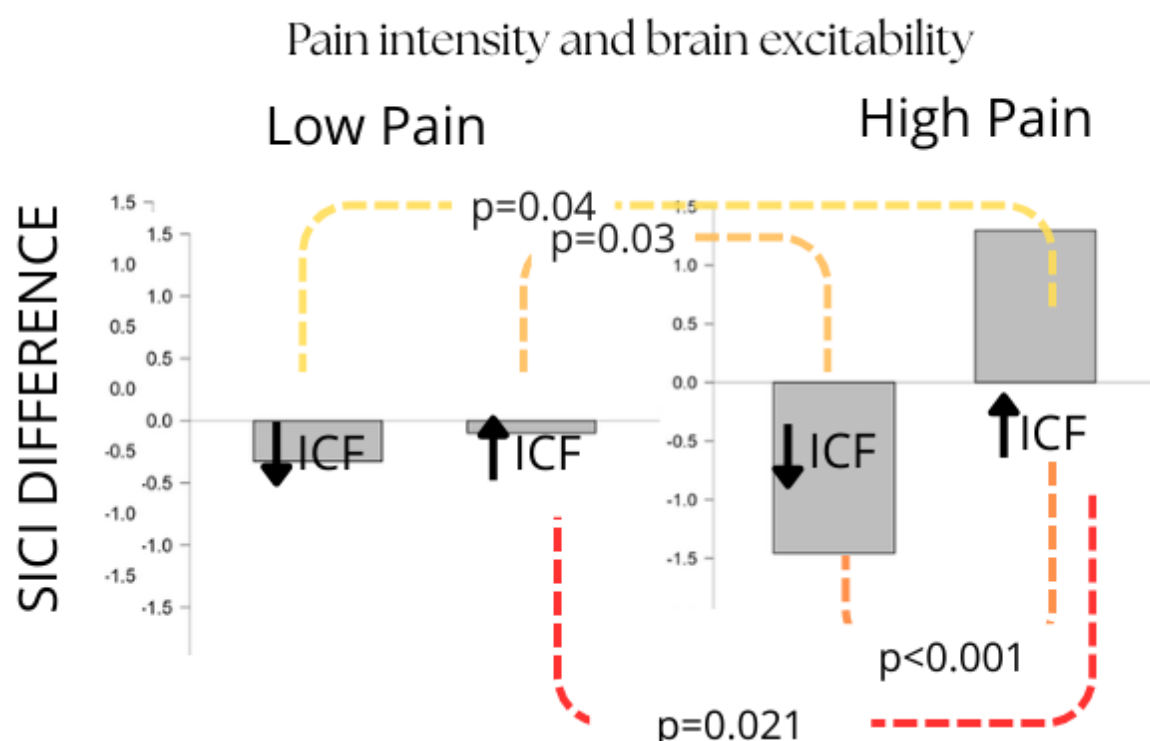
### Results

Pain Characteristics

45.53 y  
♀ 65.38%

Nociplastic (53.85%)/  
Neuropathic 46.15%

Pain duration 9.32 y



### Conclusions

These results highlight the key role of ICF modulation in SICI changes and its interaction with intensity, emphasizing the complex relationship between cortical plasticity and pain modulation in response to tDCS.