P02-192 - **INCREASE OF PREFRONTAL CORTEX BLOOD FLOW DURING THE PERFORMANCE OF THE ORIGINAL VERSION TRAIL MAKING TEST**

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Objectives: We measured oxyHb and totalHb in the prefrontal cortex during the performance of original version TMT by multichannel NIRS using sensitive for detecting changes of oxyHb and totalHb.

Methods: Sixteen healthy student volunteers performed four different screens of TMT-A, and then two different screens of TMT-B.

Results: OxyHb increased while in the prefrontal cortex during the performance of TMT-A and TMT-B. The changes were prominent during the TMT performed at first. OxyHb significantly increased in the right lateral prefrontal cortex during TMT-A while it significantly increased in the bilateral prefrontal cortices during TMT-B.

The results suggest that blood flow increases in the prefrontal cortex during the performance of TMT, and that the bilateral prefrontal cortices are involved in the performance of the original version TMT.

Conclusion: We showed an increase of oxyHb during the performance of TMT in the prefrontal cortex. The increase of oxyHb was more prominent in TMT-B than in TMT-A.

The present study suggests that the simultaneous use of the paper version TMT and multichannel NIRS may provide evidence to disclose neuronal mechanisms related to cognitive functions.

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