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Spinal direct current stimulation enhances vertical jump power in healthy adults.

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Introduction

Transcutaneous spinal direct current stimulation (tsDCS) is a simple, non-invasive tool that affects sensory, motor and pathological spinal areas, thus

Vertical countermovement jump (VCJ)

changes in power variables after tsDCS

Changes in PRM reflex RMS moderately correlated to changes in power variables after tsDCS

No return to baseline values at any time post tsDCS

Mean (95% CI) change over time after sham (0) and active (1) tsDCS

Changes in hamstring (H) and quadriceps (Q) PRM reflexes were moderately correlated with changes in peak GRF (shown above) and

subject journey on each

tsDCS-induced fatigue resistance and enhancement of VCJ power

Vertical Countermovement Jump (VCJ)

Mean (95% CI) difference between sham (0) and active (1) tsDCS

Post hoc: EMG responses during VCJ

Vertical countermovement jump (VCJ). Jump phases are as described in VCJ panel.

Conclusions

We have shown for the first time that anodal tsDCS counters the fatigue normally associated with repeated maximal VCJ performance.

Further work

Our laboratory is now investigating the effect of anodal tsDCS on EMG, torque and power production in isolated joint movements. We are also investigating genetic factors that may explain the variation in response to tsDCS between subjects.

References