

## INTRODUCTION

By wearing clothing that increases skin coverage, could athletes prevent their sensory systems from processing important tactile sensory information that may improve performance?

Sensory Evoked Potentials (SEPs)?

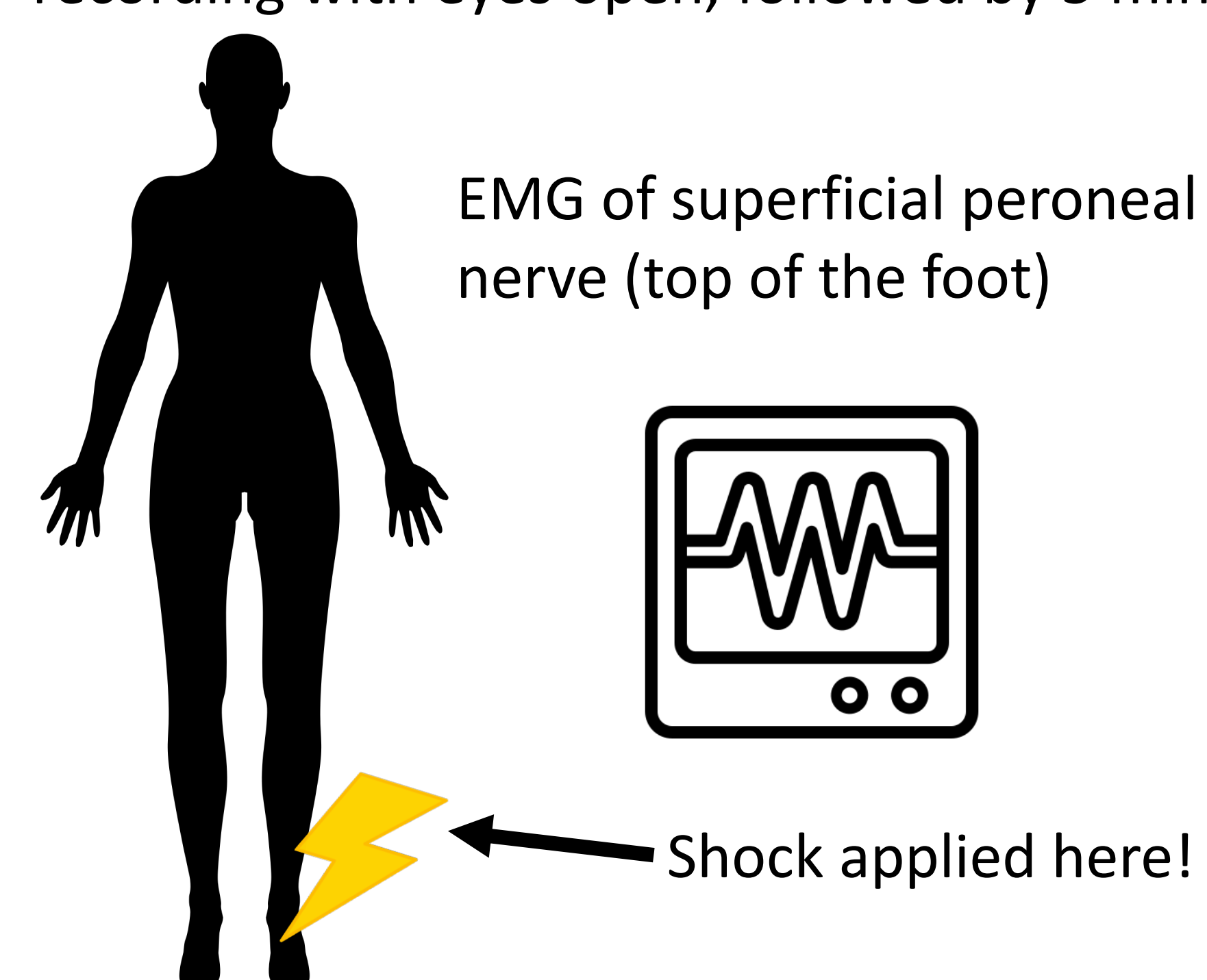
- SEPs can be thought of as “brain signatures” which depict how your brain reacts to sensory events such as feeling, seeing or hearing.
- When a sensory stimulus is recognized by the body, the signal is sent to your brain which generates small electrical impulses in response.
- Tools such as electroencephalography (EEG) can then be used to detect these electrical impulses, or sensory evoked potentials.

Study:

- Using the SEP data collected during the study, this research aimed to determine whether sensory evoked potentials in the brain can detect changes based on skin exposure during physical activity, and whether these changes correlate with improved performance.

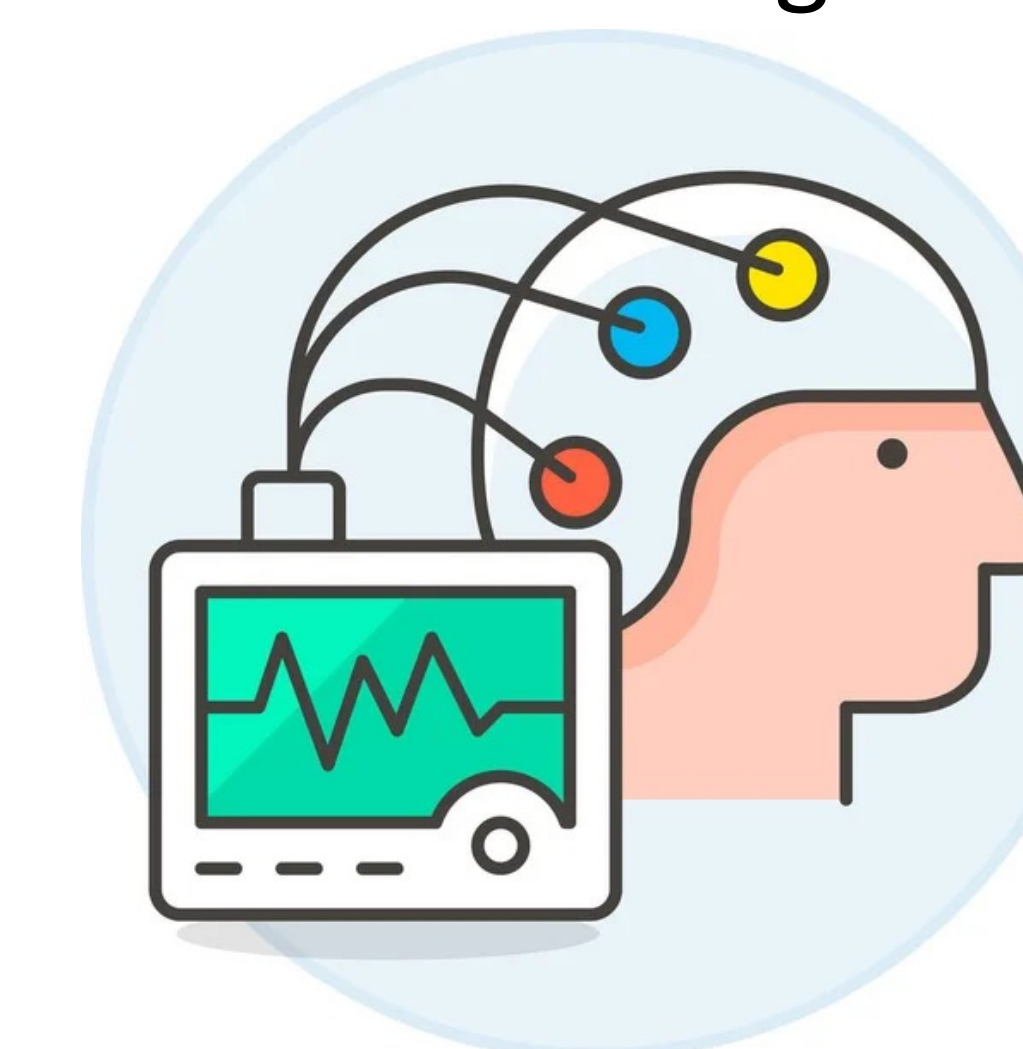
## Procedures/Task:

For each clothing condition, participants completed a 5-minute baseline recording with eyes open, followed by 5 minutes of walking on a treadmill.



## METHODS

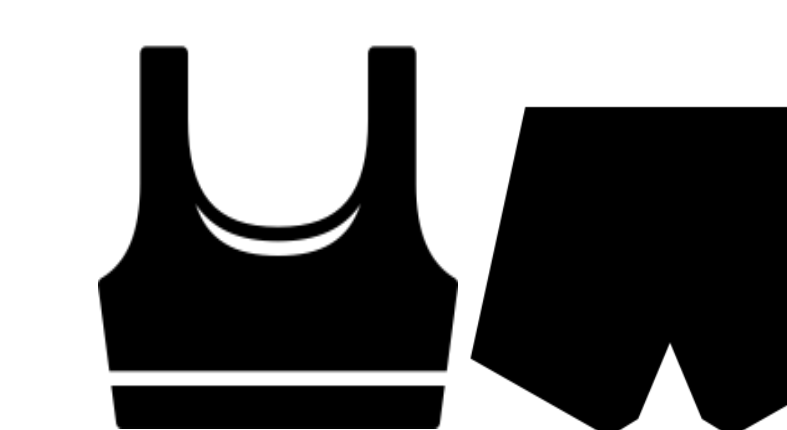
Recorded using EEG!



## Conditions:

Minimal Clothing

Maximal Clothing



## Additional Measures

Heart Rate

Running Dynamics Pod

Temperature Sensor

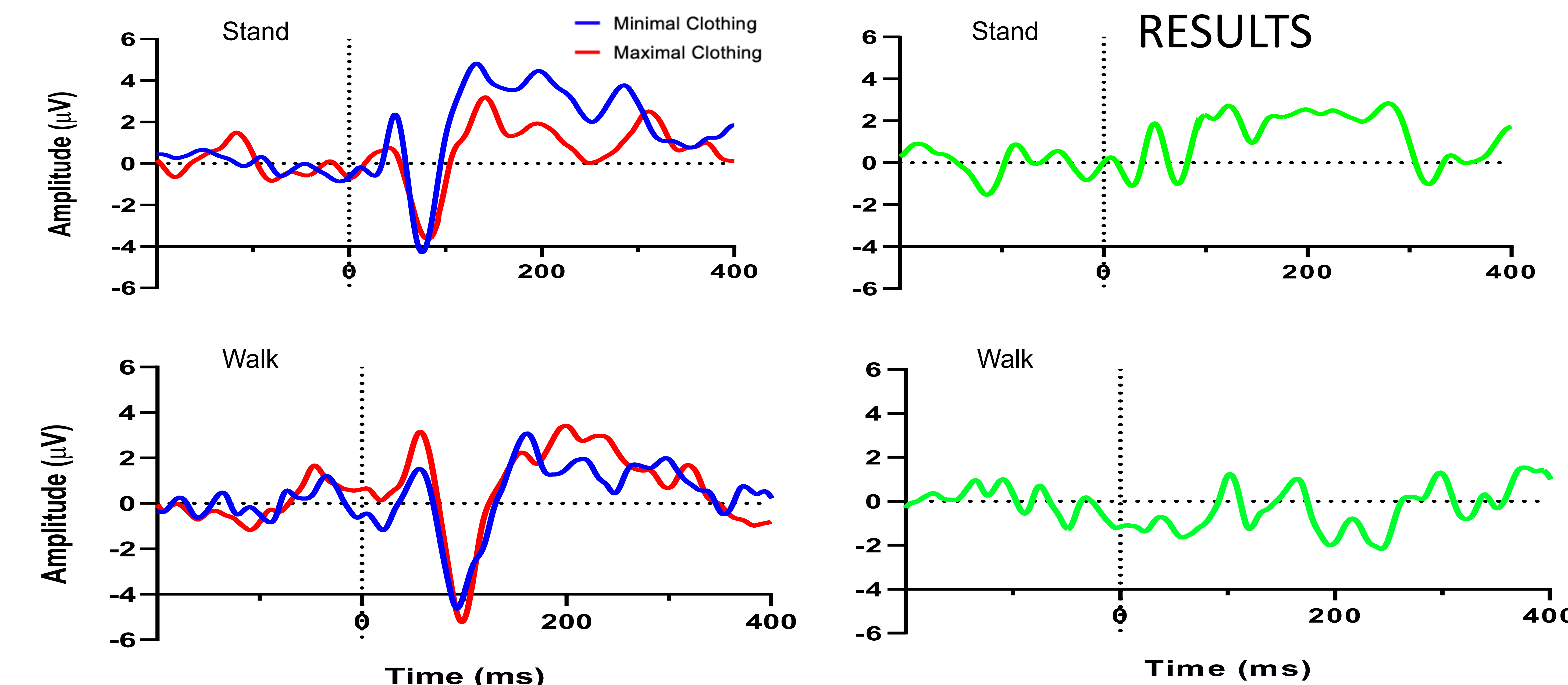
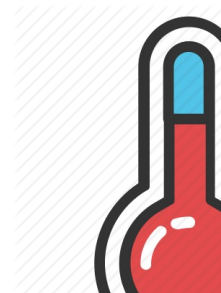


Figure 1. SEP amplitudes for minimal and maximal clothing conditions during stand and walk conditions

## RESULTS

Stand

Walk

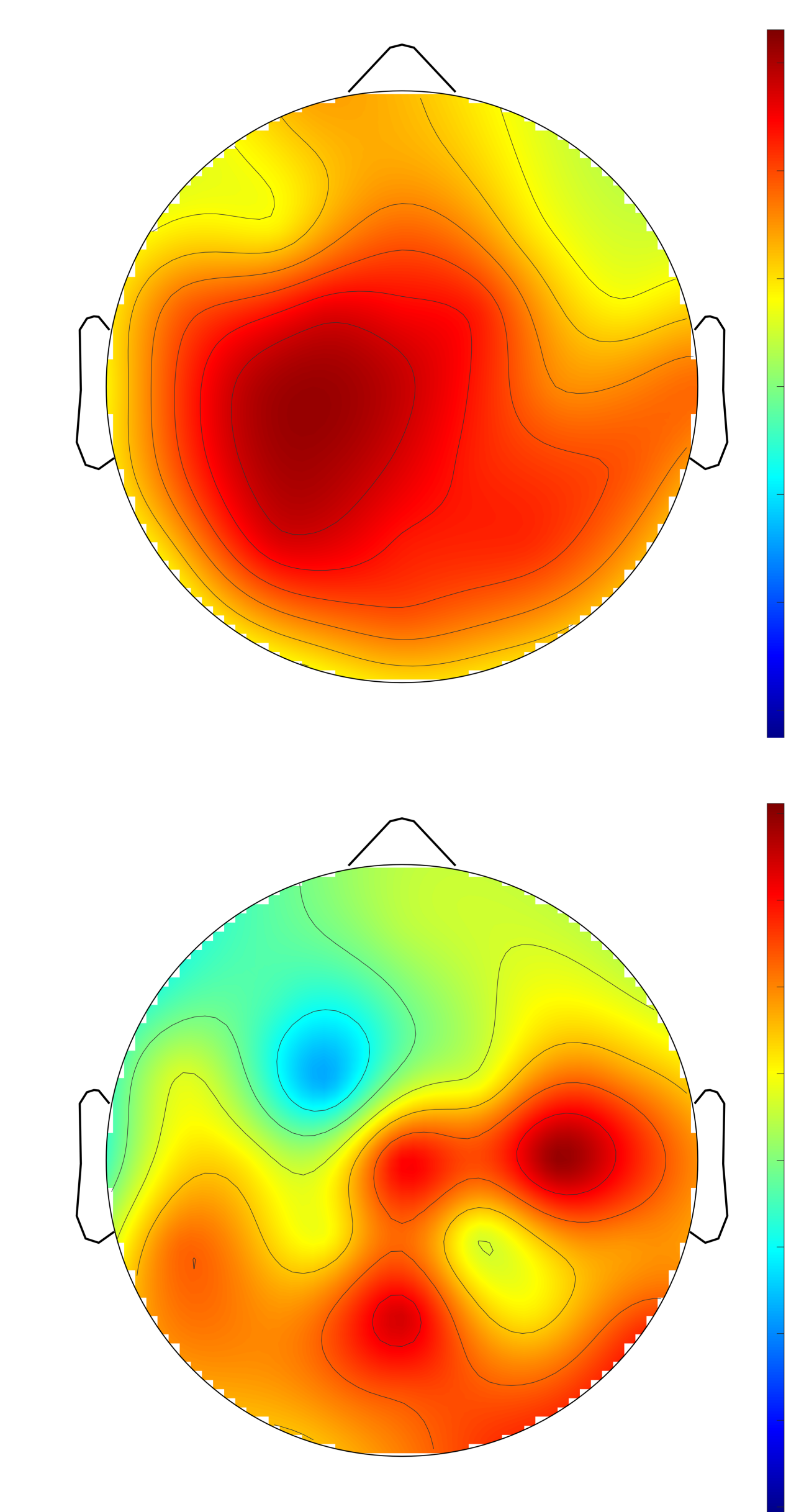


Figure 2. Topographic head map of stand vs. walk conditions depicting the difference between maximal and minimal clothing.

## CONCLUSIONS

- No statistical differences were found for SEP amplitudes between the minimal and maximal clothing conditions during standing and walking.
- As such, this preliminary data suggests that the amount of skin coverage does not have an impact on performance during physical activity.

- Despite no differences being found between conditions, this may be a result of certain study limitations such as the small sample size and the processing and analysis methods used.
- The study is ongoing, therefore it is yet to be confirmed whether the amount of skin exposure an athlete has while exercising impacts SEPs and performance.