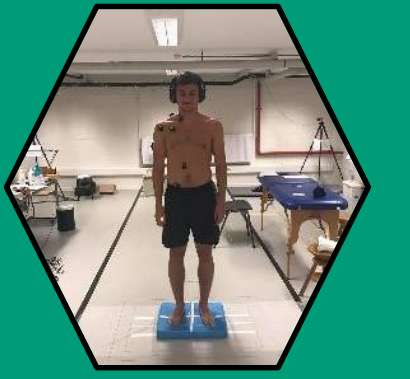


THE EFFECT OF EMOTIONAL IMAGERY ON POSTURAL CONTROL AND END-TIDAL CO₂ IN INDIVIDUALS WITH CHRONIC LOW BACK PAIN - PROTOCOL



Sofie Van Wesemael

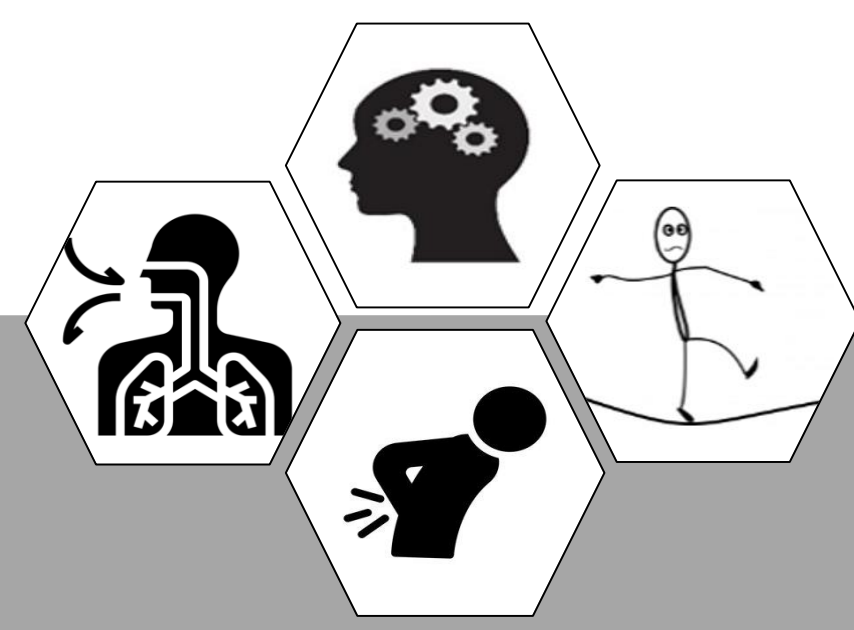
Background

- Low back pain (LBP) is one of the leading causes of disability worldwide. In 20% of the cases the complaints do not resolve within 3 months, leading to chronification of LBP.
- The presence of LBP is frequently associated with respiratory dysfunctions, e.g. 28% of the individuals with LBP experience complaints of hyperventilation.
- Postural control is impaired in individuals with chronic LBP. Free from LBP, both hyperventilation and emotions affect postural control. Thereby, end-tidal CO₂ is influenced by emotions as well.
- However, the effect of emotions on postural control and end-tidal CO₂ in individuals with LBP remains unknown.

Methodology

- Participants: 30 individuals with chronic LBP and 30 healthy individuals
- Procedure: Participants will be exposed to four emotion-provoking scripts (neutral, hostile resistance, relaxation, acceptance) while standing on a foam with their eyes closed. Every script contains a baseline, an emotional inducing script, a silent imagery and a recovery phase. Participants will be instructed to image the presented situation as vividly as possible during the script and the silent imagery phase. The scripts will be offered by means of a headphone.
- Outcomes: (1) Center of pressure (COP), measured by an AMTI 6-channels force plate, (2) Muscle activation (EMG) of m. rectus abdominus, m. obliquus internus, m. erector spinae, m. multifidus, m. intercostalis externus, m. sternocleidomastoideus and m. trapezius, measured by seven bipolar EMG units from Trigno, Delsys and (3) End-tidal CO₂ measured by BIOPAC

RESEARCH QUESTION:



To what extent does emotional imagery affect postural control and end-tidal CO₂ in individuals with chronic LBP?

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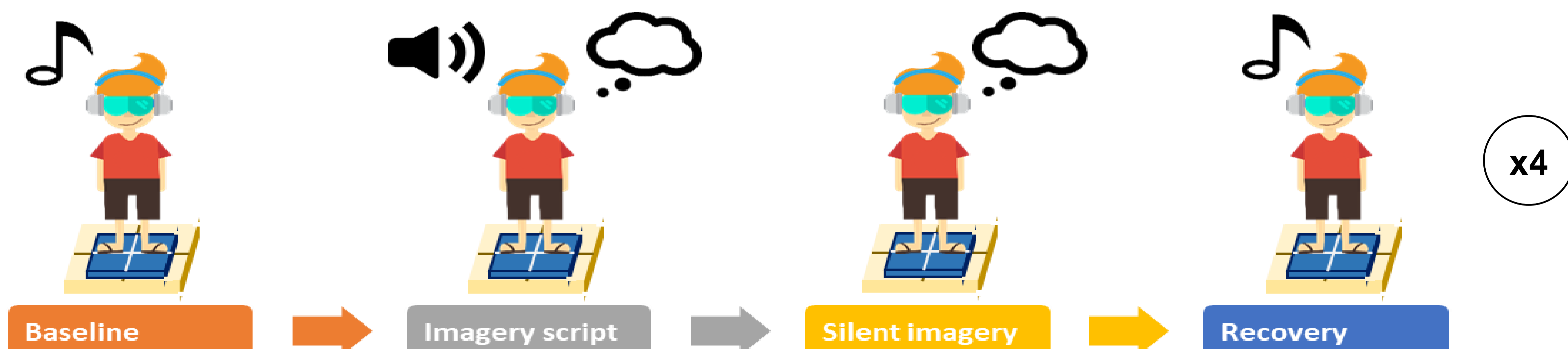
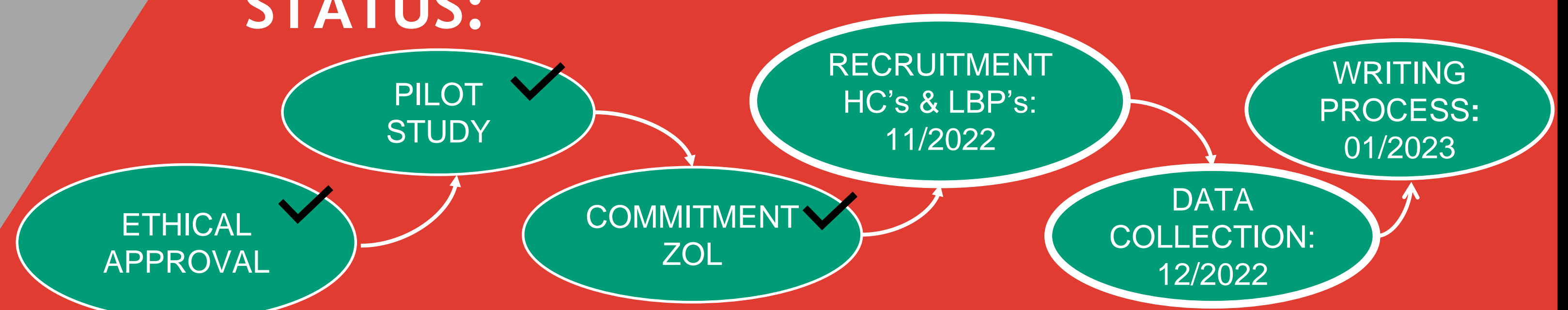


Fig. 1: Condition 1

Pilot results

- N = 14 healthy individuals
- Emotional imagery significantly affects several COP variables ($p < 0.05$)
- Most noticeable differences are found between relaxation and hostile resistance script ($p = 0.023$)

Clinical Relevance & Valorisation Potential

This research will provide more insight into the contributing factors of LBP. It will improve treatment outcomes which on its term improves the well-being of the individual with LBP. Thereby, the expenses for both patients and healthcare organisations will decrease if the treatment modalities improve.



Dra. Sofie Van Wesemael
sofie.vanwesemael@uhasselt.be
Twitter: @sofievawe
info@revalresearch.be - www.revalresearch.be

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