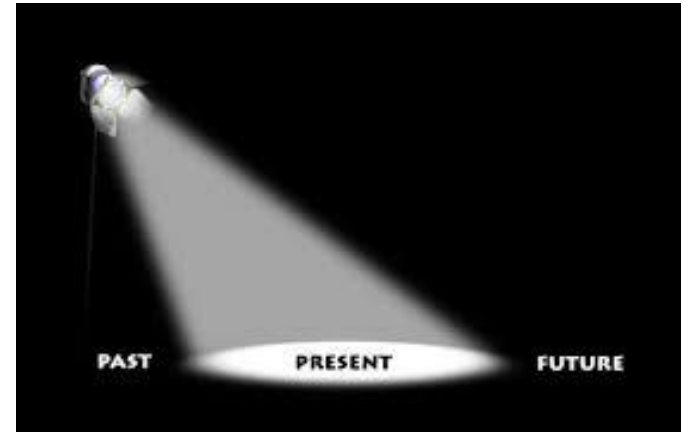


What is mindful attention?

Attention is a fundamental cognitive process that allows us to concentrate on one piece of information while ignoring the rest. A common metaphor for attention is a spotlight that (in mindfulness) brings the present into focus. Attention is closely linked to awareness and memory.

Mindfulness based therapies (e.g. MBSR) are forms of *attention training*: cultivating non-judgmental, mindful awareness of present-moment experiences. This is achieved through *body focused meditative techniques*: body scan, breathing exercises, mindful sitting and movement. Many studies have shown changes in attention to external events/information through mindfulness training.

References: Kabat-Zinn, 2003; Chiesa et al., 2011 for review



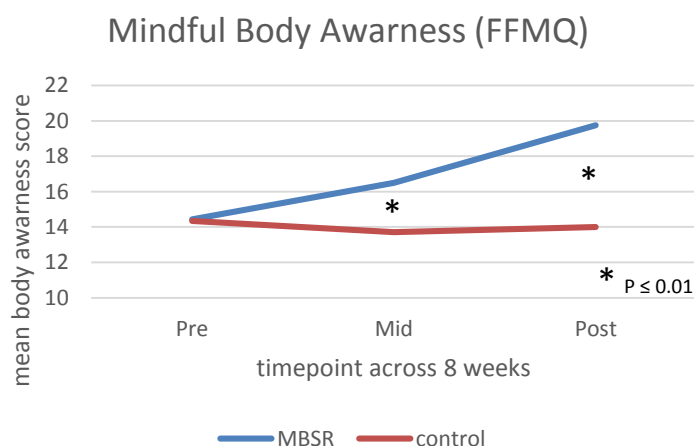
Our research questions

Mindfulness has been assessed by changes to visual/external attention but mindfulness exercises use the body. Therefore, assessing body attention and perception may be a more sensitive tool to reveal the effects of mindfulness

- What is the relation between mindful body exercises and psychological well-being?
- Are changes in body perception the first step to more general attention changes?

References: Kerr et al., 2013; Hölzel et al., 2011

Five Facet Mindfulness Questionnaire (FFMQ)



This shows improvement on questions of body awareness of the FFMQ midway and after MBSR

References: see also Carmody & Baer, 2008

Conclusions & Outlook

Changes in body awareness and perception might be the first fundamental effect of mindfulness. We aim to further understand these effects by the different mindful body exercises and its link to wellbeing.

Research Approach

Measurement of various body specific attention and awareness measures before and after MBSR :

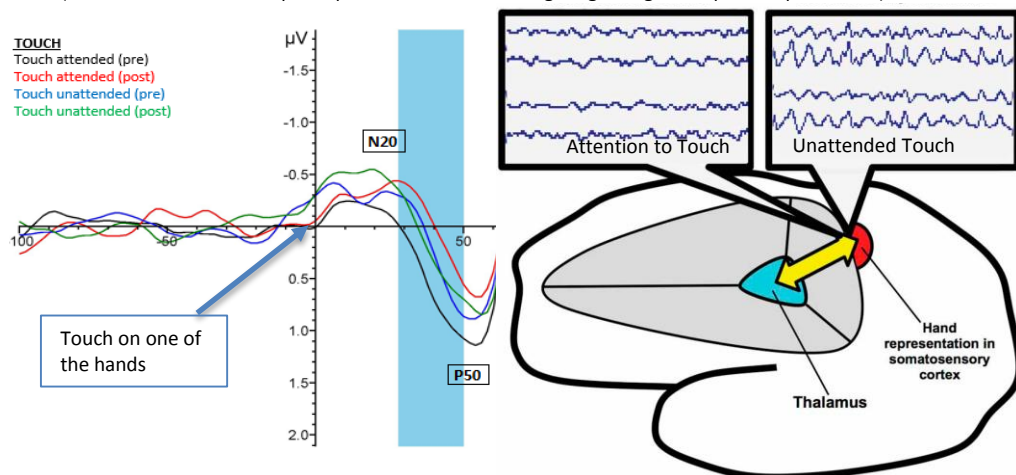
Self-report: Five Facet Mindfulness Questionnaire (body subscales); Body Awareness Questionnaire

Response measures: Heart beat counting task; Rod and Frame task; orienting and sustaining body attention tasks

Physiological measure: brain activity (EEG) measures during body attention and awareness tasks

Preliminary EEG results

Graph showing brain activity recorded over the brain's body area (somatosensory cortex) when touched on the hand (different coloured lines: participants are either counting or ignoring touch pre and post MBSR)



Series of touch and tones were presented to participants who either counted specific touches or tones. When counting touches we found changes in the way the brain processes touch post (red line) compared to pre (black line) MBSR. The timing of this difference (20 – 50ms after touch; blue box) is when information is relayed from the thalamus (our brain's 'gate keeper') to the brain's body representation area (right image). No such differences were found when ignoring touch or in response to tones suggesting a very specific effect of MBSR on the thalamus and body processes.

Reference: Kerr et al., 2011