The mindful eye: Smooth pursuit and saccadic eye movements in meditators and non-meditators

ABSTRACT:

Background
There is growing evidence for a positive effect of cultivated (i.e. developed through training) mindfulness on a range of cognitive functions. There are limited data at present examining the association between dispositional (trait) mindfulness, as measured in the general non-meditating population using self-report questionnaires, and cognitive function.

Aim of the study
To examine the effects of cultivated and dispositional (trait) mindfulness on smooth pursuit (SPEM) and anti-saccade (AS) tasks known to engage the fronto-parietal network implicated in attentional and motion detection processes, and the fronto-striatal network implicated in cognitive control, respectively.

Method
Sixty healthy men (19-59 years), of whom 30 were experienced mindfulness practitioners and 30 meditation-naïve, underwent infrared oculographic assessment of SPEM and AS performance. Trait mindfulness was assessed using the self-report Five Facet Mindfulness Questionnaire (FFMQ).

Results
Meditators, relative to meditation-naïve individuals, made significantly fewer catch-up and anticipatory saccades during the SPEM task, and had significantly lower intra-individual variability in gain and spatial error during the AS task. No SPEM or AS measure correlated significantly with FFMQ scores in meditation-naïve individuals.

Conclusions
Cultivated, but not dispositional, mindfulness is associated with improved attention and sensorimotor control as indexed by SPEM and AS tasks.

Keywords
Eye movements, Mindfulness, Attention, Inhibition

Published Work:

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