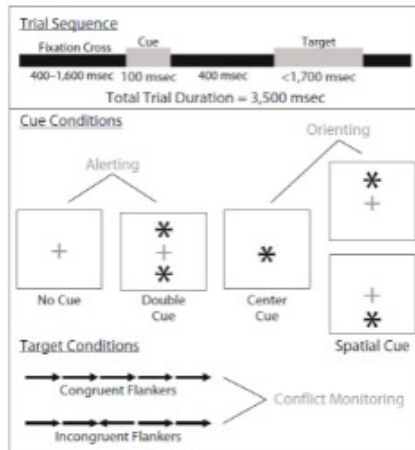


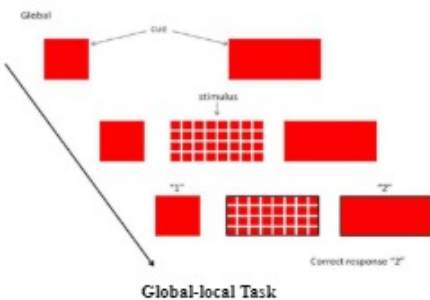


Introduction

Meditation is defined as "paying attention in a particular way, on purpose, in the present moment and non-judgmentally". Hence attentional training is essential for MT. Although research has focused on neural mechanisms that regulate cognition and emotions, the results that support attention are mixed due to poor methodological rigor.



Attention Network Test



Global-local Task

Attention Related Experimental Paradigms in Meditation Research

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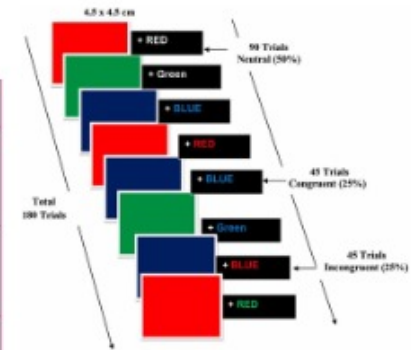
Focused Attention Meditation (FAM)
Open Monitoring Meditation (OMM)
Mindfulness Meditation (MM)

Types of Experimental Paradigms

Meditation Style	Attention task	Type of Attention	Results
FAM, OMM ²	Global-Local Task	Spatial Attention	FAM - Increased irrelevant suppression OMM - Increased cognitive flexibility
FAM, OMM ⁸	Rapid Serial Visualization Presentation	Attentional blink	No improvement in AB; improved target accuracy
FAM, OMM ¹	Attentional Network Test (ANT)	Executive Attention	Increased executive attention; no effect on orienting and alerting RT
MM ⁴	Switching Task	Attention Switching	Reduced RT; no difference in switch cost between groups
FAM ¹¹	ANT	Executive Attention	Increased orienting and executive control; no effect on alerting
MM ³	ANT & Stroop task	Executive Attention & Control	No better performance in any of the measures
MM ⁶	Continuous Performance, Stroop test, Digit Symbol Substitution	Sustained vigilance, distractor inhibition & executive control	Increased discriminability on CPT; no effect on SCWT, DST
FAM, OMM ⁷	Stroop word color task	Distractor inhibition	No RT difference
FAM ⁵	ANT	Sustained attention	Increased orienting and executive attention; reduced errors and faster RT
MM ⁷	ANT	Executive attention	Increased cognitive control and sustained attention
MM ⁵	ANT	Executive attention	Better conflict monitoring and orienting

Brief session

1 year



Stroop Word and Color Task

Discussion

Findings are highly mixed. Although significant improvement is observed, some studies show no effect. We argue that future research needs to use controlled, longitudinal, randomized design with a larger sample size that compares data at several time points. Having standardized measures will lead towards understanding neural systems involved in meditation-related attention.

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