

Employee support and enrichment by Transcendental Meditation

Corporate success depends on innovative ideas and job performance. Important skills needed are growth in creativity and a continuing ability for learning and teamwork, despite aging. Physical health and mental well-being should be actively supported. Stress, however, is in modern societies a major threat to all this, even without serious occurrences such as the Covid-19 pandemic.

The Transcendental Meditation (TM) Technique is a simple practice, twice a day 20 minutes, that significantly changes how we respond to stress and life's challenges. It also fosters further brain development towards creativity and intelligence. Much useful information can be found on websites of national TM-organizations, or the David Lynch Foundation (1). A concise, straightforward book is "Strenght in Stillness" (2).

Many scientific and peer-reviewed publications on TM have been published in the last 50 years. They found that during the TM practice a physiologic state is present described as restfully alert (3, 4). Importantly, with regular practice a wealth of long-term beneficial effects were noted. A relevant selection will be succinctly presented below.

Increased resilience to stress and its harmful sequelae.

A recent meta-analysis (5) underlines that meditation techniques are effective in treating Post-Traumatic Stress Disorder (PTSD), while TM is significantly more effective in this respect than Mindfulness or other types of meditation (figure 1). An effect-size of 1 is considered as large.

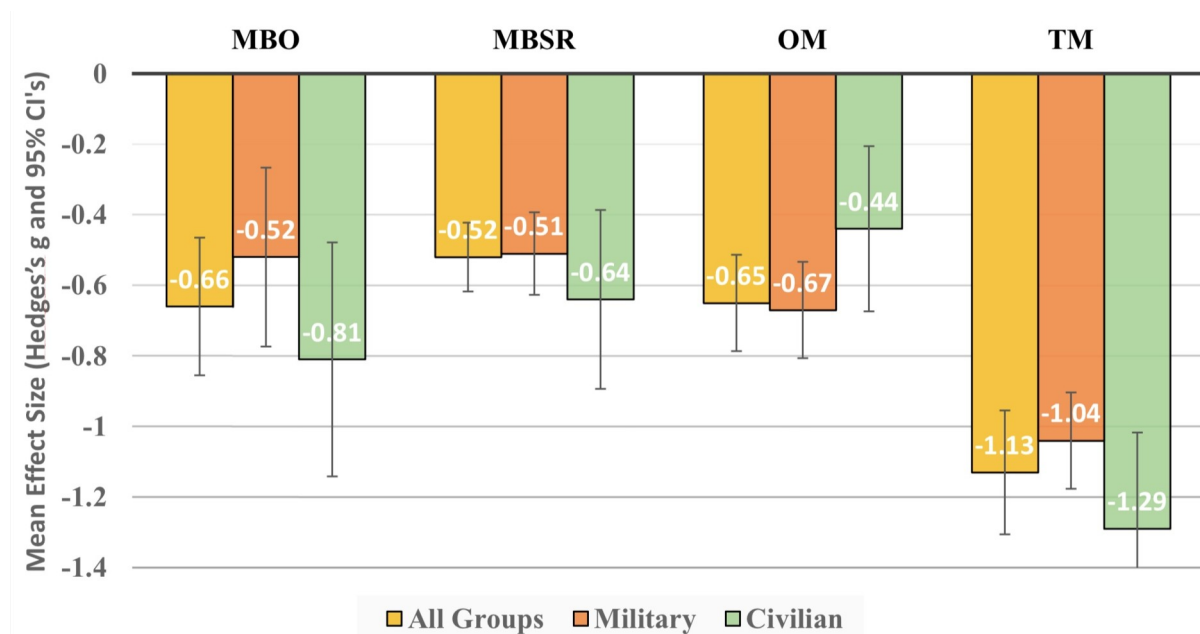


Figure 1. Effects on Post-Traumatic Stress Disorder (PTSD) of Mindfulness-Based (MB) meditation types (O = other, SR = stress reduction), Transcendental Meditation (TM) and Other Meditation techniques (OM). Mean effect sizes with 95%-Confidence Intervals (CI's).

Gold bars for all 61 studies (MBO, n=16; MBSR, n=13; OM, n=14; TM, n=18; in total 3440 subjects); Red and Green bars denote the military and civilian subgroups, respectively. Of those offered, 86 % were willing to try meditation. No serious side effects were reported.

TM: differences with other meditations

Meditation practices differ in underlying brain patterns. Indeed, electroencephalo-graphy (EEG) studies show that, among others, the brain wave-patterns produced are not the same (6, 7). TM is especially marked by frontal Alpha-1 (8-10 Hz) EEG-waves, indicating internalized attention, alertness and liveliness of the “screen of consciousness”.

The other meditation-types of figure 1, show either high-frequency EEG-waves, called Gamma (30-50 Hz) and Beta-2 (20-30 Hz), indicating concentration of one’s attention (e.g.

on a specific thought or on the breath), or they show frontal midline Theta (4-8 Hz) and posterior Alpha-2 (10-12 Hz) waves, associated with open observation (i.e. without judgement) of the thoughts and feelings as they come and go.

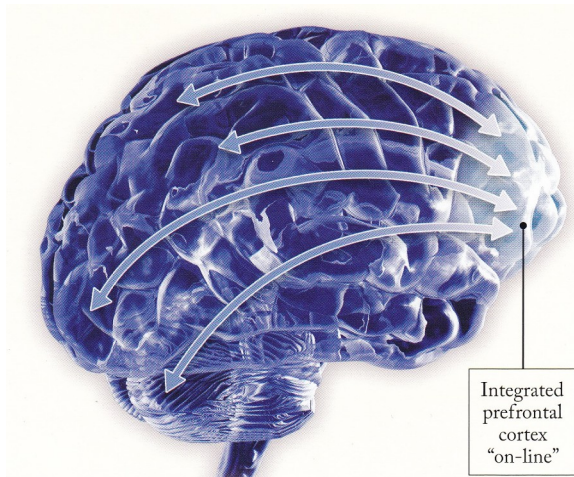


Figure 2. The prefrontal cortex is the latest evolutionary addition to the human brain. It connects to nearly all other brain parts, generating and guiding goal-directed behaviour, i.e. functioning as brain “CEO”.

Coherence between frontal and other brain areas

An important characteristic of the brain-state cultured during TM-practice is coherence frontally, and increasingly also with other areas (8). Coherence is a measure of functional connectivity. With regular practice it grows also outside of meditation (figure 2).

Figure 3 shows an example in kids with Attention-Deficit/Hyperactivity Disorder (ADHD), meditating in school (daily

2x 10 minutes). In addition, letter fluency and theta/beta power-ratio (a marker of ADHD-symptoms) significantly improved, as well as parent reports on focussing abilities and happiness (9). An earlier study also found significant reductions in stress and anxiety (10).

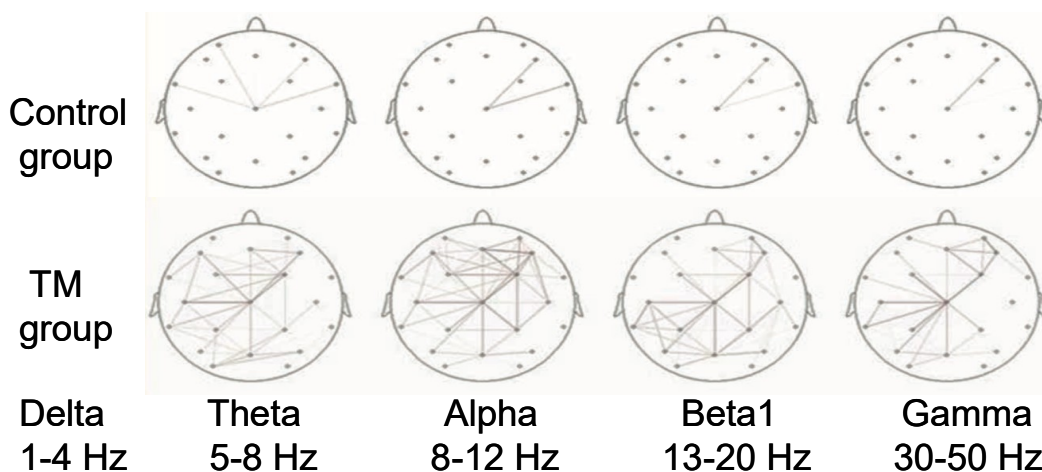


Figure 3. EEG-Coherence difference maps in ADHD school-students (age 11-14 years) during a demanding visual-motor task. Three months after learning TM, coherence between many pairs of electrodes (lines between dots) was higher than in pretest (threshold 0.2), but hardly so in controls. Coherence values (scale 0-1) averaged around 0.6.

Brain Integration and Success

During TM-practice, when EEG-coherence is high, experiences occur of ‘unboundedness’ and ‘awareness without sense of time, space and body’ (11). With ongoing regular practice the brain acquires -also outside meditation- the capability to maintain a restful continuum of inner awareness, alongside the ‘flurry’ of daily activity. Three EEG-components significantly associated with this ability have been combined in a Brain Integration Scale (11, 12).

Table 1 shows that the cognitive brain functioning scored by this scale indeed relates to success in business, sport and arts (13-15).

Table 1. Brain Integration scores in highly successful Norwegian top-level managers (n=20), world-class athletes (n=33) and professional classical musicians (n=25), and matched controls (n=20-33-25).

	Managers ~ 56,5 years	Athletes ~ 34,5 years	Musicians ~ 40 years
Top-level	2.48*	2.5*	2.48
Controls**	1.54	1.3	2.45

* $p < 0.01$; group- (& age-) averages presented (score-SDs ranged 0.68-1.33);

** managers: mostly low-level; athletes: < 50-percentile in national championships; musicians: next to their regular job playing in amateur symphony orchestras (13-15).

Interestingly, the amateur-musicians had scores similar to the top-level groups and higher than the other controls. An explanation might be that both musician-groups had played their instrument since childhood, i.e. practising classical music during a period of massive cortical reorganization and formation of brain connections.

Practising TM also increases brain integration (BI) scores already after a few months, as shown in college students (Washington DC) and school-district employees (San Francisco).

In students, BI-scores rose within 2,5 month after TM-instruction from 1.76 → 2.79 (controls: 1.46 → 0.9; age ~24 years). The decrease in controls reflects study stress around the post-test time due to upcoming exams; their electrodermal habituation to stress deteriorated, while it improved in the TM-group (12).

In employees, BI-scores rose within 4 month after TM-instruction from 1.3 → 1.74 (controls: 1.5 → 1.43; age ~46 years). Moreover, in the TM-group mood-disturbance, anxiety, anger, depression, confusion and fatigue significantly decreased, while vigor increased (16).

Innovation and Creativity

The generation of novel ideas as well as their implementation requires creative thinking. Innovation begins and ends with logical analytical thinking (preparation and verification stages), but in-between an undirected free flow of ideas is essential. Transcending the boundaries of “in the box thinking” and letting the attention wander at the feeling level, and even deeper towards experiencing a still awake state of inner awareness, is highly conducive for this incubation phase (17).

- The default network
- TM fosters the incubation phase
- EEG coherence correlations

- Students and IQ

Burnout and Depression

- zie literatuur (2 groepen)

Health, Well-being and Aging

- Long-Term TM: transcriptie-factors (i.e. gene expression), anti-stress, etc.
- Hypertension (and Cardiovascular)
- Reduced Healthcare Costs
- Anxiety, Drugs,
- Insulin resistance

Spiritual Growth

- Transcendental Experiences
- Sidhi Practice
- Self-actualization
- Development

Collective Consciousness

- Field effects

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Burnout (2 groepen)

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Anti-Aging & Anti-stress

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Field Effect(s)

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