

# 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 "Strength 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.

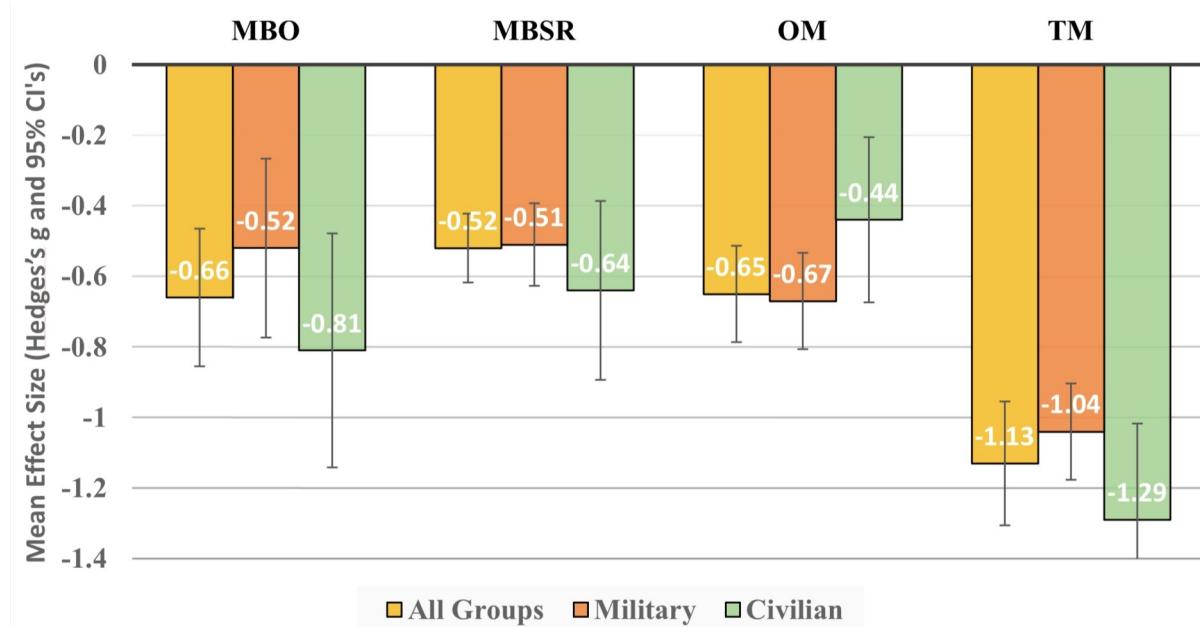


Figure 1. Effects on Post-Traumatic Stress Disorder (PTSD) of Mindfulness-Based (MB) meditation types (O = other, SR = stress reduction), Transcendental Meditation (TM) and Other Meditation techniques (OM). Mean effect sizes with 95%-Confidence Intervals (CI's). Gold bars for all 61 studies (MBO, n=16; 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, electroencephalography (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.

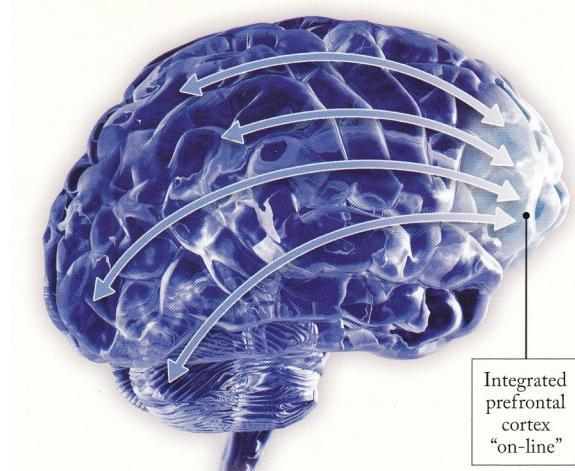


Figure 2. The prefrontal cortex is the latest evolutionary addition to the human brain. It connects to nearly all other brain parts, generating and guiding goal-directed behaviour, i.e. functioning as brain “CEO”.

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).

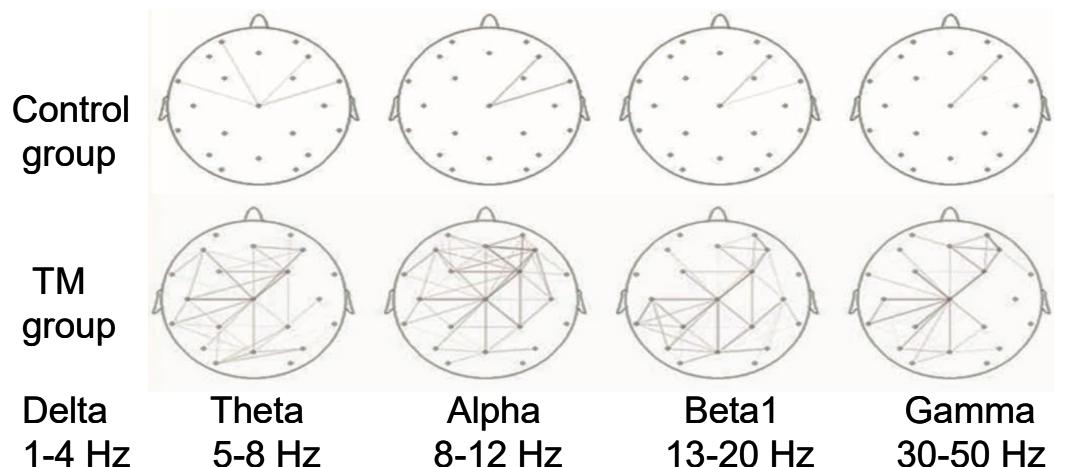


Figure 3. EEG-Coherence difference maps in ADHD school-students (age 11-14 years) during a demanding visual-motor task. Three months after learning TM, coherence between many pairs of electrodes (lines between dots) was higher than in pretest (threshold 0.2), but hardly so in controls. Coherence values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

1. <https://nl.tm.org>; <https://transcendentemeditatie.be>; <https://meditation.de>;  
<https://meditation-transcendantale.fr>; <https://www.tm.org/en-gb>;  
<https://www.davidlynchfoundation.org>
2. Bob Roth. (2022). Strength in Stillness: The Power of Transcendental Meditation. Simon & Schuster, ISBN-13: 978-1501-1612-23.  
Dutch Translation: De kracht van Transcendente Meditatie, In 20 minuten ontstrest. Kosmos Uitgevers. ISBN 978-90-215-6536-1.
3. Wallace, R.K. (1970). Physiological effects of Transcendental Meditation. *Science*, 167, 1751-1754.
4. Wallace, R.K.; Benson, H. and Wilson, A.F. (1971). A wakeful hypometabolic physiologic state. *Am. J. of Physiol.*, 221, 795-799.
5. Orme-Johnson, D.W.; Barnes, V.A.; Rees, B.; et al. (2024). Effectiveness of Meditation Techniques in Treating Post-Traumatic Stress Disorder: A Systematic Review and Meta-Analysis. *Medicina*, 60, 2050. <https://doi.org/10.3390/medicina60122050>
6. Travis, F. and Shear, J. (2010). Focused attention, open monitoring and automatic self-transcending: Categories to organize meditations from Vedic, Buddhist and Chinese traditions. *Consciousness and Cognition*, 19, 1110-1118. doi:10.1016/j.concog.2010.01.007
7. Travis, F. (2020). On the Neurobiology of Meditation: Comparison of Three Organizing Strategies to Investigate Brain Patterns during Meditation Practice. *Medicina*, 56, 712. <https://doi.org/10.3390/medicina56120712>
8. Travis, F. and Arenander, A. (2006). Cross-sectional and Longitudinal Study of Effects of Transcendental Meditation Practice on Interhemispheric Frontal Asymmetry and Frontal Coherence. *Intern. J. Neuroscience*, 116, 1519-1538. doi:10.1080/00207450600575482
9. Travis, F.; Grosswald, S. and Stixrud, W. (2011). ADHD, Brain Functioning, and Transcendental Meditation Practice. *Mind & Brain, the J of Psychiatry*, 2(1).
10. Grosswald, S.J.; Stixrud, W.R.; Travis, F. and Bateh,M.A. (2008). Use of the Transcendental Meditation Technique to Reduce Symptoms of Attention Deficit Hyperactivity Disorder (ADHD) by Reducing Stress and Anxiety: An Exploratory Study. *Current Issues in Education*, 10 (2).
11. Travis, F.; Tecce, J.; Arenander, A. and Wallace, K. (2002). Patterns of EEG coherence, power, and contingent negative variation characterize the integration of transcendental and waking states. *Biological Psychology*, 61, 293-319.
12. Travis, F.; Haaga, D.A.F.; Hagelin, J.; et al. (2009). Effects of Transcendental Meditation practice on brain functioning and stress reactivity in college students. *International Journal of Psychophysiology*, 71 (2), 170-176.
13. Harung, H.S. and Travis, F. (2012). Higher mind-brain development in successful leaders: testing a unified theory of performance. *Cogn. Process*, 13: 171-181. <https://doi.org/10.1007/s10339-011-0432-x>

14. Harung, H.S.; Travis, F; Pensgaard, A.M.; et al. (2011). Higher psycho-physiological refinement in world-class Norwegian athletes: brain measures of performance capacity. *Scand J Med Sci Sports*, 21 (1), 32-41.
15. Travis, F.; Harung, H.S. and Lagrosen, Y. (2011). Moral development, executive functioning, peak experiences and brain patterns in professional and amateur classical musicians: Interpreted in light of a Unified Theory of Performance. *Consciousness and Cognition*, 20, 1256-1264. doi:10.1016/j.concog.2011.03.020.
16. Travis, F.; Valosek, L.; Konrad IV, A.; et al. (2018). Effect of meditation on psychological distress and brain functioning: A randomized controlled study. *Brain and Cognition*, 125, 100-105. <https://doi.org/10.1016/j.bandc.2018.03.011>
17. Travis, F. (2021). Innovation, Creativity, and Brain Integration. Chapter 10 in: Gurubatham, M.R. and Williams, G.A. (Editors), Advancing Innovation and Sustainable Outcomes in International Graduate Education, IGI Global, Hershey PA, ISBN 97817998551-49 (hard cover), -56 (paperback), -63 (ebook). <http://www.igi-global.com>
- 18.

### Creativity (vervolg-referenties)

Travis, F.; Haaga, D.A.F.; Hagelin, J.: et al. (2010). A self-referential default brain state: patterns of coherence, power, and eLORETA sources during eyes-closed rest and Transcendental Meditation practice. *Cogn Process*, 11, 21-30.  
doi:10.1007/s10339-009-0343-2

Travis, F. and Parim, N. (2017). Default mode network activation and Transcendental Meditation practice: Focused Attention or Automatic Self-transcending? *Brain and Cognition*, 111, 86-94. <https://doi.org/10.1016/j.bandc.2016.08.009>

Travis, F. (1979). The Transcendental Meditation Technique and creativity: A longitudinal study of Cornell University undergraduates. *The Journal of Creative Behavior*, 13(3), 169-181. doi:10.1002/j.2162-6057.1979.tb00203.x.

Pagano, R.R. and Frumkin, L.R. (1977). The effect of Transcendental Meditation on Right Hemispheric Functioning. *Biofeedback and Self-Regulation*, 2(4), 407-415.

Orme-Johnson, D.W. and Haynes C.T. (1981). EEG Phase Coherence, Pure Consciousness, Creativity, and TM-Sidhi Experiences. *International Journal of Neuroscience*, 13, 211-217.

Jedrczak, A.; Beresford, M. and Clements, G. (1985). The TM-Sidhi program, pure consciousness, creativity and intelligence. *The Journal of Creative Behavior*, 19(4), 270-275.

So, K-T. and Orme-Johnson, D.W. (2001). Three randomized experiments on the longitudinal effects of the Transcendental Meditation technique on cognition. *Intelligence*, 29, 419-440.

Tjoa, A.S. (1975). Meditation, neuroticism, and intelligence: a follow up. *Gedrag: Tijdschrift voor Psychologie*, 3, 167-182.

## Burnout ( 2 groepen)

### 1) health-care providers:

Azizoddin, D.R.; Kvaternik, N.; Beck, M.; et al. (2021). Heal the Healers: A pilot study evaluating the feasibility, acceptability, and exploratory efficacy of a Transcendental Meditation intervention for emergency clinicians during the coronavirus disease 2019 pandemic. *JACEP Open*, 2, e12619. <https://doi.org/10.1002/emp2.12619>

Joshi, S.P.; Wong, A.I.; Brucker, A.; et al. (2022). Efficacy of Transcendental Meditation to Reduce Stress Among Health Care Workers, A Randomized Clinical trial. *JAMA Network Open*, 5(9), e2231917. doi:10.1001/jamanetworkopen.2022.31917.

Nestor, M.S.; Lawson, A. and Fischer, D. (2023). Improving the mental health and well-being of healthcare providers using the transcendental meditation technique during the COVID-19 pandemic: A parallel population study. *PLOS ONE*, 18(3), e0265046.

<https://doi.org/10.1371/journal.pone.0265046>

Bonamer, J.R. and Aquino-Russel, C. (2019). Self-care strategies for professional development: Transcendental Meditation reduces compassion fatigue and improves resilience for nurses. *J. Nurses Prof. Dev.*, 35, 93-97.

**(PS: van deze nog het artikel zelf bemachtigen).**

Bonamer, J.R.; Kutash, M.; Hartranft, S.; et al. (2024). Clinical nurse well-being improved through Transcendental Meditation. *J. Nurs. Adm.*, 54, 16-24.

**(PS: van deze nog het artikel zelf bemachtigen).**

### 2) Teachers (and Staff)

Elder, Ch.; Nidich, S.; Moriarty, F. and Nidich, R. (2014). Effect of Transcendental Meditation on Employee Stress, Depression, and Burnout: A Randomized Controlled Study. *The Permanent J.*, 18(1), 19-23.

Valosek, L.; Wendt, S.; Link, J; et al. (2021). Meditation Effective in Reducing Teacher Burnout and Improving Resilience: A Randomized Controlled Study. *Frontiers in Education*, 6, (Open Access), doi:10.3389/feduc.2021.627923.

Loiselle, M.; Brown, C.; Travis, F.; et al. (2023). Effects of Transcendental Meditation on Academic Physician Burnout and Depression: A Mixed Methods Randomized Controlled Trial. *J Contin Educ Health Prof*, 43(3), 164-171. doi:10.1097/CEH.0000000000000472.

**(PS: van deze nog het artikel zelf bemachtigen).**

Jammes, Ch.; Heiman, I. and Amri, H. (2025). A pilot intervention to reduce burnout and enhance resilience through transcendental meditation among Georgetown University medical students. *BMC Medical Education*, 25, 478. <https://doi.org/10.1186/s12909-025-07004-1>

### Anti-Aging & Anti-stress

Wenuganen, S.; Walton, K.G.; Katta, S.; et al. (2021). Transcriptomics of Long-Term Meditation Practice: Evidence for Prevention or Reversal of Stress Effects Harmful to Health. *Medicina*, 57, 218. <https://doi.org/10.3390/medicina57030218>

Wenuganen, S.; Walton, K.G.; Travis, F.T.; et al. (2025). Possible Anti-Aging and Anti-Stress Effects of Long-Term Transcendental Meditation Practice: Differences in Gene Expression, EEG Correlates of Cognitive Function, and Hair Steroids. *Biomolecules*, 15, 317. <https://doi.org/10.3390/biom15030317>

### Field Effect(s)

Orme-Johnson, D.W.; Cavanaugh, K.L.; Dillbeck, M.C. and Goodman, R.S. (2022). Field-Effects of Consciousness: A Seventeen-Year Study of the Effects of Group Practice of the Transcendental Meditation and TM-Sidhi Programs on Reducing National Stress in the United States. *World Journal of Social Science*, 9(2). <https://doi.org/10.5430/wjss.v9n2p1>