



The science behind meditation

Meditation Improves Sleep Quality

Meditation has been shown to reduce sleep disturbances and significantly improve sleep quality.

- Black et al. (2015). **Mindfulness Meditation and Improvement in Sleep Quality and Daytime Impairment Among Older Adults With Sleep Disturbances: A Randomized Clinical Trial.** JAMA internal medicine.
- Nagendra, Maruthai & Kutty. (2012). **Meditation and its regulatory role on sleep.** Frontiers in neurology.

Meditation Helps Manage Daily Stressors and Improve Cognitive Function

Meditation helps to reduce stress and manage anxiety, particularly by increasing the physiological relaxation response. Meditation has also been shown to enhance short-term memory and cognitive flexibility.

Evidence suggests that even short term meditation changes brain activation in the left anterior cortex activation, and this change corresponds to increased positive affect. Meditation can even improve immune system function.

- Singh, Sharma & Talwar (2012). **Immediate and long-term effects of meditation on acute stress reactivity, cognitive functions, and intelligence.** Alternative therapies in health and medicine.
- Davidson, Kabat-Zinn et al. (2003). **Alterations in brain and immune function produced by mindfulness meditation.** Psychosomatic medicine.

Meditation Produces Lasting Improvements in Anxiety & Depression

Meditation not only helps manage stress: it is effective in treating clinical anxiety and depression as measured by the Beck and Hamilton inventories. Even more importantly, improvements in depressed and anxious patients persist for years.

- Miller, Fletcher & Kabat-Zinn (1995). **Three year follow-up and clinical implications of a mindfulness meditation-based stress reduction intervention in the treatment of anxiety disorders.** General hospital psychiatry.

Meditation Helps Manage Chronic Pain

A standardized mindfulness-based stress reduction program (MBSR) has been shown to contribute positively to pain management and can exert significant effects on several dimensions of chronic pain including general psychological wellness, feeling in control, and pain acceptance.

- la Cour & Petersen (2015). **Effects of mindfulness meditation on chronic pain: a randomized controlled trial.** Pain medicine.

Meditation Increases Compassion and Improves Reaction to Social Stress

Mindfulness-Based Cognitive Therapy (MBCT) has been shown to increase skills in adaptive emotion recognition and stress coping. Expert meditators also show increased limbic activation, which corresponds to enhanced emotional awareness and empathy.

- Britton, Shahar, Szepsenwol, & Jacobs (2012). **Mindfulness-Based Cognitive Therapy Improves Emotional Reactivity to Social Stress: Results from a Randomized Controlled Trial.** Behaviour therapy.
- Lutz, Brefczynski-Lewis, Johnstone & Davidson (2008). **Regulation of the neural circuitry of emotion by compassion meditation: effects of meditative expertise.** PLOS One.