

What is mindfulness meditation?

- Mindfulness meditation (MM) is a practice that helps people develop **non-judgemental, compassionate attention** to experiences (**sensations, thoughts and feelings**) happening to them in the **present** moment, without ruminating over the past or future [9,3].
- Mindfulness meditation has its philosophical roots in Buddhism, but is a diverse group of **mind-body exercises** that have often been used outside of a religious framework to improve wellbeing and relieve stress
- Many healthcare practitioners have created mindfulness programs based on the **Mindfulness-Based Stress Reduction (MBSR)** program developed by Dr. Jon Kabat-Zinn at the UMass Medical Center's Stress Reduction Program [9].



Seated meditation: Children and adults can reduce stress with mindfulness practice.

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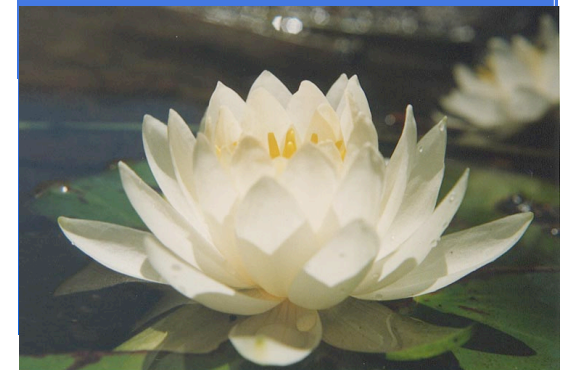
Images from:

- <http://www.soudabehmft.com/mindfulnessandstress.html>
- mindbodygreen.com
- stress-problems.com

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Mindfulness Meditation:

A Practice that Can Lower **Stress** and Improve **Health** and **Wellbeing**



How does **stress** affect my health?

- The body handles stressful experiences through multiple stress-response systems. These systems help humans **positively respond to stress** in the **short-term**—to survive, learn, and grow [1]. But, they can become overworked and overactive in response to chronic, **toxic stress**, with causes including discrimination, emotional and physical abuse, or living with a chronic illness [11]. Response systems include:
 - The Hypothalamic-Pituitary-Adrenal (**HPA axis**): responsible for the “**fight or flight**” response, which raises levels of the stress hormone **cortisol** in the blood, and suppresses **reproductive, digestive** and **immune** systems
 - **Chronically high cortisol** levels also affect the brain, decreasing the size and function of the **hippocampus**—central to learning, memory, and emotional experience
 - The **inflammatory response** (cytokine) system, which over time can contribute to high blood pressure, anxiety and depression
- Changes in these and other body systems in response to **overwhelming stress (also called allostatic overload)** have been associated with a wide range of adverse **mental and physical health conditions** [6,11].
- Some of the long-term health conditions that have been linked with acute and prolonged stress include **heart disease and heart attack, diabetes, mental illness, and cancer** [5].

How does **mindfulness meditation** affect stress and promote health?

Meditation can change the ways people experience and react to stress for the better, both physiologically (chemical indicators of stress) and subjectively (feeling stressed out!)

- Even adult brains have great potential for *plasticity*, meaning change and healing:
 - Studies have found that MM practice is associated with increased gray matter density in the **hippocampus**, and in regions of the brain associated with attention and sensory processing, counteracting stress effects [7,10].

A well-established technique for reducing stress through mindfulness is **Mindfulness-Based Stress Reduction (MBSR)**. The eight-week program involves

- Formal mindfulness training
- A mindful self-scan of the body
- Mindful yoga
- Home practice assignments
- Sitting meditation (pictured below)



- Once MBSR techniques are learned, they remain with you and can be practiced anywhere!
- MBSR and other mindfulness programs have led to improvements in self-reported psychological wellbeing, including increased awareness, acceptance, self-empowerment, self-care, compassion, and decreased distress and chronic pain [4, 3,8].

Studies have shown promising signs of linking MM to changes in biological markers of stress that lead to ill-health:

- In a Canadian study of MBSR for breast and prostate cancer patients [2], significantly decreased symptoms of stress were reported at 6 and 12 months *after* the eight-week program, which corresponded with
 - Decreased **cortisol** levels
 - Decreased levels of inflammatory **cytokines**
 - Decreased systolic **blood pressure**

To learn more about MM, and to begin a meditation practice, contact:

- UMass Medical School’s Center for Mindfulness, www.umassmed.edu/cfm, 508-856-2656
- Insight Meditation Society (Buddhist Vipassana tradition), http://www.dharma.org/ims/ss_newtom.ed.html