

# THE NERVOUS SYSTEM RESILIENCE BUILDING BENEFITS OF SLOW, MINDFUL YOGA POSTURES

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Slow, mindful yoga posture practice has health benefits (in addition to the usual exercise benefits) that can help to build resilience in the nervous system. Yoga posture practice can:

- Enhance muscular strength
  - Enhance flexibility
  - Promote and improve respiratory and cardiovascular function
- Promote recovery from and treatment of addiction
  - Reduce stress, anxiety, depression and chronic pain
  - Improve sleep
  - Enhance sense of well-being and quality of life
  - Build awareness
  - Improve function of attention networks
  - Increase interoception and proprioception and the function of the insula, anterior cingulate cortex, and sensorimotor cortex
  - Improve memory and the function of the hippocampus
  - Improve self-regulation and emotional regulation
  - Reduce reactivity of the amygdala which correlates with reduced stress response
  - Improve hemispheric communication across the corpus callosum which correlates with improved brain function



## Resources:

- Villemure, C., Čeko, M., Cotton, V. A., & Bushnell, M. C. (January 01, 2015). Neuroprotective effects of yoga practice: age-, experience-, and frequency-dependent plasticity. *Frontiers in Human Neuroscience*, 9.
- Woodyard, Catherine. (2011). *Exploring the therapeutic effects of yoga and its ability to increase quality of life*. Medknow Publications Pvt Ltd.

# THE BRAIN OPTIMIZING BENEFITS OF MEDITATION PRACTICE

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A robust body of research has emerged over the past couple of decades touting the brain optimizing benefits of meditation practice. Here are some of the ways that scientists understand meditation helps the brain:

- Reduce pain, high blood pressure, irritable bowel syndrome, ulcerative colitis, anxiety, depression, menopausal symptoms, inflammation, and insomnia
- Increase gray matter in the frontal cortex which is associated with working memory and executive function
- Activate frontoparietal attention networks
- Deactivate default mode network which is associated with reduced rumination
- Improve the function of the left hippocampus which assists in learning, cognition, memory, and emotional regulation
- Improve the function of the temporoparietal junction which is associated with perspective taking, empathy, and compassion
- Decrease amygdala reactivity which correlates with reduced emotional reactivity and a reduction in stress levels.



## Resources:

- Goleman, D., & Davidson, R. J. (2018). *Altered traits: Science reveals how meditation changes your mind, brain, and body*.
- Lazar, S. W., Kerr, C. E., Wasserman, R. H., Gray, J. R., Greve, D. N., Treadway, M. T., McGarvey, M., ... Benson, H. (November 28, 2005). Meditation experience is associated with increased cortical thickness. *Neuroreport*, 16, 17, 1893-1898.
- Hölzel, B. K., Carmody, J., Vangel, M., Congleton, C., Yerramsetti, S. M., Gard, T., & Lazar, S. W. (January 01, 2011). Mindfulness practice leads to increases in regional brain gray matter density. *Psychiatry Research: Neuroimaging*, 191, 1, 36-43.