

A guide to what recent studies have revealed about the impact that Mindfulness approaches and techniques have on our brains and bodies.

Mindfulness & the Brain

The Neuroscience of Mindfulness in Counselling

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Mindfulness Based Stress Reduction (MBSR)

This evidence based approach is also known as mindfulness or meditation therapy(Hofmann et al., 2010). Mindfulness based stress reduction(MSBR) is a treatment method that incorporates mindfulness instruction to guide clients toward developing the skills to handle presenting problems(Gotink et al., 2016). Although MSBR was originally designed to help clients manage stress, throughout the decades it has become useful in treating anxiety, anger problems, attention-deficit/hyperactivity disorder(ADHD), sleep issues, fatigue and depression(Niazi & Niazi, 2011). Tang (2015) notes that varieties of meditation can be found across many cultures and throughout the eras. He adds that during the nineteen-nineties mindfulness approaches began to be applied as potential treatments for various conditions.

Chiesa and Serretti (2009) explain that the clinical definition of mindfulness is: judgement free attention to the present, along with the experiences that come with it. This refers to the open acceptance and focused regulation of one's present consciousness, including: emotions, sensations, thoughts and body posture(Chiesa & Serretti, 2009).



What is Mindfulness-Based Stress Reduction?
5minutes



How Does Mindfulness Reduce Stress?
5minutes



Train Your Brain: Mindfulness Meditation for Anxiety, Depression,
ADD and PTSD - 6minutes

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Baum (2010) notes that MBSR is the clinical standardized version of mindfulness and it consists of interlocking components: improved control of attention, enhanced emotional regulation and better self-awareness. MBSR exercises that have been proven to promote positive outcomes include: body scanning, focusing on breathing, object meditation, walking meditation, worry and urge surfing, yoga and mindful stretching(Ackerman, 2020). One study found that people experienced improvements amongst their moods and anxiety after four sessions of mindfulness training(Zeidan et al., 2010).

MBSR also aids in the prevention of depressive symptoms recurring by helping clients to alter their own negative patterns of thought(Stahl & Goldstein, 2010). Research found that MBSR was as effective as antidepressants designed to prevent depressive relapses(Pereira, 2017). Chiesa and Serretti (2009) conducted research that compared MBSR with standard mindfulness practices which found that both reduced stress in healthy participants to equal degrees. Whilst they acknowledge that this has drawn some criticism, they also note that effectiveness of MBSR is supported by evidence and helps to empirically quantify how mindfulness impacts one's neuroscience and neurobiology.



Neurosciences Findings

Recent research has resulted in various outcomes that collectively support the claim that MBSR decreases stress levels, promotes mental and physical performance and health (Tang, 2015). Neuroimaging research results have begun to reveal which networks and areas of the brain play roles in producing the positive effects stimulated by mindfulness, and how their connections and manner or interaction is affected (Gotink, 2016). Research also suggests that mindfulness can impact the body's ability to produce chemicals associated with changing one's moods (Krishnakumar et al., 2015). The grey matter in the amygdala is the area that manages the processing of emotions, it is susceptible to stressors which cause its morphology and ability to effectively function to alter, resulting in various maladaptive outcomes such as anxiety (Kral, 2018).

Hatchard et al. (2017) note that various parts of the brain, such as the insula, superior longitudinal fasciculus, orbitofrontal cortex, brainstem and cerebellum are affected by MBSR.



The Neuroscience of Meditation, Mindfulness, and Compassion - 14 minutes



Neuroscience of Mindfulness Meditation in 4 minutes



The Science Behind Mindfulness Meditation
7 minutes

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Additionally, they refer to evidence that indicates that various areas of the brain can either shrink or grow after MBSR. For instance, research conducted by Lao (2016) found that mindfulness causes the prefrontal cortex and hippocampus to become thicker, indicating increased activity. Whereas, the stress centre in one's amygdala can become smaller(Kral, 2018). Collectively these areas are linked to problem solving, emotional control, memory, introspection and learning(Lao, 2016).

The human brain is not hardwired, circuits and neural pathways can be altered by practicing mindfulness which stimulates the development of new neurogenesis and synaptogenesis improving cognition(Kral, 2018).

The connections between the neurobiological impacts of neurotransmitters, mindfulness exercises and results from various studies show that MBSR is an effective treatment for various disorders such as stress and depression. Each of these outcomes are consistent with current clinical literature on observed outcomes post MBSR training(Hatchard et al., 2017). However, further empirical elucidation into the intricacies of the processes in which mindfulness achieves these effects is required, as whilst these studies inform where these changes occur, they do not quantify what those changes mean(Tang, 2015).



Mindfulness Based Stress Reduction in Counselling

MBSR is a standardized clinical form of meditation that involves promoting a deeper awareness of self and strengthens participants' resilience (Valley Hospital, 2015). This treatment method involves various mindfulness techniques and exercises including: sitting meditation, eating meditation, various forms of yoga and body scanning (Stahl & Goldstein, 2010). Learning how stress has a role in reactivity in healing and overall health, developing awareness through a mindful lens via various exercises, incorporating a daily ritual and applying mindfulness to stimulate a deeper awareness and connection to one's body are all things participants of MBSR therapy develop (Pereira, 2017). The awareness mindfulness technique requires viewing one's own inner thoughts and emotions, as if they belonged to another, enabling one to observe the stream of consciousness without judgement and thus becoming aware of one's own mind (Baer, 2006).

Whereas shifting from focus to awareness is one technique, pick one particular thing that flows within the consciousness stream such as a memory, feeling or image and focus solely on that (Kabat-Zinn, 2020). The breath exercise promotes mindfulness by focusing on one's breathing (Baer, 2006). Body scanning is a mindfulness application that requires one to close their eyes and guide their awareness slowly throughout the body, focusing on one aspect at a time (Pereira, 2017).



Introduction to MBSR - UMass Medical School & Center for Mindfulness - 7 minutes

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Kabat-Zinn (2020) observed that using breathing to ease areas that are sore or tight before continuing to move one's awareness to other areas can be difficult. At such times he recommends healing visualizations, like a soft ball of light melting into the area, as this can help. Object meditation involves holding an item of significance or interest and focusing all of one's senses onto it whilst being aware of what each sense is reporting, such as texture, colour, size and sounds (Scott et al., 2015).

Mindful eating is an exercise that calls for one to focus and become aware of all of one's senses whilst eating and remaining present within the moment (Baer, 2006). Taking a calm relaxing walk whilst being aware of the sensations in one's body and matching breathing to gentle pace is what is involved in the walking meditation exercise (Kabat-Zinn, 2020).

MBSR has been proven to be effective in treating a wide range of disorders beyond stress, this includes: psychosis, eating disorders, depressive relapses and borderline personality disorder (Baer, 2006). The benefits of MBSR are backed by peer reviewed studies, additionally it possesses a very low risk of adverse reactions or negative effects (Kral, 2018).



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