



COOLING BURNOUT WITH MEDITATION

Critical care clinicians are at high risk of burnout. We get it. Our work is designed for it. Studies tell us that our rates of depression and suicide are higher than for similar professions¹. But many of the factors that lead to burnout - the high stress levels, the ethical dilemmas, the high mortality rates - are often what draws us to critical care. So, when we can't change the work, is there anything we can do as individuals? Meditation is one solution that has gained a lot of recent attention. In the following discussion, I will explore what meditation is, the common types of meditation, highlight the available evidence, and describe my own personal approach.

What is meditation?

Meditation involves deliberately cultivating one's attention and awareness. It is a training for the mind just like exercise is for the body. Our attention can be on anything – these words, the sounds around us, our thoughts or feelings. Often it randomly chases the loudest or brightest thing entering our minds at any given moment. Meditation brings our attention under deliberate control. With practice, concentration improves, we can live more in the present moment, and we become more aware of how our mind actually creates our own experience.

What are the different types?

Meditation can be a religious practice or be purely secular, and is classified as either:

Concentration meditation (e.g. Mantra based, Transcendental and Jhana meditation)

One's attention focusses on a single object – such as the breath, an image, a thought, or repeated words (mantra). When one notices the mind wander, it is repeatedly brought back to the object of meditation. This results in improvements in concentration, a calmer focussed mind, and can result in intense feelings such as joyfulness and serenity.

Or

Mindfulness meditation (e.g. Vipassana, Koan or Analytic meditation)

Attention and awareness are trained towards the subjective contents of the mind, and done so in an accepting, non-judgmental way. Sometimes also called 'open monitoring', one becomes aware of the contents of one's mind and experience but doesn't become engrossed in it or 'lost in thought'. For example, when experiencing anger, one doesn't think 'I am angry', rather the emotion is seen to rise and fall away in a detached way. Mindfulness not only improves concentration, it provides insights into how we perceive reality.

Why do we need meditation?

Evolutionary psychology makes it clear that we have not been designed for happiness. The constant stream of self-referential, impulsive thoughts that drove our ancestors to improve their chances of survival and procreation, leads to a chronic state of dissatisfaction in the modern world. Critical care medicine can amplify this dissatisfaction. Our work environment includes long unsociable hours, an emphasis on cognitive mastery over emotional understanding ('IQ over EQ'), a culture of

perfectionism where inevitable mistakes are poorly tolerated, an overreliance on technology, loss of social connection, and a disconnection from nature. In short, there is little space for us to be human beings. All of this can contribute to burnout, depression, anxiety and loneliness.

How does meditation work?

Contentment and attention are skills that can be learned, not fixed personality traits. Instead of trying in vain to change an immutable environment, we can adapt by changing ourselves. Meditation allows us to create a calm space to look at our mind workings more objectively. With practice, the impulsive and haphazard thoughts that fill our minds can be calmed, and deeper urges and inclinations that drive us can be seen more clearly. With time, one learns to understand and accept these thoughts and urges, leading to personal growth and healing. Ultimately we develop deeper understanding of the world, enabling a wiser approach to living.

What is the evidence that meditation works?

Numerous meditation studies have been performed since the 1970s, but many are limited by poor methodology, the absence of appropriate controls and non-standardized meditation techniques. However, over the last 15 years, there has been a general improvement, and there are now studies that show how meditation affects the brain and how it might work clinically².

Functional neuroanatomy:

Meditation alters the pathways that underpin our conscious mind. Normally during quiet rest, a network of neuropathways called the default mode network (DMN) is active. This network, in the posterior cingulate cortex, medial prefrontal cortex and angular gyrus, is associated with day dreaming, mind wandering, and with incessant self-referential thoughts. Excessive activation of the DMN has been shown to be associated with unhappiness and discontent.

Regular meditation dampens DMN activity and leads to increased activation of connections between the amygdala and the prefrontal cortex³. In a randomized controlled trial of 8 weeks mindfulness based stress reduction, meditation resulted in increased left prefrontal cortex activation⁴. Activation of the prefrontal connections usually occurs during more task based activities, and is associated with improved cognitive control, calmness, and less impulsivity.

Recent studies suggest that some of these changes can persist even when one is not meditating and become 'permanent'. In a study of experienced meditators, deactivation of the DMN occurred at baseline (before meditation had started), as well as during the meditation. Imaging studies have also confirmed that meditation is associated with anatomical changes in the cortex, subcortical grey and white matter, brainstem and cerebellum of meditators⁵.

Attention

There is growing evidence that attention is learned, and is not fixed or a personality related phenomenon. In a controlled study looking at meditators undergoing an intensive 3 month retreat, visual discrimination, vigilance, and voluntary attention were all improved compared to controls⁶.

Emotional regulation

Compassion or 'Metta' meditations are where the attention is concentrated onto wishing well to oneself and others. There is evidence in health practitioners that practising Metta meditation can improve well-being, particularly by improving self-compassion⁷.

Clinical and psychological effects

The health effects of meditation have been studied since the 1980s. Early studies focussed on depression, anxiety and pain management, and more recently conditions such as addiction, insomnia, smoking cessation, and eating disorders. A recent systematic review of randomized controlled trials found clear benefits in the treatment of depression and anxiety, and improvements in self-reported quality of life⁸. However, the quality of some of these studies were poor.

Meditation has also been investigated as treatment of physical diseases, such as hypertension, cardiovascular issues, and inflammatory diseases⁹. Several biomarker studies suggest that meditation may cause reduced cortisol and cytokine levels, and even a reduction in telomere shortening, which is associated with reduced aging¹⁰. A recent AHA statement advised 'Overall, studies of meditation suggest a possible benefit on cardiovascular risk, although the overall quality and, in some cases, quantity of study data are modest¹¹. More research is needed before meditation can be justified purely for these reasons.

Conclusion

The above discussion is a general introduction to meditation and a review of current scientific literature. However, meditation is ultimately about understanding your own mind, and this is a very personal and subjective process. The only way to really know it is to try it yourself. Like any exercise, it is not for everyone. However, the benefits go beyond mere calming and relaxation, and have the potential to make profound changes to your brain and the way you understand your own mind and reality.

Post script: Developing a daily practice

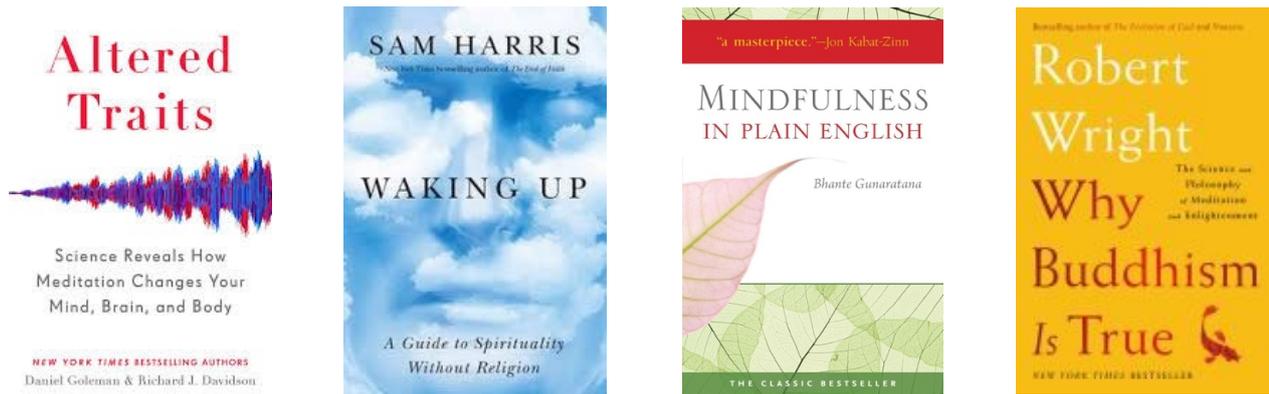
There are many ways to meditate. If you are new to it, find a good book to guide you (see recommendations below) or a meditation app. Alternatively, a mediation class can provide a more communal way to practice and expert teachers for guidance.

Over many years, I have worked out a routine that suits my life. I sit for 30 minutes in the morning. You should try different times, styles, and methods to figure out what works best for you and can be integrated into your life with the least amount of fuss.

I usually sit in a chair or cross legged on a cushion and start by taking three deep breaths. I become aware of my attention and focus it on the flow of air in and out of my nose. I then start to notice what is going on in my mind: the thoughts, the feelings and sensations that come into my experience. I see them all and try not to react to them. If my mind does get lost in thoughts, I gently bring my attention back again to my breath. If there is a loud noise, I notice it, as well as any physical tension or irritation that comes with it. I watch it all rise up and then watch it fall away again. Some days I may concentrate on a theme, other days I just sit there mindfully without a goal.

I do this every day. This practise is like a caffeine boost to my attention that lasts 24 hours, a walk in nature for my spirit, and a precious moment with family for my compassion.

Recommended books on meditation for the interested reader



- *Altered Traits* - *Daniel Coleman & Richard J Davidson*: an up-to-date review of the evidence of meditation
- *Waking Up* – *Sam Harris*: secular spirituality and the evidence for meditation
- *Mindfulness in Plain English* – *Bhante Gunaratana*: a classic introductory guide to the technique of mindfulness meditation.
- *Why Buddhism Is True* – *Robert Wright*: the relationship between Buddhism and evolutionary psychology

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