

Meditation, Yoga, Yoga Nidra, Relaxation – Research Update

There seems to be a considerable more research on yoga and meditation and relaxation techniques being published in the medical literature and other media than there used to be. Below are details of a few interesting articles which may be of interest to those with ME/CFS.

Yoga Nidra increases Heart Rate Variability (HRV)

A study performed in 2012 showed that yoga nidra significantly increases heart rate variability (HRV) providing a shift in autonomic nervous system to the parasympathetic branch making the autonomic nervous system more balanced - <http://www.ncbi.nlm.nih.gov/pubmed/22866996> (Pubmed 22866996). This effect occurs both when yoga nidra is done on its own or if it is done after a session of yoga postures. People with ME/CFS have been shown to have low heart rate variability (HRV) on tilt table testing, suggesting increased sympathetic nervous system and decreased parasympathetic nervous system activity. This means that the autonomic nervous system is out of balance. More information on this can be found on the Phoenix Rising website in an article on orthostatic intolerance (just scroll down a bit) - <http://phoenixrising.me/research-2/the-perils-of-standing-orthostatic-intolerance-and-chronic-fatigue-syndrome-mecfs-i-the-evidence> . Yoga nidra is a deep form of relaxation and is popular with some people with ME/CFS of all severity levels as an illness management technique. There is no movement involved so it is suitable for severely and very severely affected sufferers of ME/CFS who are too ill to do other types of yoga and can be done lying in bed.

How meditation affects your health and wellbeing

There is an interesting article entitled Taming the Monkey Mind – How Meditation Affects Your Health and Wellbeing on the Mercola website dated 20th February 2014 - <http://articles.mercola.com/sites/articles/archive/2014/02/20/meditation-relaxation-response.aspx> . It explains some of the more recent research done on genetic changes caused by meditation and other methods of producing relaxation. Incredibly, just doing 20 minutes a day of guided meditation for a few weeks produces significant favourable changes in gene expression especially in relation to things like inflammation, energy production (ATP), insulin, aging and antioxidant production.

The Relaxation Response induces genomic changes in energy metabolism and inflammatory pathways.

A study was published in 2013 by the Benson-Henry Institute for Mind Body Medicine on the Relaxation Response (RR)(e.g. relaxation caused by yoga, guided imagery, muscle relaxation, breathing exercises, qigong, tai chi, various types of mediation e.g. mindfulness and transcendental meditation) and how it may change genetic expression. Relaxation techniques are popular among those with ME/CFS for managing their illness. The Relaxation Response (RR) enhanced the expression of genes associated with energy

metabolism (ATP) and mitochondrial function and reduced the expression of genes linked to the inflammatory response and stress related pathways. Very favourable results were found in those doing guided meditation for 20 minutes a day for just 8 weeks and even better results in those doing it long term. Details can be found at <http://www.ncbi.nlm.nih.gov/pubmed/?term=23650531> (Pubmed 23650531). An earlier study by the same organisation showed that the Relaxation Response (RR) reduced the effects of stress by promoting a greater capacity to respond to oxidative stress and cellular damage by changing gene expression - <http://www.ncbi.nlm.nih.gov/pubmed/18596974> (Pubmed 18596974).

This may be of interest as various studies have shown mitochondrial dysfunction affecting the production of energy and ATP in people with ME/CFS. For example, refer to Dr Sarah Myhill's document on mitochondrial failure - [http://drmyhill.co.uk/wiki/CFS -
The Central Cause: Mitochondrial Failure](http://drmyhill.co.uk/wiki/CFS_-_The_Central_Cause:_Mitochondrial_Failure) . Studies have also shown inflammation and oxidative stress are associated with ME/CFS and some of these are detailed on the ME Research UK website - <http://www.mereseach.org.uk> .

Mindfulness Meditation changes pro-inflammatory gene expression

A study published in February 2014 has shown that 8 hours of mindfulness meditation produced genetic and molecular changes in a favourable manner. Changes included the reduction of pro-inflammatory genes, which in turn correlated with faster recovery from a stressful situation. The study is described on the ProHealth website - <http://www.prohealth.com/library/showarticle.cfm?libid=18531> (Pubmed 24485481). Mindfulness Meditation is used as an illness management technique by some people with ME/CFS. Studies have shown inflammation is associated with ME/CFS.

Yoga reduces homocysteine levels

A study published in January 2013 has shown that homocysteine levels were considerably reduced in women after 8 weeks of doing yoga - <http://www.ncbi.nlm.nih.gov/pubmed/22963270> (Pubmed 22963270). Although this study was looking at homocysteine levels in women with dysmenorrhea (painful periods), homocysteine levels were also measured in healthy women acting as controls. Yoga reduced the homocysteine levels in these controls by nearly half (46.46%). This may be of interest to those with ME/CFS as some people with ME/CFS have raised homocysteine levels – for example refer to an article on glutathione depletion and methylation on the Phoenix Rising website (scroll down a bit) - <http://phoenixrising.me/research-2/glutathione-depletion-methylation-blockades-in-chronic-fatigue-syndrome/glutathione-depletion-methylation-cycle-block-a-hypothesis-for-the-pathogenesis-of-chronic-fatigue-syndrome-by-richard-a-van-konynenbury-ph-d> .