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Case Study - Change Your Mind, Change Your Body?

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A recent study by researchers at the Benson-Henry Institute for Mind Body Medicine at Harvard's Mass General looked at physiological changes brought on by the "relaxation response" (RR). The RR has been studied in detail for over twenty years, and is basically the opposite of the stress response. A wide variety of modalities can elicit the RR, including many forms of meditation, prayer, yoga, Qi Gong and Tai Chi, paced respiration, biofeedback and Guided Imagery. (Presumably aspects of interactive/integrative imagery can do this also, but since different emotions may at times be engaged, the experience may not always be characterized as "relaxing".) In this study, 19 healthy long time RR practitioners (group M), were compared to 19 healthy controls. This control group was evaluated initially (called group N1) and then after they had undergone an 8 week RR course (called group N2). Blood was drawn from each group to perform microarray analysis of genetic transcriptional profiles, basically looking to see what was different in cellular metabolism and function. The control group N1 had a significant change in genetic expression between time N1 and N2 (before and after their training), and these same changes were importantly also found in the M group ($p < 10^{-10}$).

Also, the more time the M group spent in their RR practice, the greater were these changes. Certain genes were unregulated and certain ones downregulated, but overall showing a pattern of positive response to cellular oxidative stress – meaning an increased ability to overcome cellular damage and decrease inflammation. A small replication study was then done with 6 M, 5 N1, and 5 N2 subjects, with similar findings ($p < 10^{-5}$).

Since other studies have shown that stress can cause significant changes on the cellular level, including shortened telomeres (shorted ends of the DNA leading to early cell death), and increased cytokines/chemokines (compounds related to inflammation), it seems logical that the opposite is true – that stress reduction by means of eliciting the RR may improve cellular health.

The original article, funded by the NIH and CDC, can be downloaded free at:
<http://www.pubmedcentral.nih.gov/picrender.fcgi?artid=2432467&blobtype=pdf>

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