Differential Gene Expression after Emotional Freedom Techniques (EFT) Treatment: A Novel Pilot Protocol for Salivary mRNA Assessment

Citation: Maharaj, M. E. (2016). Differential gene expression after Emotional Freedom Techniques (EFT) treatment: A novel pilot protocol for salivary mRNA assessment. Energy Psychology: Theory, Research, and Treatment, 8(1), 17–32. doi:10.9769/EPJ.2016.8.1.MM Link Here to journal to obtain original paper.

Abstract: Biopsychology is a rapidly expanding field of study since the completion of the Human Genome Project in 2003. There is little data measuring the effect of psychotherapeutic interventions on gene expression, due to the technical, logistical, and financial requirements of analysis. Being able to measure easily the effects of therapeutic experiences can validate the benefits of intervention. In order to test the feasibility of gene expression testing in a private practice setting, this study compared messenger ribonucleic acid (mRNA) and gene expression before and after psychotherapy and a control condition. With four non-clinical adult participants, it piloted a novel methodology using saliva stored at room temperature. A preliminary test of the interleukin- 8 (IL8) gene in both blood and saliva was performed in order to determine equivalency in the two biofluids; convergent validity was found. Following saliva test validation, a broad, genome-wide analysis was performed to detect differential gene expression in samples collected before and after treatment with Emotional Freedom Techniques (EFT), an evidence-based practice combining acupressure and cognitive exposure. The control treatment was non-therapeutic social interaction. To establish a baseline, participants received the control first, followed a week later by EFT. Analysis of samples was performed at three time points: immediately before treatment, immediately after, and 24 hours later. Differential expression between EFT and control was found in numerous genes implicated in overall health ($p < 0.05$). Further, the differentially expressed genes in this study were shown to be linked to immunity, pro or anti-inflammatory, as well as neuronal processes in the brain. Ten of the 72 differentially expressed genes are identified as promising targets for downstream research. The data show promise for the future use of salivary samples to determine the effects of therapy; this pilot protocol also illustrated the challenges and limitations of novel technologies employed in biopsychology.

Craig's Comments: This is an incredibly important newly published study and I want to express gratitude for the author for advancing the exploration of how EFT affects our physiology and genetic expression with objective documented evidence. This study explored by Maharaj done in

conjunction with Akamai University in Hilo, HI., tested the feasibility of using a new salivary mRNA testing method for measuring a broad genome-wide analysis to detect changes in gene expression after a single 50 minute EFT session. Samples were collected immediately before, immediately after, 4 hours after and 24 hours after the EFT session.

The results revealed that immediately after the session, 72 genes were found to be differentially expressed and 24 hours after EFT 25 genes were found to be differentially expressed. It is worthy to note that of the genes whose function changed after tapping, many of them are shown to be linked to immunity (i.e. cancer tumor suppression, anti-viral properties), and others genes altered in their expression effect physiology (i.e. pro and anti-inflammatory processes, insulin resistance, hormonal expression and neural processes in the brain and body (i.e. involving memory, learning through enhancing synaptic activity, increased DNA methylation, encoding for epigenetic transctiptional plasticity and recovery after DNA damage), and psycho-emotional stress regulation (i.e. mood stabilization).

This study, in conjunction with the recent (in press) study by Church also documenting altered gene expression after EFT in a group of veterans is a critical step in documenting how EFT may be having a direct affect on a person's physiology, neurophysiology, hormonal status and immune response.

The limitations of the study need be mentioned. The sample size was small, with only four participants fully participation. There was no direct comparison of an active control group. Due to the newer testing methods, saliva sample degradation was an issue and a number samples needed to be discarded.

An interesting note by the author explores the potential for individualized epigenetic treatment plans, based on the needs of an individual. That such salivary testing methods may help determine, when sufficient data of treatment styles is researched, of who might respond best to EFT and yoga or CBT and mindfulness meditation for example.

Comments