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6<sup>th</sup> International Conference on

# **Brain Disorders and Therapeutics**

September 13-15, 2018 | Copenhagen, Denmark



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## Neurophysiological and psychometric data results from executive health coaching and biotechnology applications

Neurophysiological and cognitive/work performance data generated from a population of C-Suite executives participating in a health coaching program is analysed. The validity of direct current (DC) potential and heart rate variability (HRV) is assessed and compared to leadership and socio- psychometric data. Conclusions regarding resilient health performance and psychological toughness were compared between four groups. Application towards controlling symptoms of burn-out and stress related pathology is presented along with the impact the study had on improved working memory, leadership and socio-cognitive data. The assessment of neurophysiological resilience and psychological adaptation to occupational stress is suggested but would require further validation. Double blind studies are suggested in order to validate a proactive health-care tool for the health insurance industry.

**Background and Objectives:** According to Hassard et al. (2014) and The European Commission (2010), over 55 million Europeans reported that their health and well-being is directly affected by exposure to work related stress. Meta- analysis confirms that work stress is the most serious health problem by a margin of over 14 %. Executive health is directly linked to chronic work related stress, as illustrated by the collapse of the CEO of the automobile company BMW during a live product launch. The objective of the study was to assess the validity and relevance of the application of neurophysiological technology within an executive health coaching process. 40 volunteer C- Suite executives were tested prior to, during, and post intervention. The study generated and correlated quantitative and qualitative data o neurophysiological health, cognitive/work performance, and interpersonal/social performance. The quantitative measures included cortisol1 levels of each subject along with neurological measurement of their brains DC Potential2, HRV3 and resilience levels. All the participants completed the qualitative tests: DS147 ; POMS5 and the SF364 in order to assess self-reported health, resilience, mood and social affect levels. All subjects colleagues completed a 360 degree feedback report6

**Design and Methods:** Subjects in Group A completed the health coaching process and employed the use of the biotechnology. Group B did not apply the technology, but subjects engaged in the health coaching process. Group C applied the technology, but had no health coaching. Group D had no access to health coaching or the biotechnology and functioned as the control group. Post study data was mined off the quantitative and qualitative tests and were compared for each group.

**Results:** Results varied between groups but norms were verified. On analysing the DC Potential and HRV data the neuro-cardiac results show that Omegawave and RP index correlated positively and significantly with psychometric data. All subjects averaged had a mean salivary cortisol concentration of 15.5 +/- 0.8 nmol/L (range, 10.2-27.3) at 0800 h and 3.9 +/- 0.2 nmol/L (range, 2.2-4.1) at 2000 h (n = 20). The mean value 60 min after administration in normal subjects was 52.2 +/- 2.2 nmol/L (range, 23.5-99.4), and it was 1.4 +/- 1.1 nmol/L (range, 1.6-3) at 0800 h in subjects. Subjects with high levels of stress presented with adrenal insufficiency (n = 21) where the mean salivary cortisol level was 7.5 +/- 0.4 nmol/L (range, 1.9-21.8).

**Discussion:** Cortisol levels of each group fluctuated with Groups A and B showing highest levels of sustained improvement (over 5 months post coaching intervention). All subjects within Group A and 4 subjects in B improved significantly to a mean salivary

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cortisol concentration of 15.5 + -0.8 nmol/L (range, 10.2 - 27.3) at 0800 at 2000 h (n = 20) by the end of the study. Improvement in the DC Potential of Group A was also significant. Improvement in HRV was similar for Groups A and B, with Group A sustaining the benefits post-coaching intervention. Analysis of qualitative data (360 feedback from four work colleagues) mirrored these shifts in HRV. Positive correlations with POMS, DS14, 360 and SF36 scores were found from the coaching for Group A and B. The Vitality scale of SF36 correlated with Fatigue factor, Vigor factor psychometric scores for Group A and to some degree for Group B. The total score of POMS, DS14, Vigor and Vitality showed benefits for Group A and to some degree for Group B but not for Groups C or D. The 360 degree feedback from four work colleagues per subject presented marked social, cognitive and behavioural benefit for Group A and B, with A showing most sustained benefit. This sustained benefit was associated with consistent data tracking of their neurophysiological data. Reduction in hypertension, insomnia, migraine, anxiety, rumination, fatigue and work related leadership behaviours in groups A and B but not in C and D were observed. Subjects in Group A, who maintained application of the technology, sustained the benefits from the health coaching. The results suggest that cortisol, DC Potential and HRV are potentially valuable metrics to include in executive health coaching interventions, and that a self-care model is appropriate to include for improving cognitive performance. The metrics may also be relevant to include in assessments made for the purposes of health insurance. Results require validation through double-blind studies.

#### **Biography**

Justin James Kennedy is a Brain Coach and a globally recognized Professor of Neuroscience, Executive Coach and Leadership Specialist. With over 20 years of C-Suite executive coaching experience globally in the USA, UK and South Africa, he translates his neuroscience research into practical business skills. His specialities include: coaching on performance leadership to deliver measurable business results; coaching on the business vision, brain management and corporate strategy; advising professionals on how to optimize systemic change and; improving executive brain functions to enhance mental focus, self and team performance. His first book "Brain Triggers" is co-authored by the world's #1 coach, Dr. Marshall Goldsmith. He has also published innumerable corporate studies that demonstrate how to improve and sustain executive performance. In 2014, he delivered a TED talk on practical ways to control their brain to perform at peak and even increase IQ and memory.

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