

Kharya C, Gupta V, Deepak KK, Sagar R, Upadhyav A, Kochupillai V, Anand S. (2014). Effect of controlled breathing exercises on the psychological status and the cardiac autonomic tone: Sudarshan Kriya and Prana-Yoga. *Indian J Physiol Pharmacol.* 2014 Jul-Sep;58(3):211-21.

**OBJECTIVE:**

The objective of the study was to observe the effect of controlled breathing exercises including Sudarshan Kriya (SK) and Prana-Yoga (PY) on the psycho-physiological status.

**METHODS:**

The study group included 60 healthy volunteers (M:30, F:30) in the age group of 18 to 30 years ( $21.3 \pm 3.2$  yrs), randomly divided into three groups of 20 subjects each--(1) The SK group (2) the PY group and the (3) Control group. The psycho-physiological data was collected at the following four time interventions: Baseline, 6th, 60th and the 150th day. Psychological assessment was done using questionnaires and for the autonomic tone quantification Heart Rate Variability (HRV) analysis was done using the standard lead II electrocardiogram recordings. In a post-hoc analysis each group was further sub divided into the following two patterns, based on the baseline values of normalized Low Frequency (LF) power (cutoff 64 ms<sup>2</sup>): (i) Pattern A-Subjects with low level LF power, and (ii) Pattern B- subjects with high level LF power.

**RESULTS:**

The stress management skills have shown significant increase in SK group but not in PY and Control group. Subjects of SK, PY, and control group showed significant increase in LF value and LF:HF ratio for pattern A and significant decrease for pattern B. Plotted LF value for pattern A & B in SK and PY practitioners showed convergence, coming to a mean value over the period of 150 days. The LF:HF ratio curve plotted over time for pattern A & B showed convergence in SK group only. No such convergence in LF value & LF/HF ratio for pattern A & B was seen in control group.

**CONCLUSION:**

In conclusion, Sudarshan Kriya positively modifies stress coping behavior and initiates appropriate balance in cardiac autonomic tone.