

Comments on “Alternate Nostril Breathing at Different Rates and Its Influence on Heart Rate Variability in Non Practitioners of Yoga”

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Dear Sir,

We have read with interest the article entitled “Alternate nostril breathing at different rates and its influence on heart rate variability in non-practitioners of yoga” by Subramanian et al., published in your esteemed journal [1]. We would like to congratulate the authors for the attempt to understand the effects of Alternate Nostril Breathing (ANB) on Heart Rate Variability (HRV). However, there are a number of errors in the presented manuscript that deserve to be corrected.

In the introduction section, the authors have stated that the effects of ANB from the previous studies show contradicting results. Conversely, not a single reference that they have cited contradicts the other. All the studies reported parasympathetic dominance following ANB [2–5]. Moreover, the authors cite the studies having short term and long term effect of ANB, in which they refer to Upadhyay et al., as measuring the short-term effects of ANB on HRV [4]. Interestingly, the quoted study observed the Long-term effects of ANB. Therefore, the statements made by Subramanian et al., are misleading. In the discussion section too, the authors use the same study inappropriately to support their comments.

In the discussion section, the authors also state that Raghuraj & Telles observed “a predominant sympathetic influence on the heart following ANB.” However, the stated study reported a significant decrease in systolic and diastolic blood pressure, which is indicative of a parasympathetic shift of the autonomic activity [3]. The HRV analysis from the same study shows a non-significant increase in LF and LF/HF ratio. Therefore, the interpretation drawn using the paper of sympathetic arousal following ANB is wrong.

There were also certain methodological issues observed in the study. The authors do not report the male/female ratio in the sample. It is important to understand male/female ratio as female subjects show differential autonomic activity in different phases of menstrual cycles [6]. The authors also have not specified how much of the baseline ECG recording, which was done for 5-10 min, was used for HRV analysis.

The results section indicates the baseline value of Low Frequency (LF)/High Frequency (HF) ratio as 2.97 ± 1.59 , but the Task Force recommendations on HRV indicate the normal values to be between 1.5- 2.0 [7]. The author’s observation of LF/HF ratio may indicate that the subjects had sympathetic arousal even at baseline, which may have exuberated due to the novelty of the practice of ANB at different rates of breathing (the participants were trained only for 5 min). The baseline data of LFnu and HFnu presented by Subramanian et al., also does not correlate with the Indian normative data, published in a recent study [8]. Considering multiple errors in the methodology and reporting, we express serious concern about the replicability of the results of the study.

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FINANCIAL OR OTHER COMPETING INTERESTS: None.

Date of Submission: **Mar 21, 2016**
Date of Peer Review: **May 03, 2016**
Date of Acceptance: **May 03, 2016**
Date of Publishing: **Jul 01, 2016**