

### **P3-30 Respiratory function in Sri Lankan long-term meditators**

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#### **Introduction**

Evidence on the benefit of meditation on respiratory function would be invaluable in developing meditation interventions for those with compromised respiratory function. There is paucity of data regarding respiratory function in Sri Lankan meditators. This study aimed to describe respiratory function parameters in healthy long-term meditators (LTMs).

#### **Methods**

Healthy, skilled LTMs (n=20) practicing Buddhist meditation consistently >3 years, selected through a validated intake interview questionnaire, were included in this cross-sectional, comparative study. Eighteen age-sex matched healthy non-meditators were recruited as controls using purposive sampling. Smokers, pregnant/ breast feeding women, individuals engaged in extensive sports were excluded.

Resting RR was calculated using respiratory signals recorded by a respiratory belt transducer (AD Instrument, Australia) in the supine position, following 30 minutes rest. Spirometry parameters: FEV<sub>1</sub>/FVC, FVC, PEF, MEF<sub>25</sub>, 50, 75, vital capacity and tidal volume were recorded using a Fitmate-Med PRO cardiopulmonary assessor (Cosmed, Rome, Italy).

Data was analyzed using SPSS-23 statistical software. Between group comparisons of respiratory function parameters were evaluated using Independent sample t-test and Mann-Whitney U test, while associations were evaluated with Pearson and Spearman correlation.

#### **Results**

The LTMs (8/20 male; mean (SD) age 46.8 (7.79) years; height 1.64 (0.93) meters; BMI 23.56 (2.35) kgm<sup>-2</sup>) and the controls (7/18 male; mean (SD) age 46.11 (7.13) years; height 1.62 (0.10) meters; BMI 24.18 (3.89) kgm<sup>-2</sup>) were comparable. LTMs had a mean (SD) 6.69 (8.13) years of total life-time, and 5 (6.13) years uninterrupted, continuous meditation practice, with 98.21 (327.65) days of retreat participation experience. Self-reported mean (SD) length of a meditation session per day was 26.71 (27.78) minutes. Resting RR was significantly lower

(mean  $\pm$ SD; 13.95  $\pm$ 2.16 vs. 17.8  $\pm$ 1.61 beats.min<sup>-1</sup>; p <0.001), and PEFr (median (IQR); 8.89 (4.37) vs. 7.54 (3.2) liters per second; p <0.05) was significantly higher in LTMs compared to controls. LTMs had higher FVC, FEV<sub>1</sub>, MEF 75, 50, 25, FEF 25-75 and vital capacity compared to the controls (p >0.05). The resting RR of LTMs showed significant negative correlation with uninterrupted, continuous meditation practice in years (r= -0.446, p=0.049), retreat participation in days (r= -0.451, p= 0.046) and average length of a meditation session per day (r= -0.689, p= 0.001).

### **Conclusion**

Long-term meditators appear to have better respiratory function than non-meditators. A slower respiratory rate is seen in those who have greater uninterrupted, continuous meditation practice and retreat participation experience. These findings are to be validated in a larger sample.

**Key words:** Long-term meditation, respiratory rate, pulmonary function

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