

# Impact of Mudra Practice on Metabolic, Renal, Cardiac and Pulmonary Health: A Randomized Controlled Study

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## Abstract

**Background:** Mudras, traditional hand gestures originating from ancient Indian practices, are believed to influence various physiological and psychological states. This study explores the effects of specific mudras on blood sugar levels, blood urea nitrogen (BUN), creatinine, electrocardiogram (ECG) patterns, and pulmonary function tests (PFTs).

**Methods:** A controlled experimental design was employed, involving 20 participants divided into an experimental group performing selected mudras. Over a period of 2 weeks, participants in the experimental group practiced mudras for 30 minutes daily. Blood samples and ECG readings were collected at baseline and at the end of the study to measure changes in blood sugar, BUN, creatinine levels, and cardiac function. Pulmonary function was assessed using spirometry to measure parameters such as forced vital capacity (FVC) and forced expiratory volume in one second (FEV1).

**Result:** Post-intervention results suggest significant improvements in pulmonary function, such as a significant change in FVC. The mean and standard deviation values for pre-intervention FVC are  $2.50 \pm .607$  and post-intervention FVC is  $4.15 \pm .587$ , and the p value is less than 0.05. Peak expiratory flow rate PEFR shows a significant change; the mean and standard deviation for pre-intervention PEFR values are  $4.05 \pm 1.276$  and post-intervention PEFR values are  $5.70 \pm .801$ , and the p value is less than 0.05. There is also a significant change in pre- and post-intervention blood glucose test levels; the mean and standard deviation in pre-intervention blood glucose levels are  $99.20 \pm 10.904$  and post-intervention blood glucose levels are  $92.55 \pm 10.851$ , and the p value is less than 0.05. The mean and standard deviation of pre-intervention heart rate values are  $80.85 \pm 9.241$  and post-intervention values are  $73.50 \pm 7.722$ , and the p value is less than 0.05, which shows a statistically significant value where heart rate reduces after practicing mudras due to parasympathetic activity, indicating enhanced cardiac health.

**Conclusion:** These findings propose that incorporating mudras into the daily routine may offer a complementary approach to managing metabolic, renal, and cardiac health, along with improving respiratory function.