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The Impact of Pranayama on Pulmonary Function in Healthy Adults: A Narrative Review

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ABSTRACT

Pranayama is a Sanskrit word formed by the conjunction of two words, namely “prana,” meaning breath of life/vital energy, and “ayama,” meaning expansion/regulation/control. It is the yogic art of breathing, has gained attention for its potential benefits on respiratory health. Evaluation of the effects of different Pranayama techniques on pulmonary function metrics, such as Forced Vital Capacity (FVC), Forced Expiratory Volume in one second (FEV_1), and Peak Expiratory Flow Rate (PEFR), is the goal of this systematic study. A systematic search was conducted using PubMed and Google Scholar databases covering studies published between 2015 to 2024 focusing on randomised controlled trials and observational studies involving healthy adults practicing Pranayama.Keywords used for the search included “Pranayama,” “Pulmonary function,” “healthy adults” employing Boolean query.Inclusion criteria involved studies measuring pulmonary function parameters before and after the training of pranayams. Reviews, book chapters, and articles in other language were excluded from review. “A total of” 13935 articles were extracted from both databases and after duplicate deletion, 13312 articles were left for screening. On the basis of titles and abstracts, 13299 articles were excluded. Remaining 13 full text articles were assessed for eligibility, out of which 4 studies were included. Duration of pranayama varied from 4 to 12 weeks and all studies evaluated pulmonary function as seen on FVC, FEV1, ratio between FEV1 and FVC (FEV1/FVC), PEFR after techniques/ pranayama like Om chanting, nostril breathing,Pranav, Nadi Shuddhi, Kapalabhati, and Bhastrik. Studies demonstrated a significant effect on FVC, FEV1, FEV1/FVC and PEFR. However, the level of improvement was influenced by differences in practice frequency and duration. In conclusion, Pranayama, appears to significantly enhance pulmonary function in healthy adults, likely due to improvements in respiratory muscle strength and lung capacity.

Keywords: Healthy adults, Forced vital capacity, Lung capacity, Peak expiratory flow rate