

Carter, K.S., Carter, R. 3rd. (2016). Breath-based meditation: A mechanism to restore the physiological and cognitive reserves for optimal human performance. World J Clin Cases 4(4):99-102.

Stress can be associated with many physiological changes resulting in significant decrements in human performance. Due to growing interests in alternative and complementary medicine by Westerners, many of the traditions and holistic yogic breathing practices today are being utilized as a measure for healthier lifestyles. These state-of-the-art practices can have a significant impact on common mental health conditions such as depression and generalized anxiety disorder. However, the potential of yogic breathing on optimizing human performance and overall well-being is not well known. Breathing techniques such as alternate nostril, Sudarshan Kriya and bhasrika utilizes rhythmic breathing to guide practitioners into a deep meditative state of relaxation and promote self-awareness. Furthermore, yogic breathing is physiologically stimulating and can be described as a natural "technological" solution to optimize human performance which can be categorized into: (1) cognitive function (i.e., mind, vigilance); and (2) physical performance (i.e., cardiorespiratory, metabolism, exercise, whole body). Based on previous studies, we postulate that daily practice of breathing meditation techniques play a significant role in preserving the compensatory mechanisms available to sustain physiological function. This preservation of physiological function may help to offset the time associated with reaching a threshold for clinical expression of chronic state (i.e., hypertension, depression, dementia) or acute state (i.e., massive hemorrhage, panic attack) of medical conditions. However, additional rigorous biomedical research is needed to evaluate the physiological mechanisms of various forms of meditation (i.e., breath-based, mantra, mindfulness) on human performance. These efforts will help to define how compensatory reserve mechanisms of cardiovascular and immune systems are modulated by breath-based meditation. While it has been suggested that breath-based meditation is easier for beginning practitioners when compared to other forms of meditation more research is needed to elucidate these observations. A breath-based meditation sequence such as Sudarshan Kriya has the potential to help develop an individual's self-awareness and support better integration of the brain (i.e., mind) with other organ systems (i.e., body) for enhanced human performance.