The Benefits of Yoga

Yoga has become an extremely popular form of physical activity in the United States over the past decade and has even generated enough interest to support studios that focus on a particular form of yoga or a variety of activity-related disciplines. There is no questioning the many benefits of yoga which include reduced stress, reduced risk of lower back pain, and improvements in flexibility among both fit and unfit populations. In sedentary populations and untrained populations, studies have indicated some improvements in strength and mild improvements in cardiovascular conditioning. However it is important to note that although these benefits certainly can contribute to an improved quality of life, using yoga as one’s only form of exercise may leave some physical deficiencies.

From a postural standpoint, yoga seems to improve an individual’s ability to stabilize their spine and pelvis leading to a reduced risk of low back pain. In a study published in the *Annals of Internal Medicine*, 12 weeks of yoga demonstrated some added benefit over traditional exercise and significant improvement over self care help books for low back pain symptoms. Yoga seems to be at least equal and possibly superior to traditional exercise at reducing perceived stress. It is suggested by a growing body of evidence that yoga benefits physical and mental health via down-regulation of the hypothalamic-pituitary-adrenal (HPA) axis and the sympathetic nervous system (SNS). A review of literature which analyzed studies comparing the effects of yoga and exercise seem to indicate that, in both healthy and diseased populations, yoga may be as effective as or better than exercise at improving a variety of health-related measures. Although more research is necessary to discern the distinctions between exercise and yoga and the different types of yoga on the SNS/HPA axis, it is evident both can be used to improve measures of mental health.

One caveat to these benefits is that in all the studies reviewed, yoga interventions appeared to be equal or superior to exercise in nearly every outcome measured except those involving physical fitness. Granted there are different forms of yoga including ashtanga and power yoga which may be more challenging, but research has consistently found yoga to be ineffective at improving strength and cardiovascular fitness in healthy or trained individuals. Clinical trials have demonstrated the metabolic costs of yoga to equate to walking at a speed of 3 miles per hour. In a study published in the *Journal of Strength and Conditioning Research*, investigators measured mean absolute oxygen consumption, relative oxygen consumption, percentage maximal oxygen consumption, metabolic equivalents (METs), energy expenditure, HR, and percentage maximal heart rate during a 30 minute training session using
Hatha yoga. Average oxygen requirements equaled 2.17 METs, caloric expenditure equaled 2.23 kcal*min\(^{-1}\), and training heart rates averaged 56.89%, respectively. When compared to walking at 3.5 mph Hatha yoga required 54% lower oxygen, 53% lower METs, 53% lower kcal*min\(^{-1}\), and 21% lower HR. This information was supported by a study published in the *BMC Complimentary and Alternative Medicine* where subjects were asked to engage in three different treatments; sitting in a chair, participating in video instructed yoga and walking on a treadmill at 3.2 and 4.8 kilometers per hour. The results demonstrated a mean value across the entire yoga session for caloric expenditure (3.2 kcal/min), METs (2.5), and percent maximal heart rate (49.4%). When compared to walking at 3.2 kpm the numbers were very closely related at 0.979, 0.973, and 0.865, respectively. Researchers concluded that Hatha yoga does not meet recommendations for levels of physical activity for improving or maintaining health or cardiovascular fitness. The intensity of Hatha yoga may be too low to provide a training stimulus for improving cardiovascular fitness, although previous research suggests that Hatha yoga is an acceptable form of physical activity for enhancing flexibility and improving some levels of muscular fitness in sedentary populations.

Although critics of yoga suggest the low metabolic costs have little benefit for cardiovascular health, muscular strength and weight control, studies suggest that it is a plausible activity for those looking to maintain health. In a study published in *Alternative Therapies in Health and Medicine*, data collected from the Vitamin and Lifestyle (VITAL) cohort study between 2000 and 2002 found yoga to be a viable mechanism to attenuate weight gain in individuals over 45. Individuals who engaged in Yoga for four or more years experienced a 3.1 pound lower weight gain among normal weight (BMI < 25) participants (9.5 lbs versus 12.6 lbs) compared with individuals who did not participate in yoga. This value increased to an 18.5 pound lower weight gain among overweight participants who engaged in yoga compared to their sedentary counterparts. Therefore it can be concluded that although yoga may not have a high metabolic effect compared to traditional exercise, it certainly is a viable part of health related training consistent with daily physical activities like walking. For individuals who do not like exercise (>60% intensity) yoga is a viable option to maintain health and slow weight gain. Additionally, due to the benefits on mental health, stress reduction, posture and flexibility, yoga can serve as a positive adjunct to aerobic exercise and weight training in fit populations.