



Advantages of Yoga for Sport



Nagarathna R, Sandhya Kumar and Alex Hankey*

Yoga and Physical Science, SVYASA, India

***Corresponding author:** Alex Hankey, PhD, Distinguished Professor, Yoga and Physical Science, SVYASA, Eknath Bhavan, 19 Gavipuram Circle, Bangalore 560019, Karnataka, India

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Introduction

Currently, Yoga enjoys widespread professional use for many purposes, particularly for its medical applications. Medical applications of meditation have been explored since 1970 [1,2], following successful research on Transcendental Meditation (TM) at UCLA and the Harvard University Medical School, and found most effective. Yoga Medicine was founded in Bangalore in 1985, with applications to asthma [3,4], and has since been applied to many medical conditions, e.g. [5-7], including many of interest to sports science [8-10]. Here we discuss Yoga's potential applications to physical fitness, injury prevention and stress reduction.

To date, Yoga's applications to professional sports, and the sports medicine on which they depend has been limited, possibly because coaches regard physical fitness often regard as the sole criterion of interest. On seeing a picture of the founder of TM, Maharishi Mahesh Yogi, the famous coach of the Green Bay Packers, Vince Lombardi, could only respond with the question, "Is he fit?" There is thus a relative dearth of papers on applications of Yoga and associated practices to sports medicine, although famous professional shave privately expressed great satisfaction with results of their TM practice: 1975 Wimbledon Champion Arthur Ashe; top Golfer and successful 2009-2010 European Ryder Cup Captain, Colin Montgomerie; and the supreme 1965-1976 New York Jets Quarterback, Joe Namath.

Fitness

To understand the influence of Yoga on physical fitness, distinction must be made between the gross breath, and what Yoga and the other Vedic sciences refer to as the subtle breath, Prana. The subtle breath is said to enliven the whole quality of a person's energisation and feeling of energy. According to Yoga theory [11], if the subtle breath is strong then the power yielded by the gross breath is greater. That was certainly the experience of the third author, who led and captained university teams at three different sports, playing against or with world champions at all of them. Addition of pranayama (enlivenment of prana) practice to his training when captaining the MIT graduate squash team led to far higher levels of fitness and endurance resulting from the same effort in additional training.

Prevention of Injuries

An unexplored field of research, but one with great possibilities, is the potential reduction of musculoskeletal injuries from the practice of Yoga. Yoga alters muscle tone in ways remaining entirely un-investigated, even by research in sports science. This is very sad, since the basic protocols of practice of Yoga as an as are very likely to produce great improvements. Standard instructions in most authentic systems of Yoga practice include directions: a. not to strain, not to overstretch; b. to be aware of the calming effect on the breath and breathing pattern when holding the position; c. to come out of a Yogasana position with as much care, and paying as much attention, as when going into it; and d. to repeat the posture three or more times, slowly.

Subjectively, such a sequence greatly improves the feeling of the body; as if the muscles are better toned, with more balance between agonists and antagonists, and therefore less likely to sustain injury. Yet this topic of research is entirely unexplored. The very least could be pilot studies of short Yoga practice, 10-15mins, prior to professional sports activity to prevent injury – India is ideally situated to conduct such investigations, with ongoing Yoga programs amongst military and astronauts, and interest shown at its Training and Assessment Center for professional athletes, including Olympic athletes. Some studies have reported injuries sustained from Yoga practice [12], particularly lower back injuries [13], but this is basically due to the style of Yoga practice, often Iyengar Yoga, where excessive strain is frequently placed on practitioners' physiologies, as is well known. In contrast gentle systems of Yoga have been shown to remove lower back pain [14].

Removing Stress

A third field of application of Yoga in sports science is to stress reduction. Here distinction is to be made between the healthy challenge of eustress, as Hans Selye termed it [15], and the kind of distress that is emotionally draining. The value of challenge is that it heightens performance. The value of Yoga and related programs is that it reduces and removes anxiety [16]. While asanas and pranayama are calming, deep meditation removes the causative factors

(the 'Chitta Vrittis') of that anxiety. A recent systematic review of randomized controlled trials of TM for anxiety showed consistent, highly effective reduction [17]. Another important finding on regular Yoga practice, is consistent decrease of incidence of disease. Risk factor analysis has shown this to be the case. Since illness is an unwanted reason for athletes to be unable to participate in their sport, or to have performance compromised when they do, this is a potentially important application of yoga and meditation to professional sports. Interestingly, (dis)stress reduction is the only one of the fields discussed here where papers have appeared in sports science journals. But, sadly, not investigating professional athletes.

Discussion

Several of the benefits of Yoga discussed here may also be induced by action of medical drugs. It is increasingly well understood that Yoga's action is completely distinct from that of drugs. Drugs affect different individual differently, and this difference in drug action increases the standard deviation of the group over the course of a study. The final variance of experimental groups in drug studies is always larger than the initial variance. Yoga on the other hand, tends to normalise that variables being measured, and restore them to their healthy range of values. This means that, in experimental studies, Yoga reduces the variance of groups practising Yoga. This remarkable observation has been interpreted as meaning that Yoga improves the regulation of those functions in the physiology responsible for maintaining the values of those biomarker variables in their normal range. Yoga improves the quality and robustness of health, as a fundamental aspect of its widespread medical benefits.

Conclusion

Yoga's benefits for sports and sports medicine include: Improved Fitness, Reduced Injuries, Improved Psychology, and Improved Health. They are apparently without side-effects. Its benefits for sports medicine are promising, but much further research is needed to demonstrate these so that sports physiologists can accept them without question in their own context the gruelling demands placed on top professional sportsmen and women.

References

- Wallace RK (1970) Physiological effects of transcendental meditation. *Science* 167(3926): 1751-1754.
- Wallace RK, Benson H, Wilson AF (1971) A wakeful hypometabolic physiologic state. *Am J Physiol* 221(3): 795-799.
- Benson H, Greenwood MM, Klemchuk H (1975) The relaxation response: psychophysiological aspects and clinical applications. *Int J Psychiatry Med* 6(1-2): 87-98.
- Nagarathna R, Nagendra HR (1985) Yoga for bronchial asthma: a controlled study. *Br Med J* 291(6502): 1077-1079.
- Nagendra HR, Nagarathna R (1986) An integrated approach of yoga therapy for bronchial asthma: a 3-54-month prospective study. *J Asthma* 23(3): 123-137.
- Chandwani KD, Thornton B, Perkins GH, Arun B, Raghuram NV, et al. (2010) Yoga improves quality of life and benefit finding in women undergoing radiotherapy for breast cancer. *J Soc Integr Oncol* 8(2): 43-55.
- Milbury K, Mallaiah S, Lopez G, Liao Z, Yang C, et al. (2015) Vivekananda yoga program for patients with advanced lung cancer and their family caregivers. *Integr Cancer Ther* 14(5): 446-451.
- Datey P, Hankey A, Nagendra HR (2018) Combined ayurveda and yoga practices for newly diagnosed type 2 diabetes mellitus: a controlled trial. *Complementary Medicine Research* 25(1): 16-23.
- Saha M, Tomer OS, Halder K, Pathak A (2010) Aerobic and anaerobic performance improvement through yogic practice. *BJSM* 44(1): i68.
- Grabara M, Szopa J (2011) Health benefits of doing physical exercises yoga reported by the students of the Academy of Physical Education in Katowice. *Polish Journal of Sports Medicine* 27(2).
- Brunelle JF, Blais-Coutu S, Gouadec K, Bédard É, Fait P (2015) Influences of a yoga intervention on the postural skills of the Italian short track speed skating team. *Open Access J Sports Med* 6: 23-35.
- Nagendra HR (2003) *Pranayama, the Art and Science*. Bangalore, Swami Vivekananda Yoga Prakashan.
- Swain TA, McGwin G (2016) Yoga-related injuries in the United States from 2001 to 2014. *Orthop J Sports Med* 4(11): 2325967116671703.
- Bekhradi A, Wong D, Gerrie BJ, Mc Culloch PC, Varner KE, et al. (2018) Although the injury rate of yoga is low, nearly two-thirds of musculoskeletal injuries in yoga affect the lower extremity: a systematic review. *Joint Dis Ortho Sport Med* 3: 229-234.
- Tekur P, Nagarathna R, Chametcha S, Hankey A, Nagendra HR (2012) A comprehensive yoga programs improves pain, anxiety and depression in chronic low back pain patients more than exercise: an RCT. *Complement Ther Med* 20(3): 107-118.
- Selye H (1984) *The Stress of Life*. McGraw-Hill, New York, USA.
- Orme-Johnson DW, Barnes VA (2014) Effects of the transcendental meditation technique on trait anxiety: a meta-analysis of randomized controlled trials. *J Altern Complement Med* 20(5): 330-341.

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