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Effects of Yogic Practices on Different Systems of Human Body

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Abstract – The study reveals that there is significant reduction in post-test condition. Yogic exercises showed a positive and significant impact on diabetic adults. In the case of systolic blood pressure, diastolic blood pressure it was found that the reduction level was significant in post-test condition. Similar study is necessary to observe the efficacy Asanas and Pranayama on different age level and gender. Another suggestion may also be that these variables should be included with other variables and different time intervals with an organized manner. The increased sensitivity seems to be sustained for long time resulting in a progressive long term effect of Asanas. The study is significant because, it has for the first time attempted to probe the mechanism by which yoga- Asanas reduce blood sugar. In the present study there was a significant fall in the fasting blood glucose levels in the yoga group. All the participants in the yoga group develop a sense of wellbeing without any side effect. So they are self-motivated to continue the yoga practice as a daily routine in their life.

Keywords: Yogic, Practices, Different Systems, Human Body, Asanas, Pranayama, Yoga, etc.

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INTRODUCTION

The term “yoga” and the English word “yoke” are derived from Samskrit root “Yuj” which means union. Yoga is a psycho-somatic-spiritual discipline for achieving union & harmony between our mind, body and soul and the ultimate union of our individual consciousness with the Universal consciousness (Madanmohan, 2008). Yoga is mind-body technique which involves relaxation, meditation and a set of physical exercises performed in sync with breathing. Being holistic, it is the best means for achieving physical, mental, social and spiritual well-being of the practitioners. This can be achieved by systematic and disciplined practice of ash tang (eight-limbed) yoga described by sage Patanjali. The first two limbs of ash tang yoga are yam and niyam which are ethical code and personal discipline for the development of our moral, spiritual and social aspects. 3rd and 4th limbs areas and pranayama which help in our physical development and improvement of physiological functions. 5th and 6th limbs are Pratyahara and dharna for controlling our senses and making our mind one-pointed, calm and alert. The final two limbs of dhyan and Samadhi result in inner peace, ecstasy, higher level of consciousness and the ultimate union of our individual consciousness with the Universal Consciousness, resulting in God realization the result is unfoldment of a unique spiritual personality that is a blessing for the whole humanity. Yoga helps in developing our total personality in an integrated and holistic manner.

REVIEW OF LITERATURE:

Healthy life can be considered as a by-product of practicing yogic techniques since it has been observed that yoga practitioners are physically and mentally healthier and have better coping skills to stressors than the normal population. Yoga is widely practiced and globally accepted. Hence, it can be very well integrated as a health promoting tool in our society. Healthy people as well as patients may inquisitively approach medical professionals to take consultation about yoga. Yoga is an experiential science. If this knowledge about yoga invokes interest in the medical professionals and they practice it themselves, it might open up new avenue in bringing together our traditional heritage of yoga and today’s’ objective knowledge of modern medicine. Documented scientific evidence strongly indicates that yoga has promotive, preventive as well as curative potential. As a non-pharmaco therapeutic and safe modality, it can be used as an effective lifestyle adjunct to medical treatment to reduce drug dosage and improve quality of life of the patients. It is to be emphasized that yoga is very effective for prevention as well as management of all-pervading stress and stress-related disorders. Modern medicine is very effective in controlling infections, performing surgeries and managing diseases. However, it has limited role in stress-based, chronic degenerative, old age and lifestyle related disorders which are the bane of modern society. Yoga has been found to be very effective in these conditions. Our public health

delivery system is under-staffed, fund-starved and reeling under severe economic burden. Knowledge of inexpensive, effective and easily administrable yogic techniques by health professionals will go a long way in helping us achieve the WHO goal of providing "physical, mental, spiritual and social health" to the society.

❖ **Yoga improves cardio-respiratory efficiency**:

Madanmohan et al (2008) have reported that yoga training of six weeks duration attenuates the sweating response to step test and produces a marked increase in respiratory pressures and endurance in 40 mm Hg test in both male and female subjects. In another study, they reported that 12 weeks of yoga practice results in significant increase in maximum expiratory pressure, maximum inspiratory pressure, breath holding time after expiration, breath holding time after inspiration, and hand grip strength (Madanmohan, 1992). Joshi et al (1992) have also demonstrated that six weeks of pranayama breathing course resulted in improved ventilatory functions in the form of lowered respiratory rate, and increases in the forced vital capacity, forced expiratory volume at the end of 1st second, maximum voluntary ventilation, peak expiratory flow rate, and prolongation of breath holding time. Similar beneficial effects were observed by Makwana et al (1988) after 10 weeks of yoga practice. Increase in inspiratory and expiratory pressures suggests that yoga training improves the strength of expiratory and as well as inspiratory muscles. Respiratory muscles are like skeletal muscles. Yogic techniques involve isometric contraction which is known to increase skeletal muscle strength. Breath holding time depends on initial lung volume. Greater lung volume decreases the frequency and amplitude of involuntary contractions of respiratory muscles, thereby lessening the discomfort of breath holding. During yoga practice, one consistently and consciously over-rides the stimuli to respiratory centers, thus acquiring control over the respiration. This, along with improved cardio-respiratory performance may explain the prolongation of breath holding time in yoga trained subjects.

❖ **Yoga improves exercise tolerance**:

Bera and Rajapurkar (1993) have reported that yoga training results in significant improvement in cardiovascular endurance and anaerobic threshold. This is consistent with the findings of Muralidhara & Ranganathan (1982) who have reported an improvement in cardiac recovery index after 10 week yoga training program as indicated by Harvard step test. Raju et al (1994) have found that subjects who practised pranayama could achieve higher work rates with reduced oxygen consumption per unit work and without increase in blood lactate levels. The blood lactate levels were significantly low at rest. Madanmohan et al (2004) have demonstrated that two months of yoga training decreases basal heart rate, blood pressure, rate-pressure product (RPP = heart rate x systolic blood pressure / 100) and double product (Do P = heart rate x mean blood pressure / 100) in healthy subjects. Rate-pressure product and double product are indices of myocardial oxygen consumption and load on the heart. After yoga training, a given level of exercise leads to a milder cardiovascular response, suggesting better exercise tolerance.

❖ **Yoga Promotes Physical Fitness:**

Yogic techniques are known to improve one's overall performance and work capacity. Sharma et al (2008) conducted prospective controlled study to explore the short-term impact of a comprehensive but brief lifestyle intervention based on yoga, on subjective well-being in normal and diseased subjects. Normal healthy individuals and subjects having hypertension, coronary artery disease, diabetes mellitus or a variety of other illnesses were included in the study. They reported significant improvement in the subjective well-being scores of 77 subjects within a period of 10 days as compared to controls. Therefore, even brief intervention can make an appreciable contribution to primary prevention as well as management of lifestyle diseases. Oken et al (2006) found that hatha yoga practices for 6 months by seniors (65-85 years) resulted in significant improvement in quality of life and physical measures compared to walking exercise and wait-list control groups.

❖ **Endocrine and Reproductive System**

Studies have shown that practice of yoga orchestrates fine tuning and modulates neuro-endocrine axis which results in beneficial changes in the practitioners. Significant decrease in fasting plasma insulin in the yoga practitioners They also found that long term yoga practice (for 1 year or more) is associated with increased insulin sensitivity and attenuation of the negative relationship between body weight or waist circumference and insulin sensitivity. The effect of four sets of asanas in random order for 5 consecutive days and observed that performance of asanas led to increased sensitivity of B cells of pancreas to the glucose signal. They proposed that this increased sensitivity is likely to be a sustained change resulting from a progressive long-term effect of asanas. a reduction in urinary excretion of adrenaline, nor adrenaline, dopamine and aldosterone, a decrease in serum testosterone and luteinizing hormone levels and an increase in cortisol excretion, indicating optimal changes in hormones. Found changes in brain waves and blood levels of serum cortisol during yoga exercise in 7 yoga instructors and found that alpha waves increased and serum cortisol significantly decreased. Significantly higher plasma melatonin levels in experienced meditators in the period immediately following meditation compared with the same period at the same time on a control night. It was concluded that meditation can affect plasma melatonin levels. It remains to be determined whether this is

achieved through decreased hepatic metabolism of the hormone or via a direct effect on pineal physiology. Either way, facilitation of higher physiological melatonin levels at appropriate times of day might be one avenue through which the claimed health promoting effects of meditation occur. Also, the maximum night time melatonin levels in yoga group showed a significant correlation with well-being score. These observations suggest that yogic practices can be used as Psychophysiologic stimuli to increase endogenous secretion of melatonin, which, in turn, might be responsible for improved sense of well-being.

CONCLUSION:

Yoga affects every cell of the body. It brings about better neuro-effector communication, improves strength of the body, increases the optimum functioning of all organ-systems, increases resistance against stress and diseases and brings tranquility, balance; positive attitude and equanimity in the practitioner which makes him lead a purposeful and healthier life. All the participants in the yoga group develop a sense of wellbeing without any side effect. So they are self-motivated to continue the yoga practice as a daily routine in their life. Practice of yoga Asanas and pranayama may be helpful in reducing body weight in obese person as a result of which remote complications of diabetes mellitus may be prevented. It can be concluded that yoga Asanas and pranayama may be used as an adjunct to medical therapy to optimize the biochemical parameters. Yoga therapy also improves the status of diabetics in terms of reduction of drug doses, physical and mental alertness and prevention of complications.

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