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## Effect of yogasanas on flexibility and body mass index on sportsperson of Malda, West Bengal

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### Abstract

**Aim:** The purpose of this research was to determine the effects of 10 weeks, yoga practice (Surya Namaskara) on flexibility and BMI of school going boys of West Bengal.

**Subjects and methods:** The method of this study was experimental research and sample were 30 male athletes, of Malda DSA (18-22 aged), West Bengal. Thirty subjects were randomized in two groups, experimental group (n=15) and control group (n=15). Experimental group accomplished yoga practices program for 10 weeks, 3 days a week (control group had no yoga practice).

**Results:** Paired sample T-test was used to analyze the data of the study by use of SPSS software. Result showed that 10 weeks Surya Namaskara significantly decreased BMI and increased flexibility in experimental group.

**Conclusion:** Doing 10 weeks Surya Namaskara could decreased BMI and had positive effect on flexibility therefore it is useful exercise to increase flexibility and decrease BMI. Surya Namaskara exercise may be helpful over a longer period of time in maintaining optimum physical and mental health.

**Keywords:** Surya Namaskara, Flexibility, Body Mass Index, Students

### Introduction

Yoga is a very ancient discipline. It is recognized as one of the most important and valuable gifts of Indian heritage. Yoga refers to traditional, physical and mental disciplines that originated in India a few thousand years ago. The word is associated with meditative practices in Hinduism, Buddhism and Jainism. Several seals discovered at Indus Valley Civilization (3300-1700 BCE) sites in present day Pakistan depict figures in positions resembling yoga or meditation pose. Recorded history of the Yoga tradition starts with the Yoga Sutra, which is the definitive text on the philosophy of classical yoga. Today the world is looking to yoga to solve the various problem men are facing. Yoga at the highest level attempts to control the mind, Yoga today focuses on purification of the physical body as leading to the purification of the mind and prana or vital energy. It is also believed that living a happy and healthy life on all planes is possible through the unified practice of hatha yoga asanas and pranayams, dharna and dhyana, especially when performed consciously and with awareness, Surya Namaskara is a series of twelve physical postures. It is one of the ancient ways of exercise and more than that it was the lifestyle of the ancient India. The term Surya Namaskara is coined from the two worlds Surya and Namaskara, the meaning of Surya is "the Sun" and Namaskara is the way of "worshiping God". Its origins lie in a worship of Surya, the Hindu solar deity. This sequence of movements and poses can be practiced on varying levels of awareness, ranging from that of physical exercise in various styles, to a complete sadhana which incorporates asana, pranayama, mantra and chakra meditation. Surya Namaskara is a type of exercise for endurance, flexibility and strengthen the muscles of whole body, done on the floor without any machine or weights. This sequence of movements and poses can be practiced on varying levels of awareness, ranging from that of physical exercise in various styles, to a complete sadhana which incorporates asana, pranayama, mantra and chakra meditation. The physical base of the practice links together twelve asanas in a dynamically performed series. These asanas are ordered so that they alternately stretch the spine backwards and forwards. When performed in the usual way, each asana is moved into with alternate inhalation and exhalation (except for the sixth asana where the breath is held in external

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suspension). A full round of Surya Namaskara is considered to be two sets of the twelve poses with a change in the second set by moving the opposite leg first through the series. The simulated push-up movement and upper body weight bearing positions in the series may help to develop muscular strength and endurance in the pectoral, triceps, as well as the muscles of the trunk. The series gives such a profound stretch to the body that it is considered to be a complete yoga practice by itself, the studies reviewed illustrate that there are many physical, physiological, and psychological benefits to participating yoga and yoga related mind-body interventions. Regular practice of a variety of yoga techniques have been shown to lower BMI, These studies show that regardless of the current health status, mind-body interventions can be successful in improving the health and wellness status of a variety of individuals. The results are encouraging as they show alternate ways to improve overall physical health and mental well-being which may be considered as a compliment to traditional medical interventions. The purpose of the study was to determine the effect of 10 weeks, Surya Namaskara yoga practice on flexibility and BMI. It was hypothesized that 10 weeks Surya Namaskara yoga practice will significantly decrease BMI and will significantly improve the flexibility.

**Method**

Prior to testing, the subjects were weighed and their height measured using an electronic body scale tool and to measure flexibility used sit and reach test.

**Intervention Procedures**

After the pre-test, the yoga group was given one, 1 hour session of instruction to learn the basic postures of Surya Namaskara (Figures 1). Subjects were instructed to following their natural breath. Following the natural breath is done by paying attention to each inhalation and exhalation for the period of time indicated. When performing the routine, subjects were instructed to hold each posture for the duration of one inhalation or exhalation depending on the movement being performed. 15 Subjects participated in 10 weeks yoga training program, every week had 3 sessions and every session lasted 30 minutes. Each session started by warm up, followed by 10 minutes Surya Namaskara and finished by a 5 minute rest period of lying on their backs in shavasana (figure 2). Subjects of control group were requested neither to do yoga exercise nor participate in regular mind-body related classes during the 10 weeks of the study. Sample 30 healthy

male athletes (18-22 years old) from Malda DSA, West

**Table 1:** Change in Physical Measures (Mean±SD)

	Control	Control	T	Sig	Yoga	Yoga	T	Sig
	Group(pre)	Group(post)			group(pre)	group(post)		
BMI	26.28±0.153	26.35±0.552	1.305	0.213	26.05±0.389	25.13±0.183	8.953	0.00*
Flexibility	13.60±0.152	13.63±0.551	1.69	0.114	3.68±0.179	5.14±0.145	12.325	0.00*

**Results**

Analyzing the results of data showed that there is a significant difference in the BMI and flexibility in the post-test as compared to the pre-test in response to yoga training.

**Conclusion**

Surya Namaskara has advantages and no side effects. In fact, each of the 12 postures of Surya Namaskara renders the body suppleness and strength coupled with mental peace. Moreover, you can also cure many ailments by performing the well-coordinated movements of Surya Namaskar. The results

Bengal were selected as subjects for this study. Subjects are randomly assigned to either control (n=15) or yoga group (n=15) using simple random sampling technique. Volunteers were excluded if they had participated in regular mind-body related classes in the past or if were diagnosed as hypertensive.

Both groups were given an oral and written overview of the study and all participants agreed to participate in the study regardless of being selected for the yoga or control group.



**Fig 1:** Twelve Physical Postures Surya Namaskara



**Fig 2:** Spine Posture (Shavasana)

**Analysis of Data**

Descriptive Statistics were obtained on all measures. An independent t-test was conducted to ensure that the groups did not differ significantly at the onset of the study. Inferential statistics with paired sample t-test assessed differences due to the effect of Surya Namaskara yoga practice on BMI. SPSS 18 was used for all the analyses with  $\alpha=0.05$  used as the level of significance.

of present day study show that there is significant difference in BMI and Flexibility was observed in post-test as compared to pre-test in response to yoga practice and therefore Surya Namaskar exercise may decrease BMI and increase flexibility during 10 weeks. Surya Namaskar exercise may be helpful over a longer period of time in maintaining optimum physical and mental health. With increasingly busy schedule and lack of available time during the day to study, work, exercise and socialize, perhaps wellness centers and recreational venues might offer classes on the Surya Namaskara series, making these seemingly beneficial and self-directed techniques

available to the community at large.

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