

## Effect of Surya Namaskar on Abdominal Strength of School Students

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**Abstract:** The purpose of study was to find out the effect of Surya Namaskar on Abdominal Strength of school students. For the study 30 subjects were randomly selected of age group 12 to 15 years old. The Abdominal strength was measured by using partial curl ups. Analysis of data was done by using the mean and standard deviation. Comparative Analysis was done by t ratio. The result of the study shows the significant improvement in abdominal strength of subjects. It was concluded that continuous practice of Surya Namaskar helps in improving the abdominal strength of students.

**Key words:** Surya Namaskar, Abdominal Strength, Partial curl ups

### Introduction

In the 21st century, despite significant technological advancements that have improved convenience, humanity faces numerous challenges, particularly related to mental health and emotional well-being. Modern life has become more stressful and unhealthy due to sedentary lifestyle and lack of physical activity. Now people are increasingly turning to Ayurveda and Yoga to improve health-related issues.

Surya Namaskar, commonly performed in the early morning while facing the rising sun, consists of 12 sequential steps. Each step involves a specific posture, corresponding breathing pattern.

The twelve postures of Surya Namaskar incorporate alternating forward and backward bending movements, which effectively stretch and flex the spine and limbs to their fullest range.

Abdominal Strength is the physical energy in our core muscles that helps us move, lift things and maintain good posture. A partial curl ups test is performed to assess the abdomen power and sufferance, essential for core stability and back support.

### Statement of the problem

This study was undertaken to know the "Effect of Surya Namaskar on Abdominal Strength of School Students".

### Purpose of the study

The purpose of the study was to evaluate the effect of surya namaskar on abdominal strength of school students.

### Significance of the study

This study was helpful in determining the specific effect of Surya Namaskar on strengthening the abdominal muscles, which can improve students' posture, physical endurance, and overall fitness levels.

This research underscores the potential for integrating Surya Namaskar into school-based physical education programs.

### Objective

To evaluate the effect of surya namaskar on abdominal strength of school students.

## Hypothesis

It was hypothesized that surya namaskar will bring significant improvement in the abdominal strength of school students.

## Delimitations

The present study was delimited in the following aspects:

- The study was delimited to thirty school students only.
- The study was delimited to Delhi jurisdiction only.

## Limitations

The research was limited in following aspects :-

- Dietary habits have not been changed.
- The researcher had no limitation on the socio-economic status of the students.

## Methodology

For this study 30 school students of age 12 to 15 years were randomly selected. Abdominal strength was measured by partial curl ups. Firstly Pre test was recorded ,then the subjects were made to do 20 surya namaskar with 20 seconds hold at each step for a month and after a month Post measurements were taken.

## Data Collection Tool

Partial curl ups were used to check the abdominal strength of school students.

**Procedure:** The starting position is lying on the back with the knees flexed and feet 12 inches from the buttocks. The feet cannot be held or rest against an object. The arms are extended and are rested on the thighs. The head is in a neutral position. The subject curls up with a slow controlled movement, until the student's shoulders come off the mat two inches, then back down again. One complete curl-up is completed every three seconds (1.5 seconds up and 1.5 seconds down, with no hesitation), and are continued until exhaustion (e.g. the subject cannot maintain the rhythm). There is no pause in the up or down position, the curl-ups should be continuous with the abdominal muscles engaged throughout.

**Scoring:** Recorded the total number of curl ups. The completion of one complete curl up counts as one. Only correctly performed curl ups were counted.

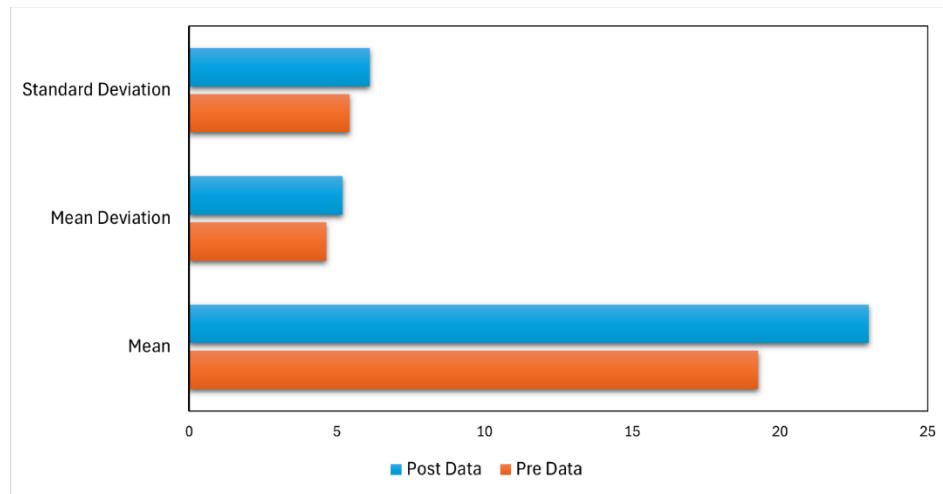
**Analysis Of Data and Interpretation of the Result** was done by using mean and standard deviation. Comparative analysis as done by using t ratio. The level of significance was kept at 0.05 level.

**Table 1. Showing the mean values and standard deviation of Pre Measurements and Post Measurements**

	Mean	Mean Deviation	Standard Deviation	'T' stat
Pre Data	19.27	4.64	5.34	10.51
Post Data	23.00	5.20	6.11	

The mean has increased significantly from 19.27 (Pre-test) to 23.00 (Post-test). Mean Deviation and Standard Deviation also show a slight increase, indicating variation in scores.

**Graph 1 : Showing the mean values, mean deviation and standard deviation of Pre and Post Data**



### Discussion of findings

Observation shows significant improvement in the mean values of pre and post data of students. The t value = 10.51 is high, which interprets a strong difference between pre-data and post-data.

### Conclusion

The result of the study concluded that there is significant improvement in abdominal strength after doing surya namaskar.

### References

<https://www.topendsports.com/testing/tests/curl-up-partial.htm>