



ISSN: 2456-0057  
IJPNPE 2019; 4(1): 1396-1398  
© 2020 IJPNPE  
www.journalofsports.com  
Received: 11-11-2018  
Accepted: 18-12-2018

**Dinesh Kaithwas**  
Research Scholar, School of  
Physical Education D.A.V.V.,  
Indore, Madhya Pradesh, India

**Dr. Vivek B Sathe**  
Assistant Professor, School of  
Physical Education D.A.V.V.,  
Indore, Madhya Pradesh, India

## Effect of dynamic suryanamaskar on vital capacity of sedentary college students

**Dinesh Kaithwas and Dr. Vivek B Sathe**

### Abstract

**Background:** Sedentary Life Style is type of lifestyle which an individual or group adopt that do not permit regular physical activity. Nowadays pollution, heating and environmental problems have covered us, the importance of health and fitness has increased to a great extent. India has a rich tradition of yogic practices. Another practice of yoga that is being practiced with tradition is that of Suryanamaskar. It gives physical, mental and spiritual benefits and is a practical, lively approach to life.

**Objectives of the study:** the objectives of the study was to characterize, effect of Dynamic Suryanamaskar, comparison between Conventional and Dynamic Suryanamaskar and determine the significant difference of adjusted post-test means among three groups of sedentary college students in relation to vital capacity.

**Materials and Methods:** To achieve these purpose Ninety (90) male sedentary college students from Jawaharlal Nehru Boys Hostel, Takshshila Campus, Devi Ahilya Vishva Vidhyalaya, Indore, in age group 18-28 were selected randomly as subjects. Further they were divided into three groups, with 30 subjects in each group such as Conventional Suryanamaskar, Dynamic Suryanamaskar and control group. Data was analyzed by using 't' test and analysis of covariance (ANCOVA).

**Results:** Conventional and dynamic Suryanamaskar groups improved significantly having 't' values - 7.88 and -2.77 respectively. It was also found that no significant improvement in control group indicating 'value of 0.17.

**Keywords:** Dynamic suryanamaskar, vital capacity, sedentary college students

### Introduction

The development of technology has reached a degree wherever just about anything is feasible at the bit of a button. Shopping, learning, working and entertainment can all be accessed from the comfort of our own homes, on a train or sat in a cafe. Amusement, learning, operating and Shopping can all be accessed from the comfort of our own homes, on a train or sat in a restaurant. The word "Sedentary" is derived from the Latin word "Seder" which means "to sit" hence Sedentary behavior is a term used to characterize those behaviors that are associated with low energy expenditure. This includes home, business centers, long screen time, prolonged sitting at work, and leisure time. The transition from school to university is often accompanied by unhealthy behavior changes such as lack of physical activity and increasing sedentary behavior in college going students. India has a rich tradition of yogic practices. Another practice of yoga that is being practiced with tradition is that of Suryanamaskar. Only regular practice of Suryanamaskar, person is able to benefit the whole yogic exercise. In the dynamic Suryanamaskar the routine differs greatly with regards to the recommended pace of movement, number of repetitions and emotional approach. I as A researcher want to know that effect of Dynamic Suryanamaskar on vital capacity of sedentary college students.

### Objectives of the study

- The first objective of the study was to characterize vital capacity of sedentary college students.
- The second objective of the study was to find out the effect of Dynamic Suryanamaskar on vital capacity of Sedentary College students.
- The third objective of the study was to find out the comparison between Conventional Suryanamaskar and Dynamic Suryanamaskar in relation to vital capacity.

**Corresponding Author:**  
**Dinesh Kaithwas**  
Research Scholar, School of  
Physical Education D.A.V.V.,  
Indore, Madhya Pradesh, India

- The fourth objective of the study was to determine the significant difference of adjusted post-test means among three groups (Two Experimental and one control group) of sedentary college students in relation to vital capacity.

**Material and Methods**

**Subjects**

The study has made on Ninety (N=90) male sedentary college students from Jawaharlal Nehru Boys Hostel (J.N.B.H.), Takshshila Campus, Devi Ahilya Vishva Vidhyalaya (D.A.V.V.), Indore were selected as subject for this study at random and their age were ranged between 18-28 years.

**Variables and tests**

Vital capacity was measured through dry Spiro meter. As far as experimental treatments are concern twelve weeks of conventional and dynamic Suryanamaskar training were conducted in a planned manner.

**Procedure**

As the subjects were sedentary they were not able to cope up in the early weeks of programme. So the subjects were allowed to take rest in between the Suryanamaskar sets as and

when they required. After the 2<sup>nd</sup> and 3 week the subjects were able to perform the Suryanamaskar properly. When they were able to perform the Suryanamaskar properly they were allowed to take rest after 6 sets in conventional Suryanamaskar group and after 3 sets in dynamic Suryanamaskar. All the subjects performed the conventional Suryanamaskar after proper warming up The experimental groups were given respective training to the subjects six days a week Monday to Saturday except Sundays from 7.00 to 8.00 a.m. Exercises were introduced in progressive manner. Simple to complex procedure was adopted.

**Statistical analysis**

To find out the significance difference between the pre and post test data of each group paired ‘t’ test was applied and to find out between group significance of the difference analysis of covariance (ANCOVA) was applied. Whenever the F ratio for adjusted post mean was found significant, the turkey L.S.D. test was applied to determine the paired mean differences. For the analysis was fixed at 0.05.

**Results**

**Discussion and Conclusions**

**Table 1:** Paired ‘t’ ratio of vital capacity for all the three groups

Groups	Mean		MD	SE <sub>DM</sub>	CAL‘T’
	Pre	Post			
Control	3420.00	3416.66	3.33	19.16	0.17
Conventional Suryanamaskar	3426.66	3583.33	-156.66	19.87	-7.88*
Dynamic Suryanamaskar	3406.66	3536.66	-130.00	46.95	-2.77*

\*significant at 0.05 level for one tailed test tab t.05(29) = 1.699 n=30 df=29

The table-1clearly reveals that conventional and dynamic Suryanamaskar groups improved significantly having‘t’ values -7.88 and -2.77 respectively. It was also found that no significant improvement in control group indicating’ value of 0.17 .The needed ‘t’ value for significance at .05 level with (29) df were 1.699.

For finding the significance of difference between the means of two experimental and one control group analysis of

covariance was applied. The value of F and means of two experimental and one control group are presented in table -2.

**Table 2:** Analysis of variance and covariance of all three groups for vital capacity

Source of Variance	Group Means			Sum of Quares	DF	Mean Sum of Square	‘F’ Ratio
	Control	Convent-Ional	Dynamic				
Pre Test Means	3420.00	3426.66	3406.66	B=6222.22 W=11585333.33	2 87	B=3111.11 W=133164.75	0.02
Post Test Means	3416.66	3583.33	3536.66	B=443555.55 W=11608000.00	2 87	B=221777.77 W=133425.28	1.66
Adjusted Post Test Means	3414.68	3575.42	3546.55	B=440572.03 W=2440060.42	2 86	B=220286.01 W=28372.79	7.76*

\*Significant At 0.05 Level, ‘F’ Ratio Needed For Significant At 0 .05 (2, 90) =3.10

B = Between Group Variance, N = 90, W= Within Group Variance

The table-2 indicates that ‘F’ value for adjusted post test means (F=7.76) for two experimental and one control group was significant. The ‘F’ value needed for significant at .05 level with (2, 90) df was 3.10.

To find which of the differences between adjusted group means were statistically significant, the post hoc‘t’ test was

applied as an extension of analysis of covariance. The data related to this is presented in table-3.

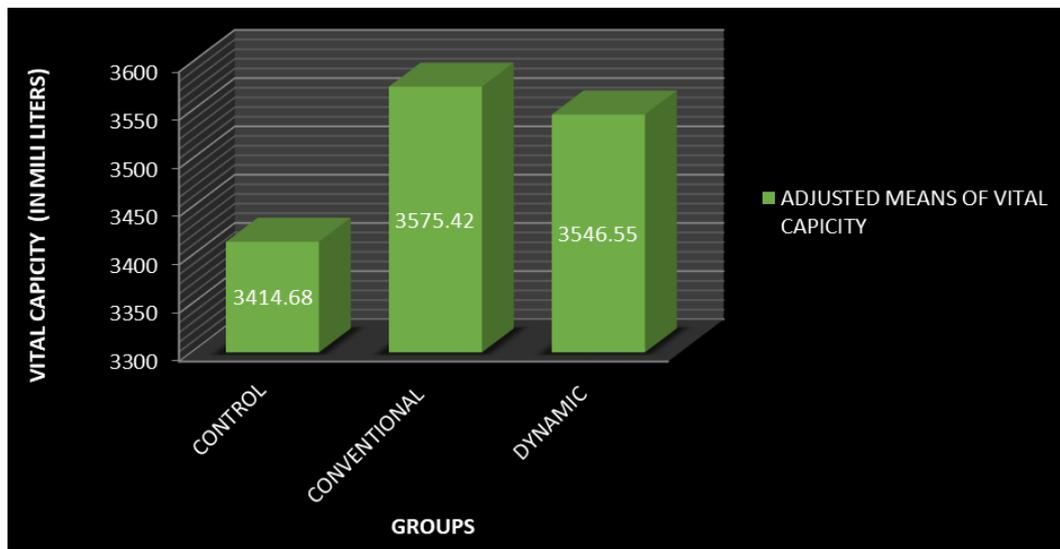
**Table 3:** Paired adjusted final means and difference between means of all three groups for vital capacity

Control	Conventional Suryanamaskar	Dynamic Suryanamaskar	Mean Difference	Critical Difference
3414.68	3575.42		-160.73*	62.73
3414.68		3546.55	-131.86*	
	3575.42	3546.55	28.87	

\*Significant at 0.05 level

Table-3 clearly reveals that conventional and dynamic Suryanamaskar group were statistically superior to the control group (MD= -160.73 and -131.86 respectively). It was also found that no significant difference were found between

dynamic Suryanamaskar group and conventional Suryanamaskar group (MD= -28.87). The graphic representation of the adjusted final means of all the three groups are presented in figure-1.



**Fig 1:** Comparison of paired adjusted final means of the two experimental and one control group for vital capacity

### Discussion

For Vital capacity that conventional and dynamic Suryanamaskar group was statistically superior to the control group. It was also found that no significant difference was found between dynamic Suryanamaskar group and conventional Suryanamaskar group. The reason for such findings might be due to Suryanamaskar basically the key method for improvement in vital capacity is regular aerobic workout. Regular Conventional Suryanamaskar strengthens and tones the heart and lungs, enabling the pulmonary system to increase the maximum amount of oxygen that the lungs can handle, according to the Merck Manuals online medical library. Dynamic Suryanamaskar causes your heart and breathing rates to increase, delivering fresh oxygen to your bloodstream and energy to your muscles. Your lung capacity can be increased through regular aerobic workouts, but only by a modest amount, according to Dr. Tim Noakes, author of "The Lore of Running." This result supported by the study conducted by Mr. Vivek Singh <sup>[1]</sup> "Effect of Suryanamaskar on vital capacity of school girls: A mixed design approach".

### Conclusion

The findings of the study show that the conventional Suryanamaskar training programme was found to be effective in relation to vital capacity And the dynamic Suryanamaskar training was also found to be effective in relation to vital capacity As far as group analysis was concern the findings concluded that no significant difference were found between dynamic Suryanamaskar group and conventional Suryanamaskar group in relation to vital capacity.

### References

1. Ajmer Singh *et al.* Essentials of Physical Education. (Fourth Edition, Kalyani Publishers, New Delhi, India. 2012, 535-540.
2. Bucher CA. Foundation of physical education and sports, (London: C.V. Mosby Co. 1983, 287.
3. Ananda Balayogi Bhavanani, Kaviraja Udupa Madanmohan, Ravindra PN. Comparison of slow and fast Suryanamaskar on physiological function. *Int. J Yoga.* 2011; 4(2):71-76.

4. Yadav HK, Singh MK. Effect of surya namaskara on selected physical and physiological variables of college students *Golden Research Thoughts* ISSN 2231-5063 Impact Factor : 2.2052(UIF). 2014; 3:12.
5. Shri Nandan Bansal. *Anatomy and physiology for nurses* (Delhi: J.P. Brothers, 1999, 351.

<sup>1</sup>Mr. Vivek Singh, "Effect of Suryanamaskar on vital capacity of school girls: A mixed design approach" *International Journal of Physical Education, Health and Social Science*, Vol. 3, Issue 2, 2278-716 July 2014.