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## Effect of Varied Frequencies of Nadhisodhana Pranayama on Selected Respiratory Parameters of College Men

**Dr.PL. Balasubramanian**

*Siddha and Yoga Consultant, Prapthi Arockya Mayam, Karaikudi, Tamilnadu, India.*

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### Abstract

*Yoga techniques have been professed to improve body flexibility, performance, stress reduction, attainment of inner peace and self-realization. This study under investigation involves the experimentation of varied frequencies of Nadishodhana pranayama on respiratory parameters. The investigator met the bachelor degree students from various classes in the Department of Physical Education, koviloor Andavar College, Karaikudi, and explained to them about the purpose and nature of the study and requested them to volunteer for the study. Only College men Participants aged between 18 and 21 years were contacted and around 31 Participants gave their voluntary consent to work as subjects for this study. There was a significant improvement in tidal volume, inspiratory volume, expiratory volume, vital capacity after the varied frequencies of nadishodhana pranayama practice when compared with the control group. In which, the high frequency (weekly five days) nadhishodhana pranayama practice group has improved significantly tidal volume, inspiratory volume, expiratory volume, vital capacity than the medium frequency (weekly three days) nadhishodhana pranayama practice group.*

**Keywords:** Tidal Volume, Inspiratory Volume, Expiratory Volume, Vital Capacity.

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### Introduction

Yoga techniques have been professed to improve body flexibility, performance, stress reduction, attainment of inner peace and self-realization. The system has been advocated as complementary and treatment to aid healing of several ailments such as coronary heart disease, depression, anxiety disorders, asthma and extensive rehabilitation for disorders including musculoskeletal problems and traumatic brain injury. The system has also been suggested as a behavioural therapy for smoking cessation and substance abuse. Combined practice of physical postures, breathing exercises and meditation in a sequence is the best compromise to meet the present day needs of the society. The results of these practices can be enhanced much more if one follows all the recommended restraints and observances in everyday life. The restraints and observances he refers to are the yamas and niyamas of classical Yoga. The ethics and morality of the traditional texts help lay groundwork for moderate, compassionate living, but behavior change is complex and one's personality is rooted in layers of unconscious conditioning (Udupa, 1985).

### Statement of the Problem

This study under investigation involves the experimentation of varied frequencies of Nadishodhana pranayama on respiratory parameters.

### Methodology

The investigator met the bachelor degree students from various classes in the Department of Physical Education, Koviloor Andavar College, Karaikudi and explained to them about the purpose and nature of the study and requested them to volunteer for the study. Only College Women Participants aged between 18 and 21 years were contacted and around 31 Participants gave their voluntary consent to work as subjects for this study. Out of those who volunteered for the study those were participated in the college or district level sports meets were excluded from the group. They were selected by lot method and they were divided randomly into three groups as two experimental groups and one control group. They were also informed that they were free to opt out of the study at any time if they feel any discomfort or difficulty in continuing with the training programme. The selected thirty subjects were randomly divided into three equal groups of ten subjects each, out of which group -I (n = 10) underwent medium frequency nadishodhana practice (weekly three days), group – II (n = 10) underwent high frequency nadishodhana practice (weekly five days) and group – III (n = 10) remained as control group. All the subjects have revealed that they have no ailments of any sort and were

### Correspondence

Dr.PL. Balasubramanian

E-mail: nivibala1973@gmail.com

taking medicines for treatment after a general medical checkup done on them. The physician confirmed this and

the subjects were given clearance to take part in the physical training.

Table 1  
Tests Selection

Sl. No.	Criterion Variables	Test Items
1.	Tidal Volume	Wetspirometer
2.	Inspiratory Reserve Volume	Wetspirometer
3.	Expiratory Reserve Volume	Wetspirometer
4.	Vital capacity	Wetspirometer

Table 2  
Analysis of covariance on tidal volume of medium, inspiratory reserve volume, expiratory reserve volume and vital capacity frequency group high frequency group and control group

		medium frequency group	High frequency group	control group	SO	sum of squares	df	Mean Square	'F' ratio
TIDAL VOLUME	Pre mean	0.43	0.429	0.43	B	0.00007	2	0.00003	0.017
	SD	0.01491	0.0137	0.01491	w	0.006	27	0.0002	
	Post mean	0.472	0.502	0.437	B	0.021	2	0.011	43.46*
	SD	0.01398	0.0187	0.01418	w	0.007	27	0.00026	
	Adjusted post-test mean	0.472	0.503	0.437	B W	0.022 0.003	2 27	0.011 0.00012	100.16*
INSPIRATORY RESERVE VOLUME	Pre mean	2.632	2.633	2.627	B	0.00022	2	0.00011	0.584
	SD	0.01317	0.01337	0.01337	w	0.005	27	0.00019	
	Post mean	2.682	2.706	2.635	B	0.026	2	0.013	26.96*
	SD	0.01317	0.02011	0.01269	w	0.007	27	0.00026	
	Adjusted post-test mean	2.681	2.704	2.639	B W	0.021 0.002	2 26	0.010 0.00008	138.98*
EXPIRATORY RESERVE VOLUME	Pre mean	2.573	2.572	2.571	B	0.00002	2	0.00001	0.056
	SD	0.01337	0.01317	0.0137	w	0.005	27	0.00019	
	Post mean	2.690	2.745	2.580	B	0.141	2	0.071	262.8*
	SD	0.017	0.1958	0.1247	w	.007	27	0.00026	
	Adjusted post-test mean	2.689	2.745	2.581	B W	0.14 0.005	2 26	0.07 0.00019	331.446*

VITAL CAPACITY	Pre mean	5.635	5.634	5.628	B	0.00028	2	0.00014	0.199
	SD	0.02877	0.0217	0.02936	w	0.019	27	0.0007	
	Post mean	5.844	5.947	5.652	B	0.448	2	0.224	254.2*
	SD	0.02319	0.03561	0.02898	w	0.024	27	0.00089	
	Adjusted post-test mean	5.842	5.946	5.655	B W	0.429 0.013	2 26	0.214 0.0005	422.02*

The above table shows that the pre-test means on tidal volume of medium frequency, high frequency and control groups were  $0.43 \pm 0.01491$ ,  $0.429 \pm 0.0137$  and  $0.43 \pm 0.01491$  respectively. The obtained 'F' ratio value of 0.017 for pre-test score of medium frequency, high frequency and control groups on tidal volume was less than the required table value of 3.35 for significance with df 2 and 27 at .05 level of confidence.

### Discussion on Findings

Based on the result of the study, the followings findings were drawn:

1. There was a significant improvement in lung capacity after the varied frequencies of nadishodhana pranayama when compared with the control group. The finding of the present study was in line with the findings of Rachna Sirohi (2013), who found there was a significant improvement after nadishodhana pranayama on forced vital capacity.
2. The findings of A.B. Fareedhabanu, A.R. Gorkal and Shantaram (August 2012) also in support of present study, in which, the lung function was improved significantly improved after the nadishodhana pranayama practice.

### Conclusions

Based on the findings of the study the following conclusions were drawn:

1. There was a significant improvement in tidal volume after the varied frequencies of nadishodhana pranayama practice when compared with the control group. In which, the high frequency (weekly five days) nadishodhana pranayama practice group has improved significantly tidal volume than the medium frequency (weekly three days) nadishodhana pranayama practice group.
2. There was a significant improvement in inspiratory volume after the varied frequencies of nadishodhana pranayama practice when compared with the control group. In which, the high frequency (weekly five days) nadishodhana pranayama practice group has improved significantly inspiratory volume than the medium frequency (weekly three days) nadishodhana pranayama practice group.
3. There was a significant improvement in expiratory volume after the varied frequencies of

nadishodhana pranayama practice when compared with the control group. In which, the high frequency (weekly five days) nadishodhana pranayama practice group has improved significantly expiratory volume than the medium frequency (weekly three days) nadishodhana pranayama practice group.

4. There was a significant improvement in vital capacity after the varied frequencies of nadishodhana pranayama practice when compared with the control group. In which, the high frequency (weekly five days) nadishodhana pranayama practice group has improved significantly vital capacity than the medium frequency (weekly three days) nadishodhana pranayama practice group. It is proved that weekly five days of practicing nadishodhana pranayama is effective than the weekly three days of practice.

### Recommendations

1. The investigator did not make any attempt to give yoga poses before the nadishodhana pranayama practice. Hence further studies may be conducted to explore the effect of yoga practice followed by nadishodhana pranayama practice on respiratory parameters.
2. It is also assumed that the eight weeks of nadishodhana pranayama practice may be sufficient to bring desirable changes in the respiratory parameters. Hence further studies may be undertaken by extending the training period.
3. The modern industrialization has resulted in a most inflating metabolic disorder like obesity. Hence the effect of nadishodhana pranayama practice can be assessed among obese people and overweight people.
2. Similar studies may be conducted for people suffering from degenerative diseases like diabetes and hypertension.
3. The effect of this nadishodhana pranayama practice can be assessed on physiological and motor fitness components also.

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