

Research Paper

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**EFFECT OF PRANAYAMA PRACTICES ON VITAL CAPACITY  
AMONG THE DIABETES WOMEN****K.L.S. Geetha<sup>1</sup>, Dr.A.M. Moorthy<sup>2</sup>**

1. Ph.D, Research Scholar, Tamilnadu Physical Education Sports University, Chennai

2. Vice chancellor, Tamilnadu physical education and Sports University

**Abstract**

"In all serious disease states we find a concomitant low oxygen state... Low oxygen in the body tissues is a sure indicator for disease...Hypoxia, or lack of oxygen in the tissues, is the fundamental cause for all degenerative disease. Oxygen is the source of life to all cells." – Dr. Stephen Levine.;

**Background** - Health is precisely, that condition in which human being has full sensitivity and in which all his faculties are operating fully. To actively work towards this condition is to cure illness and to develop maximum health. Yoga is both a philosophy and a living religion, believes that the body is so important and trains it so strictly. The present study was conducted to assess the effectiveness of pranayama as an intervention in the management of patients with Type 2 diabetes mellitus complicated with pulmonary problem.

**Method** - This study was carried out in 2016 in Hospitals Nagercoil, Tamilnadu, India among 30 Type 2 diabetics. They were randomized into control and pranayama groups. The pranayama group practiced pranayama daily for one hour and given oral hypoglycemic drugs for 3 months. The control group did not perform yogic exercises but given oral hypoglycemic drugs. Comparisons were drawn between vital capacity in both the groups at the start and at the end of 3 months. Paired and unpaired t tests were performed.

**Results** - After intervention with pranayama for 3 months the study group showed a significant increase in vital capacity from  $3.77 \pm 0.62$  to  $3.92 \pm 56.10$  ml. was however not proved to be significant statistically.

**Conclusion** - There were no significant changes in the control group. Thereby concluding that, there are significant benefits of pranayama practices on vital capacity parameters in uncomplicated type 2 diabetes.

**Introduction**

Yoga is an ancient discipline designed to bring balance and health to the physical, mental, emotional, and spiritual dimensions of the individual. It is long popular practice in India that has become increasingly more common in Western society. "Yoga" means union of our individual consciousness with the Universal

Divine Consciousness in a super conscious state known as Samadhi. The Yogic science of breathing is called pranayama. Oxygen is the most vital nutrient to our body. It is essential for the integrity of the brain, nerves, glands and internal organs. Yoga is training in the technique of harmony and also a preparation for the total integrated human personality. Yoga is a national and

scientific treasury which is the richest and oldest legacy the ancient Indians have test to the world. Science has discovered that the atmosphere is charged with electromagnetic energy which is vital to the preservation of life, which is exactly how yoga talks about the universal prana: prana shakti, the cosmic energy, is the basis of existence and whatever we see in the whole cosmos and in this little world, is nothing but the gross manifestation of prana, the counterpart in the body is called microcosmic energy.

### Methodology

The investigator selected Type 2 diabetes mellitus complicated with pulmonary problem from nagercoil and their age was between 35 to 45 years. Selected subjects were divided into two groups. The experimental group I underwent Pranayama practices weekly five days i.e. Monday to

Friday, between 6.00 P.M to 7.00 P.M.for a period of six weeks, and group II not practicing Pranayama . Vital capacities were selected as criterion variables all the subjects were tested (wet spirometer) at prior and immediately after the training period on selected dependent variable. The collected data was analyzed statistically by using analysis covariance (ANCOVA) to find out the significant differences if any between the groups at before and immediately after the training period on selected dependent variable separately. In all cases, .05 level of confidence was fixed to test the significance.

### Analysis of data

The data collected prior to and after the experimental period on vital capacity on pranayama practice group and control group were analysed presented in Table.

#### Analysis of covariance on vital capacity of pranayama practice group and control group

	Pranayama Practice Group	Control Group	SOV	Sum of Squares	df	Mean Square	'F' ratio
<b>Pre-test Mean</b>	3.77	3.75	B:	0.003	1	0.003	0.62
<b>S.D.</b>	0.06	0.08	W:	0.136	28	0.005	
<b>Post-test</b>	3.92	3.74	B:	0.246	1	0.246	56.10*
<b>S.D.</b>	0.05	0.05	W:	0.123	28	0.004	
<b>Adjusted Post-test Mean</b>	3.92	3.75	B:	0.196	1	0.196	256.13*
			W:	0.021	27	0.001	

\*Significant at 0.05 level of confidence.

(The table value required for significance at .05 level of confidence with 1 and 28 1 and 27 were 4.20 and 4.21 respectively).

Table shows that the pre-test means of vital capacity for Pranayama practice group and control group were 3.77+ 0.06 and 3.75 0.08 respectively. The obtained 'F' ratio value of 0.62 for pre-test Score of Pranayama practice group and control group on vital capacity was less than the required table value of 4.20 for significance with df1 and 28 at.05 level of

confidence. The post-test mean values of vital capacity for Pranayama practice group and control group were 3.92 + 0.05 and 3.74 + 0.08 respectively. The obtained 'F' ratio value of 56.10 for post-test scores of Pranayama practice group and control groups was greater than the required table of 4.20 for significance with df 1 and 28 at. 05 level of confidence. The adjusted post-test

mean values of Pranayama practice group and control group were 3.92 and 3.75 respectively. The obtained 'F' ratio value of 256.13 for adjusted post-test scores of Pranayama practice group and control group was greater than the required table value of 4.21 for significance with df 1 and 27 at .05 level of confidence. The result of this study showed that there was a significant difference among Pranayama practice group and control group on the changes in vital capacity after six weeks of training. The results of the study also shown that there was a significant improvement in vital capacity after the Pranayama practice.

### Conclusions

Pranayama is control of breath, breathing & blood circulation system, heart have close relation between them. Also these are dependent on mental activities. If mental strain increases the breathing rate is affected. In Pranayama the breathing is controlled and the rate is reduced, which reduces the strain on heart and also the rate. This increases the stability of mind and mental activities are also controlled. Even simple breathing exercises like Deep Breathing, Quiet Breathing help reduce the mental stresses and strains. Also the Pranic force in the body is balanced with the regular practice of Pranayama, which restores the physical and mental balance. Some Pranayama techniques affect the functioning of nervous system, which again help restore the balance. Pranayama reduces the need of oxygen, so also the production of carbon dioxide. So the respiration rate reduces. In various Pranayama techniques Ujjayi Pranayama balances the Pranic flow of energy in the body. Ujjayi also affects carotid sinus, which help reduce BP. Nadishodhan Pranayama controls the Pranic flow. In this study, there was a significant increase in vital capacity after the pranayama practices and also there was a

significant difference occurs between the pranayama training group and control group on vital capacity.

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