



## Effect of Pranayama and Brisk Walking Practices on Maximum Voluntary Ventilation (MVC) among Sedentary Women

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### Abstract

Yoga is one of the six orthodox systems of Indian philosophy. Yoga is the union of the jivatma with the paramathma. It was collated, coordinated and systematized by Patanjali in his classical work, the Yoga Sutras, which consists of 195 terse aphorisms in which it is stated that yoga is a state where all activities of the mind are channelized in one direction; or the mind is free from distractions. The purpose of the present study is to find out the effect of pranayama and brisk walking practices on maximum voluntary ventilation (MVC) among sedentary women. The study is conducted on 45 sedentary women in totally three groups, namely, experimental group – I & II and Control Group, each group consisted of 15 sedentary women. They underwent eight weeks of practice in Pranayama and brisk walking practices of both the experimental groups whereas the control group do not undergo any type of training. Maximum voluntary ventilation (MVC) are measured before and after using the Wet Spiro meter. The Analysis of Covariance (ANCOVA) analyzes the data and it is concluded that the Pranayama and brisk walking practices have a significant of ( $P < 0.05$ ).

**Keywords:** Sedentary women, Pranayama and brisk walking practices.

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### Introduction

The „bliss sheath“ is the seat of the inner essence or Atman and is where all metabolise the experience of Samadhi. The mind is said to rest in its intrinsic natural state which is pure bliss. There are no malfunctions at this level as the mind is free from „chitta vrittis“ or mental confusions and distractions. The human body has several glands, many of which are ductless. The various hormones they produce kill germs in the body as they mingle with the blood. If these glands work as well as they should, all would be disease-free. Yoga gives strength to these glands to do their job properly. Each gland secretes a different fluid that affects a different function in the body.

The pituitary and pineal body glands are situated inside the back of the head, thyroid and parathyroid are situated in the neck region, the thymus is located in the chest, and the pancreas is situated below the stomach. Different glands and organs are activated by various yogic practices without diet in unique ways as follow

1. Pituitary – Sirasasana and Sarvangasana.
2. Para thyroid – Sarvanagasana and Halasana.
3. Thyroid – Matsyasana and Usartasana

4. Pancreas – Padha Hasta Asana, Halasana, Nouli, Uddiana, Sivalingasana. and Paschimothasana
5. Adrenal – Chakrasana, Gomukhasana, Halasana, Paschimothasana.
6. Liver – Sarvagasana, Urdhva Padmasana

Hormones secreted by ductless glands are very important for a healthy life. When hormones are at a particular performance level, the body can function to its optimum. The improper functioning of these glands is usually the primary cause of most diseases. Fortunately, there are yogasana that activate each of these glands. It is a well-known fact that India is, next only to China, the second largest country in terms of population in the world. But the health status of a great majority of the people is far from satisfactory as compared to China and other developed countries. However, over the last five decades or so, India has built up health infrastructure and manpower at primary, secondary and tertiary care in government, voluntary and private sectors and made considerable progress in improving the health of its population.

However, India is one of the major countries where communicable diseases are still not under control. The incidence of new fatal diseases such as AIDS / HIV, hepatitis-A is on the increase tuberculosis and malaria still takes a high toll. Chronic non-communicable

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diseases such as heart diseases, diabetes and cancer are also in the rise.

### Statement of the Problem

The purpose of the study is to find out the effect of pranayama and brisk walking practices on maximum voluntary ventilation (MVC) among sedentary women .

### Review of Related Literature

Kulkarni DD, Bera TK (2009), conducted the “Study on Yogic exercises and health - a psycho-neuro immunological approach” at Scientific Research Department, Kaivalyadhama Yoga Research Institute, Lanavla , Pune. Relaxation potential of yogic exercises seems to play a vital role in establishing psycho-physical health in reversing the psycho-immunology of emotions under stress based on breath and body awareness. Therefore, a hybrid model of human information processing-psycho-neuroendocrine (HIP-PNE) network has been proposed to reveal the importance of yogic information processing. This study focuses on two major pathways of information processing involving cortical and hypothalamo-pituitary-adrenal axis (HPA) interactions with a deep reach molecular action on cellular, neuro-humoral and immune system in reversing stress mediated diseases.

### Methodology

The purpose of the study was to find out the effect of pranayama and brisk walking practices on maximum

voluntary ventilation (MVC) among the sedentary women. For the purpose of this study, forty-five sedentary women were chosen on the random basis from Tiruchy only. Their age group ranges from 30 to 40 .

The subjects were divided into three groups, first group considered as Experimental Group - I would undergo pranayama practices and the second group considered as Experimental Group - II would undergo brisk walking practices and third group consider as Control Group not attend any practices, and the pre test and posttest would be conducted before and after the training. Training would be given for eight weeks . It would be found out finally the effect of pranayama and brisk walking practices on the selected maximum voluntary ventilation (MVC) among the sedentary women in scientific method. The collected data were statistically analyzed by using the Analysis of Covariance (ANCOVA).

### Training Schedule

**Experimental Group – I : Pranayama practices**

**Experimental Group – II: Brisk walking practices.**

**Group III : Control Group ( No Training).**

### Results and Discussions

The statistical analysis comparing initial and final means of maximum voluntary ventilation (MVC) due to pranayama and brisk walking practices among the sedentary women is presented in the Table I.

Table 1. Analysis of covariance of the means of two experimental groups and the control MVC in maximum voluntary ventilation (In Milliliters)

Tests/ Groups	EX.GR-I	EX.GR-II	CG	S O V	Sum of Squares	df	Mean Squares	“F” Ratio
Pre Test	1.700867	1.77	1.79	B	0.06	2	0.031	1.15
				W	1.13	42	0.03	
Post Test	2.431133	2.46	1.83	B	3.83	2	1.92	27.07*
				W	2.97	42	0.07	
Adjusted Post Test	2.42	2.46	1.83	B	3.66	2	1.83	25.42*
				W	2.953	41	0.07	

\*Significant at 0.05 level of confidence (The Table Value for significant at 0.05 level of confidence with df 2 and 42, and 2 and 41 are 2.42 and 2.41).

Since significant improvements were recorded, the results were subjected to post hoc analysis using the

scheffe’s confidence interval test. The results were presented in the table 2.

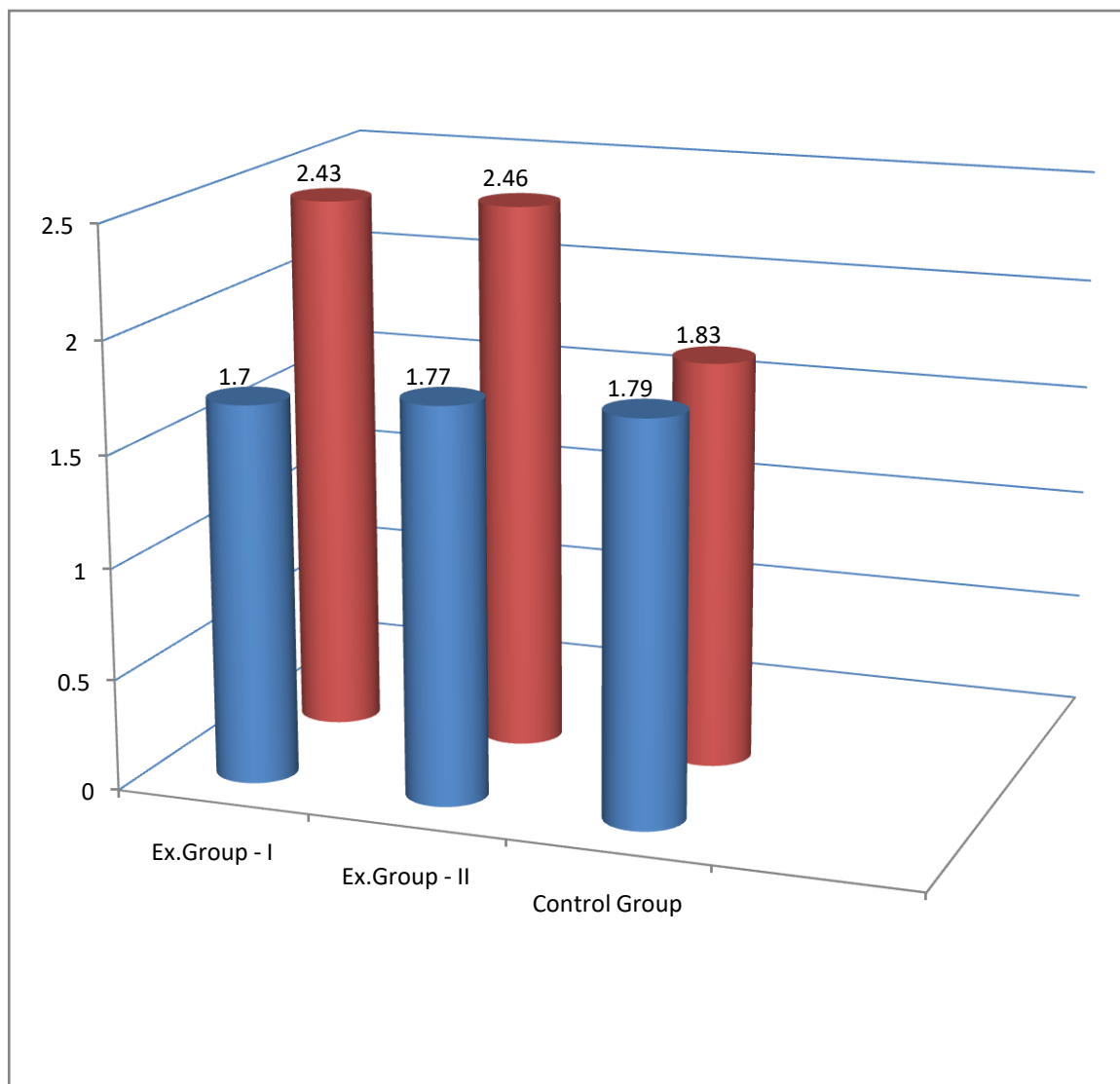
Table 2. Scheffe’s post-hoc test for maximum voluntary ventilation

Mean Values			MD	Required C.I
EX.GR-I	EX.GR-II	CG		
2.42	2.46		0.04	0.24
2.42		1.83	0.59*	
	2.46	1.83	0.63*	

\* Significant at 0.05 level of confidence

The obtained adjusted mean values were presented through bar diagram in the figure 1.

Figure 1. Bar diagram showing pre, post and adjusted post-test values of control group, two experimental groups on maximum voluntary ventilation (mvc)



### Discussions on the Findings

Taking into consideration of the post test means and adjusted post test means were determined and analysis of covariance was done and the obtained F value 27.07 and 25.42 were greater than the required value of 3.22 and hence it was accepted that the pranayama and brisk walking practices significantly changes maximum voluntary ventilation (MVC) of sedentary women.

### Conclusion

The analysis of co-variance of maximum voluntary ventilation (MVC) indicated that the Experimental Group I and II (pranayama practices) II (brisk walking practices) Group III (Control group), were significantly differences the maximum voluntary ventilation (MVC). It may be due to the effect of Pranayama and brisk walking practices .

The findings of the study showed that the Experimental Group – I (pranayama practices) and Experimental Group – II (brisk walking practices) group III (Control group) had significantly differences in maximum voluntary ventilation (MVC).

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