

Effect of Yogic Treatment on Breath-Holding Time in Asthmatics*

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Introduction :

During the pioneering research work on the treatment of bronchial asthma through yogic methods¹ breath-holding time was also studied as one of the parameters to judge the efficacy of the yogic treatment. The results of this study are presented here.

Material and Methods :

Out of a total of 104 males who had been admitted in batches of eight every month for a period of two months as in-door patients for the treatment of bronchial asthma, breath-holding time was studied in 44 patients from seven batches. The patient's age varied from 25 to 45 years and the duration of their asthmatic trouble was 5 to 10 yrs. or even more in some cases.

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The first month was kept as "control period" where general yogic practices were taught to the patients to have a placebo effect which essentially consisted of a few asanas only. The specific yogic treatment was administered during the second month which was the real treatment (experimental) period and it consisted of cleansing processes (like Dhauties, Netis and Kapalbhati) and Pranayamic breathing.

The actual testing was performed in the following manner. In a comfortable sitting position in resting condition, the patients were asked to hold their breath after deep exhalation followed by deep inhalation till breaking point. The time was recorded in seconds with the help of a stop-watch. After some rest second attempt was made and the time recorded. In all three attempts were made by the same patient in one sitting. The average of the three attempts and the maximum value amongst the three were taken for calculations. It was seen that the patient had no attack at the time of this testing.

In the beginning, the test was administered before and after the experimental period to fifteen patients. Afterwards the test was administered before the control period also. Thus twenty patients were given three tests. Data of nine patients had to be discarded as third observation could not be made on them.

Results and Observation :

The average breath-holding time of the three attempts and the maximum performance in the test is tabulated separately for different observations in Table-1. The difference in breath-holding time in different observations with the statistical analysis has been presented in Table-2.

It will be seen from the results that breath holding time has increased after teaching yoga practices to the asthma patients. The increase is less marked for the control period (average increase being 6 seconds) during which only asanas

Table 1

Average and Maximum Breath-Holding Time (Seconds) in Two Groups for Different Conditions of Observations.

Group and Number of Patients Studied	Breath Holding Time in Seconds \pm S. E. of Means					
	Average of Three Attempts			Maximum Attempt		
	I-On Admission	II-Before Treatment	III-After Treatment	I-On Admission	II-Before Treatment	III-After Treatment
A - 15	—	52.8 \pm 6.2	67.1 \pm 8.5	—	64.3 \pm 6.6	79.8 \pm 8.6
B - 20	41.8 \pm 4.2	47.1 \pm 4.1	63.2 \pm 5.3	47.1 \pm 4.7	54.3 \pm 5.5	73.9 \pm 6.5

Table-2.

Statistical Analysis of the Inter-Condition Differences for Breath Holding Time
(Average and Maximum Values) in the Two Groups.

Group and Inter Condition compared	Average Values			Maximum Values		
	Difference of means	±S. E. of means	t value	Difference of means	±S. E. of means	t value
Group A						
III-II	67.1-52.8=14.3	±10.5	1.35NS	79.8-64.3=15.5	±8.2	0.55 NS
Group B						
II-I	47.1-41.8=5.3	±5.86	0.91NS	54.3-47.1= 7.2	±7.21	1.00 NS
III-I	63.2-41.8=2.4	±6.76	3.17**	73.9-47.1=26.8	±8.02	3.35**
III-II	63.2-47.1=16.1	±6.73	2.39*	73.9-54.3=19.6	±8.51	2.31*

NS=not Significant.

* Significant at 0.05.

** Significant at 0.01.

were taught to the patients with a view to prepare them to undergo specific treatment in the experimental period. The increase in the breath-holding time at the end of the experimental period is well marked (average increase being 16 secs.) and this difference is statistically significant for group B. The total increase in the breath holding time (22 secs. group B) is highly significant.

Discussion and Conclusion :

In different asanas³ the abdominal wall is brought into activity. This in turn works on the diaphragm and helps to move it better, thus helping emptying the lungs efficiently. Some of the asanas serve as very good educators in abdominal breathing and thus they can help the patients to exhale better. Stress on proper relaxation in the practice of various asanas help to remove the tension in the respiratory muscles and this in turn can also help the asthmatics in efficient breathing which can get reflected in increased breath-holding time as is seen at the end of the control period in this study. But this increase is not directly connected with the respiratory system.

Pranayama⁴ and some of the internal cleansing processes like Kapalbhathi⁵ and Neti² are directly concerned with the respiratory system and they work on and through the respiratory centre. It allows the patient to develop a capacity to tackle the brain activity and the patient learns to manipulate the movements of the respiratory muscles from the higher level. Kapalbhathi⁵ is directly concerned with breathing. Efficient exhalation and passive inhalation is its strong point. Apart from this, it also helps to bring out the bronchial secretions by creating a strong current of air acting from within outwards. Dhauties⁶ further help to bring down the amount of bronchial secretions and give rise to a feeling of clear lungs to the patients. Neti kriya² has the potentiality to clean the nasal passages and to keep them wide open so that one could breathe easily. All these factors work together and they can produce effect in the form of improved function-

ing of the respiratory system. This is being reflected in the present observation of significant increase in the breath-holding time of the patients after yogic treatment.

In conclusion it could be said that one month's treatment of asthmatics increases their breath-holding capacity in normal resting condition.

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