



## EFFECT OF NADISODHAN AND UJJAYI PRANAYAMA ON NEGATIVE BREATH HOLDING CAPACITY OF U-19 KABADDI PLAYERS OF JANGALMAHAL

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### ABSTRACT

**Purpose:** The main aim of the study was to find out the effect of nadisodhan and ujjayi pranayama on negative breath holding capacity of U-19 kabaddi players of jangalmahal. **Method:** Fifty one kabaddi players were randomly selected for the current study. Their age ranged from 14-18 years Negative breath holding capacity was selected as a dependent variables and nadisodhan and ujjayi pranayama was considered as independent variables. For the study, the selected subjects were divided into three equal groups (Experimental group and control group). Group A and Group B served as experimental group and Group C served as control group. The breath holding capacity was measured by manual method in seconds. To find out the significant effect of nadisodhan and ujjayi pranayama on negative breath holding capacity of U-19 kabaddi players of jangalmahal, descriptive statistics and analysis of Co-Variance (ANCOVA) were used. The level of significance of set at 0.05 level. **Results:** The result reveals that there was significant effect of nadisodhan and ujjayi pranayama on negative breath holding capacity of U-19 kabaddi players of jangalmahal. **Conclusions:** It is noticed that practice of eight weeks of nadisodhan and ujjayi pranayama helped to improve negative breath holding capacity of U-19 Kabaddi players of jangalmahal.

**KEYWORDS :** Nadisodhan, Ujjayi Pranayama, Negative breath holding capacity etc.

### Introduction:

Breathing is important for two reasons. It is the only means to supply our bodies and its various organs with supply of oxygen which is vital for our survival. The second function of breathing is that it is one means to get rid of waste products and toxins from the body. According to Yoga we have a fire (Agni) in the body, situated in the vicinity of the naval, between the prana-vayu and the apana-vayu. The flame itself is constantly changing direction: on inhalation the breath moves towards the belly, causing a draft that directs the flame downward like in a fireplace; during exhalation the draft moves the flame in the opposite direction, bringing with it the just-burned waste matter. A breathing pattern where the exhalation is twice as long as the inhalation is aimed at providing more time during exhalation for freeing the body of its blockages.

The name alternate nostril breathing is due to the fact that we alternate between the two nostrils when we do the breathing. Yogis believe that this exercise will clean and rejuvenate your vital channels of energy, thus the name nadisodhan (purification of nadis or channels). With this exercise, we breathe through only one nostril at a time. The logic behind this exercise is that normal breathing does alternate from one nostril to the other at various times during the day. In a healthy person the breath will alternate between nostrils about every two hours.

Ujjayi consists in drawing air in through both nostrils with the glottis held partially closed. Ujjayi translates as "what clears the throat and masters the chest area". This partial closure of the glottis produced a sound like that heard in sobbing, except that it is continuous and unbroken. The sound should have a low but uniform pitch and be pleasant to hear. Friction of air in the nose should be avoided; consequently no nasal sounds will be heard. A prolonged full pause should begin, without any jerking, as soon as inhalation has been completed. Closure of glottis, use of chin lock and closure of both nostrils are standard. Prolong the pause as long as possible; but it should be terminated and exhalation commenced smoothly and slowly. When properly performed, exhalation proceeds slowly and steadily through the left nostril with the glottis partially closed as in inhalation. One may begin to exhale with release of air pressure by lifting the finger from this left nostril, loosening his chin lock and then partially opening his glottis. Exhalation should be complete.

**Objective of the study:** The objective of the study was to find out the effect of nadisodhan and ujjayi pranayama on negative breath holding capacity of U-19 kabaddi players of jangalmahal.

### METHODOLOGY:

**Subject:** Fifty one kabaddi players of U-19 of different schools of Jamboni blocks were selected for the present study. Their age ranged from 14-18 years of age.

**Variables:** Negative breath holding capacity was selected as dependent variable and nadisodhan and ujjayi pranayama were considered as independent variable.

**Criterion Measure:** The negative breath holding capacity was measured by manual method in seconds.

**Experimental Design:** For the present study randomized group design which consists of two experimental group each consisting of 17 players and one control group (N=17). Group A and Group B served as experimental group and Group C served as control group. Their age ranged from 14 to 19 yrs. Nadisodhan and Ujjayi pranayama techniques were properly introduced with demonstration to the subjects before the practice begins. The duration of the practice was 30 minutes with two sessions in a day i.e. morning and evening session for a period of eight weeks.

**Administration of training:** The treatment was administered on experimental groups for the period of eight weeks while the control group did not get any kind of practice. Before the administration of the treatment, the selected test was administered on all the experimental and the control groups to the pre-test data. After the eight weeks practice again the same test was administered to collect the post test data.

**Statistical Analysis:** To find out the significant effect of Nadisodhan and ujjayi pranayama on negative breath holding capacity of U-19 kabaddi players of jangalmahal, descriptive statistics and analysis of Co- variance (ANCOVA) was used. The level of significance was set at 0.05 level.

### Findings:

#### TABLE: 01

**Analysis of Co-Variance of the two experimental groups and one control group in negative breath holding capacity.**

Test	Mean and Standard deviation			ANCOVA TABLE				
	Nadisodhan	Ujjayi	Control		Sum of square	df	Mean square	F
Pre-test	44.24±3.45	44.48±1.63	42.45±1.63	A	11.80	2	5.90	
				W	298.70	48	6.22	.940
Post-test	49.76±4.94	48.52±1.12	42.76±1.43	A	474.62	2	237.31	
				W	444.35	48	9.25	25.63*
Adjusted	49.63	48.24	43.19	A	377.10	2	188.55	27.63*
				W	320.63	47	6.82	

\*Significant at 0.05 level of significance, F- ratio needed for significance at 0.05 level of significance =  $df(2,48) = 3.19$ ,  $F(2,47) = 3.19$ .

Analysis of Co-Variance for negative breath holding capacity was insignificant in case of pre-test means from which it is clear that the pre-test means does not differ significantly and that the random assignment of subjects to the two experiment groups was quite successful. The difference between the adjusted post- tests means was found significant as the obtained F-ratio was 27.63. The F- ratio needed for significance at 0.05 level of significance was 3.19.

**TABLE-02**  
**Post Hoc Comparison of adjustment means of two experiment and one control group in relation to negative breath holding capacity.**

Nadisodhan Gr.	Ujjayi Gr.	Control Gr.	Mean Difference	Critical Difference
49.63	48.24		1.39	1.79
49.63		43.19	6.44*	
	48.24	43.19	5.05*	

\*Significant at 0.05 level of significant. The above table reveals that significant difference was found between nadisodhan and ujjayi pranayama & control group, as the mean difference was greater than the critical difference. However, no significant difference was found between nadisodhan group and ujjayi group, as the mean difference was less than the critical difference.

**Discussion:**

The significant difference in negative breath holding capacity of U-19 Kabaddi players of jangalmahal was seen, this may be due to the fact that all the subjects have been practicing nadisodhan and ujjayi pranayama. Since eight weeks in normal breathing, inspired air is not distributed uniformly. In the erect posture the unit of lungs is greater in the lower part than the upper parts. In normal breathing after a particular degree of stretching or even before this, stretch receptors (situated in the alveolar walls) are stimulated and send message to the respiratory centre so that exhalation starts. However, in pranayama we continue the phase of inhalation with our strong voluntary control so that lungs are expanded considerably and the walls of the alveoli are stretched to the maximum. Thus, the chest continues to get expanded under cortical control. The stretch receptors are thus trained to withstand more and more stretching. This helps us to hold the breath for a long period. The duration of Kumbhaka is gradually increased by the practice of pranayama so that the respiratory centre is gradually acclimatized to withstand higher and higher CO2 concentration in the alveoli and the blood.

**Conclusions:** On the basis of finding negative breath holding capacity of the subjects of experimental groups was found to be statistically significant since the obtained "F" value 27.63 was found to be higher than the tabulated value 3.19 at 0.05 level of significance.

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