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## A comparative study on respiratory parameters between kayaking and canoeing players

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### Abstract

This study aimed to examine the comparison of respiratory parameters between kayaking and canoeing players. To investigate in this study 24, players of kayaking and canoeing from Guru Nanak Dev University, Amritsar between the age group of 21-26 years ( $23.5 \pm 1.74456$ ) volunteered to participate in the study. Student t test for paired samples was utilized to compare the means of kayaking and canoeing players. Significant differences were found in Tidal Volume (VT) and Inspiratory Capacity (IC) whereas, no significant differences were noted in Expiratory Reserve Volume (ERV), Inspiratory Reserve Volume (IRV) and Vital Capacity (VC) in the experimental group. The Mean and Standard Deviation values of Tidal Volume (VT) of Kayaking & Canoeing players were  $391.42 \pm 10.00$  and  $396.50 \pm 6.75$  respectively. The Mean and Standard Deviation values of Expiratory Reserve Volume (ERV) of Kayaking & Canoeing players were  $4499.50 \pm 151.15$  and  $4558.17 \pm 125.90$  respectively. The Mean and Standard Deviation values of Vital Capacity (VC) of Kayaking & Canoeing players were  $4499.50 \pm 151.15$  and  $4558.17 \pm 125.90$  respectively. The Mean and Standard Deviation values of Inspiratory Reserve Volume (IRV) of Kayaking & Canoeing players were  $2986.67 \pm 106.88$  and  $3016.67 \pm 71.77$  respectively. The Mean and Standard Deviation values of Inspiratory Capacity (IC) of Kayaking & Canoeing players were  $3517.92 \pm 73.16$  and  $3523.75 \pm 59.82$  respectively. There were no significant differences found between kayaking and canoeing player in the scores of respiratory parameters.

**Keywords:** Respiratory Parameters, Kayaking and Canoeing Players

### Introduction

Kayaking & canoeing are sport that spots remarkable requests on the upper physique Also trunk musculature (Tesch, 1983). Past exploration papers (Bishop, 2000; Fry and Morton, 1991; Gray *et al.*, 1995; Tesch, 1983)<sup>[8]</sup> recommended that kayak & kayak paddlers have high values maximal aerobic and anaerobic capacities and upper-body muscle quality. Canoeing and kayaking would upper-body sports that make changing requests on the body, contingent upon the kind from claiming challenge and the separation secured. The shorter event (500m) would essential anaerobic (2 minutes from claiming exercise), calling to capable shoulder muscles with high proportion fast-twitch fibers. Previously, contrast, 10,000m event call for vigorous activity to be performed by the arms. Such contestants require a helter skelter extent about slow-twitch fibres, Also a capability to create near 100% for their leg most extreme oxygen intake when paddling. Oxygen is continuously required for energy metabolism. The process of gaseous exchange by which oxygen is taken from the environment to the cellular level and carbon dioxide is removed from the body is known as respiration. Therefore, in the display investigation the examiner means to figure out those contrasts to of respiratory Indices between Kayaking and Canoeing Players.

### Material and Methods

Subjects A group of 24 players ( $n_1=12$  kayaking players and  $n_2=12$  canoeing players) in Guru Nanak Dev University Amritsar aged 21-26 years ( $23.5 \pm 1.74456$ ) participated in the study. The purposive sampling technique was used to attain the objectives of the study. All the subjects, after having been informed about the objective and protocol of the study, gave their consent and volunteered to participate in this study.

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**Table 1:** Distribution and Demographics of Subjects

Simple Size (N=24)			
Variable	Total=24	Kayaking Players (n <sub>1</sub> =12)	Canoeing Players (n <sub>2</sub> =12)
Age	23.5	23.66	23.33
Body Height	1.77	1.775	1.768

**Methodology**

This study is designed as a retrospective cross-sectional study. The subjects from Kayaking Players (n<sub>1</sub>=12) and Canoeing Players (n<sub>2</sub>=12) from Guru Nanak Dev University Amritsar. The following respiratory parameters were measured with the use of a wet spirometer, the respective average values being used in the analysis:

**Selection of variable**

**Respiratory Parameters**

- Tidal volume (VT)
- Expiratory Reserve Volume (ERV)

- Inspiratory Reserve Volume (IRV)
- Vital Capacity (VC)
- Inspiratory Capacity (IC)

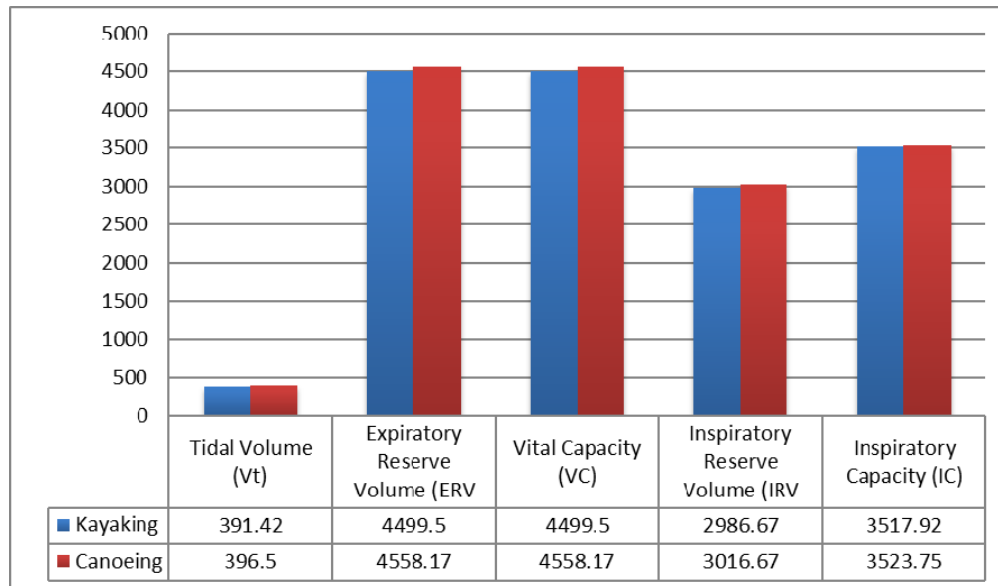
**Statistical procedure used**

The SPSS 16.0 4software was used to analysis data. The group differences were assessed by using the Student’s t-test for independent data. The level of significance was set at 0.05. Level.

**Analysis and results**

**Table 1:** Significant differences in the Mean scores of Respiratory parameters of the kayaking and canoeing players.

Tidal Volume (Vt)						
Group	N	Mean	Std. Deviation	Std. Error Mean	t-value	p-value
Kayaking	12	391.42	10.00	2.89	1.45	0.15
Canoeing	12	396.50	6.75	1.95		
Expiratory Reserve Volume (ERV)						
Kayaking	12	4499.50	151.15	43.63	1.03	0.31
Canoeing	12	4558.17	125.90	36.34		
Vital Capacity (VC)						
Kayaking	12	4499.50	151.15	43.63	1.03	0.31
Canoeing	12	4558.17	125.90	36.34		
Inspiratory Reserve Volume (IRV)						
Kayaking	12	2986.67	106.88	30.85	0.80	0.42
Canoeing	12	3016.67	71.77	20.72		
Inspiratory Capacity (IC)						
Kayaking	12	3517.92	73.16	21.12	0.83	0.21
Canoeing	12	3523.75	59.82	17.27		



**Results**

The results of Respiratory Parameters (i.e., Tidal Volume (VT), Expiratory Reserve Volume (ERV), Inspiratory Reserve Volume (IRV), Vital Capacity (VC) and Inspiratory Capacity (IC) of University Level kayaking and canoeing players. The Mean and Standard Deviation values of Tidal Volume (VT) of Kayaking & Canoeing players were 391.42 ± 10.00 and

396.50 ± 6.75 respectively. The Mean and Standard Deviation values of Expiratory Reserve Volume (ERV) of Kayaking & Canoeing players were 4499.50±151.15 and 4558.17±125.90 respectively. The Mean and Standard Deviation values of Vital Capacity (VC) of Kayaking & Canoeing players were 4499.50±151.15and 4558.17±125.90 respectively. The Mean and Standard Deviation values of Inspiratory Reserve Volume

(IRV) of Kayaking & Canoeing players were  $2986.67 \pm 106.88$  and  $3016.67 \pm 71.77$  respectively. The Mean and Standard Deviation values of Inspiratory Capacity (IC) of Kayaking & Canoeing players were  $3517.92 \pm 73.16$  and  $3523.75 \pm 59.82$  respectively. There were no significant differences found between kayaking and canoeing player in the scores of respiratory parameters.

### Discussion

We compared the respiratory parameters between kayaking and canoeing players. The various respiratory parameters were measured with the use of a wet spirometer. With respect to tidal volume, we found no significant differences between kayaking and canoeing player in the scores of respiratory parameters. These results were similar to other previous studies Bishop, D. (2000) [8]. However in a study on similar variables, sukhbir *et al* (found that intervarsity throwers were better than inter-college level throwers.

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