

## **Comparative Effect To Static and Dynamic Stretching Warm – Up on Health Related Variables Among Veterinary Students**

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### **ABSTRACT**

*The purpose of the study was to compare the effect of static and dynamic stretching warm-up on health related variables among veterinary students. Twenty-four male veterinary students studying Bachelors of veterinary science of I year from Veterinary College And Research Institute, Tirunelveli were selected randomly as subject. The age of the subjects ranged in from 18 to 23 years. The selected subjects were divided into two groups. Group I underwent static stretching warming up programme (SSEP) and group II underwent dynamic stretching warm-up programme (DSWP). The experimental groups were subjected to the static stretching warming –up programme and dynamic stretching warming-up programme for alternative three days per week up to eight weeks. The static stretching warming –up programme (SSWP) group, received static type stretching warming up exercise for 40 minutes duration with the assistance of the investigator. The static stretching warming –up programme (SSWP) and dynamic stretching warming –up programme (DSWP) were selected as independent variables and the criterion variables flexibility and body composition were selected as dependent variables and the selected dependent variables were assessed by standard test items. Flexibility was assessed by sit and reach test the unit of measurement in centimeters and body composition was assessed by body mass index and the unit of measurement in percentile\kg\m<sup>2</sup>. The experimental design selected for this study was pre and post test randomized design. The data were collected from each subject before and after the training period and statically analysed by using paired sample 't' test and analysis of covariance (ANACOVA). It was found that there was a significant improvement and significant difference exist due to the effect of static stretching warming up programme (DSWP) on flexibility and body composition among veterinary students.*

**KEYWORDS:** Static and Dynamic Stretching, Veterinary Students.

### **INTRODUCTION**

The warm-up prior to exercise is recommended is prepare the muscle and heart for the training or exercise. A general warm-up before exercise has gradually increase the amount of blood the heart pumps, the blood flow to active muscles, and the internal body temperature. Warm-up helps redirect the blood flow from places such as stomach and spleen to the muscles that use the exercise. The blood flow gives more endurance by providing the muscles that more nutrients and oxygen ([www.Resource2.Rocky.view.ad.ca](http://www.Resource2.Rocky.view.ad.ca)).

Warming –up consist of a gradual increase in intensity until the player is work at 70% of maximal hear rate. This intensity has the effect of allowing an increase in the range of movement of the joints and improves the aerobic and anaerobic performance. It leads the individuals becomes more flexible and running efficiency. The warming up effect to allow the

muscles and tendons to become more extensible it makes muscles and tendons easier and more effective ([www.physioroom.com/prevention/warm\\_up](http://www.physioroom.com/prevention/warm_up)).

Warm – up is an essential part of physical activity to prepare the physiological and psychological system for the further specific activity. Sports persons are used many different types of stretching that are usually based only on their personal preference, but not optimal type of stretching exercises has been identified. The main actual purpose of stretching before any sports activity are to ensure that the individual has the optimum range of motion in the muscles and the joint to perform the sports activity and to decrease the muscle pull and muscle spasm and to decrease the risk of injury. In addition the warming up programmer has the different kinds of stretching exercises are widely used, including ballistic, proprioceptive neuromuscular facilitation, static and dynamic stretching. To find out optimal warm – up programmer and to select exercise which improve the contraction of muscle, and assist to prevent injuries in sports activities. The studies of recent 10 years have not found which kind of stretching exercises is more effective for warm – up the static and dynamic exercises.

Static stretching warm-up increase the joint range of motion almost two- folds as compared to dynamic stretching warm – up but they have no positive effect on the muscle contraction characteristic and explosive muscle strength. It has been also demonstrated that warm-up which includes dynamic stretching exercises is effective to prepare the muscle for performance during high-speed movement. In many physical activities, it is important to achieve the optimal condition of muscles in very short time, especially among the exchange players in all sports or in any athletic events between the trials.

In most previous studies, the function of lower limb muscle has been determined, but in several sports events the maximal exertion of upper limbs is very important ([www.ojs.utlib.ee/index.php](http://www.ojs.utlib.ee/index.php)).

## **METHODOLOGY**

To achieve the purpose, twenty-four students studying from Veterinary College and Research Institute, Tirunelveli were selected randomly as subjects. The age of the subjects ranged from 18-23 years. They were assigned randomly into two groups (group I) under –static type of stretching exercise for warming –up programmer (DSWP) training and the group received static type of stretching exercise for 40 minutes during with the assistance of the investigator. The experimental groups were subjected to the training during evening hours for alternative three days for eight weeks. The static Stretching Warning-up programme(SSWP) and Dynamic Stretching Warming – up Programme (DSWP)were selected as independent variables and the criterion variables flexibility and body composition were selected as dependent variables and the selected dependent variables were assessed by standard test items. Flexibility was assessed by sit and reach test and the unit of measurement in centimeters and the body composition was assessed by body mass index and the unit of measurement in kg/m<sup>2</sup>. The experimental design selected for this study was pre and post-test randomize design. The data were collected from each subjected before and after the training period and statistically analyzed by using paired sample 't' test and analysis of covariance (ANCOVA).

## **RESULTS AND DISCUSSIONS**

The data pertaining to the variables in this study were examined by using paired sample 't' test to find out significant improvement and analysis of covariance (ANOCOVA) for each

variables separately in order to determine the difference and tested at 0.05 level of significance. The analysis of paired sample ‘t’ test on data obtained for flexibility and body composition of the pre -test and post -test means of experimental groups have been analyzed and presented in Table I.

**TABLE-1  
MEAN AND PAIRED SAMPLE “T” TEST OF EXPERIMENTAL GROUPS ON  
SELECTED VARIABLES**

VARIABLES	MEAN	SSWP GROUP	DSWP GROUP
FLEXIBILITY	PRE TEST	14.87	14.73
	POST TEST	15.44	16.53
	‘T’ TEST	<b>27.8*</b>	<b>16.84*</b>
BODY COMPOSITION	PRE TEST	24.00	23.93
	POST TEST	22.00	21.33
	‘T’ TEST	<b>20.5*</b>	<b>15.92*</b>

\*significant at 0.05 level of confidence (15) = 2.15

The obtained ‘t’ ratio value of experimental groups is higher than the table value, it is understood that static stretching warm – up programme (DSWP) had significantly improved the performance of flexibility and body composition. It is understood that static stretching warm – up programme (DSWP) groups had significantly improved the performance of flexibility and body composition due to the effect of static stretching warm – up programme (SSWP) and dynamic stretching warm – up programme (DSWP) have been analysed and presented in Table II.

**TABLE –II  
ANALYSIS OF COVARIANCE OF EXPERIMENTAL GROUPS ON SELECTED  
VARIABLES**

VARIABLES	AJUSTED POST TEST MEANS		SOURCE OF VARIANCE	SS	DF	MEAN SQUARES	‘F’ RATIO
	SSWP GROUP	DWEP GROUP					
FLEXIBILITY	15.38	16.59	BETWEEN	11.12	1	11.12	125.63*
			WITHIN	2.39	27	.089	
BODY COMPOSITIO-N	21.98	21.36	BETWEEN	2.89	1	2.89	16.08*
			WITHIN	4.85	27	.180	

Table II shows that the adjusted posttest mean values of flexibility and body composition of SSWP and DSWP groups were 15.38 and 16.59, 21.98 and 21.36 respectively. The obtained F-ratio 125.63 and 16.08 which is higher than the table value 4.21 with df 1 and 27 required for

significant difference at 0.05 level. Since the values of F-ratio was higher than the table value, is indicated that there was significant difference exist between the adjusted posttest means of static stretching warm – up programme (DSWP) groups in improving the performance of flexibility and body composition. For the development of coaching progress, the coaches should add the both types of stretching exercise for their warm – up sessions to improve the performance of flexibility and body composition.

## CONCLUSIONS

1. The experimental groups namely static stretching warm – up programme (SSWP) and dynamic stretching warm – up programme (DSWP) had achieved significant improvement on flexibility and body composition.
2. Significant difference were found among the two experimental groups namely static stretching warm – up programme (SSWP) and dynamic stretching warm – programme (DSWP) groups towards improving the selected criterion variables such as flexibility and body composition.
3. It was found that the improvement caused by dynamic stretching warm – up programme (DSWP) group was better than static stretching warm – up programme (SSWP) group on improving the selected dependent variables.

## REFERENCE

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