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## Contents

S.No	Names Of The Articles	Page.No
1	Effect Of Yogic Practices And Physical Exercise On Hemoglobin Blood Glucose And Body Mass Index Among Male Diabetic Patients- Mr. S. Ananth, Dr. S. Chidambara Raja,	1
2	Standard Progressive Matrices Scores Of Male And Female Physical Education Professional Students Of Igpess-Madhavi Pathak, Manish Kumar. P	5
3	Study Of The Effect Of Commonwealth Youth Games 2008 On The Sport Tourism In Pune City-Mohammad Hadi Tavakkoli	9
4	Effects Of Interval Running And Aerobic Dance On Selected Body Composition Variables Of College Women-Rekha M R	12
5	A Study On Relationship Between Mental Skills And Competitive Anxiety And Their Effects On Performance-Jain. Shilpi, Wazir Singh Phogat	15
6	Sports education - preparing for the new reality-Dr. G.Shyam Mohan Reddy	20
7	A Study on the Physical Fitness among 10 Meter Air Rifle and Yoga Players of Panipat-Mahipal	22
8	Team Cohesion Among National Level Cricket Players-Anil Kumar, A.B., Virupaksha, N. D	24
9	Prediction of Basketball Players ability for Anthropometric measurements-Vishwanath M Nadakatti,Suresh.B.Patil	27
10	A Study On Folk Games Of Bijapur District-Rajashekhar. D. Benakanahalli., Virupaksha, N.D.	29
11	Anthropometric Determinants Of Running Performance In Elite Junior Athletes-Wazir Singh Phogat, Ravinderpal Ahlawat,	31
12	Effect of Ashwagandha (Withania Somnifera) Root Powder Supplementation <i>on the</i> Core Muscle Strength and Stability in Hockey Players-Dr. Arvind Malik, Dr. Sonia Malik, Vikas Mehta, Pardeep Sharma	34

13	<b>A Comparative Study of Agility among Badminton Players and Lawn Tennis Players of the Khammam District in Telangana-Dr.K.Savithri</b>	39
14	<b>Effect Of Consumption Of Whey Protein Supplement On Aerobic Power, Anaerobic Power And Bodycomposition Of Weight Trainers-Ankan Sinha</b>	41
15	<b>Budget allocating Scenario for Sports in advanced Countries - A study on Olympic Games-Anish Fatima</b>	44
16	<b>How Media Publicising Sports and An Analysis on Performance-M.Naganna</b>	46
17	<b>Issues and Challenges of Women in Sports and Games-K.Venkateshwarlu</b>	49
18	<b>Effect Of Skipping Exercises On Vertical Jump Among Junior Volley Ball Players Of Nalgonda District-Avula Srinivas</b>	51
19	<b>Influence Of Brisk Walking And Yogic Practices On Selected Physiological variables among Diabetic Patients-Dr.S.Manikandan</b>	53
20	<b>Analysis on FVC and FEV1/FVC ratio between playing and non playing women students of Hyderabad-Mrs.Rajeshwari, Dr.N.Dileep</b>	55
21	<b>A Study On Aggressiveness Between Male And Female Sportsperson Of All India-Interuniversity Players”-Dr. Hanumanthayya Pujari</b>	57
22	<b>Effectiveness Of Athletic Taping And Kinesio Taping For Prevention Of Sports Injury-Jagadish S Gasti,</b>	60
23	<b>A Study Of Aerobic Endurance Among Foot Ball Players And Sepak Takraw Players Of Hyderabad-Dr.K.Deepa,Prof.L.B.Laxmikanth Rathod</b>	65
24	<b>A Study on the effect of Weight Training Exercises for development of Explosive Strength among Long jumpers of Hyderabad in Telangana - Prof.RajeshKumar,Prof.J.PrabhakarRao,Dr.I.Balaram Reddy,J.Ravinder</b>	67
25	<b>Effect Of Circuit Training And Parcourse Training On Anxiety And Blood Pressure-Mr.K.P.R.Sethupathyraja, Dr.M.Sundar</b>	69
26	<b>Financing Cost Elements of Crude Oil Import in Indian Oil Corporation Limited (IOCL)-FatemeHkiassi</b>	72

27	A Comparative Study On Psychosocial Adjustment Of The Students Of Different Category Schools-Prasenjit Barman, Dr. Sanjib Mridha,	75
28	Food Effects On Health And Hygiene By Yoga-Dr.Rajashekhar .M.Hiremath, Mr. Basavraj.S.Lokapur	78
29	The Role and Responsibilities of the Physical Education Teacher in the School Physical Activity Program-Dr.Rajashekhar .M.Hiremath, Mr.Basavaraj .S.Lokapur	81
30	Yoga As A Good Sceince In Modern Life-Mr. Basavaraj Lokapur	83
31	High Intensity Aerobic Exercise Reduces Resting State Plasma Fibrinogen And Ldl Cholesterol-Dr. Rajasekhar Kali Venkata, Mr. VVS Naidu,	85
32	Loss of lung function and Upper Respiratory Tract Infection status among Professional marathon runners due to very high intensity competitive marathon running-Dr. Rajasekhar Kali Venkata	90
33	Universal Magnetism and Bio Magnetism and their Relationship- Mr. Nagarjunasangem, Dr. K. Savithri, Prof. B. Digamber Rao	95
34	A Study On Thyroid Hormone And Its Effects On Exercise – B.David	98
35	Effect of Exercise Training on hs-CRP, Adipokinand Insulin Resistance levels in Obese Men- Amin Mohammadi	100
36	A Comparative Study of Self Confidence between Physically Challenged Male Sportspersons and Non-Sportspersons- Pramod Kumar Tiwari	105

## Effect Of Yogic Practices And Physical Exercise On Hemoglobin Blood Glucose And Body Mass Index Among Male Diabetic Patients

Mr. S. Ananth, Ph.D., Scholar  
Dr. S. Chidambara Raja, Associate Professor,  
Department Of Physical Education And Sports Sciences, Annamalai University.

### Abstract

*Aim:* The purpose of the present study was to find the effect of yogic practice and physical exercise on hemoglobin, blood glucose and BMI among male diabetic patients. *Methods:* For this purpose, thirty male diabetic patients (type-I) around at Karaikal Town, Pondicherry State, with the age group of 35 – 40 years were selected. They were divided into three equal groups, each group consisted of ten subjects, in which group – I underwent yoga practices, group – II underwent physical exercise and group – III acted as control that did not participate in any special activities apart from their regular day-to-day activities. The training period for this study was six days in a week for twelve weeks. Prior to and after the training period the subjects were tested on hemoglobin, blood glucose and BMI. 10 ml of blood samples were taken by venous puncture method for assessing the hemoglobin and blood glucose. BMI was measured by a formula applying weight (Kg) /Height<sup>2</sup>(meter). The Analysis of Covariance (ANCOVA) was used to find out any significant difference between the pre- test and post-test means that was exists between the yogic practice group, physical exercise group and control group on selected criterion variables since three groups were involved in the present study, the Scheffe'S test was used as post –hoc test. *Results:* The result of the study shows the yoga practice and physical exercise group has increased the hemoglobin level, and decrease in the BMI and glucose level significantly (P > .05). *Conclusions:* It was concluded from the results of the study that yoga practice and physical exercise has bring positive changes in hemoglobin, blood glucose and BMI as compare to the control group. And also it was concluded that the yoga practice group shows better result in all variables when compared with physical exercise group and control group.

**Key words:** *yoga practice, physical exercise, diabetic patients, hemoglobin, blood glucose, BMI, Boehring Mannheim kit method, ANCOVA*

### Introduction

Yoga is one of the most ancient cultural heritage of India. Yoga is a spectacularly multifaceted phenomenon, and as such it is very difficult to define because there are exceptions to every conceivable rule (Georg Feuerstein, 2002). Yoga is a complete science of life that originated in India many thousands of years ago (Swami Vishnu Devananda, 2000). Yoga was evolved ceturites ago, it is an ancient and perfect art, science and philosophy which takes one towards the innermost trust (B.K.S. Iyengar, 2006 p.86).

Diabetes mellitus is classified into four broad categories: type 1, type 2, gestational diabetes and "other specific types". The "other specific types" are a collection of a few dozen individual causes (Shoback, 2011). Diabetes mellitus is a group of metabolic diseases characterized by high blood sugar (glucose) levels that result from defects in insulin secretion, or action, or both. Elevated levels of uric acid (hyperglycemia) lead to spillage of glucose into the urine. Uric acid is a diprotic acid with pKa<sub>1</sub>=5.4 and pKa<sub>2</sub>=10.3 (McCrudden, Francis H. 2008). The uric acid levels are controlled and lowered by insulin, a hormone, which is a produced by the pancreas. Some of the yogasanas which cures diabetes are Ardha Chandrasana, Bhujangasana, Salabhasana, Poorna Salabhasana, Dhanurasana and Ustrasana. The postures of asanas causes the internal viscera to stretch and stimulates the pancreas, glands and organs.

Cholesterol is a waxy compound, is a kind of sterol. Cholesterol is also found in the blood circulation of humans. Our body manufacturing the cholesterol which is needed by the liver and with smaller amounts produced in the small intestine and in individual cells of our body.

### Methods

*Selection of Subjects:* Thirty male diabetic patients (type – I) living around Karaikal Town, Pondicherry State, were selected as subjects and their age ranged between 35 and 40 years. *Design:* They were divided into three equal groups, such as, Group - I (n = 10) underwent yoga practices, Group - II (n = 10) underwent physical exercise and Group –III (n = 10) acted as control, which did not undergo any special exercises apart from their day-to-day activities. *Training Period:* Yoga practice period was conducted six days (Monday to Saturday) per week for twelve weeks.

Self regulation in diet and medicine which was prescribed by the physician was followed and a regular interrogation was made about the subjects' diet and medicine. *Criterion Variables Selected:* The researcher consulted with the yoga experts and selected the following variables as criterion variables: 1. hemoglobin, 2. blood glucose, 3. BMI. *Testing tool and Procedure:* The hemoglobin, blood glucose were measured by using the Sahil method and BMI was measured by weight (Kg) /Height<sup>2</sup>(meter). 10 ml of blood was collected from each subject during fasting conditions, by venous puncture method and the blood thus collected was stored in small bottles for pre and post-test for measuring the hemoglobin and blood glucose.

### Results

The data collected prior to and after the yoga practice physical exercises and control groups on hemoglobin, blood glucose and BMI were analysed and presented in the following Table – I.

*Table – I: Analysis of Covariance and 'F' ratio for Hemoglobin, Blood Glucose and BMI for Yoga Practice Group, physical Exercises Group and Control Group*

Variable Name	Group Name	Yoga Practice Group	Physical Exercise Group	Control Group	'F' Ratio
<b>Hemoglobin (gm/dl)</b>	<b>Pre-test Mean ± S.D</b>	15.42 ± 0.32	15.46 ± 0.894	15.36 ± 0.393	0.312
	<b>Post-test Mean ± S.D.</b>	15.86 ± 5.578	15.74 ± 6.724	15.29 ± 0.909	4.507*
	<b>Adj. Post-test Mean</b>	15.953	15.876	15.20	16.304*
<b>Blood Glucose (mg/dl)</b>	<b>Pre-test Mean ± S.D</b>	123.28 ± 1.927	123.37 ± 2.745	124.63 ± 1.27	0.218
	<b>Post-test Mean ± S.D.</b>	125.23 ± 2.901	125.03 ± 1.627	123.29 ± 2.75	5.064*
	<b>Adj. Post-test Mean</b>	126.874	125.884	123.309	18.821*
<b>BMI</b>	<b>Pre-test Mean ± S.D</b>	26.87 ± 1.312	27.08 ± 1.056	25.126 ± 1.85	0.217
	<b>Post-test Mean ± S.D.</b>	23.215 ± 1.163	22.135 ± 1.33	26.151 ± 1.08	7.83*
	<b>Adj. Post-test Mean</b>	23.116	22.159	26.011	21.035*

\*Significant at .05 level of confidence. (The table values required for significance at .05 level of confidence with df 1 and 28 and 1 and 27 were 4.20 and 4.21 respectively).

Table – I shows that pre and post test means 'f' ratio of yogasana practice group, physical exercise group and control group on hemoglobin were 0.312 ( $p > 0.05$ ) and 4.507 ( $p < 0.05$ ). The adjusted post test mean 'f' ratio value of experimental groups and control group was 16.304 ( $p < 0.05$ ), which was significant at 0.05 level of confidence. The pre and post test means 'f' ratio of yogasana practice group, physical exercise group and control group on blood glucose were 0.218 ( $p > 0.05$ ) and 5.064 ( $p < 0.05$ ). The adjusted post test mean 'f' ratio value of experimental groups and control group was 18.821, which was significant at 0.05 level of confidence. The pre and post test means 'f' ratio of yogasana practice group, physical exercise group and control group on body mass index (BMI) were 0.217 ( $p > 0.05$ ) and 7.83 ( $p < 0.05$ ). The adjusted post test mean 'f' ratio value of experimental groups and control group was 21.035, which was significant at 0.05 level of confidence.

Table - II

Scheffé S Test for the Difference on the Adjusted Post-Test Means of Selected Criterion Variables among the Yoga Practice Group Physical Exercise Group and Control Group

Adjusted Post-test Mean on Hemoglobin					
Yoga Group	Practice	Physical Exercise Group	Control Group	Mean Difference	Confidence interval at .05 level
15.953		15.876		0.077	0.56973
15.953			15.20	0.753*	0.56973
		15.876	15.20	0.676*	0.56973
Adjusted Post-test Mean on Blood Glucose					
Yoga Group	Practice	Aerobic Exercise Group	Control Group	Mean Difference	Confidence interval at .05 level
126.874		125.884		0.989	1.87992
126.874			123.309	3.565*	1.87992
		125.884	123.309	2.575*	1.87992
Adjusted Post-test Mean on Body Mass Index (BMI)					
Yoga Group	Practice	Aerobic Exercise Group	Control Group	Mean Difference	Confidence interval at .05 level
23.116		22.159		0.957	2.011863
23.116			26.011	2.895*	2.011863
		22.159	26.011	3.852*	2.011863

\* Significant at .05 level of confidence.

Table – II shows that the Scheffé S Test for the difference between adjusted post-test mean on hemoglobin of yoga practice group and control group (0.753) and physical exercise group and control group (0.676), which were significant at .05 level of confidence. There was a significant difference on blood glucose between yoga practice group and control group (3.565) and physical exercise group and control group (2.575) and also there was a significant difference on body mass index between yoga practice group and control group (2.895) and physical exercise group and control group (3.852) which was significant at 0.05 level of confidence after the respective training programmes. In the present study there were no significant difference was found between the experimental groups.

### Discussion

In the present study, the yoga practice group and physical exercises group reduced the blood glucose and BMI and an increase in hemoglobin level was significant. It was proved that there was a stretch and stimulation of various internal organs like heart, lungs, liver, pancreas etc., which improves the functions of these organs. Moreover, there are other benefits of yogasana and physical exercise, which help to burn off the fat from muscles. In future, instead of male diabetic patients, those who were working in various offices may be selected as subjects, because, these diabetic patients are under severe environmental and work stress. Thus, yoga practice and physical exercise may help them to improve their fitness level which helps to reduce their risk factors.

### Conclusions

1. It was concluded from the results of the study that there was a significant decrease in blood glucose and BMI among male diabetes patients (type – I) after the twelve weeks of yoga practice, physical exercises. Which was supported by the findings of **Muldoon MF, Herbert TB, Patterson SM, et al** (1995).
2. It was also concluded from the results of the present study that there was a significant difference was occurred between the yoga practices group, physical exercises group and control group on hemoglobin, blood glucose and BMI also. The result of the present study is in line with the findings of **Kumari et al** (2011) , **Dhananjai et al** (2011) and **Chen et al** (2009)

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## Standard Progressive Matrices Scores Of Male And Female Physical Education Professional Students Of Igpess

Madhavi Pathak, PhD, Research Scholar,  
Department of Physical Education and Sports Sciences, University of Delhi  
Manish Kumar. P, PhD, Research Scholar,  
Department of Physical Education and Sports Sciences, University of Delhi

### Abstract

The objective of the study was to compare selected standard progressive matrices variables namely standard progressive matrices (time), standard progressive matrices (total score), standard progressive matrices (level- A), standard progressive matrices (level-B), standard progressive matrices (level-C), Standard progressive matrices (level-D), standard progressive matrices (level-E) between male and female physical education professional students of Indira Gandhi Institute of Physical Education and Sports Sciences (IGPESS), University of Delhi. For the purpose of the study 30 students were randomly selected from Indira Gandhi Institute of Physical Education and Sports Sciences (IGPESS), University of Delhi. Raven's Standard Progressive Matrices questionnaire was administered and scored as per the instructions given in the manual. Descriptive Statistics (Mean and Standard Deviation) and Independent't' test were computed on the obtained data. The findings documented that there was insignificant difference at 0.05 level between female and male in regard to the selected variables namely Standard Progressive Matrices (Time), Standard Progressive Matrices (Total Score), Standard Progressive Matrices (Level- A), Standard Progressive Matrices (Level-B), Standard Progressive Matrices (Level-C), Standard Progressive Matrices (Level-D), Standard Progressive Matrices (Level-E). The findings have been graphically illustrated using bar diagrams appropriately. From the findings it is concluded that the intelligence level of male and female physical education students are identical.

Keywords: - Standard Progressive Matrices, Male Physical Education Students, Female Physical Education Students.

### Introduction

Raven first published his progressive matrices test in 1938, with a subtitle Perceptual Intelligence Test. The revised version was published in 1956 and this test is known today as Standard Progressive Matrices (SPM). Later, Raven published two more main versions of his progressive matrices, which followed the concept of standard matrices in all respects. (Cotton, Kiely, Crewther, Thomson, Laycock, & Crewther, 2005; Lynn, Allik, & Irwing, 2004; Bors & Vigneau, 2003)

The Standard Progressive Matrices (SPM) is a group or individually administered test that nonverbally assesses intelligence in children and adults through abstract reasoning tasks. It is sometimes called Raven's, although the SPM is only one of three tests that together comprise Raven's Progressive Matrices. Appropriate for ages from 8 years to 65 years, the SPM consists of 60 problems (five sets of 12), all of which involve completing a pattern or figure with a part missing by choosing the correct missing piece from among six alternatives. Patterns are arranged in order of increasing difficulty. The test is untimed but generally takes from 15 to 45 minutes and results in a raw score which is then converted to a percentile ranking. The test can be given to hearing and speech-impaired children, as well as non-English speakers. The Standard Progressive Matrices is usually used as part of a battery of diagnostic tests, often with the Mill Hill Vocabulary Scales. The SPM is part of a series of three tests (Raven's Progressive Matrices) for persons of varying ages and/or abilities, all consisting of the same kind of nonverbal reasoning problems. The SPM is considered an "average"-level test for the general population.

Raven intended to create a test that measures the "pure g", and when the test yielded its first results, Spearman accepted it as such as well. Since then, the interpretation of intelligence has undergone a long and intensive development, during which not only new interpretations of that ability arose, but also qualitatively different approaches to its studying have emerged. The consequence is that many papers dedicated to analysis of latent structure of Raven's test use different theories about the structure of intelligence, and accordingly, name factors differently.

For example, in the domain of theories accepting the existence of general intelligence, Raven's tests are marked in different ways – for instance, as tests of “g-factor” or as test of “fluid intelligence”, according to Cattell-Horn terminology (Cattell, 1963, 1971; Horn, 1979).

In test manual, Raven does not mention any differences between boys and girls. In Australia, Cotton et al. (2005) obtained a significant difference in favor of boys only at the age of 6, but the size of groups was 25. On Iceland, Pind et al. (2003) did not obtain a significant effect of sex on SPM in school children aged 6–16, or significant interaction of age and sex. In the study by Fajgelj et al. (2007) on 2300 children aged 4–11, there was no significant sex effect or significant interaction of sex and age. Mackintosh and Bennet (2005) found significant sex differences in some of Raven's items (males were better at items dominated by the rule of addition and subtraction, Carpenter, Just, & Shell, 1990), while in other items the differences were not significant. Generally, it can be considered that there are no significant sex differences in the level, but differences can be expected in parts of the test and latent structure.

Raven attributed large importance to perception, as an ability to “create order from chaos”. In keeping with that commitment of the experienced Raven, a large number of studies confirmed that one perceptive factor does occur. It is sometimes named gestalt factor, sometimes the speed of completing the whole, and sometimes visual or visual-spatial factor. Besides this factor, the factor of reasoning according to analogy, that is, inductive inference is usually also singled out (I or R, according to Cattell, according to IviC, Milinkovic, Rosandic, & Smiljani), (1978). DeShon et al. (1995) and Lynn et al. (2004)<sup>10</sup> also derived the factor of verbal reasoning (in more difficult items in APM and SPM).

Diaz A, Sellami K, Infanzón E, Lanzón T, Lynn R( 2012) aim their study to fill a gap in intelligence research by presenting data for the average IQ in Morocco and for a comparable sample in Spain. Adult samples were administered the (SPM) Raven Standard Progressive Matrices (Raven, Court, & Raven, 2001) and scored for the total test and for the three sub-factors of gestalt continuation, verbal-analytical reasoning and visuospatial ability identified by Lynn, Allik, and Irwing (2004). The total test and the three factors have shown satisfactory reliability. Our results for the Moroccan sample show significant relationship between general intelligence factor, gestalt continuation and visuospatial ability with education level and income. Conversely, these variables have been shown to be independent for the Spanish sample. This sample obtained significantly higher scores for the four factors assessed than the Moroccan one. These differences have been found also comparing samples with the same education levels. Finally, the errors percentage for Moroccans has been higher than for Spaniards in all the items, suggesting that the level of difficulty was higher for the Moroccan sample.

Wang HR, Dai JJ, Jiang ZL, and Cai J.(2010) explore and analyze the cognitive quality of professional divers 165 professional divers were tested with Raven's Standard Progressive Matrices (SPM), 80.8 Neural Type Measuring Form, etc. with 230 common people, 49 sailors and 66 trainee divers as control. There were significant difference among professional divers of different ages in the type of nerve activity, cognitive style, action stability, memory span, time reaction, the perception of space, act of attention and dark adaptation ( $P < 0.05$ ); Over all, the cognitive quality of professional divers did not differ significantly in education level or working years ( $P < 0.05$ ); Professional divers were superior to the common people in depth perception, cognitive style, act of attention, action stability, the perception of space and dark adaptation, but inferior to them in intelligence, memory span and time reaction ( $P < 0.05$ ); There were significant difference in such cognitive indicators as the type of nerve activity, depth perception, kinesthetic memory, cognitive style, the perception of space and dark adaptation ( $P < 0.05$ ); Compared with the trainee divers, professional divers were significantly better in the type of nerve activity, cognitive style, act of attention, action stability and the perception of space ( $P < 0.05$ ), it was concluded that As a specified profession, diving needs some particular cognitive quality, while the profession itself would affect professional divers' cognitive ability to a certain extent.

Physical education studies at any level requires certain level of mental ability or intellectual level which may be progressive, regressive or equal along the progression of level or standard . Such hypothesis has never been tested in Indian situation, simultaneously the reference for the same are not available for Indian physical education students. It is presumed that mean and standard deviation of Standard Progressive Matrices variables for both male and female physical education students will serve as good reference. It is further presumed that the intellectual level of physical education students will be identical. Keeping in view the above arguments the objectives of the study was to compare between the standard progressive matrices scores of male and female physical education professional students of IGIPSS, University of Delhi.

## Methodology

For the purpose of the study thirty physical education professional students (fifteen males and fifteen females) were randomly selected from Indira Gandhi institute of physical education and sports sciences, University of Delhi. The age of the subjects ranged from 17 to 25 years. The selected variables were Standard Progressive Matrices (Time)= SPM(Time), Standard Progressive Matrices (Total Score)=SPM (Total score), Standard Progressive Matrices (Level- A)= SPM (Level- A), Standard Progressive Matrices (Level-B)= SPM (Level-B), Standard Progressive Matrices (Level-C)= SPM (Level- C), Standard Progressive Matrices (Level-D) = SPM (Level- D), Standard Progressive Matrices (Level-E) = SPM (Level- E).The test has been conducted on the students after explaining about the programme, after good understanding the subject volunteered as sample for the test. Researcher requested them for their cooperation in the investigation for the study. Required information was being given to the subjects before the administration of the test. The overall purpose of the study was explained to each and every student. The answers received were coded in the numerical form. It was then represented in tabular format for statistical analysis and interpretation. For the purpose of statistical analysis Descriptive Statistics (Mean and Standard Deviation) and Independent't' test were computed on the obtained data.

## Findings And Discussion Of Findings

Table

Comparison between Male and Female Physical Education Students in Regard to Standard Progressive Matrices Variables

Group	Variables	Mean	Std. Deviation	MD	SED	"t"
Male (N=15) Female (N=15)	SPM(Time)	27.6000 25.8000	7.00816 9.33656	1.80000	3.01425	.597 (NS)
Male (N=15) Female (N=15)	SPM (Total score)	45.2000 43.0667	6.63540 10.87899	2.13333	3.29020	.648 (NS)
Male (N=15) Female (N=15)	SPM (Level- A)	11.1333 10.6667	1.12546 1.63299	.46667	.51208	.911 (NS)
Male (N=15) Female (N=15)	SPM (Level- B)	10.4000 10.0000	1.63881 2.72554	.40000	.82115	.487 (NS)
Male (N=15) Female (N=15)	SPM (Level- C)	8.8667 8.6667	1.92230 2.74296	.20000	.86483	.231 (NS)
Male (N=15) Female (N=15)	SPM (Level- D)	9.0667 8.2667	1.83095 2.71153	.80000	.84478	.947 (NS)
Male (N=15) Female (N=15)	SPM (Level- E)	5.8000 5.4000	2.67795 2.72029	.40000	.98561	.406 (NS)

NS = Not Significant at 0.05 level, MD = Mean Difference, SED = Standard Error of Difference

According to the findings of the table pertaining to Comparison between Male and Female Physical Education Students in Regard to Standard Progressive Matrices (Time) Variable documented that there was 1.80000 as mean difference (MD), 3.01425 as Standard Error of Difference (SED) with insignificant 't' ratio (t=.597) , in regard to Standard Progressive Matrices (Total Scores) Variable, documented that there was 2.13333 as mean difference (M.D) 3.29020 as Standard Error of Difference (SED) with insignificant 't' ratio (t=.648) , in regard to Standard Progressive Matrices (Level-A) Variable documented that there was.46667 as mean difference (M.D), .51208 as Standard Error of Difference (SED) with insignificant 't' ratio (t= .911) , in regard to Standard Progressive Matrices (Level-B) Variable documented that there was .40000 as mean difference (M.D), .82115 as Standard Error of Difference (SED) with insignificant 't' ratio (t= .487) , in regard to Standard

Progressive Matrices (Level-C) Variable documented that there was .20000 as mean difference (M.D) .86483 as Standard Error of Difference (SED) with insignificant 't' ratio ( $t=.231$ ), in regard to Standard Progressive Matrices (Level-D) Variable, documented that there was .80000 as mean difference (M.D) .84478 as Standard Error of Difference (SED) with insignificant 't' ratio ( $t=.947$ ), in regard to Standard Progressive Matrices (Level-E) Variable documented that there was 1.40000 as mean difference (M.D), .98561 as Standard Error of Difference (SED) with insignificant 't' ratio ( $t=.406$ ) at 0.05 level. Findings are illustrated below in the figure.

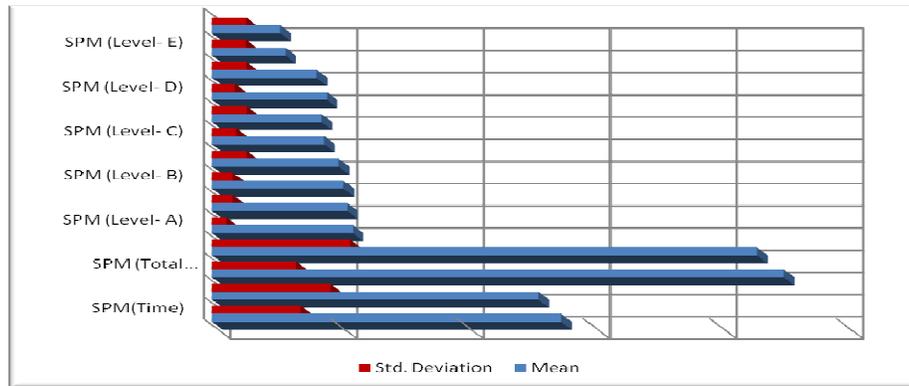


Figure: Mean and Standard Deviation of Male and Female Physical Education Students in Regard to Standard Progressive Matrices Variables

### Conclusion

From the findings it is concluded that the intelligence level of Male and Female physical education students are identical.

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## Study Of The Effect Of Commonwealth Youth Games 2008 On The Sport Tourism In Pune City

Mohammad Hadi Tavakkoli  
PhD Scholar-LNCPE (Lakshmbai National College of Physical Education)  
University of Kerala E-mail: mhadit2002ir@gmail.com

### Abstract

The purpose of the study was to find out the effect of commonwealth youth games 2008 on the sport tourism in Pune city which included infrastructure, facilities and spectators. The teacher made questionnaire was used to collect the data. Information regarding the conduct of C.Y.G 2008 was taken from the organizing committee and the C.Y.G. manual was analyzed subjectively and interpreted. The result obtained highlighted that due to C.Y.G 2008 there was a huge development in the sport infrastructure of the city, there were many jobs opportunities created for the people, there were increased in the number of National and International competitions.

**Key words:** sport tourism, commonwealth youth games 2008

### Introduction

Sport plays a huge role in our every day life. Sports bring people together, it allows us to stay fit and active, meet new people and discover new things. Preuss, (2005). Attracting a considerable amount of media attention, money, participants and political interest. Meanwhile, tourism – with well over a billion participants and billion of dollars generated in revenue annually – remains the world's largest industry as well as its fastest growing. Na chaen, (2008). Sports tourism is now an emerging market indeed over the past twenty years, the interest in sport especially elite sporting events has grown at a phenomenal rate. Sports tourism events at the international, national and regional levels have a double – barreled effect – the direct effect of the attendance of the competitions and spectators and accompanying persons, and the indirect effect of the marketing of the destination which lead to the subsequent tourism flows. (Michel S. G. (2007).

One must not forget the amount of tourism and money that produced through the world cup of soccer, Olympic Games and the 3<sup>rd</sup> commonwealth youth games were held in Pune, India 2008. The city of Pune, the cultural capital of Maharashtra and a fast growing metropolis, hosted the 3<sup>rd</sup> C.Y.G 2008. Games between 12-18 October in 2008 with the 9 disciplines; athletics, badminton, boxing, shooting, swimming, table tennis, tennis, weight lifting, and wrestling. Over 1300 athletes and 350 officials from 71 countries participated in the games. ((www.cypune2008.com)

### Methodology

The study was a case study. In this researcher had made an attempt to study the effect of commonwealth youth games 2008 on sport tourism in terms of effect on infrastructure, facilities and spectators in the host city Pune.

### Tools for Data Collection

The questionnaires were prepared keeping in mind the objectives of the study. The questionnaires covered all the areas of the sports tourism which was delimited by the researcher.

### Procedure of the study

Initially a questionnaire was developed considering the objectives of the study. The questionnaire was sent to the expert for their comments and suggestions. After incorporating the suggestion given by the experts the final questionnaire was made. The questionnaire was then sent to the concerned authorities for collecting data. The Collected data was analyzed subjectively.

### Analysis and interpretation

There was a huge development of the sports infrastructure in the city because of commonwealth youth games 2008.

Athletic stadium that already existed was renovated, new badminton courts, swimming pool, tennis stadium, shooting hall, boxing hall, and judo hall were constructed. In addition to the above sports infrastructure a huge amount was spent for constructing 2 hostels, 3 and 5 star hotels to accommodate officials and players during the competition, sport science center and international fitness center. There was also the resurrection of city infrastructure in the view of C.Y.G 2008. A most 200 new buses were deployed to reinforce the public transport.

### **Total expenditure**

An approximate amount of 425 crores was spent on building the above infrastructure which were paid by the government of India solely. These facilities and infrastructure is maintained by the respective management. The annual expenditure spent on the maintenance is 9 crores annually. 2000 crores had been sanctioned under JNNURM funding project for various works in the city in view of the commonwealth youth games 2008.

#### **Utilization of sports infrastructure**

After commonwealth youth games 2008 all the facilities were used by national camp, national and international games, school colleges, regular people and various functions are held. A good amount of revenue was generated (figures undisclosed) by this.

#### **Promotion of the sports**

Pune has seen a substantial increase in the sports events conducted in the city post C.Y.G. 2008. Many National and International competitions have been organized in the city; details are presented in table No.4.1 respectively. A great number of officials and participants from different part of the country and the world came to this city

**Table No. 4.1**

Sr.No.	Name of international competition	No. of participated	year
	Badminton world junior competition	350	10/02/09
	Asian junior tennis competition	90	23/05/09
	World rail ground competition	550	09/02/09
	Asian cadets wrestling competition	450	30/07/09
	15 <sup>th</sup> volleyball junior competition	450	31/08/09
	Asian carom competition	125	10/08/09
	Asian junior basketball competition	250	30/11/09
	C.Y.G power lifting competition	175	09/12/09
	Athletic international veterans competition	600	22/01/10
	Asian kick boxing competition	250	20/02/10
	Asian grand prix competition	300	31/05/10
	International football competition	100	04/10/10

The table No. 4.1 shows the list of competitions held post C.Y.G. the different competitions were held at Asian level are junior tennis, cadets wrestling competition, carom, junior basketball and Grand prix. Other competitions held were such as world badminton junior championship, world rail ground competition volleyball junior competition, power lifting, veterans Athletic international competition and international football competition.

### **Discussion**

It is seen by many as a sure way of shooting the host city into the limelight, resulting in an economic windfall and at the same time giving these host cities the impetus to improve domestic facilities and infrastructure. The nomination of a city as organizer impacts the physical (construction project) to the intangible (local self-esteem or international impact) gains. The impact that an event of this kind has on the urban landscape can largely be gauged by the size of the legacy that it creates. It is important to note here that it is not just important to create legacy, but creating a legacy which is beneficial to the host community post games, and which justifies the costs involved. Urban regeneration and the re-imaging of cities is now a central aspect of game bids. Sports Tourism is a multi-billion dollar business, one of the fastest growing areas of the \$4.5 trillion global travel and tourism industry. It has become a vast international business attracting media coverage, investment, political interest, traveling participants and spectators.

### **Finding**

There was a huge development in the sport infrastructure of the city due to C.Y.G2008 game. The different levels ranging from laborers to managers. C.Y.G 2008 has played an important role in the promotion of the sports in the city and there was an increase in the number of national and international competitions held in the city post C.Y.G. The event like C.Y.G 2008 attracted many tourists and visitors from the different parts of the country and world. A substantial economic growth was seen during C.Y.G 2008 due to the boost in industries and services like hospitality, food and

beverage, cultural and handycraft and travelling services, aviation, hotels and other transportation services

### **Conclusion**

The true impact of commonwealth youth games 2008 on sport tourism could be judged that state of India was introduced, marketed and advertised to the sportsman, and other global visitors to the country. The C.Y.G 2008 also boosted the Indian tourism industry as the foreign tourist who had come greatly depended upon the travel agents for their itineraries. The state`s aviation and the hotel industry was also benefited. The games provided a great enjoyment for the tourist and the city had a new look. The new projects that had come discovered new heritage, religious and adventurous sites. The C.Y.G 2008 boosted the city transport facilities new bridges were constructed, airports of the state were modernized and not the least the stadiums were renovated and as well as new stadiums were built. It has not just benefited the tourism industry but also boosted the various job opportunities in the state. In the light of present study it is recommended that: The same study should be conducted including more areas of sport tourism. The same study can be conducted on commonwealth games Delhi 2010 and other sport mega events. The detail information regarding the events should be made available for general people.

**EFFECTS OF INTERVAL RUNNING AND AEROBIC DANCE ON SELECTED BODY COMPOSITION VARIABLES OF COLLEGE WOMEN**

**Rekha M R**

**\*Physical culture instructor, Govt. First Grade College, Haliyal Dist: Karwar (Karnataka)**

**INTRODUCTION**

Physical activity is a vital part of a comprehensive weight loss and weight control programme. As a result of physical activity, abdominal fat may decrease, cardio respiratory fitness may increase and weight loss in overweight and obese adults can be achieved. Step aerobics has become gradually more popular in fitness and weight loss programmes. Step aerobics is a combination of low-impact aerobic dance movements and step aerobics. Step aerobics and aerobic dance have been combined with the purpose of achieving maximum aerobic effects. The choreography is repeated several times to music and uses different movements in an appropriate sequence. It is suitable for most groups, from beginners to advanced exercisers and even top level athletes. It is also recommended by the ACSM (American College of Sport Medicine) and Pollock et al. In order to improve cardio respiratory endurance, control body weight and reduce the risk of premature chronic disease, an individual should perform 20 to 60 minutes of continuous or intermittent aerobic exercise at an intensity of between 50% and 85% of their maximal oxygen uptake ( $VO_2max$ ), three to five days per week. Olson et al. has mentioned that aerobic bench-step exercises provide sufficient cardio respiratory demand to enhance aerobic fitness and promote weight loss in females. Defined the interval training as a programme of repeated running with a set interval of restful, jogging after each run. The period between run must be long enough to allow the athlete same time to recover from previous run but long enough to afford him complete recovery. The objective of this study was to analysis the effects of interval running and aerobic dance on selected body composition of college women. Aerobic metabolism with low intensity over longer periods denotes extensive training and anaerobic metabolism with high intensity over short period's intensive training. In interval training you run fast over a short distance several times, with predetermined recovery period, or interval, of slow jogging between the fast runs which develops some anaerobic resistance. The key to this type of training is the recovery interval. There is a qualitative difference in the type of interval training a long distance runner should do. The fast distance run can range from 100 meters to a mile (1.6 kilometers or four laps of the track) so there are intensive interval training sessions and extensive ones. Intensive interval sessions have shorter distances such as 200 meters run fast, whereas extensive interval sessions are run over 500, 800, 1500 metres. 5000 and 1000 meter runners should progress by increasing the number of intervals and reducing the recovery time. In contrast, the 800 and 1500 meter runner should progress by increasing the speed of the fast runs, which may mean reducing the number of runs. Interval training is based on the premise that a greater amount of intense work can be accomplished if the work is interspersed with periods of rest. During an interval-training workout, an individual performs a prescribed amount of work in a specified time for a set number of times. The difficult periods of activity are interspersed with recovery periods so that the individual is physiologically overloaded and becomes fatigued many times in a single training session. As a result, exercisers progressively increase their endurance by increasingly stressin the cardio-respiratory system. (Novich and Taylor, 1993).

**Materials And Method**

To execute this investigation the research scholar has used random sample technique of ninety subjects drawn at random among the Government First Grade College, Haliyal, Karwar District, Karnataka Hostel women students. Their age ranges from eighteen to twenty-two years. They were divided in to three equal Groups namely Control Group, Interval Running Group and Aerobic dance Group. The initial and final test score were recorded for three Groups. The subject were tested in order to find Body fat weight, Total fat percentage, Body mass index and total body weight. Body composition variablesSkin fold caliper used for measuring Total body percentage, Body fat weight, Durnin JVGA, Womersley J. Body fat assessed from total body Method was used. Standard BMI Chart used for Body Mass Index and Weighing Machine for Total Body Weight.

### Interval Running Training

Interval training is a type of discontinuous physical training that involves a series of low- to high-intensity exercise workouts interspersed with rest or relief periods. The high-intensity periods are typically at or close to anaerobic exercise, while the recovery periods involve activity of lower intensity.

### Aerobic Dance

The training programme was schedule for one session in the morning between 6.30A.M-7.30A.M. for three alternate days on a week and the same was continued for 12 weeks. Ten to fifteen minutes warm up and cool down periods were also included. The duration of training programme was gradually increased and also the number of repetitions. Block Sue (1982).

Table: Comparison of three groups with respect to post test scores of weight of college women

Groups	Pre test	Post test	Paired t-test	P-value	Effect size
	Mean± SD	Mean± SD			
Control group	48.54±5.25	48.72±5.35	-1.8354	0.0767	0.104
Interval running group	49.88±5.59	46.93±5.80	20.8034	0.00001*	0.937
Aerobic dance group	51.70±3.40	45.97±3.46	44.7953	0.0000*	0.986
F-test	3.2231@	543.9265#			
P-value	0.0446*	0.00001*			
Pair wise comparisons by Tukeys multiple post hoc procedures					
Control vs Interval running	0.5327	0.0001*			
Control vs Aerobic dance	0.0351*	0.0001*			
Interval running vs Aerobic dance	0.3176	0.0001*			

\*p<0.05, @one way ANOVA applied, # ANCOVA applied

Table: Comparison of three groups with respect to post test scores of body mass index of college women

Groups	Pre test	Post test	Paired t-test	P-value	Effect size
	Mean± SD	Mean± SD			
Control group	22.98±2.90	23.21±2.93	-0.7833	0.4398	0.021
Interval running group	24.30±1.77	21.35±1.30	13.2767	0.00001*	0.859
Aerobic dance group	24.55±1.82	20.59±1.84	15.9136	0.00001*	0.897
F-test	4.2927@	63.64240#			
P-value	0.0167*	0.00001*			
Pair wise comparisons by Tukeys multiple post hoc procedures					
Control vs Interval running	0.0626	0.0001*			
Control vs Aerobic dance	0.0209*	0.0001*			
Interval running vs Aerobic dance	0.8997	0.0677			

\*p<0.05, @one way ANOVA applied, # ANCOVA applied

Table: Comparison of three groups with respect to post test scores of body fat percentage of college women

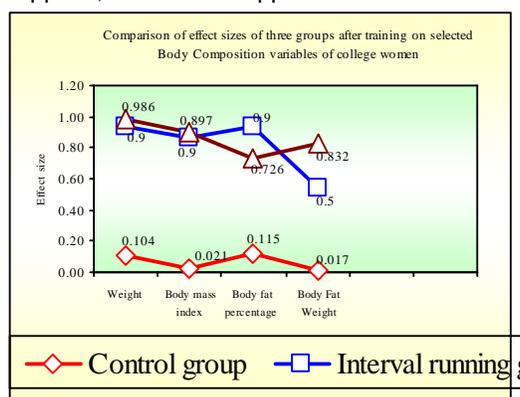
Groups	Pre test	Post test	Paired t-test	P-value	Effect size
	Mean± SD	Mean± SD			
Control group	23.35±3.62	23.47±3.55	-1.9369	0.0626	0.115
Interval running group	24.85±4.20	22.56±4.15	20.2393	0.00001*	0.934
Aerobic dance group	25.70±5.35	22.34±3.54	8.7744	0.00001*	0.726
F-test	2.1532@	72.37288#			
P-value	0.1223	0.00001*			
Pair wise comparisons by Tukeys multiple post hoc procedures					
Control vs Interval running	0.3931		0.0017*		
Control vs Aerobic dance	0.1069		0.0002*		
Interval running vs Aerobic dance	0.7419		0.6602		

\*p<0.05, @one way ANOVA applied, # ANCOVA applied

Table: Comparison of three groups with respect to post test scores of body fat weight of college women

Groups	Pre test	Post test	Paired t-test	P-value	Effect size
	Mean± SD	Mean± SD			
Control group	11.22±2.19	11.26±2.07	-0.7006	0.4892	0.017
Interval running group	11.02±1.93	9.58±1.68	5.8300	0.00001*	0.540
Aerobic dance group	11.17±2.40	8.90±1.75	12.0026	0.00001*	0.832
F-test	0.0706@	58.98998#			
P-value	0.9319				
Pair wise comparisons by Tukeys multiple post hoc procedures					
Control vs Interval running	0.9323	0.0001*			
Control vs Aerobic dance	0.9968	0.0001*			
Interval running vs Aerobic dance	0.9579	0.0069*			

\*p<0.05, @one way ANOVA applied, # ANCOVA applied



## Discussion

The result of the study indicated there was significant improvement in Total weight, Body mass Index, Body fat percentage, Body fat weight due to Twelve Weeks of Training. The findings of the study showed that there was a significant improvement after training of Aerobic dance Group on Total weight, Body mass Index, Body fat percentage and Body fat weight. Aerobic dance Training group was found to better than the Control group and Interval Running Group. The Aerobic dance group was better than Interval Running Group. The study was conducted on hard working age group i.e. from eighteen to twenty two. Being a hard working group without prescribed exercise also they can maintain good health. The outcome of the study helps to prescribe physical activities for middle and upper middle age women who are unable to provide proper and healthy exercise. The interval training method of training may be more effective at inducing fat loss than simply training at a moderate intensity level for the same duration. This is due to the metabolism-boosting effects of high intensity intervals.

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## **A Study On Relationship Between Mental Skills And Competitive Anxiety And Their Effects On Performance**

**\*Jain. Shilpi, Ph.D. Research Scholar,  
Dept. of Physical Education & Sports Sciences, Univ. of Delhi  
\*\*Wazir Singh Phogat, National Chief Coach (Youth Athletics)  
Athletics Federation of India**

### **Abstract**

The purpose of the study was to correlate the Mental Skills and Anxiety of athletes' which affects the performance of athlete during competition. 41 athletes were selected to measure the correlation between Ottawa Mental Skills Assessment Tools (version 3) and Competitive State Anxiety Inventory - 2 (Modified CSAI 2) with the help of Pearson's Correlation. To answer by athletes' mental skills questionnaire to assessed three categories: foundation skills, psychosomatic skills and cognitive skills and Competitive State Anxiety questionnaire to assessed three categories: Cognitive state anxiety, Somatic state anxiety and Self-Confidence on intensity of symptoms and perception of these symptoms of anxiety. The results of Pearson's Correlation revealed positive and negative significant correlation between Mental Skills and Competitive Anxiety. According to the results of this study, it is recommended that athlete's coaches should be used mental skills during training of their athletes' for coping with anxiety symptoms and to create a positive approach to improve their performance.

Key words: OMSAT -3 Scale, Modified CSAI -2 Scale, Athletes of Athletics Discipline

### **Introduction**

In the sport psychology literature, it is well-established that mental skill training interventions are effective in enhancing performance and decreasing anxiety (Greenspan & Feltz, 1989; Vealey, 1994; Weinberg & Comar, 1994), only a few studies had been conducted that examines the effects of mental training on athletes' anxiety. Researches show that so far none of these researches have focused on studying the relation between sport anxiety and mental skills criteria of sprint and endurance runner. Thus this study aims to study this relation between mental skill criteria and sport anxiety of endurance and sprint runners. (Hanton & et al 1999 b, Dominikus F & et al 2009, Aufenanger S. J., 2005).

There are many athletes who are registered under exclusive or elite team dedicate their whole year training and focus to increase their performance to get scholarship or make it to the professional level thus developing a hope not only among athletes but to parents and coaches. Unfortunately, high hope also increases the stress on the athletes and it shows a close relationship with high anxiety and dealing with anxiety is an important task for coaches because athletes could not perform when they are under stress, having problems in their concentration, memory and the priority they should put on in their performance (Coakley, 2007).

According to various researches find that using of mental skills and experiencing them during a competition are the best strategies to control factors which cause poor performance of athletes who can control their stressful conditions before a competition can be more successful in achieving their goals (Jones and et al, 1995). Thus, it seems that different mental skills have positive effects on the performance of athletes and reduce anxiety before a competition (Gold and et al, 1995).

To achieving a desired goal and higher performance concentrate with mental skills and coping with anxiety situation where one feels nervous and stressed because of the demand by the environment that leads to an imbalance between the demand and the ability of an individual to fulfill the expectation. Anxiety during the game in the other hand is defined as nervousness or and/or physical stress that is related to imbalance between the demand on performance and the capability of an individual to achieve that objective.

Therefore, there need to be a positive thinking and better mental skills to solve the problems that may arise because of anxiety. If it is not handled well or misinterpreted, the athlete will lose control and their performance will decrease. (Hardy & Fazey, 1987; Martens, Burton, & Vealey, 1990; Gualberto & Wiggins, 2008). According to the research on anxiety and anxiety direction indicated a difference between genders. Some researchers reported difference in gender when they carried out a study on the forms of anxiety and self-confidence. In a study focused on anxiety frequency, (e.g. how often

does an individual suffer anxiety symptom before a competition) that cognitive anxiety and somatic symptom increase significantly on both male and female as the competition is coming close.

Females were reported to score higher in somatic anxiety compared to males (Swain and Jones, 1993). But other research reported the difference based on time in terms of gender where females showed higher cognitive anxiety intensity within 24 hours before the competition. In the other hand, they did not show any difference in anxiety direction (Wiggins, 1998). In addition to the past studies that focused on situational measure, researchers also conducted a study on anxiety direction in terms of attributes. The attributes of competition anxiety is related to anxiety on performance. It has been defined as an anxiety symptom that influences someone to interpret the surrounding as a threat (Dominikus, F. et. al., 2009).

### Objective

To study the correlation between Intensity of Competitive State Anxiety and Mental Skills of Athletics athletes' to achieve higher performance. To study the Correlation between Perception of these Competitive State Anxiety symptoms and Mental Skills of Athletics athletes' to achieve higher performance. To compare the correlation between Mental Skills sub scales. To compare the correlation between Competitive State Anxiety Intensity level (anxiety symptoms) and Direction level (Perception of these anxiety symptoms).

### Hypothesis

There is significant correlation between Competitive State Anxiety and Mental Skills of Athletics athletes' performance.

### Methods

#### Participants

Elite Junior level athletes (N=41) of above 16 years age can be selected from Sports Authority of India Sonapat, Haryana for the present study. The Athletes were represented the discipline of track and field game.

#### Instrumentation

OMSAT-3 was used to evaluate the extent of selected mental skill application. The questionnaire examined mental skills in three categories: 1) Foundation skills including, 2) psychosomatic skills and 3) cognitive skills developed by Durand-Bush et. al., 2001,

Modified CSAI -2 was used to evaluate Anxiety symptoms at three sub-scales categories: 1) Cognitive State Anxiety, 2) Somatic State Anxiety and 3) Self-Confidence measured anxiety symptoms at intensity level during competition and also measured perception of these anxiety symptoms at direction level during competition developed by Jones and Swain, 1995.

#### Statistical Method

Used of Descriptive Statistics and Pearson's Correlation was used in this study to measured relationship between Anxiety and Mental skills of Indian athletes of athletics.

### Results

Descriptive result in relation to mental skills and anxiety of athletics athletes' performance (vide Table no. 1). The Mean and SD value of Anxiety Scale on Intensity of symptoms and Perception of Direction of these symptoms (Cognitive State Anxiety, Somatic State Anxiety and Self-Confidence) and Mental Skills (Foundation Skill, Psychosomatic Skill and Cognitive Skill) were measured with the help of Pearson's Correlations.

Table no. 1: Descriptive Results in Relation to Mental Skills and Anxiety

Variable	Mean	Std. Deviation	N
Cognitive_Intensity	18.71	5.728	41
Somatic_Intensity	14.85	3.978	41
Self-Confidence_Intensity	27.80	3.849	41
Cognitive_Direction	-.51	10.991	41
Somatic_Direction	-4.73	10.075	41
Self-Confidence_Direction	13.51	6.820	41
Foundation Skill	73.66	5.256	41
Psychosomatic Skill	74.93	15.682	41
Cognitive Skill	101.22	12.676	41

In a series of Pearson's Correlations examines the relationship of Competitive State Anxiety Inventory – 2D at Intensity level of symptoms with mental skills score. Table no. 2 indicates the negative significant relationship between Psychosomatic Skill with Cognitive Anxiety Intensity, Psychosomatic Skill with Somatic Anxiety Intensity and Cognitive Skill with Somatic Anxiety Intensity where  $r = -.540^{**}$ ,  $-.566^{**}$  and  $-.327^{*}$  at 0.01 level and 0.05 level respectively. The analyses also describe the

positive significant relationship between Psychosomatic Skill & Self-Confidence Intensity where  $r = .431^{**}$ ;  $p < 0.01$ .

Table No. 2: Relationship between Mental Skills and Perception of Competitive Anxiety

Variable	r	p-value
Foundation Skill & Cognitive Anxiety Intensity	.028	.861
Psychosomatic Skill & Cognitive Anxiety Intensity	-.540**	.000
Cognitive Skill & Cognitive Anxiety Intensity	-.282	.074
Foundation Skill & Somatic Anxiety Intensity	-.056	.727
Psychosomatic Skill & Somatic Anxiety Intensity	-.566**	.000
Cognitive Skill & Somatic Anxiety Intensity	-.327*	.037
Foundation Skill & Self-Confidence Intensity	.118	.463
Psychosomatic Skill & Self-Confidence Intensity	.431**	.005
Cognitive Skill & Self-Confidence Intensity	.180	.259

\*\* Correlation is Significant at the 0.01 level (2-tailed)

\* Correlation is Significant at the 0.05 level (2-tailed)

Table no. 3 shows the significant relationship between Mental Skills and Perception of direction of Competitive State Anxiety of athletes' performance. There were found positive significant relationship between Foundation Skill with Self-Confidence Direction, Psychosomatic Skill with Self-Confidence Direction and Cognitive Skill with Self-Confidence Direction where  $r = .318^*$ ,  $.504^{**}$  and  $.504^{**}$  is significant at 0.05 level and 0.01 level respectively.

Table no. 3 also indicates the negative significant relationship between Psychosomatic Skill with Cognitive Anxiety Direction ' $r = -.488^{**}$ ';  $p < 0.01$  level, Psychosomatic Skill with Somatic Anxiety Direction ' $r = -.492^{**}$ ';  $p < 0.01$  level and Cognitive Skill with Somatic Anxiety Direction ' $r = -.170^*$ ';  $p < 0.05$  level.

Table No.3: Relationship between Mental Skills and Direction of Competitive Anxiety of Athletes in Relation to Performance

Variable	r	p-value
Foundation Skill & Cognitive Anxiety Direction	.069	.669
Psychosomatic Skill & Cognitive Anxiety Direction	-.488**	.001
Cognitive Skill & Cognitive Anxiety Intensity	-.237	.136
Foundation Skill & Somatic Anxiety Direction	-.042	.793
Psychosomatic Skill & Somatic Anxiety Direction	-.492**	.001
Cognitive Skill & Somatic Anxiety Direction	-.170*	.287
Foundation Skill & Self-Confidence Direction	.318*	.043
Psychosomatic Skill & Self-Confidence Direction	.504**	.001
Cognitive Skill & Self-Confidence Direction	.402**	.009

\*\* Correlation is Significant at the 0.01 level (2-tailed)

\* Correlation is Significant at the 0.05 level (2-tailed)

Positive significant relationship was found between Foundation Skill & Cognitive Skill, and Psychosomatic Skill & Cognitive Skill, which were significant at 0.01 levels. The ' $r$ ' value between relations of Foundation Skill & Cognitive Skill and Psychosomatic Skill & Cognitive Skill were  $.462^{**}$  and  $.429^{**}$  respectively (Vide Table no. 4).

Table no. 4: Relationship between Mental Skills of Athletes in Relation to Performance

Variable	r	p-value
Foundation Skill & Psychosomatic Skill	.182	.255
Foundation Skill & Cognitive Skill	.462**	.002
Psychosomatic Skill & Cognitive Skill	.429**	.005

Through this study we found the positive and negative significant relationship between Intensity of symptoms and Perception of these symptoms of Competitive State Anxiety Inventory -2D. Positive and negative correlation between Cognitive State Anxiety, Somatic State Anxiety and Self-Confidence were significant at 0.01 levels (Vide Table no. 5).

The ' $r$ ' between Cognitive Anxiety Intensity & Cognitive Anxiety Direction  $.677^{**}$ , Cognitive Anxiety Intensity & Somatic Anxiety Direction  $.682^{**}$ , Somatic Anxiety Intensity & Cognitive Anxiety Direction  $.469^{**}$ , Somatic Anxiety Intensity & Somatic Anxiety Direction  $.404^{**}$ , Cognitive Anxiety Intensity & Self-Confidence Direction  $-.518^{**}$ , Self-Confidence Intensity & Cognitive Anxiety Direction  $-.470^{**}$  and Self-Confidence Intensity & Cognitive Anxiety Direction  $-.433^{**}$ .

Table no. 5: Relationship between State Anxiety Symptoms at Intensity and Perception of These Symptoms of Athletes in Relation to Performance

Variable	r	p-value
Cognitive Anxiety Intensity & Cognitive Anxiety Direction	.677**	.000
Cognitive Anxiety Intensity & Somatic Anxiety Direction	.682**	.000
Cognitive Anxiety Intensity & Self-Confidence Direction	-.518**	.001
Somatic Anxiety Intensity & Cognitive Anxiety Direction	.469**	.002
Somatic Anxiety Intensity & Somatic Anxiety Direction	.404**	.009
Somatic Anxiety Intensity & Self-Confidence Direction	-.199	.212
Self-Confidence Intensity & Cognitive Anxiety Direction	-.470**	.002
Self-Confidence Intensity & Somatic Anxiety Direction	-.433**	.005
Self-Confidence Intensity & Self-Confidence Direction	.271	.087

\*\* Correlation is Significant at the 0.01 level (2-tailed)

\* Correlation is Significant at the 0.05 level (2-tailed)

Table no. 6 indicates the positive significant relationship between Cognitive Anxiety Intensity & Somatic Anxiety Intensity at 0.01 level, where 'r' = .567\*\* and negative significant relationship between Cognitive Anxiety Intensity Self-Confidence Intensity and Somatic Anxiety Intensity & Self-Confidence Intensity at 0.01 level & 0.05 level, where r = -.480\*\* and -.391\* respectively.

Table no. 6: Pearson's Correlation between Competitive State Anxiety Intensity of Anxiety Symptom effects on athletes' performance

Variable	r	p-value
Cognitive Anxiety Intensity & Somatic Anxiety Intensity	.576**	.000
Cognitive Anxiety Intensity Self-Confidence Intensity	-.480**	.001
Somatic Anxiety Intensity & Self-Confidence Intensity	-.391*	.012

Table no. 7 indicates the positive correlation between Cognitive Anxiety Direction & Somatic Anxiety Direction. The r = .762\*\* was significant at 0.01 level and negative correlation between Somatic Anxiety Direction & Self-Confidence Direction. The r = -.457\*\* was significant at 0.01 level.

It refers the somatic anxiety decreases the self-confidence of athlete during competition.

Table no. 7: Pearson's Correlation between Competitive State Anxiety Perception of Directions in Relation to Anxiety Symptom effect on athletes' performance

Variable	r	p-value
Cognitive Anxiety Direction & Somatic Anxiety Direction	.762**	.002
Cognitive Anxiety Direction & Self-Confidence Direction	-.304	.054
Somatic Anxiety Direction & Self-Confidence Direction	-.457**	.003

## Discussion and Conclusion

The main purpose of this study was measured the effect of relationship between Mental Skills and Anxiety symptoms with the help of OMSAT-3 and Modified CSAI -2. Through this study try to find the effect of mental skills in relation to anxiety i.e. Mental Skills help the athlete to cope with Anxiety during competition. The use of Mental Skills helps the athlete to cope with Anxiety symptoms and perception of these symptoms during competition.

As per the previous researches the result of mental skill scales is significantly effective on training programs, which helpful to athlete to cope with anxiety symptoms but as per result of this study positive and negative significant correlation between mental skills and anxiety.

Using mental skills and experiencing them during a competition are the best strategies to control factors which cause poor performance of athletes who can control their stressful conditions before a competition can be more successful in achieving their goals (Jones and et al, 1995). On the other hand self-confidence is one of the most important mental parameters that is influential in the performance of athletes and has a positive linear relation to performance and can cause athletes to interpret anxiety positively. Mental skills shared a positive relationship with self-confidence direction. Self-confidence is seen as something that could facilitate performance of athletes which use mental skills can concentrate better and have higher self-confidence (Perry & Williams, 1998)-(Wiggins, 2000)-(Gold et. al., 1995). Thus, it seems that different mental skills have positive effects on the performance of athletes and reduce anxiety before a competition.

According to this study was found positive relationship between mental skills variables. But there was negative relationship between anxiety variables, between anxiety & mental skills and also negative relationship between Competitive State Anxiety Inventory intensity of symptoms. In other variables

inter-relations we can say Cognitive State Anxiety and Somatic State Anxiety relationship with Self-Confidence showed negative relationship.

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## **Sports education - preparing for the new reality**

**Dr. G.Shyam Mohan Reddy, Associate Professor,  
Head, Department of Physical Education,  
Chaitanya Bharathi Institute of Technology, Hyderabad.**

### **Introduction:**

The field of sports education is rapidly expanding, but still relatively unexplored with pretty low awareness, a crucial shortage of trained professionals make this very viable career option for the youth of today. The sports industry has been on a flourishing trajectory for the past few years. What it entails: Sports education is a multidimensional field encompassing everything from coaching to marketing and talent management to tourism for a broad umbrella of sports like cricket, tennis, football, basketball, golf, skiing, motor sports, water sports, adventure sports, martial arts, track and field etc. Both indoor and outdoor, team and individual, leisure and competitive are included. There's something for everyone – be it identifying, grooming and placing sporting talent or working as a sports persons agent in charge of players schedules, promotions, public relations and career progression. Athlete's physical training, coaching, medical checks, therapy and psychological counseling are a separate stream. There are various sports associations that plan, organize, conduct and manage various sporting activities and events – think IPL, Formula one etc. Back-end jobs for sports events include event promotion, getting sponsorships, ticketing, financials and accounts. Then there is sports management that entails applying business principles to sports with business planning, brand management and operations to develop and manage sports apart from routine administration work, budgeting, finances etc.

Today, many small nations are making a mark in Olympics. India is lacking a way behind. India's higher education system is the third largest in the world enrolling nearly 22 million students in more than 46 thousand institutions, but only a handful make it to the international level to sports. While the nations have been taking measures to develop and implement an accredited education system, efforts are being made to make the curriculum research-base along with industry interface. In spite of these efforts sports has not been given the importance it deserves. The failure to strike a balance between co curricular activities and academics in the higher education has led to a lap of holistic development of the students. Many colleges does not maintained the playgrounds or provide the required sports equipment to aspiring students. Sports trainers and support staff are poorly paid, unlike the academic faculty. The absence of sports-friendly policies and the myth that physical education doesn't aid once academic progress prevail, even in the best institutions.

### **All Round Development :**

Sports helps in creating a holistic personality, healthy and stable body functions maintaining hormones levels and higher immunity levels, besides managing stress and depression. Most parents fail to understand this and continue to pressurize children to score well in academics. This is not only demotivating but also leads to low self confidence in children who can not measure up to their parents aspirations. With continuous physical education and participation in sports, most students became confident and learn to overcome failures. There is ample evidence to suggest that physical activity has a positive impact on cognitive skills leading to improved academic performance through enhanced concentration and attention as well as improved class room behavior. Students perform better academically when they are physically fit. The brain gets revitalized and they are able to perform more efficiently. Unfortunately, many higher education institutions eliminate physical education with the belief that more rigid class room time would somehow spur students to learn more. Sports inculcate team spirit, leadership skills, strategic thinking and a risk-taking attitude that is essential in an individual's career after having performed well academically

### **Charting a career:**

In recent times, various career opportunities in sports have opened up for interest youngsters. There are different graduates and postgraduate programmes for those wanting to build a career in sports. Besides playing at state, national and international levels, a sports person can work as a coach/fitness instructor, umpire/referee or a sports commentator.

There is a growing need and crucial shortage of trained professionals in the sports education arena in interesting disciplines like sports marketing, PR and communications, media planning, market research, event marketing and management ticket and sponsorship, sports broadcasting, celebrity

management, merchandising, administration, front office, track and field management, game day operations, etc. Apart from sports management companies, stadiums, sports federations and specialized sports centers, various high-end clubs, hotels and resorts also offer sports facilities necessitating qualified professionals. It's an incredibly lucrative field with blossoming opportunities that are rising in popularity. Jump on and you may even get to interact with your favorite sports person. A career in sports journalism and photography is much sought after these days. Individual sports persons have become consultants in space. Taking up dealership of sports equipment or manufacturing the same is a lucrative business. SAI under its several academies and institutes provides training to youngsters to become talented sports persons. The discipline of sports medicine influences and understands human behavior in physical activities or sports. Sports scientists or sports medicine specialists are involved in sports nutrition supplements, sports biomechanics, sports psychology and other areas. They counsel and educate budding sports persons by providing scientific input and enhancing performance. Today, we have great sports celebrities like Pankaj Advani, Shikha Pandey and Rehan Khan, Anup Sridhar and Rohan Bopanna who have been able to achieve success due to immense support from their educational institutions.

**Making the right moves:** These are success stories of how Indian universities can play a critical role in building India's sporting culture. Hence a constructive effort is needed to gradually adopt methods to linking sports to higher education thus ensuring a successful evolution in the Indian education system. This can only happen if sports can be woven into the academic stream.

## **A Study on the Physical Fitness among 10 Meter Air Rifle and Yoga Players of Panipat**

**Mahipal**

**Physical Education Teacher, The Millennium School, Panipat (Haryana)**

**E-mail: mahi.gaur13@gmail.com**

### **Abstract:**

Physical fitness comprises two related concepts general fitness a state of health and well being, and specific fitness a task-oriented definition based on the ability to perform specific abstracts of sports or occupations. Physical fitness is generally achieved through correct nutrition, exercise & enough rest. 10 meter Air Rifle is an International shooting event, shot over a distance of 10 meter (10.94 yards) from standing position with a 4.5mm (0.177in) caliber air rifle with a maximum weight of 5.5kg (12.13lb).It is an indoor sport and included in the Olympic Games. Yoga is a Physical, mental and spiritual discipline originating in ancient India. Yoga is derived from a Sanskrit word 'Yuj' in verb form which means to unite or join. The purpose of yoga is to provide sound body with tension free sound mind. The aim of the present study was to study the difference in Physical Fitness among 10 meter air rifle and yoga players of Panipat District. 15 Male Air Rifle and 15 male yoga players between the age group of 14 to 16 years of Panipat were taken for the study. The AAPHER Youth Fitness Test consisting of 6 items of 50 yard run, standing broad jump, pull ups, sit ups, shuttle run and 600 yard were used for the study. It was found that 10 Meter Air Rifle players have good physical fitness compare to Yoga Players. This study show that the 10 Meter Air Rifle players are good because they do physical training compare to Yoga players.

Key word: Physical fitness, 10 Meter Air Rifle, Yoga, Physical training etc.

### **Introduction:**

AAPHER contends "Fitness is that state which characterizes the degree to which a person is able to function efficiently. Fitness is an individual matter. It implies the ability of each person to live most effectively with physical , mental, emotional , moral and spiritual components of fitness; all of which are related to one and other and are mutually inter-dependable ." (AAPHER Youth Fitness Test Manual)Physical fitness implies a relation between the task to be performed and the individual capability to perform it. Physical fitness is the ability to function effectively and efficiently, to enjoy leisure, to be healthy, to resist disease and to cop up with the emergency situations. Physical fitness varies according to the nature of work, individual size, and shape of the body, age and sex. For physical fitness we require and efficient motor mechanism, efficient organic mechanism and an efficient mental functioning. A Physical fit individual should possess a sufficient reserve of energy to meet the demand of emergency in which a person age expectedly called upon to perform activities demanding unusual expenditure of strength energy and adaptive ability under unfavorable environment

### **10 Meter Air Rifle:**

10 meter air rifle is an International shooting event, shot over a distance of 10 meter (10.94yards.) from a standing position with a 4.5mm(0.177in) caliber air rifle with a maximum weight of 5.5kg.(12.13lb). It is an indoor sport and included in the Olympic Games. In many clubs and ranges, electronic targets are now being used instead of the traditional paper targets. The use of specialized clothing is allowed to improve the stability of the shooting position and prevent chronic back injury which can be caused by the asymmetric off set load on this spine when the rifle is held in position. It is one of the ISSF-governed shooting events.

The course of fire is an unlimited number of slighter shots followed by 16 competition shorts for men or 40 competition shorts for women. All fired with in 105minutes for men or 75 minutes for women during the initial or qualification phase a maximum of 10 points are awarded for each shot. The top 8 shooters follows this with a final 10 shots-each scored to a maximum of 10.9- with the cumulative score determine the winner. Maximum of 10.9 is derived from an additional set of 10 rings with in the center 10point circle, increasing in0.1point value as the rings approach the center of the target. The completion is won by the shooter who reaches the highest aggregate score (qualification +final score).

**Yoga:**

Yoga is a physical, mental and spiritual discipline, originating in ancient India. Yoga is derived from a Sanskrit word 'Yuj' in verb form which means to unite or to join. It is concerned with the union of the individual soul with the absolute or Devine soul. The purpose of yoga is to improve sound body with tension free sound mind. The ultimate aim by yoga is 'self identification and self perfection' which come through self purification and self realization.

**Statement of Problem:**

To find out the Physical Fitness among 10 meter Air Rifle and Yoga players of Panipat District.

Sample: For the present study 15 male air rifle and 15 male yoga players were taken for the study of Panipat district who have participated in Haryana state sports and games for the year 2013-14.

Tool: To measure the Physical fitness the AAPHER youth fitness test are used for the study.

**Procedure of Data collection:** The AAPHER youth fitness test consisting of 6 items i.e. of 50 yard run, 600 yard run, Standing broad jump, Pull ups, Shuttle run and sit ups were used for study. Before administering the test all the subjects were oriented to the test in procedure and the objectives of the test.

**Result and Discussion:**

Table-1

Test Items	Group	N	Mean	Std. Deviation	Std. Error Mean	t	df	Sig.(2-tailed)
50 yard	10m Air Rifle Players	15	8.38	0.878	0.227	-1.387	28	0.187
	Yoga Players	15	8.86	0.859	0.222			
600yard	10m Air Rifle Players	15	162.20	25.948	6.700	-1.586	28	0.135
	Yoga Players	15	180.47	31.000	8.004			
SBJ	10m Air Rifle Players	15	1.63	0.327	0.084	0.355	28	0.728
	Yoga Players	15	1.58	0.251	0.065			
Pull ups	10m Air Rifle Players	15	4.53	1.246	0.322	-6.000	28	0.001
	Yoga Players	15	6.93	1.100	0.284			
Shuttle Run	10m Air Rifle Players	15	17.65	1.230	0.318	0.008	28	0.994
	Yoga Players	15	17.64	1.116	0.288			
Sit Ups	10m Air Rifle Players	15	38.80	9.756	2.519	0.595	28	0.562
	Yoga Players	15	37.33	5.765	1.489			

In table 1 it was found 10 meter Air rifle players are good in 50 yard dash, standing broad jump, Sit ups, 600 yard run and Yoga players are good in Pull ups and Shuttle run.

**Conclusion:** It is concluded that 10 meter Air rifle players are having good Physical fitness compare to Yoga players.

**Recommendations:** It is recommended that Air rifle and yoga players must be given Physical fitness training in the ground to achieve the good physical fitness. Similar Studies can be conducted on females and also other sports and games.

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## Team Cohesion Among National Level Cricket Players

Anil Kumar, A.B.\* and Virupaksha, N. D.\*\*

\*Physical director, Government First Grade College, Shikaripura, Kuvempu University,  
Shimoga, Karnataka, India, anilkumarkk138@gmail.com

\*\* Co ordinator, Department of P.G. Studies in Physical education, Kuvempu University,  
Shivamogga Karnataka state, India email: vsporty@gmail.com

### Abstract:

Team cohesion was the sum of the forces that causes member to remain a part of the team. Team cohesion was a dynamic process, which was reflected in the tendency for a group to stick together and remain united in the pursuit of its goals and objectives. The purpose of the study was to compare the team cohesion between Under 22 years and Under 17 years cricket male players. To achieve the purpose of the study, the data was collected from 120 cricket players who have participated in the Under 22 years and Under 17 years semi final matches in the national tournament. To assess the team cohesion of cricket players the standardized Group environment questionnaire constructed by Albert V Carron was administered to the players before the match. The data collected was treated with 't' test statistical technique to achieve the purpose. The results shows Under 22 years cricketers found significant in individual attractions to group task and group integration task and there is no significant difference in individual attraction to group social and group integration social.

Key Words: Team Cohesion, Individual Attractions to Group Task, Group Integration Task, Individual Attraction to Group Social, Group Integration Social.

### Introduction

In modern sports, successful performance is determined by number of factors. For optimum performance at higher level, variety of aspects must be addressed. Psychological preparation considers the painstaking daily workouts and is objectively based on the current level of the performance. Psychological information is presented to coaches who are responsible for training as well as the welfare of the players. A number of psychological techniques have been developed to help players reduce stress and gain the mental skills needed for a competition. Team cohesion was the sum of the forces that causes member to remain a part of the team. Team cohesion was a dynamic process, which was reflected in the tendency for a group to stick together and remain united in the pursuit of its goals and objectives. Cricket is a type of sport characterized by maximal effort and close integration by teamwork and deep cohesion. The term "team work" universally connotes operation on the part of a number of individuals working toward a common goal. Cooperation exists in all walks of life and is an integral part of every success.

**Purpose:** The purpose of the study was to compare the team cohesion between Under 22 years and Under 17 years cricket male players.

**Procedure:** To achieve the purpose of the study, One hundred and twenty subjects were selected from teams which played semi final matches. The age group of the subjects was ranging from 16 years to 22 years. To achieve the purpose of the study team cohesion data was collected by administering the standardized Group environment questionnaire constructed by Albert V Carron before the match. This questionnaire measures Individual attraction to group task, Individual Attraction to group social, Group integration task and group integration social.

**Statistical technique:** The data collected from the subjects was treated with statistical technique 't' test to find out the difference in team cohesion between Under 22 years and Under 17 years National Level Cricket Players with the help of statistical package for social sciences (SPSS).

**Results:** The data collected for the study was analyzed and results are presented in the following tables

Table 1: Shows Mean, standard deviation and 't' value of Individual attraction to group task

Sl.No.	Game	N	Mean	Standard deviation	't' value
1	Under 22 years	60	28.77	6.64	2.97
2	Under 17 years	60	25.05	7.68	

\*significant at 0.05 level.

The above table shows the calculated 't' value 2.97 which is significant at 0.05 level, since this value is higher than the table value 1.96.

Table 2: Shows Mean, standard deviation and 't' value of Individual Attraction to group social

Sl.No.	Game	N	Mean	Standard deviation	't' value
1	Under 22 years	60	32.93	7.47	1.01
2	Under 17 years	60	31.61	7.88	

\*significant at 0.05 level.

The above table indicates the calculated 't' value 1.01 which is not significant at 0.05 levels, since this value is lesser than the table value 1.96.

Table 3: Shows Mean, standard deviation and 't' value of Group integration task

Sl.No.	Game	N	Mean	Standard deviation	't' value
1	Under 22 years	60	34.18	7.43	3.59
2	Under 17 years	60	29.18	6.11	

\*significant at 0.05 level.

The above table shows the calculated 't' value 3.59 which is significant at 0.05 levels, since this value is higher than the table value 1.96.

Table 4: Shows Mean, standard deviation and 't' value of group integration social

Sl.No.	Game	N	Mean	Standard deviation	't' value
1	Under 22 years	60	22.27	6.69	1.79
2	Under 17 years	60	20.15	5.09	

\*significant at 0.05 level.

The above table shows the calculated 't' value 1.79 which is not significant at 0.05 levels, since this value is lesser than the table value 1.96. When mean values are compared under 22 years cricketers are having more mean value of group integration social than Under 17 years cricketers.

### Results of the Study

The results of the study shows that Under 22 years cricketers found significant in individual attractions to group task and group integration task than the under 17 years cricketers and there is no significant difference in individual attraction to group social and group integration social between Under 22 years and under 17 years cricketers. In individual attractions to group task under 22 male cricketers found significant because that is the age to develop the group relation and due to the experience they get in that age. In group integration task also under 22 cricketers found significant than under 17 because that is age normally the players have peak performance, to demonstrate high performance in team games group integration task in very important.

### Conclusion

The data analysis shows that in Individual attraction to group task and Group integration task Under 22 years National Level Cricketers are attracted more to group task than the Under 17 national cricketers. There is no significant difference in Individual Attraction to group social and group integration social.

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## Prediction of Basketball Players ability for Anthropometric measurements

Vishwanath M Nadakatti  
Research Scholar  
Department of Physical Education  
Singhania University, Rajasthan

Suresh.B.Patil  
Research Scholar  
Department of Physical Education  
Singhania University, Rajasthan

### Introduction

'Anthropometry' means the measurement of man. Whether living or dead and consists primarily in the measurement of the dimensions of the body. Anthropometry the measurements of man provide scientific methods and observations on the living man and the skeleton. Anthropometry represents the typical and traditional tool of human biology, physical anthropology and axiology. Recently it has taken a strong bonded relationship with physical education and sports sciences.

### Need and Importance of Anthropometric Measurements.

The physical structure especially the height and arm length have definite and decisive advantage in many games and sports. Similarly, segmental length of individual body parts especially height and arm length are of considerable advantage in certain games like volleyball, Cricket and Basketball. Anthropometric measurements have revealed correlation between body structure and physical characteristics and sports capabilities. This knowledge of mathematical correlation permits sports physicians to evaluate and to predict performance potentialities on the requirements of the sports and games, the prediction prognostics. The higher level performance of a basketball does not depend only on the mastery of technical, tactical aspects alone, but also upon the anthropometric measurements. An Anthropometric measurement has wide applications as one of the essential parameters consists the selecting diagnostics of any game or sport. The anthropometric indices aided in evaluating potentiality for athletic performance<sup>1</sup>.

Despite the importance of physical fitness, physiology, and psychological features of them team players the anthropometric characteristics of team game players, are also very imperent for the success at inter college level competition

**Aim:** the aim of the study was to know the ability from the anthropometric measurement.

In this chapter, the selection of subjects, variables, reliability of subjects, collection of data are explained in detail.

**Procedure:** 40 basketball male players, who have participated in the Karnataka University Intercollegiate tournament during the year 2012-13, were selected as subjects for this study.

The investigator explained the purpose and significance of the study to all the subjects selected for this study to ensure maximum co-operation from the subjects.

**Table 1. Shows the relationship between shooting and anthropometric measurement**

Sl. No.	Variables	Correlation coefficient
	Shooting ability and height	0.394
	Shooting ability and weight	0.371
	Shooting ability and fore arm	0.607
	Shooting ability and upper arm	0.618
	Shooting ability and chest	0.720
	Shooting ability and thigh	0.702
	Shooting ability and calf	0.572
	Shooting ability and arm length	0.486
	Shooting ability and leg length	0.752

\* Significant at 0.05 level.

The above table 1 indicate the shooting and anthropometric measurement, according to this correlation coefficient for shooting ability and height is 0.394, for Shooting ability and weight is 0.371,

for Shooting ability and fore arm is 0.607, for Shooting ability and upper arm is 0.618, for shooting ability and chest is 0.720, for shooting ability and thigh is 0.702, for shooting ability and calf is 0.572, for shooting ability and arm length is 0.486 and for shooting ability and leg length is 0.752 respectively.

**Table 2. Shows the relationship between passing and anthropometric measurement**

Sl. No.	Variables	Correlation coefficient
	Passing ability and height	0.498
	Passing ability and weight	0.466
	Passing ability and fore arm	0.419
	Passing ability and upper arm	0.396
	Passing ability and chest	0.641
	Passing ability and thigh	0.404
	Passing ability and calf	0.381
	Passing ability and arm length	0.240
	Passing ability and leg length	0.501

\* Significant at 0.05 level.

The above table 1 indicate the shooting and anthropometric measurement, according to this correlation coefficient for passing ability and height is 0.498, for passing ability and weight is 0.466, for passing ability and fore arm is 0.419, for passing ability and upper arm is 0.396, for passing ability and chest is 0.641, for passing ability and thigh is 0.404, for passing ability and calf is 0.381, for passing ability and arm length is 0.240 and for passing ability and leg length is 0.501 respectively.

**Table 3. Shows the relationship between dribbling and anthropometric measurement**

Sl. No.	Variables	Correlation coefficient
	Dribbling ability and height	0.634
	Dribbling ability and weight	0.335
	Dribbling ability and fore arm	0.568
	Dribbling ability and upper arm	0.530
	Dribbling ability and chest	0.449
	Dribbling ability and thigh	0.584
	Dribbling ability and calf	0.263
	Dribbling ability and arm length	0.300
	Dribbling ability and leg length	0.533

\* Significant at 0.05 level.

The above table 1 indicate the shooting and anthropometric measurement, according to this correlation coefficient for dribbling ability and height is 0.634, for dribbling ability and weight is 0.335, for dribbling ability and fore arm is 0.568, for dribbling ability and upper arm is 0.530, for dribbling ability and chest is 0.449, for dribbling ability and thigh is 0.584, for dribbling ability and calf is 0.263, for dribbling ability and arm length is 0.300 and for dribbling ability and leg length is 0.533 respectively.

### Conclusion

Within the limitations of the present study and on the basis of findings, the following conclusions may be drawn. It is observed from the study that there are significant difference between in the selected anthropometric measurements such as arm length, thigh girth and leg length. . But in the remaining measurements there is no such difference because of the selection procedure, interest and popularity of these games among students of the colleges affiliated to Karnataka University

### Refereneces:

Corolyn Nicholson, "A Study to Determine the Relationship of Selected Anthropometric Measurements to Leg Strength", Complete Research in Health Physical Education and Recreation 6 (1964) : 94

## A Study On Folk Games Of Bijapur District

Rajashekhar. D. Benakanahalli.\* and Virupaksha, N.D.\*\*

\*Physical Education Director, Shri. R N Deshpande Government First Grade College,  
Mulgunda, Gadag Dist. Karnataka, India, kingomxxx@gmail.com

\*\* Co ordinator, Department of P.G. Studies in Physical education, Kuvempu University,  
Shivamogga Karnataka state, India email: vsporty@gmail.com

### Abstract:

Folk games have been formed and existed from a long time. They are more than entertainment; they contain culture of a particular geographical area. These games are very interesting and useful. However, folk games are being played very less. These games have to be preserved for the coming generation other wise Children are at a disadvantage, and they don't get chance to play them. So it is very important to unearth and popularise folk games to all the ages to develop the social values. This study was done to bring out the folk games which are still played by boys, girls and adults of Bijapur District. The results showed that Tag games, Tiger & Cattle, Hide & Seek, and Hopping circle games. Huthu Thu, Gilli danda, Spinning top, hitting the man with ball and Beating the coconut folk games are widely played by the people of Bijapur district.

**Key words:** Folk games, Tag games, Tiger & Cattle, Hide & Seek, and Hopping circle games. Huthu Thu, Gilli danda

### Introduction

Games have grown with man right from the time of man came into existence on the earth. Games are inseparable part of man's life. Sports and games have deep roots in the culture and in the humanities simply because they provide life enrichment and fulfilment of opportunities. Culture and folk games have originated and continued according to climatic conditions and geographical factors. Some of the original folk games has attained international recognition. Even in the changing and different circumstances they have not lost their original form and importance. Folk games have been formed and existed from a long time. They are more than entertainment; they contain culture of a particular geographical area. These games are very interesting and useful. However, folk games are being played very less. These games have to be preserved for the coming generation other wise Children are at a disadvantage, and they don't get chance to play them. So it is very important to unearth and popularise folk games to all the ages to develop the social values. One can understand the social heritage of any culture through the study of folk games. By a deep insight into the folk games in various countries of the world, we find that folk nurture the values of life and these values being played a vital role in the growth and development of the society. Folk games reflect the social and cultural values of human life.

Bijapur District is a district in the state of Karnataka in Southern. The city of Bijapur is the headquarters of the district, and is located 530 km northwest of Bangalore. Bijapur is well known for the great monuments of historical importance built during the Adil Shahi dynasty. Bijapur District comprises five taluks.

**Aim of the Study:** The main of the study was to investigate the folk games played by different age group people of Bijapur district of Karnataka State.

**Methodology:** To achieve the aim of the study data was collected through questionnaire and interview. Questionnaire was prepared and finalised with experts' opinion. Subjects were randomly selected and researcher scholar himself visited the subjects and data was collected.

### Results:

The purpose of the present research was to investigate and list the folk games and sports of Bijapur District. The data were collected as explained in methodology. The collected data were analyzed and presented in the following table.

Table – 1: Shows the details of the folk games played by girls, boys and adults of Bijapur District

Sl. No.	Category	Name of the games
1	Girls	Hopping circle, Tag games, Tiger & Cattle, Hide & Seek, Channemane, Whirling, blind mans game, Kallu – Mannu, Games of bangle pieces, Koosumari, Kitchen Games, Marriage Games, Annekallu, Balechooru, Kuntepille, and Girigatte.
2	Boys	Huthu thu, Gilli danda, hitting the man with ball, Buguriyata, Chendata, Game with creeper or rope, Tag games, Kallu – Mannu, Kaddiyatta, Kudurejuttu, Marakothiyata, Marbles betting, Game of hours. Motor ata and Urulugaliyata.
3	Adults	Beating the coconut, hand wrestling ,Chakara, Huli aata and Pagade

### Conclusions

The world of play may also be the result of an individual's biological, sociomotional and contextual characteristics. In this context, interculturality means recognising the culture of the other. The universal language of play is a valuable tool to foster knowledge of and respect for different cultures and languages present in society. In nutshell, children's traditional games are an excellent instrument for intercultural development, given that many of them increase tolerance, respect and participation, and due to their content constitute a powerful resource for moral education and a unifying link between children from different cultures. With the results obtained from the study, the following conclusions were drawn It was observed that varieties of folk games are available for the people of all ages to participate in Bijapur District. The folk games are played according to their age and gender. But Tag games, and Kallu – Mannu are the two games played by both boys and girls of Bijapur District. Adults are playing less folk games when compared to boys and girls. Boys and girls are playing more folk games than the adults due to growth and development characteristics. Adults are participating less in folk games due to their responsibility and life style.

### Recommendations:

Here we should bear in mind that the broad definition of the term 'sports' considers, along with the development of physical shape and mental well-being, also facilitation of social interactions as a function of sport, which enables us to regard expressions of sports and sports-related activities (especially folkloric) as one of the forms of culture. The government should include the folk games in school curriculum to preserve the culture as well as sporting culture. During village festivals local bodies should take initiative to organise more folk games annually to all ages. Physical education teachers should be given training for folk games to make folk games more popular among school children.

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## Anthropometric Determinants Of Running Performance In Elite Junior Athletes

Wazir Singh Phogat, PhD Scholar, Dept. of Physical Education, CDLU, Sirsa, Haryana  
Ravinderpal Ahlawat, PhD Associate Professor, CDLU, Sirsa, Haryana

### Abstract

The purpose of the study was to find out the anthropometrical determinants of running performance in junior elite runners. To achieve the purpose of study 61 elite level Junior Athletes from National Athletics Coaching camp at Sonapat, Haryana were selected as the subjects. Anthropometrical parameters were measured with the help of different tools, Standing height (wall mounted height measure meter), body weight (weighing machine), leg length, trunk length, arm length and hand length (non-stretchable measuring tape), calf girth, thigh girth and upper arm girth (non-stretchable measuring tape) and body compositions biceps skin fold, triceps skin fold sub-scapularis region and supra-iliac region (skin fold callipers). Descriptive statistic and Pearson's Product Moment Correlation were employed to analyse the data. Significant positive correlation was found between Standing height and performance ( $r = .266^*$ ,  $p < 0.05$ ), between Leg length and performance ( $r = .276^*$ ,  $p < 0.05$ ), b/w Trunk length and performance ( $r = .359^{**}$ ,  $p < 0.01$ ) between Calf girth and performance ( $r = .254^*$ ,  $p < 0.05$ ) and between body composition and performance ( $r = .347^{**}$ ,  $p < 0.01$ ). However significant negative correlation was found between Upper Arm Girth ( $r = -.501^{**}$ ,  $p < 0.01$ ). Body Weight, Arm length, Hand length and Thigh Girth were found to be not significantly correlated with performance.

Key words: anthropometrical parameters, junior elite runners

### Introduction

Running performance is related to a variety of Anthropometrical characteristics in national (Maldonado, Mujika, & Padilla, 2002) and elite (Rabadan, et al., 2011) level middle- and long-distance runners. Several anthropometric and body composition values are known to be associated with running performance in elite and national level runners for example, body height and mass (Maldonado, et al., 2002), fat and fat-free mass (Winter & Hamley, 1976), arm circumference Mooses, M. et al.: ANTHROPOMETRIC AND PHYSIOLOGICAL ... Kinesiology 45(2013) :154-162 155 , different lower limb skin folds and circumferences (Arrese & Ostariz, 2006; Legaz & Eston, 2005;) and also sum of three (Kong & de Heer, 2008) and six (Legaz & Eston, 2005) skin folds have been related to distance running performance. Runners with a proportionally smaller amount of body mass concentrated in the extremities, particularly in the legs, would perform less work moving their body segments during running if all other factors are unchanged (Myers & Steudel, 1985). Therefore, leg mass and the distribution of leg mass might be important characteristics of distance runners' performance (Myers & Steudel, 1985). Despite a number of studies describing different anthropometric parameters related to running performance over different distances, there is paucity of studies investigating the associations between specific anthropometric ratios with the performance in junior level elite athletes.

### Methods

Subject:

61 elite level junior athletes from National Athletics Coaching camp at Sonapat, Haryana were selected as the subjects for the study.

Instrumentation:

Anthropometric parameters were measured with the help of different administrating tools, Standing height (wall mounted height measure meter), body weight (weighing machine), leg length, trunk length, arm length and hand length (non-stretchable measuring tape), calf girth, thigh girth and upper arm girth (non-stretchable measuring tape) and body compositions biceps skin fold, triceps skin fold sub-scapularis region and supra-iliac region (skin fold callipers).

Performance scores allocated by three experts for performance of athletes were averaged to assess the athlete's performance

**Statistical analysis:**

Descriptive statistics and Pearson's Product moment Correlation were computed to analyse the collected data.

**Analysis and Discussion on Findings**

Table No. 1 :Descriptive Statistics (Mean±SD) on Anthropometrical Variables to Assessed the Performance of Junior Indian National Runners

Variables	Mean	Std. Deviation	N
Standing height	164.7443	7.8258	61
Body Weight	82.9410	9.4635	61
Leg length	77.3853	14.9610	61
Trunk length	77.3672	10.2732	61
Arm length	47.5082	8.2523	61
Hand length	19.8656	1.4858	61
Calf Girth	21.7853	2.9916	61
thigh Girth	52.3262	7.9743	61
Upper Arm Girth	23.6344	3.8012	61
Body Composition	50.6557	11.3772	61

Table no. 1 depicts the descriptive result of anthropometrical variables. The descriptions of (Mean±SD) are standing height 24.24 ±2.69 (cms), Body Weight 82.94 ±9.46 (kg), Leg length 77.39 ±14.96 (cms), Trunk length 77.37±10.27 (cms), Arm length 47.51±8.25 (cms), Hand length 19.87±1.49 (cms), Calf Girth 21.79±2.99 (cms), thigh Girth 52.33±7.97 (cms), Upper Arm Girth 23.63±3.80 (cms) and Body Composition 50.66 ±11.38 (mm).

Table No. 2: Relations between Anthropometrical–Motor Variables and Performance

Variables	Performance Pearson Correlation (r)	Sig. (2-tailed) p-value	N
Standing height	0.266*	0.039	61
Body Weight	0.088	0.500	61
Leg length	0.276*	0.031	61
Trunk length	0.359**	0.005	61
Arm length	0.082	0.528	61
Hand length	0.019	0.884	61
Calf Girth	0.254*	0.048	61
Thigh Girth	0.024	0.855	61
Upper Arm Girth	-.501**	.000	61
Body Composition	0.347**	0.006	61

\* Correlation is significant at the 0.05 level (2-tailed).

\*\* Correlation is significant at the 0.01 level (2-tailed).

Table no. 2 presents depicts correlation between anthropometrical variables and performance of Junior Indian National runners. The results of Pearson's Product moment correlation indicated the inter-relationship of anthropometrical variables and performance of athlete's.

Significant positive correlation was found b/w between Standing height and performance ( $r = .266^*$ ,  $p < 0.05$ ), b/w Leg length and performance ( $r = .276^*$ ,  $p < 0.05$ ), b/w Trunk length and performance ( $r = .359^{**}$ ,  $p < 0.01$ ) b/w Calf girth and performance ( $r = .254^*$ ,  $p < 0.05$ ) and b/w body composition and performance ( $r = .347^{**}$ ,  $p < 0.01$ ). however significant negative correlation was found b/w Upper Arm Girth ( $r = -.501^{**}$ ,  $p < 0.01$ ). Body Weight, Arm length, Hand length and Thigh Girth were found to be not significantly correlated with performance.

**Conclusions**

Significant positive correlation was found between Standing height and performance ( $r = .266^*$ ,

p<0.05).

Significant positive correlation was found between Leg length and performance ( $r = .276^*$ ,  $p < 0.05$ )<sup>3</sup>

Significant positive correlation was found between Trunk length and performance ( $r = .359^{**}$ ,  $p < 0.01$ )

Significant positive correlation was found b/w Calf girth and performance ( $r = .254^*$ ,  $p < 0.05$ ).

Significant positive correlation was found between body composition and performance ( $r = .347^{**}$ ,  $p < 0.01$ )

Significant negative correlation was found between Upper Arm Girth and performance ( $r = -.501^{**}$ ,  $p < 0.01$ ).

Body Weight, Arm length, Hand length and Thigh Girth were not significantly correlated with the performance.

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## Effect of Ashwagandha (*Withania Somnifera*) Root Powder Supplementation on the Core Muscle Strength and Stability in Hockey Players

Dr. Arvind Malik<sup>1</sup>, Dr. Sonia Malik, Vikas Mehta, Pardeep Sharma

1. Associate Professor, Department of Physical Education, Kurukshetra University, Kurukshetra, Haryana. (India)

### Abstract

*Withania Somnifera* (WS) is having significant effects on anti-inflammatory, nervine tonic, nerve soothing, antioxidant, immunomodulator, free radical scavenger, adaptogen, antiarthritic, antispasmodic, anti-stress and anti-cancer. But ergogenic value of WS as nutritional supplement is yet to be established. Objectives: Present study was designed to investigate the effect of supplementation of WS on the **Core Muscle Strength and Stability in** Hockey Players. Method: Thirty two male hockey players, with a mean age of  $17.3 \pm 1.8$  years and BMI  $20.7 \pm 2.8$  kg/m<sup>2</sup> volunteered for the study. Subjects were randomly assigned into two groups Group I (n= 24): *Withania somnifera* group (experimental group) and Group II (n=24): Placebo (control) group. The experimental group received 500 mg capsules of aqueous roots of Ashwagandha twice daily for eight weeks, whereas the placebo group received starch capsules. Core Muscle Strength & Stability was assessed with Mackenzie B. (2002) **Core Muscle Strength and Stability Test in** both experimental and control groups before and after the administration of *Withania somnifera* and placebo respectively. Results: A significant improvement in the Core Muscle Strength & Stability after 4 weeks ( $t = 2.99$ ,  $p < 0.021$ , on tail rest) and 8 weeks ( $t = 9.05$ ,  $p < 0.02$ , one tail test) in experimental group was found. Whereas, no significant improvement in the control group for Core Muscle Strength & Stability after 8 weeks of placebo supplementation was found. Conclusion: Supplementation of *Withania Somnifera* improves **Core Muscle Strength and Stability** in young hockey players.

Key Words: *Withania Somnifera*, **Core Muscle Strength**, **Core Muscle Stability**, Placebo

### Introduction

The plant *Withania Somnifera* commonly known as "*Ashwagandha*" is well known for its therapeutic use in the ayurvedic system of traditional medicine. It has been used as an antibacterial, antioxidant, adaptogen, aphrodisiac, liver tonic, anti-inflammatory agent (Puri HS, 2003). It is a reputed health food and herbal tonic and used for cardiovascular diseases in ethnomedicine. It is available for human use either as a single herb or an ingredient of polyherbal or herbomineral formulations. *Withania somnifera*, also known as Indian ginseng, widely used in the Ayurvedic medicine, belongs to the family of Solanaceae. Leaves, fruits, seeds, shoots and roots of this plant have all been used traditionally as well. The roots of *Withania Somnifera* contained 35 chemical constituents. Withaferin A and withanolides, the active ingredients contribute to the most of the biological actions of *Withania*. Furthermore, the roots of this plant are reputed to promote health and longevity by augmenting defense against some diseases, arresting the aging process, revitalizing the body in debilitated condition, increasing the capability of individual to resist adverse environment factors and by creating a sense of mental well being (Mishra LC; 2003).

Aphale et al. (1998) reported in a study conducted on rats, intake of ginseng and ashwagandha for 90 days, researchers found significant increase in body weight, food consumption and liver weight, and improved hematopoiesis. They did not reveal any toxicity of brain, heart, lung, liver, spleen, kidneys, stomach, testis and ovaries. Further the side effects of WS were not significantly different from those experienced by placebo-treated individuals Cooley et al. (2009) and Chopra et al. (2004). The human doses of *Ashwagandha* are generally in the range of 4-6 g/day and expected to be safe and non-toxic. *Withania* contains active ingredients like steroidal alkaloids and lactones known as "withanolides". Withaferin A and withanolide D are the two main withanolides that contribute to most of the biological actions of *Withania* (Matsuda et al. 2001; Sharma V et al. 2011). Stress, as a major cardiovascular risk factor leads activation of sympathoadrenal and hypothalamic pituitary adrenal (HPA) axis and causes oxidative stress.

Withania possesses a potent anti-stressor effect and is reported to alleviate stress induced changes and provides cardio protection in ischemic rats similar to the properties ascribed to adaptogens like Panax ginseng. It also increases heart weight and glycogen in myocardium and liver indicating intensification of the anabolic process and enhances the duration of contractility as well as coagulation time (Dhuley 2000). So, this study was planned to assess the effect of Ashwagandha on hypertensive subjects.

Long term strenuous exercises release of free radicals that causes oxidative damages of varied amount on different systems of human body. Stress can cause increased peroxidation of lipids, while decreasing levels of the antioxidant enzymes catalase and glutathione peroxidase. When Ashwagandha extract was administered by re-searchers one hour before a daily stress-inducing procedure, all of the aforementioned parameters of free radical damage normalized in a dose-dependent manner Bhattacharya et al. (2001). Thus, ashwagandha probably is safe without serious side effects. There are only few scientific clinical studies showing effect of WS on selective parameter of exercise performance after regular administration when given as supplements. The present study was therefore designed and performed to assess the effects of Withania somnifera (Ashwagandha) on the Core Muscle Strength & Stability which is the key for all form of sports/games.

#### Methodology

The present randomized controlled, parallel group, single blinded study was conducted on thirty two male hockey players, with a mean age of  $17.4 \pm 1.7$  (aged between 16 to 19 years) years and BMI  $20.9 \pm 2.9$  kg/m<sup>2</sup> from Shri Guru Hari Singh Hockey Academy, Shri Jiven Nager, Sirsa, Haryana, who volunteered for the study. Subjects were randomly assigned into two groups using the chit in a box method, Group I (n=16): Withania somnifera group and Group II (n=16): Placebo (control) group. Withania somnifera was used in the form of a standardized aqueous root extract was obtained from Central Council for Research in Ayurveda and Siddha (CCRAS), Delhi, India. Prior to the start of data collection, participants were explained about the drugs and previous research supporting the effectiveness on physical performance and possible side effects due to overdose. Only then the subjects who volunteered to participate in the study were recruited. A written informed consent was taken from each participant and their parent prior to recruitment.

Quality and dose of drug was decided after consultation with the Ayurvedic Medical Officer of civil hospital, Sirsa. 500mg of roots of WS and 500mg of sugar power was filled in gelatin capsules and stored in air tight containers and in room temperature below 30°C throughout the experiment. Drug and sugar capsules were given to their respective groups (Experimental and Controlled) in the dose of 1 capsule/day orally with milk after meals at night for 8 weeks under the personal supervision of researcher. Subjects were unaware of which group they were in and which drug they were to receive. It was thus a single blinded study, where all the subjects were completely unaware of drugs which they were going to consume. Core Muscle Strength & Stability was assessed with Mackenzie B. (2002) **Core Muscle Strength and Stability Test** of both experimental and control groups were measured before and after the administration of **Withania somnifera**. The data was analyzed by student 't' test(one tail) with Statistical Package for Social Sciences (SPSS - 20) software.

#### Results:

Results of the table- 1 indicates that the mean Pre Test and Mid Test (After 4 Weeks) Core Muscle Strength & Stability of placebo group (control group) before the supplementation of placebo (Pre Test) is 49.34 and after 4 weeks supplementation of placebo (Mid Test) it is 51.02. The mean difference is 1.68, which is in favor of mid test. The t value is 1.25, which is less than the table value of 1.68 at 0.10 levels (one tail test) of significance for 40 degrees of freedoms.

**Table – 1**

Comparative status of Pre Test and Mid Test Core Muscle Strength & Stability in Placebo Group (Control Group)

S.No.	Phase	Mean	S.D	Mean Difference	S.E.D	t – Value	P Value
1.	Pre Test	49.34	4.81	1.68	1.347	1.25	Not Significant
2.	Mid Test	51.02	3.87				

Similarly mean Core Muscle Strength & Stability of placebo group (control group) before the supplementation of placebo (Pre Test) is 49.34 and after 8 weeks supplementation of placebo (Post Test) it is 51.54. The t value is 1.58, which is less than the table value of 1.68 at 0.10 levels (one tail test) of significance for 40 degrees of freedoms.

Table – 2

Comparative status of Pre Test and Post Test Core Muscle Strength & Stability in Placebo Group (Control Group)

S.No.	Phase	Mean	S.D	Mean Difference	S.E.D	t – Value	P Value
1.	Pre Test	49.34	4.81	2.20	1.396	1.58	Not Significant
2.	Post Test	51.54	4.17				

Whereas table - 3 indicates that mean Core Muscle Strength & Stability of Experimental Group before the supplementation of Ashwagandha (Pre Test) is 48.86 and after 4 weeks supplementation of Ashwagandha (Mid Test) it is 52.87. The mean difference is 4.01, which is in favor of mid test. The t value is 2.99, which is more than the table value of 2.42 at 0.02 levels (one tail test) of significance for 40 degrees of freedoms. It means that there is a significant improvement in the **Withania Somnifera** group (Experimental Group) for Core Muscle Strength & Stability after 4 weeks of Ashwagandha (**Withania Somnifera**) supplementation.

Table – 3

Comparative status of Pre Test and Mid Test Core Muscle Strength & Stability in **Withania Somnifera** Group (Experimental Group)

S.No.	Phase	Mean	S.D	Mean Difference	S.E.D	t – Value	P Value
1.	Pre Test	48.86	3.93	4.01	1.338	2.99	Significant at 0.02 level
2.	Mid Test	52.87	4.71				

Similarly mean Core Muscle Strength & Stability of **Withania Somnifera** group (Experimental Group) before the supplementation of Ashwagandha (Pre-Test) is 48.86 and after 8 weeks supplementation of Ashwagandha (Post Test) it is 65.72. The mean difference is 16.86, which is in favor of Post Test. The t value is 9.85, which is more than the table value of 2.42 at 0.02 levels (one tail test) of significance for 40 degrees of freedoms. Hence, there is a significant improvement in the **Withania Somnifera** group (Experimental Group) for Core Muscle Strength & Stability after 8 weeks of Ashwagandha (**Withania Somnifera**) supplementation.

Table – 4

Comparative status of Pre Test and Post Test Core Muscle Strength & Stability in **Withania Somnifera** Group (Experimental Group)

S.No.	Phase	Mean	S.D	Mean Difference	S.E.D	t – Value	P Value
1.	Pre Test	48.86	3.93	16.86	1.710	9.85	Significant at 0.02 level
2.	Post Test	65.72	6.78				

Discussion of results:

According to table 1 and 2 the t value is 1.25 and 1.58, which are not significant. It means that there is no significant improvement in the Pre Test, Mid Test and Post Test in Core Muscle Strength & Stability after 4 and 8 weeks of placebo supplementation. Whereas table 3 and 4 reveals as t value is 2.99 and 9.85, which are significant also, indicates that there is a significant improvement in the **Withania Somnifera** group (Experimental Group) for Core Muscle Strength & Stability (CMSS) after 4 and 8 weeks of Ashwagandha (**Withania Somnifera**) supplementation.

The growth-promoting effect of WS was studied for 60 days in a double-blind study of 60 healthy children, age 8-12 years, experienced a slight increase in hemoglobin, packed cell volume, mean corpuscular volume, serum iron, body weight, and hand grip, and significant increases in mean corpuscular hemoglobin and total proteins ( $p < 0.01$ ) at the end of 60 days when compared to the initial level and the placebo group Venkataraghavan et al.(1980). WS may induce the synthesis of inducible nitric oxide expression likely by acting at transcriptional level Iuvone et al.(2003). Shenoy S et al. (2012) found that eight weeks of Ashwagandha supplementation increased endurance, respiration capacity and metabolic efficiency among cycling athletes.

Colorado State University researchers found that Ashwagandha and other Ayurvedic herbs help protect the heart from oxidative damage Reuland DJ et al.(2012). The effect of Ashwagandha on glycosaminoglycan synthesis in the granulation tissue of carrageenin-induced air pouch granuloma was studied. Ashwagandha is shown to exert significant inhibitory effect on incorporation of ribosome - 35S into the granulation tissue. The uncoupling effect on oxidative phosphorylation (ADP/O ratio reduction) was also observed in the mitochondria of granulation tissue. Further, Mg<sup>2+</sup> dependent ATPase activity was found to be influenced by Ashwagandha. Ashwagandha also reduced the succinate dehydrogenase enzyme activity in the mitochondria of granulation tissue (Begum & Sadique, 1987). Biswal BM et al.(2012) from Malaysia's University Sains found that Ashwagandha reduced fatigue and increased general well-being among patients who were undergoing chemotherapy. Raut AA et al.(2012) from the ICMR Advanced Centre for Reverse Pharmacology in

Traditional Medicine found in a 30-day clinical trial among 18 healthy volunteers that 750-1250 milligrams of Ashwagandha per day reduced cholesterol, improved sleep and increased muscle strength. Research from Germany's University of Tuebingen discovered that Ashwagandha reduces oxidative stress and alters gene expression to help cells with energy production Sabir F et al. (2012).

Analytical reports on *Ashwagandha* suggest that this herb has a rich array of a diverse spectrum of bioactive compounds Chaurasiya ND et al. (2008). The abundance of phytochemicals with antioxidant properties, such as phenolic, flavonoids, and carotenoids may be held responsible for the rejuvenating activity of this medicinal herb. This explains the inclusion of this herb in the Indian system of Ayurvedic lists in promoting longevity and other pharmacological effects Widodo N et al. (2008). In spite of the many properties attributed to *Ashwagandha*, there is a shortage of clinical scientific evidence for its use in athletes. Present study provides a scientific basis for the use of Ashwagandha supplementation by athletes.

Though there are many factors that could contribute to the increase in the Core Muscle Strength & Stability, we believe that an increase in the CMSS is due the ability of Ashwagandha to provide healthy long-lasting energy for enhanced performance, improving recovery from workout-derived stress and fatigue, and increasing anabolic metabolism to promote lean muscle development. An added benefit of this stress reduction is that many people feel an enhanced mood when taking Ashwagandha. In addition, most athletes know that maintaining a healthy weight helps enhance performance. Further studies on Core Muscle Strength & Stability would provide conclusive evidence regarding the mechanism of the ergogenic effect of Ashwagandha. Thus, the above findings clearly indicate that the traditional use of Ashwagandha has a logical and scientific basis. Large scale clinical studies are needed to prove the clinical efficacy of this herb, specially in sports performance.

#### **Conclusion:**

*Withania somnifera* may therefore be useful for to improve Core Muscle Strength & Stability after 8 weeks of Ashwagandha (*Withania Somnifera*) supplementation. Drug appears to be safe for young adults when given for mentioned dosage and duration. The forthcoming researches should focus on dose finding, longer treatment duration as well as gender specific effects of WS. Further studies are also required to measure whether the drugs can improve other parameters of physical fitness so that in future *Withania somnifera* can be used as ergogenic elements.

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## A Comparative Study of Agility among Badminton Players and Lawn Tennis Players of the Khammam District in Telangana

Dr.K.Savithri

Physical Director, Singareni Collieries Womens Deg. College  
Kothagudam, Khammam

### Abstract:

The Purpose of the study is to find the Agility among Shuttle Badminton Players and Lawn Tennis Players of the Khammam District in Telangana. The Sample for the Study consists of 15 Male Lawn Tennis Players and 15 Male Badminton Players of Khammam District between the age group of 18-22 Years. To assess the Agility the Shuttle Run Test is conducted by the Technical Officials. The results of the study shows that the Badminton Players are having good agility compare to Lawn tennis Players. It is recommended that this study is help to Coaches to prepare the conditioning Program to improve the agility among Badminton and Lawn Tennis Players.

Key words: agility, conditioning etc.

### Introduction:

Badminton is a racquet sport played by either two opposing players (singles) or two opposing pairs (doubles), who take positions on opposite halves of a rectangular court divided by a net. Players score points by striking a shuttlecock with their racquet so that it passes over the net and lands in their opponents' half of the court. Each side may only strike the shuttlecock once before it passes over the net. A rally ends once the shuttlecock has struck the floor, or if a fault has been called by either the umpire or service judge or, in their absence, the offending player, at any time during the rally.<sup>[1]</sup>

The shuttlecock (or shuttle) is a feathered (or, mainly in uncompetitive games, plastic) projectile whose unique aerodynamic properties cause it to fly differently from the balls used in most racquet sports; in particular, the feathers create much higher drag, causing the shuttlecock to decelerate more rapidly than a ball. Shuttlecocks have a much higher top speed, when compared to other racquet sports. Because shuttlecock flight is affected by wind, competitive badminton is played indoors. Badminton is also played outdoors as a casual recreational activity, often as a garden or beach game.

Since 1992, badminton has been an Olympic sport with five events: men's and women's singles, men's and women's doubles, and mixed doubles, in which each pair consists of a man and a woman. At high levels of play, especially in singles, the sport demands excellent fitness: players require aerobic stamina, agility, explosive strength, speed and precision. It is also a technical sport, requiring good motor coordination and the development of sophisticated racquet movements

**Tennis** is a sport people play individually against a single opponent (singles) or between two teams of two players each (doubles). Each player uses a racquet that is strung with cord to strike a hollow rubber ball covered with felt over or around a net and into the opponent's court. The object of the game is to play the ball in such a way that the opponent is not able to play a good return.

Tennis is an Olympic sport and is played at all levels of society and at all ages. The sport can be played by anyone who can hold a racquet, including wheelchair users. The modern game of tennis originated in Birmingham, England, in the late 19th century as "**lawn tennis**".<sup>[1]</sup> It had close connections both to various field ("lawn") games such as croquet and bowls as well as to the older racquet sport of *real tennis*. During most of the 19th-century in fact, the term "tennis" referred to real tennis, not lawn tennis: for example, in Disraeli's novel *Sybil* (1845), Lord Eugene De Vere announces that he will "go down to Hampton Court and play tennis."<sup>[2]</sup>

The rules of tennis have changed little since the 1890s. Two exceptions are that from 1908 to 1961 the server had to keep one foot on the ground at all times, and the adoption of the tie-break in the 1970s. A recent addition to professional tennis has been the adoption of electronic review technology coupled with a point challenge system, which allows a player to contest the line call of a point.

Tennis is played by millions of recreational players and is also a popular worldwide spectator sport.

The four Grand Slam tournaments (also referred to as the "Majors") are especially popular: the Australian Open played on hard courts, the French Open played on red clay courts, Wimbledon played on grass courts, and the US Open played also on hard courts.

**Methodology:**

The sample for the present study consists of 15 Male Badminton and 15 Male Tennis Players of Khammam District between the age group of 18 to 22 Years. To assess the agility the Shuttle Run Test is conducted by the Technical Officials

**Agility Shuttle Run Test**

This test describes the procedure as used in the President's Challenge Fitness Awards. The variations listed below give other ways to also perform this test.

purpose: this is a test of speed and agility, which is important in many sports.

equipment required: wooden blocks, marker cones, measurement tape, stopwatch, non-slip surface.

procedure: This test requires the person to run back and forth between two parallel lines as fast as possible. Set up two lines of cones 30 feet apart or use line markings, and place two blocks of wood or a similar object behind one of the lines. Starting at the line opposite the blocks, on the signal "Ready? Go!" the participant runs to the other line, picks up a block and returns to place it behind the starting line, then returns to pick up the second block, then runs with it back across the line.

scoring: Two or more trails may be performed, and the quickest time is recorded. Results are recorded to the nearest tenth of a second.

**Results and Discussion:**

The results of the study shows that the Badminton Players are having good agility compare to Lawn Tennis Players

Table I Showing Comparison of **Agility** among Badminton Players and Lawn Tennis Players

**Independent Sample Test**

Comparison of **Agility** among Badminton Players and Lawn Tennis Players

Agility	N	Mean	Std.Deviation	t	Sig.
Lawn Tennis Players	15	13.78	1.11	1.79	0.083
Badminton Players	15	13.14	0.823		

In Table –I the Mean Values of Badminton Players in Shuttle Run is 13.14 and Lawn Tennis Players is 13.78 The Standard Deviation on Badminton Players is 0.823 and Lawn Tennis Players is 1.11 and t is 1.79 and significance is 0.083

The Mean values of Badminton Players in Shuttle Run is 13.14 and Lawn Tennis Players is 13.78 in shuttle run. Hence the Badminton Players are having good agility compare to Lawn Tennis Players. Badminton players hit fast to the Shuttle cork and also move fast in badminton court.

**Conclusions:**

It is concluded that the Badminton Players are having good agility because they require good movements and agile to perform well.

**Recommendations:**

Similar Studies can be conducted among females and in other Sports and games. This study is useful to the Coaches to prepare the conditioning program to improve their skills in Badminton and Lawn Tennis.

**References:**

Wikipedia Badminton and Lawn Tennis  
www.topendsports

## Effect Of Consumption Of Whey Protein Supplement On Aerobic Power, Anaerobic Power And Bodycomposition Of Weight Trainers

Ankan Sinha<sup>1</sup>

<sup>1</sup> Assistant Professor, Dept., of Physical Education, Govt. Degree College, Dharamnagar, North Tripura. (ankan3sinha@yahoo.co.in)

### Abstract

The aim of the present study was to determination the effect of ten weeks exercise combined with whey protein supplement on aerobic power, anaerobic power and body composition of Weight trainers. It is hypothesises that the whey protein supplement has effect on the aerobic capacity, anaerobic power and body composition (total body mass, lean body mass and body fat percentage) of Weight trainers. The study was semi-experimental that done in pre and post-test phases on control (n=10) and treatment (n=10) groups on 2013 in Tripura, India. One day before beginning of the study protocols, subjects accomplished aerobic capacity, anaerobic power and body composition tests. Afterwards, the subjects underwent exercise protocol for 10 weeks, 3 sessions per week, and 90 minutes per session of training. Half hour before each training session, the training group consumed whey protein supplement (1.25 g. whey protein powder with medium glass of water and 2 tea spoon of sugar for 1 kilogram of body weight) and the control group consumed placebo (2 tea spoon of sugar per medium glass of water). Data were analyzed through independent t test. The results showed that there were significant differences in post-test of aerobic and anaerobic capacity and body composition of Weight trainers. These results indicated that consumption of whey protein supplement combined with exercise leads to increase in aerobic power, anaerobic power, total body mass, lean body mass and decrease in body fat percentage.

Keywords: Whey protein, Aerobic power, Anaerobic power, Body composition, Weight trainer.

### Introduction

Every bodybuilder understands, or should understand, the importance of protein supplementation. Weight trainers require more protein than sedentary folks. Without protein (which the body breaks down into amino acids), you cannot build muscle. As far as study concerned, no matter what kind of diet one follow – whether it is low or high in complex carbohydrates or fats – and despite the number of calories you taken in, your diet must be rich with protein. There are many different types of protein sources available to all. Qualitative protein can be found in whole foods like eggs, milk, cottage cheese, beef, fish, poultry, etc. and, there are also a variety of protein supplements on the marked milk and egg protein, soy, beef, even vegetable protein. Out of all these different protein supplements, everyone absolutely convinced that whey protein is the best. Not only does it have a superior biological value (which means it may “yield” most usable grams of amino acids than other protein (supplements), it is also very low in lactose. Whey protein – ion-exchanged, micro filtered whey protein / is extremely high quality and very easy to use which is another thing that is terrific about it. On the other hand in the case of weight trainers (specifically players of Olympic weightlifting and power lifting, success is determined by how much weight can be lifted in the appropriate movements, whereas a wrestler is judged by the degree of physical control over the opponent. These sports are quite different in terms of the patterns of muscle recruitment, the force and power produced, and the equipment used. For most competitive sports, improving the performance of an athlete can be accomplished by reducing the resistance or drag that must be overcome or by increasing the athlete's ability to sustain a high power output to overcome that resistance or drag. There are so many ergogenic aids for improving the performance; supplementary foods are one of them. During the training schedule or period a sportsman wants much more energy for completion of their schedule. The sources of energy in our body is limited i.e. the sportsman needs extra energy. The ultimate aim of sportsman is achieving highest performance in sports and games. If the sports are depend on strength, endurance, speed then the supplementary food is much more needed. However, in comparison with different types of exercise, there are not many studies available that were done on effects of whey protein supplement consumption on aerobic power, anaerobic power and body composition of Weight trainers.

The present study aimed at assessing the effect of whey protein supplement consumption on aerobic power, anaerobic power and body composition of Weight trainers.

**Materials and Methods**

**Subjects**

The present study was performed in order to assessing the effect of whey protein supplement consumption combined with 10 weeks exercise on the aerobic capacity, anaerobic power and body composition of weight trainers. All subjects were informed about the purpose, requirements and the experimental protocol of the investigation and completed confirm form. Twenty subjects were selected from the Dharmanagar (Tripura) for participants of the study. Afterward, they randomly assigned into two groups; control (n=10, consumed placebo) and treatment group (n=10, consumed whey protein supplement). The age, height and weight of the subjects were recorded before beginning the exercise protocols. Dietary program: duration the exercise protocol, all subjects (control and treatment groups) were informed about nutrition information and dietary program. So, both groups get similar program and consumed same food diets. The subjects underwent exercise protocol for 10 weeks, 3 sessions per week, and 90 minutes per session of training. Each exercise session included warm up, ball training, training without ball, tactical training, competition and cool down. Whey protein supplement: Each subjects of training group consumed 1.25 g. whey protein powder with medium glass of water and 2 tea spoon of sugar for 1 kilogram of body weight half hour before each exercise session. Each subjects of control group consumed placebo (2 tea spoon of sugar per medium glass of water without whey protein) half hour before each exercise session.

Measures: aerobic power measured by using Cupper test and calculated by using this formula:

$$Vo_2 \text{ max (ml/kg/min)} = \frac{\text{covered distance (m)} - 504.9}{}$$

44/73

Peak, mean and minimum anaerobic power measured by using the Rast test and calculated by using this formula: Anaerobic power = weight (kg) × [distance (m)]<sup>2</sup>/[time(s)]<sup>3</sup>

Mean of anaerobic power = sum of 6 time peak anaerobic power divided 6

Body composition measurements were done by using the body composition apparatus such as skin fold caliper and BMI caculator measure total body mass, lean body mass and body fat percentage.

**Statistical analysis**

Statistical analysis was performed using the independent t-test. Values of p<0.05 were considered significant.

**Results**

The results of the study are shown in tables 1, 2,3,4,5 and 6 shows that consumption of the whey protein supplement has statistically significant increasing effect on aerobic power, peak, mean and minimum of anaerobic power, total and lean body mass and has significant decreasing effect on body fat percentage of treatment group in comparison with control group.

Table1. Comparison of aerobic power between two groups

Groups	n	mean	SD	df	t	p
Control	10	0.98	3.34	18	2.83	0.011
Training	10	5.35	3.55			

The results of t test in table 1 show that there is significant differences between treatment and control group (p=0.011).

Table2. Comparison of peak anaerobic power between two groups

Groups	n	mean	SD	df	t	p
Control	10	-25.92	72.18	18	2.78	0.012
Training	10	52.82	52.96			

As shown in table2 the results of t test show that there is significant differences in peak anaerobic power between treatment and control group (p=0.012).

Table3. Comparison of minimum anaerobic power between two groups

Groups	n	mean	SD	df	t	p
Control	10	-15.09	127.56	18	2.19	0.042
Training	10	80.8	53.9			

The results of t test that shown in table3 show that there is significant differences in minimum anaerobic power between treatment and control group (p=0.042).

Table4. Comparison of mean anaerobic power between two groups

Groups	n	mean	SD	df	t	p
Control	10	-6.53	86.75	18	2.33	0.031
Training	10	64.22	40.67			

The results of t test that shown in table4 show that there is significant differences in mean anaerobic power between treatment and control group (p=0.031).

Table5. Comparison of total body mass between two groups

Groups	n	mean	SD	df	t	p
Control	10	0.71	1.32	18	2.37	0.029
Training	10	2.2	1.48			

The results of t test in tble5 show that there is significant differences in total body mass between treatment and control group (p=0.029).

Table6. Comparison of body fat percentage between two groups

Groups	n	mean	SD	df	t	p
Control	10	-0.32	1.56	18	2.35	0.03
Training	10	-2.33	2.21			

The results of t test in tble6 show that there is significant differences in body fat percentage between treatment and control group (p=0.03).

### Discussion

The aerobic power the training group in this study increased significantly after 10 weeks whey protein intake combining with training program. Whey protein supplement has significant increasing effect on aerobic capacity of experimental group in comparison with control group. The peak, mean and minimum anaerobic power of experimental group increased significantly in comparison with the control group after 10 weeks consumption of whey protein supplement combining with training programme. Consumption of whey protein supplement has significant effect on total body mass and lean body mass of training group in comparison with control group and leads to increase in total and lean body mass. The great things about-whey protein is that it has an especially high concentration of essential amino acids (up to 50%), half of which are muscle-preserving branched-chain aminos, and most quality whey-protein supplements are also fortified with glutamine – an amino acid which everyone believe is important to bodybuilders. So, it helps in the performance of weight trainers. In the present study, whey protein supplement used in prolong time but in moderate sample and we achieved to beneficial results. However it is not cleared that using the whey protein supplement leads to good results in conditioning period or in large population. So, it is suggested that more studies must be taken place to response this question that if the whey protein supplement has other effects on the weight trainers in different condition of exercise.

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## **Budget allocating Scenario for Sports in advanced Countries - A study on Olympic Games**

**Anish Fatima**  
**(Ph.D) Research Scholar,**  
**Department of Economics, Osmania University, Hyderabad-07.**

### **Introduction**

The modern Summer Olympic Games began in 1896 and take place every four years at new locations selected through an elaborate bidding process many years in advance of the event. The Winter Olympics, held since 1924, follow an identical procedure. In recent times, the host city for both the summer and Winter Games has been selected six or seven years before the event is to take place. Historically, hosting the Olympic Games has been almost exclusively the domain of rich, industrialized nations. Between 1896 and 1952, every summer and Winter Games was held in either Western Europe or the U.S. with cities in Japan, Canada, and Australia joining the mix over the next two decades. Mexico City in 1968 was the first location outside the industrialized world in which the Games were held. Eastern European countries were awarded the Summer Games in 1980 (Moscow) and Winter Games in 1984 (Sarajevo, Yugoslavia). Seoul, Korea was awarded the 1988 Summer Games, a time during which South Korea might be classified as "rapidly industrializing" rather than industrialized, but it is probably fair to note that shortly after the Olympics, the country was admitted to the Organization for Economic Cooperation and Development (OECD), a de facto dividing line between industrialized and developing nations.

More recently, however, the International Olympic Committee (IOC) has encouraged bids from poorer countries and has awarded the Games on several occasions to countries outside of the OECD. The 2008 Summer Games were hosted by China, and the 2016 Summer Olympics will be played in Rio de Janeiro, the first time the event has taken place in the South America. In both cases, the winning nations prevailed over numerous bidders from various industrialized countries. The next two Winter Olympics will be played outside of Western Europe, North America, and Japan, for only the second and third times with the 2014 Winter Olympics in Sochi, Russia, and the 2018 Winter Games in Pyeongchang, South Korea. The list of countries submitting formal bids has also dramatically changed in recent decades.

Sporting mega-events such as the summer and Winter Olympic Games or soccer's World Cup focuses the world's attention on the region hosting the event and is highly sought-after by cities and countries around the globe. It would not be an exaggeration to suggest that the competition among cities and countries to host these events can often be as fierce as the competition among the athletes on the playing field. Over the past decade or two, developing countries have increasingly thrown their hats into the ring for a chance to host these mega-events. However, the cost of operating, organizing, and building infrastructure for an Olympic Games or World Cup can be daunting, especially for developing nations without the same level of sports and tourism infrastructure that exists in many industrialized countries. On the other hand, megaevents present an opportunity to generate the political will necessary to make investments in general infrastructure that can lead to long-run economic growth. From an economic standpoint, the question is whether mega-events represent a good investment for developing countries and whether developing nations have used mega-events differently than industrialized nations to promote general infrastructure development. These are the questions that will be addressed in this article.

Empirical research into the true economic impact of mega-events on host economies tends to show that major sporting events bring high costs with low rewards. The potential risks, but also possibly the potential rewards, from hosting mega-events may be even higher for developing nations. Mega-events may allow governments to overcome political constraints to allow beneficial infrastructure investments to be made, and the general investment needs of developing countries are likely to be higher than in industrialized nations. However, overcoming these political constraints comes at a very high cost in terms of money spent on unproductive investments in sport infrastructure and tournament operations, and there is also no guarantee that any all general infrastructure investments will provide a net positive return for the cities involved.

While the recent trend has been to “reward” developing countries with the opportunity to host mega-events such as the World Cup and the Olympics, the empirical evidence suggests that if rich countries want to promote economic development in poor countries, it would make more sense for high-income nations to explicitly keep these events out of the developing world and instead continue to award the games to rich countries that are better able to absorb more of the associated costs than low-income countries. Alternatively, the industrialized world could subsidize these events when they are held in poor countries through sponsorship or by direct foreign assistance although seems unlikely that rich countries would be willing to subsidize poor countries’ hosting efforts when the two are often in direct competition with one another for the rights to host in the first place. Brazil’s upcoming events may provide one additional avenue for potential economic gains. Mega-events can serve to “put the host on the map” leading to higher levels of future tourism, trade, and investment. As noted by Matheson (2008), The other major intangible benefit of mega-events claimed by sports boosters is that of national and international exposure. Sports fans may enjoy their visit to the city and return later raising future tourist revenues for the area. Corporate visitors, it is claimed, may relocate manufacturing facilities and company headquarters to the city. Television viewers might decide to take a trip to the host city at some time in the future based on what they see during the broadcast of the mega-event. Finally, hosting a major event might raise perceptions of the city so that it becomes a “world class” city and travel destination. All of these claims are potential true although little empirical research has conclusively demonstrated any long-run connections between hosting mega-events and future tourism demand. There are not even any anecdotal examples of companies moving corporate operations to a city based on the hosting of a sporting event. There are individual cases where mega-events do seem to have major influence on future demand, but it appears that a “perfect storm” is needed.

### **Conclusion**

In is possible that Brazil’s upcoming moments in the spotlight could bring long-run increases in global tourism, but it is important to note that Brazil in incurring very certain costs today for very uncertain future benefits. It remains a widespread belief among countries that there are substantial national gains to be made from hosting these global events, but the evidence indicates that this is rarely the case. Samuel Johnson once wrote that second marriages reflect “the triumph of hope over experience.” Such thinking also pervades the vigorous competition among countries to host these exciting but economically questionable events. Acknowledgements: The authors would like to thank the BRIC Policy Institute and fellow participants at the Symposium on BRICS and Sports Mega-Events at the BRICS Policy Institute in Rio de Janeiro in December 2012. Portions of this paper update and draw heavily from our previous work published as “Assessing the infrastructure impact of mega-events in emerging economies. Cities that are already on everyone’s map, London for example, gain little in exposure from a major event since they are already at nearly maximum exposure. Other cities such as Atlanta or many Winter Olympics hosts also gain little from exposure because the cities have little to offer potential tourists after their events. Advertising without a subject to advertise is likely to be an exercise in futility. Under very specific conditions, however, a “hidden gem” can raise its international profile by hosting a major event. This appears to have been the case with Barcelona, a city with great artistic, cultural, and architectural treasures, but also a city long overshadowed by European capitals such as Madrid, Rome, London, and Paris, as well as 40 years of fascist rule. By 2012, twenty years after their moment on the world stage, Barcelona was the fourth most visited city in Europe. Barcelona’s tourism experience, however, has not been replicated in the majority of Olympic hosts. Brazil in general and Rio in particular, offer unparalleled travel opportunities for tourists, but may have been underutilized as vacation destinations by world travellers.

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## How Media Publicising Sports and An Analysis on Performance

M.Naganna  
(Ph.D) Research Scholar,  
Department of Political Science,Osmania University, Hyderabad-07.

### Introduction

The purpose of this article is to initiate an examination of the influence of the media as a distraction and its impact on athletic performance. For the purposes of this paper it is important to have a common definition and understanding of media, arousal, stress, anxiety, and mood. Media will be defined as individuals who publicly report or make public statements relative to an athlete's performance. In this context, media can be newspaper reporters, paparazzi, television newscasters, or fans and critics who publicize their critiques of athletic performance through the use of public forums and blogs. In order to differentiate between arousal, anxiety, and stress in this text, specific definitions will be used. Arousal will refer to a state of alertness as the body prepares itself for action. It is associated with increases in physiological and psychological activity, such as heart rate and attention (Landers, 1980). Stress is defined as a state that results from the demands that are placed on the individual which require that person to engage in some coping.

### **Arousal and Anxiety**

In the field of Sport Psychology, many models have been created to explore arousal and anxiety levels as they relate to athletic performance. Following criticisms of lack of support, popular one-dimensional models such as the Inverted U-Theory and the Catastrophe Theory are being replaced with multidimensional-type models (Weinberg, 1990). The Multidimensional Anxiety Theory by Martens et al. (1990), for instance, focuses on the anxiety response that accompanies high levels of stress. It takes into consideration two different elements: cognitive anxiety and somatic anxiety. Cognitive anxiety signifies distractions which involve inability to concentrate, disruptions in attention, and negative performance expectations (Martens et al., 1990).

### **Arousal and Stress**

In sport competition, athletes must often think fast and make sharp decisions regarding the task at hand. For example, when a basketball player is receiving a pass from a teammate, he or she must complete necessary cognitive functions quickly in order to catch the pass. According to a model created by A.F. Sanders, one entity that may affect one's cognitive functions is arousal level. If the basketball player exhibits a low level of arousal, his or her perception declines. However, the player's perception is sped up with a high level of arousal. When the arousal level is too high, though, perception becomes less efficient. Additionally, Sanders proposes that stress commonly results from one's failed efforts in correcting a level of arousal that is too high or too low. Moreover, high levels of stress accompany increased anxiety (Sanders, 1983).

### **Media's Influence on Athletic Performance**

Many athletes are targets of media prey. Win or lose, their performance and life is publicly dissected by the media. Winning brings about media glorification and expectation, and/or jealousy and criticism. Losing brings forth negative judgment and more criticism. Howard Ferguson (1990) in his book, *The Edge*, said, "Criticism can be easily avoided by saying nothing, doing nothing, and being nothing. Mediocre people play it safe and avoid criticism at all costs. Champions risk criticism every time they perform." One such athlete who risked media criticism was Miki Ando.

Miki Ando was a two-time Japanese national figure skating champion and 2004 Junior World champion. She also became the first female skater to successfully complete a quadruple jump in competition. Ando is very popular in Japan and receives a lot of attention from gossip magazines and other Japanese media. Ando's athletic performance struggled in 2005 and 2006, and media coverage turned negative. When the Japanese Skating Federation (JSF) selected her to be on its 2006 Olympic woman's figure skating team, the press said she did not deserve to go to Torino. They also frowned on her for wearing miniskirts. The JSF was so concerned media coverage would negatively affect Ando as she prepared for the Olympics, they sent formal written requests to several magazine publishers asking them to cut back on their coverage (NBC, 2006).

The JSF was not the only organization concerned with media impact on their 2006 Olympic athletes. The Canadian Olympic Committee (2006) recognized the potential of the media as a distraction to their athletes as well. In an effort to divert any negative media influence, the Committee publicly announced the following communications objective in their victory management plan: A media training section emphasizing the notion to support athletic performance by removing media as a distraction (Canadian Olympic Committee, 2006). Were these concerns founded? Some in the Republic of China believe so. After China won the first gold medal in the 2004 Olympic Games and had some major unexpected wins during the first few days of Olympic competition, Chinese newspaper and television stations touted predictions of gold medals their athletes would claim. The predictions, however, did not come to fruition. Athletes the media advertised would take first, such as the Chinese male gymnasts, did not even make it to the award stand. Badminton player Lin Dan was beaten in the first round of competition and Ma Lin, China's top table tennis player, was defeated by 20th-ranked Swede Jan-Ove Waldner (China Daily, 2004).

#### ***Kenny Rogers***

Baseball player Kenny Rogers has had a volatile relationship with media. During the 2005 season, Rogers refused to talk to media after they published a report saying he would retire if the Rangers did not give him a contract extension. Then on June 29, 2005, while walking onto the field for a pre-game warm-up, he had an altercation with two cameramen. Rogers first shoved Fox Sports Net Southwest photographer David Mammeli, yelling at him to get the cameras out of his face. Next, Rogers charged cameraman Larry Rodriguez, wrestled the camera from him, threw it to the ground, and kicked it. As a result of the tirade, Rodgers was suspended and fined. Before all of his run-ins with the media, Rogers was having a career best season. However, following the suspension, in his August 11, 2005 return to the mound, Rogers allowed five runs and seven hits in five innings, on the way to a 16 to 5 loss. He also gave up a two-run homer in the all star game where he was booed by the crowd. This indicates a possible causal relationship between stress and the media influence on Rogers. His adversarial relationship with the press caused him to publicly lose his temper and become violent, which cost him playing time, salary, and the respect of the fans. Moreover, it affected his performance and his season's statistics declined (ESPN, 2006).

#### ***Ricky Williams***

David Swerdlick's editorial Ricky Williams – Just Let Him Be, discusses how the constant pressure of the media drove collegiate and professional football standout, Ricky Williams, to quit the sport he loved. According to Swerdlick (2005), Ricky Williams suffered with a debilitating social anxiety disorder and extreme shyness. The aggressive media attention was uncomfortable and frightening for him. In his early pro years he dreaded doing interviews so much he wore his helmet and an eye shade inside his face mask. The article claims that in order to cope with all the unwanted media attention Williams smoked marijuana. As a result, he failed three NFL drug tests and experienced further embarrassing press. Superstar NFLer, Ricky Williams, loved the sport, but couldn't handle the media attention that comes with greatness. Swerdlick asserts that the media negatively impacted this athlete. Ricky Williams walked out on the Miami Dolphins; lost millions of dollars; lost the respect of his teammates and fans; and still finds himself as media fodder (Swerdlick, 2005). Many disagree with this conclusion, however, as is indicated on numerous blogs. One such blog critic instead credits Williams's early departure with his overriding desire to smoke marijuana (Sportscolumn.com, 2004).

#### ***Mike Tyson***

Iron Mike Tyson's quick rise to the top of professional boxing made him one of the most publicized and admired boxers of all times. His personal turmoil, however, such as being convicted of raping Miss Black America and his volatile escapades such as biting off the ear of opponent, Evander Holyfield, made him one of the most media criticized boxers of all times. Up until the early 1990s, Tyson, to many boxing enthusiasts, seemed unbeatable. He earned numerous championship titles such as: World Boxing Council (WBC) Heavyweight Title, World Boxing Association (WBA) Heavyweight Title, and International Boxing Federation (IBF) Heavyweight Title. However, as his personal life became mired in legal difficulties, the media had an increased negative focus when reporting about him, and concurrently, Tyson lost all of his previously earned professional boxing titles. His sudden decline in performance may be tied to negative and excessive media attention, effecting his training and mental state. Days prior to a comeback fight, in an interview by writer John Raygoza, Tyson was asked if it bothers him when the media writes negative things about him. He responded, "It's my job to beat people and win fights...and it's their job to sell papers. Everything that could've been said about Mike Tyson has already been said. I don't take it personally like I use to." Here, Tyson admits that the media criticism did impact him but he is beyond that. One has to wonder, though, as Tyson was knocked out in the fourth round of that fight, and his boxing career ended on that night (Raygoza, 2004).

### ***Only the Mentally Strong Survive***

The above were examples of athletes whose performance was negatively impacted by media. Tony Dorsett, legendary NFL halfback, said: "You can turn the negative around and use it as a motivating force in your life. One of my biggest desires has always been to prove certain people wrong-to prove to them I can do it despite what they think or say" (Ferguson, 1990). Like Dorsett, some athletes are able to strive under intense media scrutiny by using it as motivation to achieve success. The following are several reports of athletes who have been able to survive and thrive in spite of the media.

#### ***Venus and Serena***

In the world of tennis, two standout sisters have received more than their share of negative press. Venus and Serena Williams are not your typical small, cutesy, white, female tennis players. They are black, muscular, and solid. They win with their hard hitting, hard return, power-games. Not only does the media write and talk about them due to them not fitting the stereotypical construct of the usual tennis player, Venus and Serena are also known and criticized for the exotic, colourful, and tight fitting attire they wear on the court. The two girls grew up in a poor, Los Angeles neighbourhood.

#### ***Colin Montgomerie***

Colin Montgomerie, one of Europe's top golf pros, has had his share of ups and downs. Among his many accomplishments are victories at the European Tour Order of Merit every year from 1993 to 1999. During this era, he was consistently ranked in the top 10 in the Official World Golf Rankings, reaching the number two ranking at his peak. Then in 2003 and 2004, he began having personal and performance problems, and his ranking slumped to the eighties. To make matters worse, he became the victim of media and fan abuse. Media publicly questioned his ability, and fans called him names, such as Mrs. Doubtfire, because of his noticeable weight gain.

#### ***Clinton Portis***

Washington Redskins running back, Clinton Portis, during the 2005-2006 season, was known for wearing outrageous costumes and playing odd characters during media interviews. In one such costume, he dressed up as a made-up character named "Sheriff Gonna Getcha". He wore a long, black wig, glasses with oversized eyes, a Led Zeppelin T-shirt, a star-shaped badge, and an unusual necklace. In another interview, he showed up in a black cape, black Lone Ranger mask, clown-style oversized yellow sunglasses, a shaggy black wig, and fake gold teeth. He also created outrageous names for his costumes such as: Dr. I Don't Know, Dolla Bill, Rev Gonna Change, Kid Bro Sweets, and Coach Janky Spanky (Solomon, 2006). The stand-out athlete started this charade of characters after being traded by the Denver Broncos to the Washington Redskins in 2004. He was uncomfortable on this new team and had trouble scoring touchdowns.

#### **Conclusion**

While media has potential to negatively impact athletic performance, this medium can also be used to cultivate or bring out the best in an athlete. In an excerpt from the book, *Coaching Wrestling Successfully*, Dan Gable, a gold medalist in freestyle wrestling in the 1972 Olympics and former head wrestling coach for the University of Iowa, discusses various ways to motivate wrestlers. Of specific note is his view on using the media as a tool to positively motivate wrestlers. He believes athletes get pumped up from positive media, and media forums should be used extensively as a tool to motivate athletic performance. One specific media outlet he references is the collegiate team's annual poster.

He suggests that if athletes know they will get their picture on the poster if they become an All-American, they are motivated to excel and attain some deserved recognition. He also discussed the advantages of having a media day before the first competition each year. He says this not only serves as a good motivator, but also assists to enhance the athlete's communication skills in responding to the media. Most importantly, Gable stresses the importance of a coach's statements to the media and how they can serve as motivators. He believes athletes are inspired when they hear their coach's positive comments about them (Gable, 1999). The examples and cases above support the premise that media does impact athletic performance. The cases also reveal or recognize that athletes have two choices: 1) they can succumb to the challenges of media distractions, or 2) they can meet the challenges of media. American poet Arthur Guiterman wrote, "The stones that critics hurl with harsh intent - a man may use to build a monument". As evidenced above, we suggest that a champion can use those stones as momentum to win.

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## Issues and Challenges of Women in Sports and Games

K.Venkateshwarlu  
(Ph.D) Research Scholar,  
Department of Commerce, Dravida University, Kuppam-517425.

### Introduction

Historically, it has been understood that the "natural order of the universe" consisted of man to the marketplace, woman at home with her family, woman the mistress of domesticity, man the master of all else, man the rational thinker, woman the guardian of morals, man dominant, and woman subordinate. The injection of equality between the two genders challenged the foundation of the social order. Women's sports in the late 1800's focused on correct posture, facial and bodily beauty, and health. In 1916 the Amateur Athletic Union (AAU) holds its first national championship for Women. In 1919, Suxanne Lenglen shocks Wimbledon in triumph in a dress that exposes her arms and lower legs. In 1925 Gertrude Ederle becomes the first woman to swim the English Channel, breaking the existing record by more than two hours. In 1932, Babe Didrkson sets the world record in three track and field competitions. Amelia Earhart disappears over the South Pacific in her round-the-world flight in 1937. In 1949 the LGPA is established. Marcinia (Toni) Stone is the first woman to break gender barrier when signed to the Negro American League Team in 1953. In 1960 gender verification testing for women was enforced at international sport competitions. The first five-person full court play is adopted in women's basketball in 1971. In 1972 Title IX is passed creating opportunities for girls and women to participate in sport. In 1973 Billy Jean King defeats Bobby Riggs in the "battle of the sexes" tennis match. In 1973 the Association for Intercollegiate Athletics for Women (AIAW) awards the first academic scholarships to women athletes at the collegiate level. Jackie Joiner-Kersee sets the new heptathlon world record and wins a second gold medal in the long jump in 1988. In 1991 Judith Sweet becomes the first woman president of the NCAA. Soccer and softball make it into the Olympic debut in 1996. In 1997 professional basketball debuts with the WNBA and ABL. In 1999 the U.S. Women's Soccer team defeats China for the World Cup win in a record seating of 90,185 people (Cohen, viii).

The topics including race, gender, history and sexual orientation play major roles in women's participation in sport. Throughout the history of women in sport, opportunity has increased. Many athletes and coaches are presented with the issue of sexual orientation throughout their sporting career. Regardless of sexual orientation, all female athletes are affected by heterosexist. One's racial or ethnicity background greatly shapes the experience they may have in sport. This essay explores the many issues women in sport face today. Historically, it has been understood that the "natural order of the universe" consisted of man to the marketplace, woman at home with her family, woman the mistress of domesticity, man the master of all else, man the rational thinker, woman the guardian of morals, man dominant, and woman subordinate. The injection of equality between the two genders challenged the foundation of the social order. Women's sports in the late 1800's focused on correct posture, facial and bodily beauty, and health. In 1916 the Amateur Athletic Union (AAU) holds its first national championship for Women. In 1919, Suxanne Lenglen shocks Wimbledon in triumph in a dress that exposes her arms and lower legs. In 1925 Gertrude Ederle becomes the first woman to swim the English Channel, breaking the existing record by more than two hours. In 1932, Babe Didrkson sets the world record in three track and field competitions. Amelia Earhart disappears over the South Pacific in her round-the-world flight in 1937. In 1949 the LGPA is established. Marcinia (Toni) Stone is the first woman to break gender barrier when signed to the Negro American League Team in 1953. In 1960 gender verification testing for women was enforced at international sport competitions. The first five-person full court play is adopted in women's basketball in 1971. In 1972 Title IX is passed creating opportunities for girls and women to participate in sport. In 1973 Billy Jean King defeats Bobby Riggs in the "battle of the sexes" tennis match. In 1973 the Association for Intercollegiate Athletics for Women (AIAW) awards the first academic scholarships to women athletes at the collegiate level. Jackie Joiner-Kersee sets the new heptathlon world record and wins a second gold medal in the long jump in 1988. In 1991 Judith Sweet becomes the first woman president of the NCAA. Soccer and softball make it into the Olympic debut in 1996. In 1997 professional basketball

debut with the WNBA and ABL. In 1999 the U.S. Women's Soccer team defeats China for the World Cup win in a record seating of 90,185 people (Cohen, viii).

Gender role is defined as the socially constructed and culturally specific behaviour and appearance expectations imposed on women (femininity) and men (masculinity). Many girls are subjected to gender role stereotyping and different treatment through socialization, individuals learn to behave in accordance with the expectations of others in the social order (Hult, 83.). Gender ideology is involved when one attaches a colour such as pink and blue to sex and when one designates types of toys as male, female or neutral.

Most play behaviour is an outcome of gender role stereotyping that stems from cultural ideology. Early research provides that by first grade, boys recognize sports, whereas girls recognize grades as the most important attribute for popularity. Research has found that girls tend to play indoors more often and tend not to play team or competitive games, which limits their spatial experiences in outdoor settings. Developmental progression of sports socialization process provides us with the following information: activities during the early years are more gender similar than gender differentiated, by grade one, children are monitoring their parents' behaviours for cues that reveal the importance parents attach to participating and doing well in sports, gender differences in sport ability, enjoyment, and perceived usefulness are evident, parents encourage sons more than they encourage daughters to be physically active (Cohen, 9.)

An early study indicates that race and social class background accounts for different experiences in socializing young girls into sport. Women of colour experience both racism and sexism. Racial and social class are essential elements that need to be incorporated into the socialization process in general and sport socialization in particular. These factors represent critical components in the formation of values and cultural practices that orient individuals to particular patterns of thinking and feeling about sport, leisure, gender, and the body. Women of colour speak with the understanding that they will often not be listened to. Coaches who are women of colour know that the majority of White colleges and universities are not viable places employment. People cannot be late to meetings or practices without it reflecting their race. When people of colour are successful athletes, their success reflects their race rather than their ability (Cohen, 291.) Girls and women who excel in sport are threats to a gender system that insists on unequal social constructions of womanhood and manhood. Women are perceived as an imitation of the real thing and are treated as second class citizens. Women and girls in sport are often called lesbians or dykes to deny them the equal opportunity in school or community sport programs. The heterosexist in women's sport affects all women, regardless of their sexual orientation. Many lesbian coaches and athletes are hesitant to out themselves publicly out of fear that they will be discriminated against, losing corporate endorsements or the support of fans, teammates, or coaches. Some athletic directors prefer to hire female coaches that are married to avoid hiring a lesbian coach. Some colleges participate in negative recruiting.

They tell the recruit and her parents that there are lesbians in other school's sports program to discourage an athlete from considering another educational institution. Sometimes lesbian athletes are shunned by their teammates. Athletes taunt and tease opponents during competitive play by shouting anti-gay slurs or questioning female identity. Homophobia in sport needs to be addressed because generally 10% of athletes are gay, coaches may help unlearn certain prejudices that athletes bring with them. Another reason to address homophobia in sport: The U.S. dept. of health and services released information indicating that 30% of suicides are committed by gay or lesbians (Cohen, 279.)

### **Conclusion**

Although Title XI has brought women's history in sport a long way and has provided women with the opportunity for fair play, many objectives are still left unmet. For every one dollar spent on collegiate female athletes, two dollars are spent on males. As long as there are expectations for male and female children to participate in certain activities based upon their gender, equality between the two sexes will not be met. The touchy subject of homophobia in sport has begun to draw interest over women in sports today. This major issue needs to get world-wide attention before great efforts are made to stop homophobia in sport. White people realize the concept of their white privilege and the responsibility it entails.

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## Effect Of Skipping Exercises On Vertical Jump Among Junior Volley Ball Players Of Nalgonda District

Avula Srinivas

Lecturer in PE, Srikrishna College of Physical Education, Nalgonda

**Introduction:** It's popular with boxers, so skipping exercise within your training programs is an underrated activity that can be used as warm up or simply as part of your cardio workout. While you might in addition, that is excellent for your body. it uses about 60% lower body, 40% upper body, which means that unlike activities such as running and walking, you get considerable benefits to your upper body particularly the shoulders and arms. It not thinking of jumping rope as an old sport, the fact is, jump rope history goes back to the time of very early humans. Jump rope has many names, including jumprope, skipping rope, and rope jumping as well as many variations of those phrases. Volley ball is popular sport where teams separated by a high net hit a ball back and forth between the other teams. Every team is allowed three hits to get the ball over the net to the other half. A point is scored if the ball hits the opponents court, if the opponents commit a fault or if they fail to return the ball properly. Volley ball is an exciting and challenging sport that has developed into a premier interscholastic and professional spectator event. Understanding the rules, technical skills and strategies of competitive volleyball is essential for its full appreciation. In theory, the objective of volleyball is to "ground" the ball on the opponents side of the net. Accomplishing this objective in a consistent manner requires the highest levels of speed, agility, power, concentration and team work. This program introduces viewers to the fundamentals of traditional six player volleyball.

### **Method:**

The purpose of this study was to find out the effect of skipping exercise on vertical jump among junior volleyball players. To achieve this purpose 60 male students were selected as subjects on the basis of equal scores obtained from total male population among junior volleyball players of Nalgonda district Z.P high school, Chinthaguda. The initial vertical jumping ability was taken for 60 students by modified method. This subjects were divided into two groups as control and experimental with thirty each. The experimental group exclusively administered skipping exercise after six weeks completion of training again find test in vertical jumping ability was administered to both the groups. The data thus collected were analysed statically to estimate the effect of skipping exercise on vertical jump among junior volleyball players.

### **Measurement Of Vertical Jumping Ability:**

The vertical jump was measured by administering modified sergeant major test. A brief description of the test is given below. The sergeant vertical jump test consists of vertical leap into the air and this is primarily a test to find out the vertical jumping ability of an individual. In this test the lines were drawn on the wall in centimetre for easy measuring, initially the subjects stood close to the wall and stretch their hands upward and touch the maximum height on wall marking with fingers dipped in colored water the height was measured and the subjects were instructed not to raise their up. After completion of height measuring subjects were permitted to stand one foot away from the wall and the subjects were given the instruction to make a mark on the wall with his fingers dipped in the colour water. With the jump trials or three chances were given to each subject and the best among the three was considered as the maximum jump.

### **Results:**

Results regarding the change in the improvement of vertical jumping ability through skipping exercise subjected to the experimental group, and the control group under general conditioning are presented in the following table. Data regarding initial and final mean values, standard deviation and t-value of the jumping performance of control group presented in below table.

Mean values, mean difference .standard deviation, t-ratio of the control and experimental group:  
Paired samples statistics

Group		Mean	N	Std.deviation	Std.Error Mean
control	Initial test[cm]	0.3973	30	0.03473	0.00634
control	Final test[cm]	0.4007	30	0.03523	0.00643
experimental	Initial test[cm]	0.4210	30	0.02537	0.00463
experimental	Final test[cm]	0.4667	30	0.03032	0.00554

Paired samples statistics

Group		t-ratio	Df	Sig.[2-tailed]
Control	Initial test[cm] Final test [cm]	2.065	29	.048
Experimental	Initial test[cm] Final test [cm]	9.265	29	.000

A careful examination of table shows that the initial and final mean values of the vertical jumping performance are 0.3973 and 0.4007 respectively. The statistical analysis of data regarding the mean difference standard deviation and value of vertical jump test of the control and experimental group has been presented in table. The result of the study showed significant improvement in the performance of experimental group when compared to the control group.

**Conclusion:**

Several researches have been conducted on the vertical jumping performance and its influences on various skills in sports and games. The investigator based on the results of the study was of the opinion that skipping exercises have improved the vertical jumping ability among junior volleyball players of Nalgonda district. The result of this investigation showed a significant improvement in the subjects of the experimental group after regular practice than the control group. The experimental group given training in addition to skipping exercise was also given. Due to skipping exercises the test showed improvement in the performance of vertical jump for all subjects of experimental group also it is noted that there was slight improvement in the performance of vertical jump of the control group, which may be due to the fact that they also underwent regular conditioning exercises except skipping exercises practiced daily. The result of the study showed significant improvement in the performance of experimental group when compared to the control group.

**Recommendations:**

1. Skipping exercises might be one of the training methods to improve the performance of vertical jumping ability.
2. Skipping exercise might be recommended to different age groups of men and women.
3. The volleyball coaches may concentrate on skipping exercise which will give an improvement in vertical jump which will help in improving the skills such as spiking and blocking.

**INFLUENCE OF BRISK WALKING AND YOGIC PRACTICES ON SELECTED  
PHYSIOLOGICAL VARIABLES AMONG DIABETIC PATIENTS**

**Dr.S.Manikandan,  
Assistant Professor,  
Dept. of Physical Education & Sports Sciences,  
Annamalai University, Tamilnadu.**

**Abstract**

The purpose of the study was to analyze the influence of brisk walking and yogic practices on selected physiological variables among diabetic patients. To achieve this purpose thirty men type II diabetic patients from Raja Muthiya Medical College, Annamalai University, Chidhambaram, Tamilnadu, aged 30 – 50 years volunteered to participate in this study. Subjects were assigned into three groups namely brisk walking exercises group (N-10), yogic practices group and control group. Physiological variables such as resting pulse rate and vital capacity were selected as criterion variables. Analysis of covariance (ANCOVA) was used as statistical technique. Scheffe's test was followed as a post hoc test. The results of the study showed that there was a significance differences exist between the groups on resting pulse rate and vital capacity when compared to the control group.

Keywords: Brisk Walking, Yogic Practices, Resting Pulse Rate and Vital capacity

**Introduction:**

Brisk walking is generally distinguished from running in that only one foot at a time leaves contact with the ground: for humans and other bipeds running begins when both feet are off the ground with each step. Diabetes mellitus often referred to simply as diabetes is a syndrome of disordered metabolism, usually due to a combination of hereditary and environmental causes, resulting in abnormally high blood sugar levels. All forms of diabetes have been treatable since insulin became medically available in 1921, but there is no cure. A physiological value of exercises depends upon its capacity to confer health upon the person practicing it. Practice of yoga has been reported to be beneficial in treating a range of stress related disorders, improving autonomic functions, relieving symptoms of asthma, stuttering and reducing signs of oxidative stress. Practice of yogic develops a steady mind, strong will-power and sound judgment. In addition regular yogic helps extends life and enhance perception.

**Methodology:**

The purpose of the study was to analyze the influence of brisk walking and yogic practices on selected physiological variables among diabetic patients. To achieve this purpose thirty men type II diabetic patients from Raja Muthiya Medical College, Annamalai University, Chidhambaram, Tamilnadu, aged 30 – 50 years volunteered to participate in this study. Subjects were assigned into three groups namely brisk walking exercises group (N-10), yogic practices group and control group. Physiological variables such as resting pulse rate and vital capacity were selected as criterion variables. They were assessed by using Palpation method and Spiro Meter. Analysis of covariance (ANCOVA) was used as statistical technique. Scheffe's test was followed as a post hoc test. The results of the study showed that there was a significance differences exist between the groups on resting pulse rate and vital capacity when compared to the control group.

**Training Schedule:**

Experimental Group I (Brisk walking exercises) Duration : 45 minutes(6.00 to 6.45 am), Six weeks (6 days per week). Experimental Group II (Yogic Practices) Duration : 45 minutes(6.00 to 6.45 am), Six weeks (6 days per week), Yogic practices such as Kriyas, various types of Asanas, Pranayama and Meditation. Control group did not participate any specific training.

**Results and Discussions:**

Tab 1: Results on Calculation of Analysis of Covariance on Physiological Variables

Calculation of Analysis of Covariance on Resting Pulse Rate								
	Brisk Walking Group	Yogic Practices Group	Control Group	Source of Variance	Sum of Squares	Df	Mean Squares	Obtained F- ratio
Pre Test Mean	69.22	69.75	70.25	Between	11.0	2	5.50	1.63
				Within	193.7	27	3.38	
Post Test Mean	66.61	64.81	70.35	Between	320.7	2	160.35	34.57*
				Within	264.5	27	4.46	
Adjusted Post Test Mean	66.69	64.80	70.72	Between	302.3	2	151.15	32.59*
				Within	259.6	26	4.46	
Calculation of Analysis of Covariance on Vital Capacity								
Pre Test Mean	3440.00	3450.00	3460.00	Between	3000.00	2	1500.00	0.01
				Within	8357000.00	27	198976.19	
Post Test Mean	3496.67	3603.33	3486.67	Between	125444.44	2	62722.22	30.52
				Within	8567000.00	27	203976.19	
Adjusted Post Test Mean	3506.74	3603.33	3476.59	Between	131511.64	2	65755.82	33.49*
				Within	80502.18	26	1963.47	

Tab 2: Scheffe's Post Hoc Analysis Results

Post Hoc Analysis for Resting Pulse Rate				
Brisk Walking Group	Yogic Practices Group	Control Group	Mean Difference	Reqd. C.I
66.69	64.80		1.89*	1.73
67.48		70.27	3.58*	1.73
	64.80	70.27	5.47*	1.73
Post Hoc Analysis for Vital Capacity				
3506.74	3603.33		96.59*	41.88
3506.74		3476.59	30.15	41.88
	3603.33	3476.559	126.74*	41.88

Finding of the study shows that there was a significant improvement in diabetic patients. It may be due to influence of differences existed between brisk walking group, yogic practices group and control groups on resting pulse rate and vital capacity. The significant changes in resting pulse rate and vital capacity observed in the present study suggests that brisk walking and yogic practices might have immediate effect on selected criterion variables.

**Conclusion:**

It was concluded that the brisk walking and yogic practices programs has resulted in significant improvement on selected criterion variables as compared to control group.

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## Analysis on FVC and FEV1/FVC ratio between playing and non playing women students of Hyderabad

Mrs.Rajeshwari, Asst.Professor, C.B.I.T.Hyderabad  
 Dr.N.Dileep,Professor, JNTU,Hyderabad

### Introduction:

Pulmonary function variables indicate the functional efficiency of respiratory system and could be used to indicate physical efficiency in terms of endurance or diagnose the respiratory illnesses if any (Margit Pelkonen, Irma-Leena Notkola, Timo Lakka, et.al 2003). Among the several functional and dynamic variables of respiratory function, Forced Vital Capacity (FVC) and timed Forced Expiratory Volume (FEV) measure the physical functional efficiency and offer help in determining the lung health issues like Chronic Obstructive Pulmonary Disease (COPD), Asthma, Bronchitis etc. FVC of an individual can be correlated to Cardio respiratory endurance measured through  $VO_2$ max and can assess the cardio respiratory endurance of an individual. Timed FEV especially the  $FEV_1$  is more indicative in understanding the functional lung defects of an individual and this measure in relation to FVC, ie the ratio of  $FEV_1/FVC$  is extensively used for this purpose. Since, exercise in terms of sports activity also influences the status of functional ability of many systems of the human body, especially the cardio respiratory systems (Reza Farid, Farahzad Jabbari Azad, Ahmad Ebrahimi Atri et.al 2005)., comparing the sportspersons and non sportspersons would provide an understanding of how exercise in terms of sports activities could influence the respiratory system.

### Methods:

Thirty one non playing women and thirty one playing women students of Chaitanya Bharati Insitutie of Technology, Hyderabad participated in this study. All the participants of the study were volunteers and an informed consent was obtained from every participant of the study. All the students were in the age range of 19 to 22 years and no other screening was done like screening for lung diseases etc. Computerised PFT kit was used to measure the FVC and  $FEV_1$ . Analysis of Variance (ANOVA) was applied to understand whether there was any significant difference for the two variables (FVC,  $FEV_1/FVC$ ) and descriptive mean analysis was also used to arrive to conclusion. The level of significance used was 0.05.

### Results And Discussion:

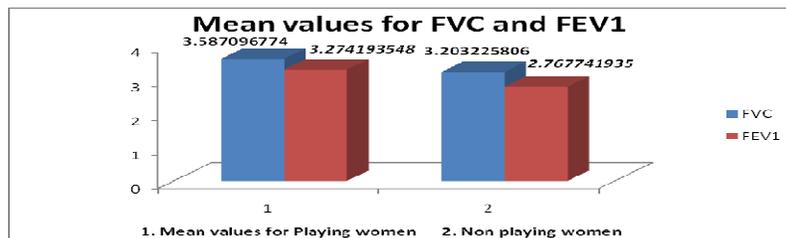
Analysis of Variance (table I) indicates that there was significant difference between the sports women and non sportswomen students of the study for their FVC value. The mean values indicated in figure I clearly establish that the FVC of sports women (3.587) was higher when compared to the non sports women (3.203) of the study. Also the analysis of variance (table II) indicates that there was significant difference

TABLE I : ANOVA for FVC

Source	S.S	df	M.S	F	P
Treatment (Between Groups)	2.284	1	2.284	12.43	0.000816
Error	11.0245	60	0.1837		Significant
Total	13.308	61			

Significant at 0.05 level

FIGURE I



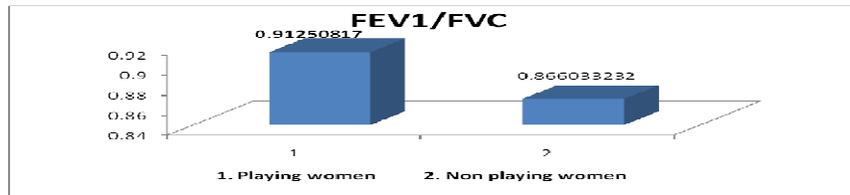
between the sports women and non sportswomen students of the study for their FEV1/FVC ratio. The mean values indicated in figure II clearly establish that the FEV1/FVC ratio of sports women (91.25%) was higher when compared to the non sports women (86.6%) of the study. Several earlier researches in exercise physiology and exercise science indicated that the exercise would bring positive changes in functional capacities of the cardio respiratory systems (Alethéa Guimarães Fariaa, Maria Angela G.O. Ribeiroa, Fernando Augusto Lima Marsonb et.al 2013).. Enhancement in the cardio respiratory functional efficiency of an individual may be correlated to the significant improvements in the physical capacities of the individuals

TABLE II: ANOVA For FEV1/FVC Ratio:

Source	S.S	df	M.S	F	P
Treatment	0.03347	1	0.03347	25.32	<.001
(Between Groups)					Significant
Error	0.0793	60	0.00132		
Total	0.1128	61			

*Significant at 0.05 level*

**FIGURE -II**



especially in terms of cardio respiratory endurance, measured quantitatively as  $VO_2$ max (Grisbrook TL, Wallman KE, et.al 2012).. Rationally, exercise had been an effective preventive medicine as per many studies, and could enhance the tolerance of an individual to many degenerative diseases and other lung diseases. Exercise may be effective in enhancing the functional capacity of the cardio respiratory systems and regular exercise training could make individuals functionally robust towards the obstructive lung diseases (Richa Ghay Thaman et.al 2010)..

**CONCLUSION:** The present study clearly indicates that the sports woman of the study showed significantly higher values for FVC and FEV1/FVC ratio when compared to the non sports women of the study.

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## **A Study On Aggressiveness Between Male And Female Sportsperson Of All India-Interuniversity Players”**

**Dr. Hanumanthayya Pujari**  
Asst Professor,KSW university, Bijapur.-586101

### **Abstract**

*The paper is an empirical attempt to explore the influence of sex variables on aggressive behavior of male and female sportsperson of All India Inter-University players. A sample of 200 sportsperson in the age group of 19 to 25 years studied by using semi-structured interview schedule. It is explored that impact of sex factor on the sports person has something to do with the aggressive behaviors of sportsperson. But results reveal that there is no significant difference in their aggressive behavior of male and female sportsperson.*

### **Introduction:**

There has always been interest in aggressive behavior and competitive sport. Several writers have maintained that sport provides a necessary “safety value” or cathartic release for the aggressive drives of the human (Scott, 1970; Lorenz, 1966). Opponents of this position have posited that successful aggressive behavior facilitates further aggressive behavior. Controlled research findings support this view and many writers have stated that sport should not be compromised as an excuse for punitive and criminal – like behavior (Mc Murty, 1974; Underwood, 1978; Vaz, 1976). The arguments for and against aggression and violence in sport are often emotional debates. A major obstacle encountered in this discussion is that the discussants are frequently not talking about the same concept even though they are using the same term! When one begins to examine the various writings on aggressive behavior, it is clear that the term aggression has the misfortune of being defined in a multitude of ways. The use and misuse of the term is often confusing to players, coaches, and researchers. What does one mean by aggression or aggressiveness? Since these terms have taken popular connotations, they are often used to describe different classes of behavior rather than a unitary concept. Unfortunately, research on aggressive behavior in sport has also been plagued by inconsistencies and vague definitions of “aggression” both as an independent and dependent variable. It appears that a clarification of the term aggression will benefit all who are interested in furthering the understanding of aggression and athletic performance.

A study completed by Sliva (1979a) found that subjects exhibiting hostile aggression in a sport setting experienced significantly lower levels of guilt than did subjects exhibiting similar behavior in a non-sport setting. Subjects in the sport setting were also not able to discriminate between appropriate and inappropriate behavior whereas subjects in the non-sport setting were able to discriminate. This finding is consistent with Vaz’s work in pointing out that generalized expectancies are facilitators rather than inhibitors of aggressive behavior in sport.

A similar view has been expressed by the Seville Statement on Violence (1986), which argues that aggression is not genetically programmed but is largely a function of cultural factors. This statement refers to aggression in general and therefore outside

Sport, but similar sentiments have been expressed about aggression inside sport [Tenenbaum et al., (1997) ISSP Position Statement on Aggression and Violence].

Problem: “Impact of Sex variables on Aggressive Behavior of all India inter-university sportsperson.

Hypothesis:

1. There is sex difference in aggression of sportsmen.
2. The sportsmen of low SES high aggression and low will to win.

Objectives of studies:

To examine the influences of SES on aggressive behavior of sportsmen.

To verify the significant sex difference in the aggression of sportsmen.

**Methodology:**

The present investigation pertaining to "Impact of Socio-economic status on Aggressive Behavior between male and female Sportsmen" is in the frame of empirical research. The particulars of samples, tools, collection of data and statistical techniques are given as under

Sample:

The total sample consists of 200 sportsmen belonging to high socioeconomic status and low socioeconomic status. The age level ranging from 19-25 were selected randomly in all India interuniversity tournaments held at Thiruchanalpalli the sample design is given below:

Table No 1 Showing Sample Design of the study

Sex	High Socioeconomic Status (HSES)	Low Socioeconomic Status (LSES)	Total
Male	50	50	100
Female	50	50	100
Total	100	100	200

. Tools:

1. Personal Data Schedule:

This is framed to collect information regarding the personal and socio demographic status of the sample.

2. Socio-economic Status Scale:

The Socio economic status scale developed by Bhardwaj and Chavan (1984) has been used in the present study to measure social, educational, professional and economic perspectives of the participants scoring was done according to scoring key given in the manual.

Scoring (Aggressive Behavior)

Sports Aggression inventory constructed by A.Kumar consists of 25 items in which 13 items are keyed "Yes" and rest of 12 items are keyed "No". For each item score 1 is given to the following responses. Maximum score on the inventory may be 25 on this test and minimum score being 0.

Statistical Analysis:

Keeping the objectives of the study in view, the following statistical techniques were applied.

The t-test was used to assess the significant differences between SES and sex with aggressive behavior

**RESULTS AND DISCUSSIONS:**

The major objective of the present study is to assess the influence of socio-psychological correlation on Aggressive Behavior of sportsmen. Also, the present study intends to measure and probe the impact of sex variables on the other dependent variables like aggressive behavior. Many distinguished scholars like Rath(1974b) who analyzed the relationship between social conditions and personality dimensions, argued that the upper and lower caste groups would show significant differences in their personality make up. Rath also concluded that the personality dimensions are the functional resultants of the socio-economic conditions in which they live.

The hypothesis that there is a significant difference in aggressive behavior between male and female sportsmen is postulated to test the data. on the rationale that the women were having weak genetically make up, and are having lack of social support, socio-cultural obstacles, orthodox perception and negative attitude towards females, male dominated society and created culture might put her into the secondary and subsidiary role. Under these deprived conditions, she does not show aggression in sport competitions and in her performance.

Table-2:Showing the Mean, SD and't' Values of Aggressive Behavior of the Male and Female Sportsmen

Variables	Male	Female
Mean	11.73	11.53
SD	2.72	3.14
t-value	.554	

Table- reveals that mean, SD and't' scores of aggressive behavior of male and female sportsmen. The mean scores of male and female sportsmen are 11.73 and 11.53 respectively. The obtained't' value for these two groups is .554, which is not significant. Therefore, the hypothesis that there is a significant difference in the aggressive behavior of the male and female sportsmen is not accepted.

This is because, irrespective of male and female in the sports field every sportsman should have aggressive behavior to win the competition. Every competitor develops the sport spirit. The female also have equal exposure to the sport competitions, good training, high will to win, higher level of self confidence and these factors could have influenced them to adopt the higher level of aggression. Moreover, the fear and frustrations associated with defeat, situational stimulus factors, and nature of the competition might have contributed in stimulating the high aggressive behavior in female sportsmen on par with the male sportsmen. In conclusion, facilities extended to female are made use properly. Hence, there is no difference in their aggressive and the above-formulated hypothesis is rejected.

**Conclusion:**

The present result trend reveals that participation of physical education and sports leads emotional stress and cultivates few psychological competencies among sportsperson. But in this study male and female sportsperson of all India interuniversity have exhibited similar intensity of aggressiveness and there is not found any difference in their assertiveness and angeriness towards sports situation, it means that sex variables does not influenced on eliciting aggressiveness among the sportsperson.

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## EFFECTIVENESS OF ATHLETIC TAPING AND KINESIO TAPING FOR PREVENTION OF SPORTS INJURY

**Jagadish S Gasti**  
**Physical Education Director,**  
**Sangalli Rayanna First Grade Constituent College,**  
**Malmaruti Extention, Belagavi, Karnataka.**

### **Abstract**

Taping in sports is a subordinate mechanism adopted as a preventive measure of injuries or post-injury rehabilitation and prophylaxis. The tape is chosen properly so that it could be able to strap the body parts properly, e.g., ankle, wrist, finger, etc. There are certain principles, guidelines, rules and regulations based on which taping has to be done. Besides injury prevention, taping is also used in sports as conservative management of pain, biomechanical effects, effects on balance, posture and neuromuscular system, rehabilitation. Taping has been found to be effective in cases of ankle, foot, hand and wrist injuries as well as appeared to be more valuable in rehabilitation than in prevention of knee and ankle injury. A modern and new approach of taping is kinesiology tape which provides athletes with a solution for working through minor injuries and recovering faster from major injuries and has also been found to be an ideal modality for use in chiropractic settings. It also helps in enhancement of endurance capacity and even performance level in certain cases. Contradictory opinions exist among scientists regarding the advantages and disadvantages of application of taping in sports. Nonetheless Athletic Taping is recommended with certain precautions for the benefit of the sportspersons and athletic performance. –

Key words: Kinesiotaping; Injury; Chiropractice; Athletes; Sport Performance

### **Introduction**

Athletic taping is the process of applying tape directly to the skin in order to maintain a stable position of bones and muscles during athletic activity. The general goals of athletic taping are to restrict the motion of injured joint, compress soft tissues to reduce swelling, support anatomical structure involved in the injury, serve as a splint of to secure a splint, secure dressing or bandages, protect the injured joint from re-injury, and protect the injured part while the injured part is in the healing process.



**Traditional  
Athletic Tape**

**VS**



**Kinesiology  
Tape**

Exercising is good for all, but sometimes we can injure ourselves when we play sports or exercise. Accidents, Poor Training Practices, Improper Gear, Not in Shape and Not Warming up or Stretching

### **Which tape to use**

To restrict joint movement, use a rigid strapping tape.

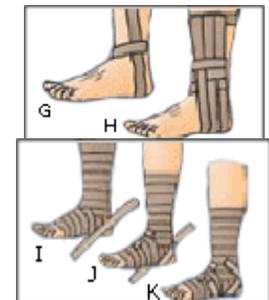
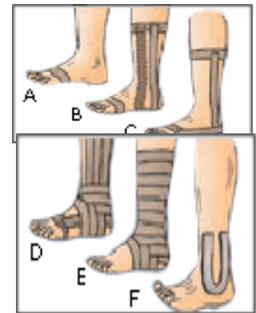
USE:	PRODUCT:
Preventative ankle taping	Rigid Strapping Tape 38mm or 50mm for large joints
Treatment such as injured ankle, elbow, fingers	Rigid Strapping Tape 25mm or 12.5mm
Treatment such as injured shoulder, knee, feet	Rigid Strapping Tape 50mm

To compress and support joints or muscles, use an elastic adhesive bandage.

USE:	PRODUCT:
For strong compression when returning from injury, eg sprained knee. To be used over rigid tape.	Elastic Adhesive Bandage 75mm
For initial compression, eg, acute ankle sprain	Elastic Adhesive Bandage 50mm

### Basic Taping Methods

1. A. Anchor - provides a firm base to attach the other 38mm or 50mm tapes.
2. B. Stirrup - a vertical "U" piece of tape, supporting either side of the ankle.
3. C. Spur - a horizontal stirrup that holds the ankle in position.
  
1. D. Basket-weave - Stirrups and spurs in half overlapping layers to build a pattern.
2. E. Locking straps - short circular tapes to cover all exposed skin and lock down the tape job.
3. F. Foam padding - used to fill in hollows, compress swelling and pad sensitive areas.
  
1. G. Figure of six - to support and reinforce one side of the ankle. Starts as a stirrup and crosses to form a six.
2. H. Interlocking sixes - the over-lapping tapes provide excellent support to one side of the joint.
1. I. Half-Heel Lock - 38 or 25mm rigid tape is applied over the finished tape job to firmly lock in the ankle joint.
2. J. First Half-Heel Lock - the tape makes a 'U' to lock in one side of the heel.
3. K. Second Half-Heel Lock - opposite to the first. Supports the other side and further restricts ankle movement.
  
1. L. Figure-8 Bandage - used with a compression bandage for RICER.
2. M. Figure-8 - also used with a 75 or 50 mm elastic bandages for strong support.
3. N. Spica - the thumb spica is a repeated figure 8 in 25 mm rigid or elastic tape.



Sports medicine community has not only developed a greater interest in the prevention of injuries, e.g. ligament injuries to the knee and ankle, there has also been an interest in an early return of the injured athlete to sports after both operative and non-operative treatment programs. This interest, coupled with the injured athlete striving to return to his/her original sport at the same intensity level, has challenged the limits of joint support provided by bracing and taping. Taping - Strapping or taping is the use of tapes and bandages to support a weakened body part without limiting its function. A taped joint should retain its normal range of movement but as the tapes are usually inelastic, they prevent movements beyond the normal range which might stress the weakened area and aggravate an injury.



Athletic Taping - Sports tape, commonly known as athletic tape, is an adhesive used by sportsmen and athletes around the world. Athletic tape was invented in the 1970's by a Japanese chiropractor. Athletic taping is an adjunct mechanism adopted as a preventive measure of injuries or post-injury rehabilitation and prophylaxis.



The tape is chosen properly so that it could be able to properly strap the body parts, e.g., ankle, wrist, finger, etc. There are certain principles, guidelines, rules and regulations based on which taping has to be done. Besides injury prevention, taping is also used in sports as conservative management of pain, biomechanical effects, effects on balance, posture and neuromuscular system, rehabilitation.



Rigid Strapping Tape - Under wrap tape (such as Cover-Roll) plus rigid strapping tape (such as Leukotape) adheres better than traditional athletic tape and allows athletes to withstand activity longer.

- Leukotape and other similar brands of rigid strapping tape have only a 30% stretch from the time of initial application and are therefore more useful for creating a bracing type of support to the area.
- This lack of stretch in the tape is especially important if the person is engaged in physical activity and is relying on stability gained from the tape. A tape under wrap is usually applied before the rigid tape is applied.

White athletic taping - Technique is the most common in North America. White athletic tape is extremely rigid and requires a pre wrap prior to application. It is used for acute and preventative injuries.

It is normally left on for a short period of time, typically applied immediately prior to an activity and taken off immediately thereafter.



- McConnell Taping - is a bracing or strapping technique using a super-rigid, cotton mesh highly adhesive tape (Endura Tape®) Most commonly used for patella femoral syndrome, shoulder subluxation, lumbar, foot, and hip impingement.

### **Benefits of Athletic Taping**

Stabilizing joints, Improving joint movement, Tolerance to loading, Changing & controlling posture/small deformities, Aiding in assessment for use of orthotics, Facilitating muscle activity and control, Inhibiting muscle activity, Reducing pain by unloading structures, Increasing motor neuron excitability, Increasing joint torque, Enhancing Proprioception

Kinesio Taping - In Japan, Dr. Kenzo Kase first developed the Kinesio taping method in 1979: Kinesio Tape which has elasticity up to 140% of the tape's original length. This elastic tape allows full joint motion and aids lymphatic flow. Elastic kinesiology tape is latex free and water resistant. Despite its popularity, evidence for the effectiveness of kinesiology taping as the only treatment technique for an injury is limited, conflicting.

### **Benefits of Kinesiology Taping**

Pain Relief, Reduced Swelling, Inflammation and Bruising, Prevention or Relief from Spasms and Cramping, Speedier Recovery of Overused Muscles, Structural Support for Weak or Injured Body Parts, Enhanced Strength and Muscle Tone in Weak or Injured Muscles, Allows Athletes to Remain Active while Injured, For Rehab, For Alignment, For Pain, For Competition

### **Taping Techniques**

Strapping with adhesive tape is important for the prevention of joint injuries, especially the ankle and hand. Taping is also essential during early management of injury and rehabilitation. Recurrence of injury when the athlete recommences training is less likely with supportive taping.<sup>1</sup>

A variety of sports use taping to prevent injury. In karate, the foot is taped to prevent injury.<sup>2</sup> Adhesive tape is often used to help athletes recover from ligament sprains of the ankle or to help prevent further injury. Sports most commonly associated with ankle sprains include basketball, football, baseball and soccer.

Ankle taping can protect the ankle from injury when an athlete lands awkwardly.

Preventative taping has also been found to:

- Reduce severity of injury to the ligament
  - Lower recurrence of injury by as much as 75%<sup>3</sup>,
  - Give the most support while limiting backward bending<sup>4</sup>
- Taping Preparation and Removal

### **How To Prepare The Skin:**

Before you apply the tape, you need to prepare the area to be taped by:

- Cleaning the area by using a tape remover to remove the body oil.
- Covering any rashes or broken skin with a non-stick wound pad.
- Applying an underwrap to the area, (optional). An underwrap will help protect tape-sensitive skin.

### **Where To Apply The Tape:**

Joints are normally strapped in their "at rest" position.

Do not use the limb to pull against when getting the tape off the roll.

Hold the roll in one hand and pull the tape off with the other hand, then apply gently OR cut off the required number of strips of the correct length before you start applying.

### **How Tight Should The Tape Be?**

Flexing the muscles when applying the tape will help you get the correct tension. Check that the tape is not too tight by pinching the skin below the tape for a few seconds. The skin should return to its normal colour when released. If the tape is too loose, it will not support the joint. If it is too tight, then it could cut off the blood supply. If numbness and tingling result, remove tape or bandage and reapply with reduced tightness.

### **How Much Tape To Apply:**

For maximum strength, overlap each layer of strapping tape by 1/3-1/2.

The amount you use depends upon the amount of support you need. If you use too little, then you are not providing enough support to the joint. If you use too much, then you could reduce the mobility of surrounding muscles.

### **When To Remove The Tape:**

Remove the tape as soon as you have finished training or playing.

### **How To Remove The Tape:**

Ideally, remove the tape using bandage scissors. Place the scissors over a soft part of the limb (not over the bone) then slide under the tape and cut. Peel down over the top of the tape. Do not peel at right angles away from the limb. Peel gently and evenly - do not rip.

A tape remover can help to quickly and painlessly remove tapes and bandages. It also helps to remove any tape residue from the skin.

## **Conclusion**

Athletic tape is structurally supportive whereas Kinesio Tex tape may have therapeutic benefits. With Kinesio tape it is important to know that an individual should always consult to someone who has been trained to tape through an approved CKTI (Certified Kinesio Tape Instructor), and has a background in kinesiology, anatomy, and physiology. Kinesio tape may look simple, but there are several different combination tapes and tension strengths that a person who has been trained will know how to do and do it effectively.

Kinesiology tape differs from other types of strapping tape in both form and function. Most types of strapping tape are non-elastic, and are wrapped tightly around an injured joint or muscle to provide rigid support and restrict movement. They can only be worn for short periods of time, after which they must be removed to restore movement and circulation. Kinesiology tape, on the other hand, has unique elastic properties that allow it to provide dynamic support, protecting muscles and/or joints, while still allowing a safe and functional range of motion. Rather than being wrapped completely around injured joints or muscle groups, kinesiology tape is applied directly over and/or around the periphery of these areas. This non-restrictive type of taping allows most applications to be worn for 4-5 days, allowing therapeutic benefits to accumulate 24/7 for the entire time they're worn. Kinesiology tape can be worn during intense exercise, showering, bathing or swimming, and dries quickly after a quick pat with a towel

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## A Study Of Aerobic Endurance Among Foot Ball Players And Sepak Takraw Players Of Hyderabad

Dr.K.Deepla  
Secretary, Inter College Tournaments (Women) OU, Hyderabad  
Prof.L.B.Laxmikanth Rathod  
Secretary, Inter University Tournaments, OU, Hyderabad

### Abstract:

Aerobic Endurance is the amount of oxygen intake during exercise. Aerobic Endurance is the time which you can exercise, without producing lactic acid in your muscles. **Football** refers to a number of sports that involve, to varying degrees, kicking a ball with the foot to score a goal. The Sepak" is the Malay word for kick and "takraw" is the Thai word for a woven ball, therefore sepak takraw quite literally means to kick ball. The choosing of this name for the sport was a compromise between Malaysia and Thailand, the two powerhouse countries of the sports. The Purpose of the the present study to find out the Aerobic endurance among Male Foot Ball and Male Sepaktakraw Players of Hyderabad. sample for the present study is Male Thirty Foot Ball and Male Thirty sepaktakraw Players of Hyderabad.. The data will be collected separately from Foot Ball and sepaktakraw Players. The Subjects were made to Run 12 Min Run Cooper Test for endurance.:This study shows that Foot Ball Players are having the good endurance compare to sepak takraw players.:It is concluded that Male Foot Ball Players are having good endurance compare to Male sepaktakraw players

**Key Words:** Aerobic endurance, Foot Ball, sepaktakraw.

### INTRODUCTION

Aerobic Endurance is the amount of oxygen intake during exercise. Aerobic Endurance is the time which you can exercise, without producing lactic acid in your muscles. Aerobic exercise is physical exercise of relatively low intensity and long duration, which depends primarily on the aerobic energy system. Aerobic means "with oxygen", and refers to the use of oxygen in the body's metabolic or energy – generating process.

**Football** refers to a number of sports that involve, to varying degrees, kicking a ball with the foot to score a goal. The most popular of these sports worldwide is association football, more commonly known as just "football" or "soccer". Cardio respiratory endurance (CRE) is required to last the full 90 minutes of the game. During the game you will do a lot of work both on and off the ball. You will make repeated runs to support attacks, get into space to receive the ball, make runs with the ball, chase back to defend etc. The energy required to do this is supplied **aerobically**, which requires your heart, lungs and blood system to supply oxygen to the working muscles throughout the game.

"Sepak" is the Malay word for kick and "takraw" is the Thai word for a woven ball, therefore sepak takraw quite literally means to kick ball. The choosing of this name for the sport was essentially a compromise between Malaysia and Thailand, the two powerhouse countries of the sport."Sepak" is the Malay word for kick and "takraw" is the Thai word for a woven ball, therefore sepak takraw quite literally means to kick ball. The choosing of this name for the sport was essentially a compromise between Malaysia and Thailand, the two powerhouse countries of the sport. Strength and agility is important for football players and sepak takraw players. The basic elements of speed, mobility and strength are all functions of explosive power and agility. Sepak Takraw is Playing Volleyball with the Feet.Sepak takraw is a skill ball game originated from Asia. It combines the teamwork of volleyball, the dexterity of soccer and the finesse of badminton. In Thailand it is called takraw, but the official name of this internationally recognized game is sepak takraw. Without a doubt it is one of the world's most exciting sports, both to play and to watch, yet it is relatively unknown outside of Southeast Asia. Playing the sport requires little in the way of equipment or preparation but it does require quick reflexes, coordination, agility and, above all, technique. Thick skin is also helpful; a skilfully kicked takraw ball can travel at speeds of over 60mph!

The game is played by two opposing Regus, a team of three players each, on a court separated by a net similar to badminton. It begins with the service, executed by a ball toss from one player to the Server. Then, the players try to beat their opponents using their legs and head, except their hands, inside three kicks. The highlight is the "spike". This is the most dramatic and explosive move in the game for spectators to watch as players go mid-air, twisting and turning to power the ball down into the opponent's court. To play takraw, players can use either a net, a hoop, or simply stand around in a circle formation. Whatever the style, the object is to kick the ball to another player without the ball touching the ground. Sepak takraw combines ball skills (kicking and juggling) with the agility and acrobatic moves of gymnasts and the instinctive reflexes of competitive badminton players. This sport seems to have its origins in ancient Thailand and was invented about 500 years ago. There is a strong martial arts tradition in Thailand with Muay Thai Boxing originating from and still being widely practiced there today. Because of this strong tradition of martial arts which relies on powerful kicks, the sport may have come about as a side project of a few Muay Thai boxers. The kicking aspect of Muay Thai and the kicking aspect of Sepak Takraw are fairly similar and agility and dexterity in kicking very high objects and flexibility all play a part in both sports

**Method:**

To find out the Aerobic Endurance between Male Foot Ball and Male sepaktakraw Players. The sample for present study consists of 30 Male Foot Ball Players and 30 Male sepak takraw Players of Hyderabad. The 12 Minute Cooper Test is used for collection of Data.

The Cooper test is a test of physical fitness. It was designed by Kenneth H. Cooper in 1968 for US military used in the original form; the point of the test is to run as far as possible within 12 minutes. To undertake this test you will require:

400 meter track ,Stop Watch,Whistle and Technical Official

This test requires the Foot Ball and Hockey player to run as far as possible in 12 minutes.

The subjects given 10 minutes for warm up.

The assistant gives the command "GO", starts the stopwatch and athlete commences the test

The Technical Official keeps the athlete informed of the remaining time at the end of each lap

The Technical Official blows the whistle when the 12 minutes has elapsed and records the distance the athlete covered to the nearest 10 meters

**Results and Discussion:**

The Table No.1 showing the Mean, S.D, Standard Error, t-ratio of Foot Ball Players and Sepak takraw Players in Cooper Test.

**Table No.1**

Results of 12 min Cooper Test	N	Mean	Std. Deviation	Std. Error Mean	t	df	Sig. (2-tailed)
Foot Ball Players	30	2800.00	219.71	49.13	1.69453	58.00	0.10
Sepaktakraw Players	30	2700.00	137.71	30.79			

The Foot Ball Players Mean Performance is 2800 Meters and the Sepak Takraw Players Mean performance is 2700 Meters. There is mean difference of 100 Meters between Foot Ball and Sepaktakraw Players. The Performance of Foot Ball Players is very good comparing to Sepak Takraw Players. Hence it is concluded that FootBall Players are good in aerobic endurance than Sepaktakraw players

**Conclusion**

Hence it is concluded that Foot Ball Players are good in aerobic endurance than Sepak Takraw Players

**Reccomendations:**

Similiar studies can be conducted on female players and other team game players and individual game players.

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## A Study on the effect of Weight Training Exercises for development of Explosive Strength among Long jumpers of Hyderabad in Telangana

Prof.Rajesh Kumar

Chairman, Board of Studies in Physical Education, Osmania University, Hyderabad

Prof.J.Prabhakar Rao

Principal, University College of Physical Education, Osmania University, Hyderabad

Dr.I.Balaram Reddy

Head, Dept. of Physical Education, OU

J.Ravinder

Lect. In Physical Education, Sri Venkateshwara B.Ped College, Medak

### Abstract:

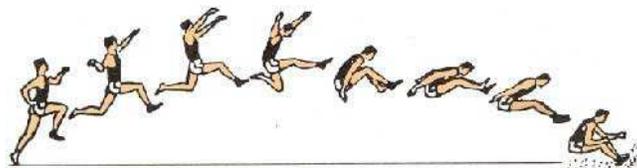
The **long jump** is a track and field event in which athletes combine speed, explosive strength, and agility in an attempt to leap as far as possible from a take off point. The purpose of the present study to find out the effect of weight training exercises for the development of explosive Strength among Long Jumpers of Hyderabad. The sample for the present study consists of 40 Male Long Jumpers of Hyderabad out of which 20 are experimental group and 20 are controlled group between the age group of 18-22 Years. Weight training exercises such half squats, heel raise, hack squat, biceps curls, triceps curls, bench press, jumping with weights etc were given three times a week for six weeks for experimental group and controlled group were given general training of Long Jump. To assess the Explosive Strength the Pre Test and Post Test were conducted in standing Broad Jump. This study shows that due to the plyometric exercises there is a rapid improvement of experimental group in the explosive strength and controlled group has less improvement in explosive strength due to the general training. It is recommended that the Plyometric exercises are excellent to improve the explosive strength and Performance in Long Jump.

Key Words: Plyometrics, explosive strength etc

### Introduction:

The **long jump** (formerly commonly called the "broad jump") is a track and field event in which athletes combine speed, strength, and agility in an attempt to leap as far as possible from a take off point. This event has been an Olympic medal event since the first modern Olympics in 1896 (a medal event for women since 1948) and has a history in the Ancient Olympic Games. There are five main components of the long jump: the approach run, the last two strides, takeoff, action in the air, and landing. Speed in the run-up, or approach, and a high leap off the board are the fundamentals of success. Because speed is such an important factor of the approach, it is not surprising that many long jumpers also compete successfully in sprints. There are three major flight techniques for the long jump: the hang, the sail, and the hitch-kick. Each technique is to combat the forward rotation experienced from take-off but is basically down to preference from the athlete. It is important to note that once the body is airborne, there is nothing that the athlete can do to change the direction they are traveling and consequently where they are going to land in the pit. However, it can be argued that certain techniques influence an athlete's landing, which can have an impact on distance measured. For example, if an athlete lands feet first but falls back because they are not correctly balanced, a lower distance will be measured.

### Hang Style Technique in Long Jump



## Hitch Kick Style Technique in Long Jump



### Methodology:

The sample for the present study consists of 40 Male Long Jumpers of Hyderabad out of which 20 are experimental group and 20 are controlled group between the age group of 18-22 Years Years those who have participated in the different level of athletics competitions of Hyderabad in Telangana. The following Weight training exercise training were given for six weeks alternate days to the Experimental group.

Biceps Curl, Triceps Curl, Bench Press, Half Squats, Heel Raise, Hack Squats, Good morning etc.

The controlled group were given general training of Long Jump. To assess the Explosive Strength the Pre Test and Post Test were conducted in standing Broad Jump

### Results and Discussion:

This study shows that due to the weight training exercises there is a rapid improvement of experimental group in the explosive strength and controlled group has less improvement in explosive strength due to the general training. It is recommended that the Plyometric exercises are excellent to improve the explosive strength and Performance in Long Jump.

Table I showing the Mean values and Independent Samples Test of Standing Broad Jump between experimental and control groups of Long Jumpers

Variables	Group	Pre Test Mean $\pm$ SD	Post Test Mean $\pm$ SD	t	P - Value
Standing Broad Jump	Experimental	2.31 $\pm$ 0.157	2.43 $\pm$ 0.185	3.55	0.001
	Control	2.27 $\pm$ 0.159	2.23 $\pm$ 0.161		

\*Significant at 0.05 level

In Table –I the Mean Values of Pre Test Experimental Group in Standing Broad Jump is 2.31 and control group is 2.27 and in the Post Test the Mean values of Experimental Group has increased from 2.31 to 2.43 and control group has decreased from 2.27 to 2.23. It is concluded that due to the weight training Exercises there is an improvement in the Explosive strength among Long Jumpers.

### Recommendations:

1. It is recommended that coaches must include the weight training exercises for Long Jumpers for the development of explosive strength.
2. Similar Studies can be conducted on other events such as High Jump, Pole Vault and Triple Jump.
3. Similar Studies can be conducted on female athletes in Long Jump and other Jumping events.

### Acknowledgements:

I am thankful to Mr.A.Xavier, Athletics Coach,OU and Mr.T.Bhoomaiah, Physical Director, Avanthi Degree College for their help in accomplishment in the study.

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## Effect Of Circuit Training And Parcourse Training On Anxiety And Blood Pressure

Mr. K.P.R. SETHUPATHYRAJA  
Ph.D., Research Scholar  
Dr. M. SUNDAR

Head of the Department of Physical Education, Alagappa University.

### Abstract

The purpose of the present study was to find out the effect of circuit training and parcourse training on anxiety, systolic and diastolic blood pressure. For this purpose, forty five male students studying various colleges affiliated to the Madurai Kamaraj University, Madurai with age group of 18 to 25 years, were selected as subjects. They were divided into three equal groups, each group consisted of fifteen subjects, in which group – I underwent circuit training, group – II underwent parcourse training and group – III acted as control which did not participate any special training, except their regular curricular activities. The training period for this study was three days in a week for twelve weeks. Prior to and after the training period, the subjects were tested for anxiety, systolic and diastolic blood pressure. The selected criterion variables, such as, anxiety was tested by Taylor's Manifest Anxiety Scale and systolic and diastolic blood pressure were tested by using sphygmomanometer. The Analysis of Covariance (ANCOVA) was applied as statistical tool. Whenever the post-test means found significant, the Scheffé S was applied as post-hoc test. In all cases, .05 level of confidence was fixed to test the significance, which was considered as an appropriate. It was concluded from the results of the study that the training groups have reduced the resting puls rate and systolic and diastolic blood pressure.

**Key Words:** *Circuit Training, Parcourse training, anxiety, Systolic and Diastolic Blood pressure.*

### Introduction

Physical training is one of the most important ingredients in training to achieve high performance. The objectives of physical training are to increase the athlete's physiological potential and to develop biomotor abilities to the highest standards (Tudor O. Bompá, 1999). The term circuit refers to a number of carefully selected exercises arranged consecutively. In the original format, 9 to 12 stations comprised the circuit. This number may vary according to the design of the program. Each participant moves from one station to the next with little (15 to 30 seconds) or no rest, performing a 15 to 45 second work bout of 8 to 20 repetitions at each station (using a resistance of about 40% to 60% of one-repetition maximum). (Len Karviz, 1996) A new concept of circuit training developed in Europe has been adopted recently in the United States and Canada called 'parcourse'. It consists of a series of stations set up over a one to two and a half mile path, to provide a recreational exercise circuit for individuals of all ages and abilities. (William E. Prentice and Charles A. Bucher, 1988). Anxiety is a complex emotional state characterized by a general fear or fore binding, usually accompanied by tension. It is related to apprehension and fear and is frequently associated with failure, either real or anticipated. It has to do with inter-personal relations and social situations. Feelings of rejection and insecurity are usually a part of anxiety. Blood pressure (BP) is a force exerted by circulating blood on the walls of blood vessels, and is one of the principal vital signs. ([http://en.wikipedia.org/wiki/Blood\\_pressure](http://en.wikipedia.org/wiki/Blood_pressure))

### Methods

The purpose of the present study was to find out the effect of circuit training and parcourse training on anxiety, systolic and diastolic blood pressure. For this purpose, forty five male students studying various colleges affiliated to the Madurai Kamaraj University, Madurai with age group of 18 to 25 years, were selected as subjects. They were divided into three equal groups, each group consisted of fifteen subjects, in which group – I underwent circuit training, group – II underwent parcourse training and group – III acted as control which did not participate any special training, except their regular curricular activities. The training period for this study was three days in a week for twelve weeks. Prior to and after the training period, the subjects were tested for anxiety, systolic and diastolic blood pressure.

The selected criterion variables, such as, anxiety was tested by administering Taylor's Manifest Anxiety Scale and systolic and diastolic blood pressure were tested by using sphygmomanometer.

**Analysis of the Data**

Analysis of covariance was used to determine the differences, if any, among the adjusted post test means on selected criterion variables separately. Whenever the 'F' ratio for adjusted posttest mean was found to be significant, the Scheffé S test was applied as post-hoc test. The level of significance was fixed at .05 level of confidence to test the 'F' ratio obtained by analysis of covariance.

*Table – I: Analysis of Covariance and 'F' ratio for Anxiety, Systolic and Diastolic Blood Pressure of Circuit Training and Parcourse Training Groups and Control Group*

Variable Name	Group Name	Circuit Training Group	Parcourse Training Group	Control Group	'F' Ratio
Anxiety (in Points)	Pre-test Mean ± S.D	16.53±1.06	17.067±1.44	17.07±1.54	0.77
	Post-test Mean ± S.D.	14.80±0.94	15.73±1.39	17.60±1.92	14.082*
	Adj. Post-test Mean	15.113	15.577	17.445	29.858*
Systolic Blood Pressure (in mmHg)	Pre-test Mean ± S.D	112.33±1.88	114.3±4.32	113.73±4.72	1.064
	Post-test Mean ± S.D.	110.53±0.99	112.2±4.16	114.13±4.78	3.551*
	Adj. Post-test Mean	111.584	111.397	113.886	29.24*
Diastolic Blood Pressure (in mmHg)	Pre-test Mean ± S.D	71.20±1.82	73.20±3.49	72.47±2.95	1.91
	Post-test Mean ± S.D.	69.40±1.298	71.80±3.51	72.80±3.14	5.75*
	Adj. Post-test Mean	70.425	70.942	72.633	23.706*

\* Significant at .05 level of confidence. (The table value required for significance at .05 level with df 2 and 42 and 2 and 41 are 2.21 and 3.22 respectively).

*Table – II: Scheffé S Test for the Difference Between the Adjusted Post-Test Mean of Anxiety, Systolic and Diastolic Blood Pressure*

Adjusted Post-test Mean on Anxiety					
Circuit Training Group	Parcourse Training Group	Control group	Mean Difference	Confidence interval at .05 level	
15.113		17.445	2.332*	0.50835	
15.113	15.577		0.464	0.50835	
	15.577	17.445	1.858*	0.50835	
Adjusted Post-test Mean on Systolic Blood Pressure					
111.584		113.886	2.302*	0.362399	
111.584	111.397		0.187	0.362399	
	111.397	113.886	2.489*	0.362399	
Adjusted Post-test Mean on Diastolic Blood Pressure					
70.425		72.633	2.208*	0.847557	
70.425	70.942		0.517	0.847557	
	70.942	72.633	1.691*	0.847557	

\*Significant at .05 level of Confidence.

## Results

Table – I showed that there was a significant difference among circuit training group, parcourse training group and control group on anxiety, systolic and diastolic blood pressure.

Table – II shows that the Scheffé S test on anxiety for the difference between adjusted post-test mean of between circuit training group and control group (2.332), and parcourse training group and control group (1.858), which were significant at .05 level of confidence. But the adjusted post-test mean difference between circuit training group and parcourse training group (0.464) was insignificant.

Table – II shows that the Scheffé S test on systolic blood pressure for the difference between adjusted post-test mean difference of circuit training group and control group (2.302), and parcourse training group and control group (2.489), which were significant at .05 level of confidence. But the result of the study also shows that there was no significant difference between circuit training group and parcourse training group (0.187).

Table – II shows that the Scheffé S test on diastolic blood pressure for the difference between adjusted post-test mean of circuit training group and control group (2.208), and parcourse training group and control group (1.691), which were significant at .05 level of confidence. The result of the study shows that there was no significant difference between circuit training group and parcourse training group (0.517) was existed on diastolic blood pressure.

## Conclusions

It was concluded from the results of the study that the anxiety was reduced for circuit training group (Rahmani-Nia *et al* (2011) and Norvell and Belles (1993)), and parcourse training group. The reduction in systolic and diastolic blood pressure for both the training groups (Antonio Paoli *et al*, (2013), Matthew B. Miller *et al* (2014) and Atul Meethal and AM. Najeeb (2013)) was significant.

When compared with the control group, the training groups has significantly decreased on selected criterion variables, such as, anxiety, systolic and diastolic blood pressure.

There was no significant difference was found between the training groups on selected criterion variables such as, anxiety, systolic and diastolic blood pressure

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## Financing Cost Elements of Crude Oil Import in Indian Oil Corporation Limited (IOCL)

Fatemehkiassi\*

\*Student of MBA, college of business management, Osmania University, Hyderabad, India

### Abstract:

The complex structure of international seaborne trade is composed of thousands of voyages whereby goods are carried from one country to another. Each of these voyages comprises many different legal relationships. Without proper systems in place, such an activity involving millions of dollars will result in all-around confusion and chaos. Global crude market is quite complicated. Companies are often considered as primary actors in this market, but governments have a major role to play as well. The purpose of this study is to describe and understand the crude oil import procedure and various costs involved in it along with defining the various financing structures of foreign trade with a focus on Indian Oil Corporation Limited (IOCL). The import procedures at Indian oil involving scheduling, chartering and freight payments have been covered. Moreover, it also includes foreign exchange management at IOCL. The results from this study are expected to reveal evidence on the importance of proper planning for crude oil trading as a crucial and sophisticated process.

**Key words:** Financing Cost Elements, Crude Oil Import

### Introduction:

The major factors affecting the crude oil market is the supply constraint and the ever rising demand conditions. Generally OPEC countries work together to influence the world oil supplies. Together they control approximately 70% of world's total proven oil reserves and produce 41% of the total world supply. OPEC's oil exports represent about 60% of the total petroleum traded internationally. Because of the market share, actions by these countries affect the world oil market. In India, the industry was initially opened for international players and global oil majors such as Caltex, Esso and Burma Shell. However after the oil crisis of 1970s, the government nationalized the Indian division of the international oil companies and the industry became one of the most strictly regulated industries in the country. The government nationalized the refining and marketing sectors and subsequently, introduced regulatory controls on the production, import, distribution and pricing of crude oil and petroleum products by establishing the Oil Coordination Committee (OCC). India's growing dependence on imported oil products and the dramatic rise in the prices of crude oil to as high as \$148/bbl the international market in July 2008, followed by an equally dramatic fall, pose significant policy challenges. The Government's efforts to insulate domestic consumers, at least to some extent, resulted in huge fiscal burden for the Government and financial problems for the public sector oil marketing companies.(1)

Indian Oil is the largest commercial enterprise in the country. It is the highest ranked Indian Corporate in the prestigious FORTUNE 'GLOBAL 500' listing. Besides having a dominant market share, Indian Oil is widely recognized as India's dominant energy brand and customers perceive Indian Oil as a reliable symbol for high quality products and services. Indian Oil has been meeting India's energy demands for over five decades. This oil concern is administratively controlled by India's Ministry of Petroleum and Natural Gas, a government entity that owns just over 90 percent of the firm. Since 1959, this refining, marketing, and international trading company served the Indian state with the important task of reducing India's dependence on foreign oil and thus conserving valuable foreign exchange. That changed in April 2002, however, when the Indian government deregulated its petroleum industry and ended Indian Oil's monopoly on crude oil imports. This study is an attempt to understand and analyse crude oil import procedures, all related documents and foreign exchange management. Besides all these, the study also aims at the various financing structures involved in the company. The company finances its costs through currency purchase and foreign currency loans. The study majorly focuses on these types of financing which are required to fund the costs and other working capital needs.

## **Methodology**

The methodology of this paper is explanatory and descriptive by using secondary data. Different costs incurred in importing crude oil are defined and the various methods on financing them are described to get a clear understanding about the whole procedure. The Indian Oil Corporation Limited (IOCL) regarded as a benchmark for the oil industry as a whole as it is a main importer of crude oil in Indian scenario.

## **Research Findings and Discussion**

Indian Oil Corporation Ltd. imports Crude Oil for itself and its subsidiaries. The crude oil is mainly sourced from Gulf Countries, West African Countries, Malaysia, Brunei, etc. Crude is transported through tankers/ vessels and discharged at different ports. Vadinar and Mundra are disports for west coast refinery. Kakinada, Vishakhapatnam etc. are disports for East coast refineries. Indian Oil imports crude on the basis of FOB, CIF and CFR contracts. This study concentrates mostly into FOB type of contracts. The payment is made through direct funding or currency purchase. It is also done by loan availment. The steps involved in crude oil import are as Budgeting, Procurement and Payment and Price Determination. The International trade department generally determines the requirement of crude oil through budgeting. The previous year's data, the market consumption rate as well as the refining capacity determines the quantity of crude import. Furthermore, tender for crude oil procurement is finalized by International Trade on the following basis:

\*Term Contract -Mainly annual contract with fixed term from suppliers who are manufacturers of crude oil like NIOC, SOMO, SAUDI ARAMCO, etc.

\*Spot Contract -Monthly / Quarterly Contract from traders who buy crude for further sale.

The requirement for crude, determined through budgeting, is fulfilled through term contracts. In case of fluctuations in actual and budgeted figures, any shortage is met through the spot contracts. After finalisation of Contract, a copy is forwarded to Shipping for execution.

The price is determined at the time of contract. There is an official site named 'Platts', which publishes the daily rates and prices. The exchange rate is determined by averaging the monthly rates according to which the payment is made.

There are various costs involved in import of crude oil such as FOB payment and settlement, Demurrage, Freight, NMA/OTD Charges, Port Charges, Survey Fees, Marine Insurance, and Cargo Insurance and so on. After calculating the FOB value based upon the pricing formula and contract. Shipping Finance certifies the payments and forwards the same to finance for payment. After receipt of complete set of documents from Shipping, finance cross checks the complete particulars of payments including calculations, based on contract Terms, and advises Corporate Office (Treasury) the final value for FOB payment. Necessary debit Notes are raised on CPCL/BRPL where the FOB imports is for CPCL/BRPL. Based on the plan advised by CO (T), the FOB payments are effected to the beneficiary either through Loans or through Currency Purchases. FOB (Free on Board) is one of the most popular sales contracts. The seller has the responsibility for bringing the goods to the named port and loading them over the ship's rail. They then become the buyer's problem. Freight and Insurance, being concerned with matters after loading, are the responsibility of the buyer. Based on the plan advised by Treasury department, the FOB payments are effected to the beneficiary either through Loans or through Currency Purchases. Crude oil FOB payment cycle is as follows:

\*Invoices from the Supplier are received by shipping department. Shipping prepares US Dollar cash flow containing the day wise details of FOB Payments. Details include Supplier, Tanker name, Tanker Flag, quantity, Unit Price, FOB value, Date of payment, and disport location.

\*Based on the cash flow a daily fund requirement statement is advised to corporate office (treasury) and receipt from OMC for their share of import is projected.

\*Treasury based on the fund position decides on the mode of payment i.e. through currency purchase or through availment of loan and advises the same to RD (Finance) for execution.

\*Based upon the above advice from Treasury, the remittances are executed by Refinery Finance.

The Loans can be either foreign currency loans or Indian Rupee loans. In order to take advantage of strong rupee as well as to cover excessive FOREX requirements on particular dates in future, sometimes USD/INR forward cover is also taken. As per these forward covers, the Banks will sell specified quantum of US Dollars to ICDL at an agreed exchange rate. These covers are generally taken for repayment of loans as their repayments dates are fixed quite in advance. The difference between the USD/INR exchange rate as on the date of booking of forward contract and the Exchange rate at which the Forward cover is booked is treated as USD/INR forward cost and the same is amortized over the period of the forward cover. In order to bridge the gap between available resources and payment commitments corporate Office borrows money from various Banks and Financial Institutions in Indian Rupees for various terms.

Such borrowings are affected at "MIBOR rate + Margins" or at fixed rates of Interest mutually agreed by treasury department of company with the Banks / Lending Institutions. One of the another methods to bridge the gap between funds requirements and the funds availability is by borrowing in INR from the Collateralized Borrowings and Lending Obligations (CBLO) borrowings. In this way, importers borrow funds from Credit Corporation of India Ltd (CCIL) on overnight / short term basis by pledging the Oil Bonds received from Govt. of India as collateral security. Borrowings are allowed to the limit of the market value of the pledged Bonds, which is estimated on day to day basis by CCIL. The borrowing cost of the same, (paid to CCIL), is lower than the MIBOR / Overnight Inter-bank rates of interest. Foreign Exchange Purchase is the other way of financing in which the large importers of crude oil to remit huge amount of FOREX out of the country to meet their obligations. For instance, Indian Oil Corporation limited imports are around 3.5 million MTs every month and around 42 million MTs every year from foreign countries. It remits around \$36 billion every year. Besides payment for crude oil, Forex is also required for some projects like expansion projects, purchase of new and up-to-date technology etc. This expenditure at times has to be in foreign currencies and is termed as capital expenditure (cap-ex); whereas the payment of the crude oil (being the raw material) is termed as the working capital expenditure. Demurrage is a separate freight charge, in addition to ordinary shipping costs, which is imposed according to the terms of a carriage contract upon the person responsible for unreasonable delay in loading or unloading cargo. In maritime law, demurrage is the amount identified in a charter contract as damages payable to a ship owner as compensation for the detention of a ship beyond the time specified by a charter party for loading and unloading or for sailing.

#### **Conclusion**

From the above discussion it is clearly understood that importing crude oil is a complicated process which need cautious and keen considerations. Crude Oil Import for Home-Consumption requires a whole host of meticulous back-end corporate activities namely regulatory compliance, demand estimation, proper documentation, payment follow-up and verification. As it is known that demurrage is a type of added liability along with freight and it is not avoidable as everything on sea does not goes as per plan. But an attempt can be made to reduce it. To reduce its demurrage costs, IOCL can purchase cargo ships for these imports. By doing this, freight, demurrage and other charges could be permanently eliminated.

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## **A Comparative Study On Psychosocial Adjustment Of The Students Of Different Category Schools**

**Prasenjit Barman, Research Scholar  
Dr. Sanjib Mridha, Associate Professor  
Department of Physical Education, University of Kalyani**

**Abstract:** Life presents a continuous chain of struggle for existence and survivals. The purpose of this study was to observe the difference, if any, on the early –teen boys students of two different type schools. Subjects of this study were one hundred thirty five male Navodaya students of three age categories and similar number of age and height-weight-matched students from other than Navoday schools (forty five students for each age group from each type of school). Three dimensions of adjustment inventory, namely- emotional adjustment, social adjustment and educational adjustment were the criterion measures. Mean, standard deviation (SD) and ANOVA followed by Post-Hoc LSD and independent t-test were the statistics used for data interpretation. Significance difference ( $p < 0.05$ ) was observed between Navodoy and other than Navodoy students in emotional adjustment, social adjustment and educational adjustment in the age group of 14-year and 15-year, 14-year and 14-year respectively. However, in 13-year age group the difference was not significant in emotional adjustment. In social adjustment the significant difference was not observed in 13-year and 15-year age group. It was also observed that there was no significant difference in 13-year and 15-year age group.

**Key Words:** Adjustment inventory, Student, Navodoy and Non-Navodoy School

**Introduction:** The concept of adjustment was first given by Darwin, who used it as 'adaptation' to survive in the physical world. The term adjustment is often used as a synonym for accommodation and adaptation. Strictly speaking, the term denotes the results of equilibrium, which may be affect by either of these processes (Monroe, 1990). It is used to emphasize the individual's struggle to along or survive in his or her social and physical environment. Good (1959) sates that adjustment is the process of finding and adopting modes of behaviour suitable to the environment or the changes in the environment. Shafer (1961) emphasized that adjustment is the process by which a living organism maintains a balance between its needs and the circumstances that influence the satisfaction of these needs. Kulshrestha (1979) explained that the adjustment process is a way in which the individual attempts to deal with stress, tensions, conflicts etc., and meet his or her needs. In this process, the individual also makes efforts to maintain harmonious relationships with the environment. In adjustment, the two crucial factors are the individual and the environment. In the study of the individual, the considerations are the heredity and biological factors, the psychological factors, and the quality of socialization given to him or her. Whereas, the environment includes all the social factors. Every individual from the time he or she steps out of the family and goes to school makes to a long series of adjustments between the whole unique personality and the environment. The school is the major socialization institution for any child. It is the child's first contract with the world outside the house. For nearly 12 years a child spends 5 to 7 hours a day in the school. School is one the most important foundation pillars on which the child's personality develops. Children learn proficiencies in various abilities like, learning process and home work, social communications, handling emotion, and the management of day to day interactions at home and school. In reality, the growing child is dependent on the immediate environment i.e. the house and the school to meet his growth needs. The concern, therefore" extends to how the school facilities can be enhanced and improved to meet the growth needs of the children. Several studies have been reported in the area of social, educational, health and emotional adjustment of school students of both sexes. Some studies try to relate adjustment with variables like intelligence, achievement, age, sex, socio-economic status, needs, anxiety, and security. Student's reaction to frustration has also been studied. A few studies focused on the nature, causes, and extent of indiscipline among students. The relation between indiscipline and variables like achievement, participation in co-curricular activities etc., were also examined. .

Boys were significantly better than girls in their health adjustment at different levels of socio-emotional climate of the school. Sharma and Gakkar (1991) and Pradhan (1992) observed that the students from

English medium school tend to exhibit better emotional adjustment while their counterparts from rural schools display relatively better educational adjustment as they do experience stress from their teachers and parents regarding their academic performance. It was reported by Kasinath (1990) and Pradhan (1993) that boys are significantly better adjusted than girls. The analysis of the individual items of the emotional adjustment dimensions indicated that boys as compared to girls have not expressed any fear to go out alone in night, see a dead body or control their anger whenever things are not happening according to their wish. The purpose of this study was to observe the difference, if any, on the early –teen boys students of two different type schools.

Methods and materials: The present study was conducted on a sample of height-weight matched 270 students. Forty five male students in three age categories of thirteen, fourteen and fifteen years of age from two different type schools were the subjects. Their height and weight were matched according to age groups. Students from Navodaya School of Kalyani, Nadia District and Banipur, North 24 Parganas and other than Navodaya school students from three schools of Malda District of West Bengal were selected for the study. Height-weight range of the subjects is given in Table-1.

Table-1: Range of height and weight of the subjects

Age (Years)	Height (cm)	Weight (kg)
13	150 - 156.5	39 – 44
14	156.5 - 163	44 - 49.5
15	163 - 168.5	49.5 - 55.5

As a measure of adjustment, the Bengali version of adjustment inventory for school student by A.K.P. Sinha and R.P. Singh (2007) was used. An adjustment scale developed by A.K.P. Sinha and R.P. Singh (2007) was adopted for the Indian population. It consists of the 60 items, which measure adjustment in three different areas: emotional adjustment, social adjustment and educational adjustment. In the dimension of emotional adjustment high scores indicate unstable emotion. Students with low scores tend to be emotionally stable. In social adjustment individuals scoring high are submissive and retering. Low scores indicate aggressive behaviour. In educational adjustment individuals scoring high are poorly adjusted with their curricular and co-curricular programmes. Persons with low scores are interested in school programmes. It consists of 60 items, totally objective in nature and demanding response in terms of yes and no. For any item indicative of adjustment, 0 is given; otherwise a score of 1 is awarded. Mean standard deviation (SD), ANOVA and independent t-test was used for assessment and interpretation of data. For statistical calculations SPSS software version 20 was used.

Results and Discussion: Table-2 represents the description of data of three age groups in the form of mean and SD along with independent t-test results.

Table-2: Comparison of adjustment of students of two groups

Adjustment Dimensions	Age Group	Navodaya School (Mean ± SD)	Non-Navodaya School (Mean ± SD)	t-ratio	Sig. level
Emotional	13	5.45 ± 3.85	6.19 ± 3.61	0.94	0.35 <sup>NS</sup>
	14	3.38 ± 3.31	5.43 ± 3.29	2.83	0.00*
	15	3.10 ± 2.81	5.42 ± 3.16	3.06	0.00*
Social	13	7.36 ± 1.68	8.10 ± 2.66	1.57	0.12 <sup>NS</sup>
	14	6.47 ± 1.72	8.88 ± 2.39	5.02	0.00*
	15	8.35 ± 2.40	7.94 ± 2.21	0.72	0.47 <sup>NS</sup>
Educational	13	4.40 ± 2.96	5.42 ± 2.99	1.61	0.11 <sup>NS</sup>
	14	3.63 ± 2.66	6.12 ± 3.19	3.76	0.00*
	15	4.74 ± 4.07	6.10 ± 3.42	1.42	0.16 <sup>NS</sup>

NS = Not Significant, \*Significant at 0.05 level ( $t_{0.05,43}=2.01$ )

From Table-2, it was found that the obtained t-values for emotional adjustment of three age groups of 13-year, 14-year and 15-year were 0.94, 2.83 and 3.06 respectively. The t-value of 14-year and 15-

year age group was greater than the tabulated t-value 2.01. Therefore, the difference was statistically significant ( $p < 0.05$ ) in emotional adjustment of Navodoy and non Navodoy school students.

In social adjustment, obtained t-values were 1.57, 5.02 and 0.72 for the age group of 13-year, 14-year and 15-year respectively. Here, the 13-year and 15-year age group was not statistically significant but in 14-year age group had difference between two groups.

For educational adjustment obtained t-values of three age groups of 13-year, 14-year and 15-year were 1.61, 3.76 and 1.42 respectively. In 14-year age group were greater than the tabulated t-value. Therefore, there was significance difference in educational adjustment of Navodoy and non Navodoy school boys but not in 13-year and 15-year age group.

Table-3 represents the description of the data of thirteen, fourteen and fifteen year age group. Results of adjustment inventory dimension of thirteen, fourteen and fifteen years boys i.e., emotional adjustment, social adjustment and educational adjustment have been presented in mean, standard deviation (SD), ANOVA and 't' ratio.

Among the three dimensions of adjustment inventory F-value for emotional adjustment (4.394) was greater than the critical F-value ( $F_{0.05} 2,267=3.09$ ). Therefore, there was difference in emotional adjustment among the students according to their age. However, in the remaining cases the differences were not statistically significant.

Table-3: ANOVA on adjustment of students according to age

Variables	Age-wise value of Mean $\pm$ SD			F-value	Inter-group t-ratio		
	13 Yr.	14 Yr.	15 Yr.		13 vs.14	14 vs.15	13 vs.15
Emotional	5.84 $\pm$ 3.72	4.70 $\pm$ 3.42	4.26 $\pm$ 3.19	4.394*	2.149*	0.804 <sup>NS</sup>	2.737*
Social	7.76 $\pm$ 2.27	8.02 $\pm$ 2.46	8.15 $\pm$ 2.30	0.564 <sup>NS</sup>	0.755 <sup>NS</sup>	0.311 <sup>NS</sup>	1.034 <sup>NS</sup>
Educational	4.94 $\pm$ 2.99	5.23 $\pm$ 3.23	5.42 $\pm$ 3.79	0.403 <sup>NS</sup>	0.622 <sup>NS</sup>	0.325 <sup>NS</sup>	0.825 <sup>NS</sup>

\*Significant at 0.05 level ( $F_{0.05} 2,267=3.09$ ,  $t_{0.05} 88=1.98$ ), NS = Not Significant

**Conclusions:** Though the socio-economic conditions of the students were not considered in this study, but on the basis of the finding of the study on height-weight matched 13-16 years male students of Navodoya and Non-Navodoya schools, the following conclusions were drawn on their self concept:-According to school Navodoya and non Navodoya students' adjustment inventory did differ in emotional adjustment in fourteen year and fifteen year age group. In social adjustment in the age group of fourteen year and in educational adjustment in the age group of fourteen year.

According to age of the students of two schools together, had difference only in emotional adjustment dimension of adjustment inventory.

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## Food Effects On Health And Hygiene By Yoga

Dr.Rajashekhar .M.Hiremath Assistant Professor  
Dean, Students Welfare Office  
University Of Horticultural Science, Bagalkot  
Mr. Basavraj.S.Lokapur Physical Director  
Basaveshwar Science College, Bagalkot

### Introduction:

If you think of people in seemingly impossible and weirdly twisted poses when you think of "Yoga", then you may have an inkling of what yoga is, just an inkling that's it. Yoga is much more than those poses. Derived from the Sanskrit word "yuj" which means "to unite or integrate"; yoga is a 5000 year old Indian body of knowledge. Yoga is all about harmonizing the body with the mind and breath through the means of various breathing techniques, yoga postures and meditation.

### Yoga for everyone:

Yoga has never been alien to us. It's a way of our life. We have been doing it since we were a baby! Whether it is the Cat Stretch that strengthens the spine or the Wind-Relieving pose that boosts digestion, you will always see kids do some form of yoga throughout the day. Yoga works for everyone from people engaged in desk jobs to professional cyclists to runners to people looking for weight loss to housewives to students. This section mostly explains how yoga can improve the quality of life for everyone who adopts this practice.

### Ten yoga benefits

Weight loss, a strong and flexible body, glowing beautiful skin, peaceful mind, good health – whatever you may be looking for, yoga has it on offer. However, very often, yoga is only partially understood as being limited to asanas. As such, its benefits are only perceived to be at the body level and we fail to realize the immense benefits yoga offers in uniting the body, mind and breath. When you are in harmony, the journey through life is calmer, happier and more fulfilling.

### 1. All-round fitness

You are truly healthy when you are not just physically fit but also mentally and emotionally balanced. As Sri Sri Ravi Shankar puts it, "Health is not a mere absence of disease. It is a dynamic expression of life in terms of how joyful, loving and enthusiastic you are." This is where yoga helps: postures, pranayama and meditation are a **Holistic Fitness** package.

### 2. Weight Loss

What many want! Yoga benefits here too. Sun Salutations and Kapal Bhati pranayama are some ways to help lose weight with yoga. Moreover, with regular practice of yoga, we tend to become more sensitive to the kind of food our body asks for and when. This can also help keep a check on weight.

### 3. Stress relief

A few minutes of yoga during the day can be a great way to get rid of stress that accumulates daily - in both the body and mind. Yoga postures, pranayama and meditation are effective techniques to release stress. You can also experience how yoga helps de-tox the body and de-stress the mind at the Sri Sri Yoga Level 2 Course.

### 4. Inner peace

We all love to visit peaceful, serene spots, rich in natural beauty. Little do we realize that peace can be found right within us and we can take a mini-vacation to experience this any time of the day! Benefit from a small holiday every day with yoga and meditation. Yoga is also one of the best ways to calm a disturbed mind.

### 5. Improved immunity

Our system is a seamless blend of the body, mind and spirit. An irregularity in the body affects the mind and similarly unpleasantness or restlessness in the mind can manifest as an ailment in the body. Yoga poses massage organs and strengthen muscles; breathing techniques and meditation release stress and improve immunity.

## **6. Living with greater awareness**

The mind is constantly involved in activity swinging from the past to the future but never staying in the present. By simply being aware of this tendency of the mind, we can actually save ourselves from getting stressed or worked up and relax the mind. Yoga and pranayama help create that awareness and bring the mind back to the present moment, where it can stay happy and focused.

## **7. Better relationships**

Yoga can even help improve your relationship with your spouse, parents, friends or loved ones! A mind that is relaxed, happy and contented is better able to deal with sensitive relationship matters. Yoga and meditation work on keeping the mind happy and peaceful; benefit from the strengthened special bond you share with people close to you.

## **8. Increased energy**

Do you feel completely drained out by the end of the day? Shuttling between multiple tasks through the day can sometimes be quite exhausting. A few minutes of yoga everyday provides the secret to feeling fresh and energetic even after a long day. A 10-minute online guided meditation benefits you immensely, leaving you refreshed and recharged in the middle of a hectic day.

## **9. Better flexibility & posture**

You only need to include yoga in your daily routine to benefit from a body that is strong, supple and flexible. Regular yoga practice stretches and tones the body muscles and also makes them strong. It also helps improve your body posture when you stand, sit, sleep or walk. This would, in turn, help relieve you of body pain due to incorrect posture.

## **10. Better intuition**

Yoga and meditation have the power to improve your intuitive ability so that you effortlessly realize what needs to be done, when and how, to yield positive results. It works. You only need to experience it yourself.

Remember, yoga is a continuous process. So keep practicing! The deeper you move into your yoga practice, the more profound are its benefits.

### **Yoga for Health and Wellness**

Health is not a mere absence of disease. It is a dynamic expression of life in terms of how joyful, loving and enthusiastic you are

One who is stable and established in the self is healthy. That is to say that identifying a healthy person doesn't only entail physical fitness, but what's even more crucial is one's mental fitness. One cannot say that 'I'm healthy, but not interested in life'. The enthusiasm in life shows how healthy you are.

Causes of sickness or ill health are generally noted as impurities on the level of mind, body and speech. Your own speech can create distress in you as well as other people around you. Even distress or discomfort should be treated as an illness.

### **Role of Food in Keeping One Healthy**

Yogis in The Himalayas can survive without food because they don't need to eat as their body survives on prana. But we need to eat and maintain a healthy diet.

Did you know that your next day starts from your dinner? What you eat, what time you eat and how much you eat affects your sleep, the morning and your entire day.

### **Second Most Important Aspect of Health**

Vihar plays a tremendous role in measuring how healthy an individual is. A sadhak should know what is suitable for his/ her living.

There is a tendency in our body towards health. At one level, our body intelligence signals that what we are doing is not alright, but we all have our excuses because we are following our mind and emotion. That intelligence fails when you become a slave to your mind and creates problems on a physical level. And soon, it becomes a pattern.

A headache is not a disease, but a signal for something bigger, and when we suppress that sign with painkillers, the real cause soon surfaces on a much bigger scale.

### **Core Principles**

The knowledge of Ayurveda was passed on orally through a lineage of sages in India until it was collated into text more than five thousand years ago. The oldest known texts on Ayurveda are the Charaka Samhita, Sushruta Samhita, and the Ashtanga Hrudaya. These texts detail the affect that the five elements found in the cosmic system - earth, water, air, fire, space have on our individual system, and expound on the importance of keeping these elements balanced for a healthy and happy life. According to Ayurveda, each person will be influenced by certain elements more than others. This is because of their prakriti, or natural constitution. Ayurveda categorizes the different constitutions into three different doshas:

## **Yoga And Diet**

The purpose of food is to increase the duration of life, purify the mind and aid bodily strength. The modern science classifies the food on the basis of its function on body as carbohydrates, protein, fat etc. In the same way the yoga divides the food on the basis of its effect on mind as satvic, rajasik and tamasik foods. The yoga tells food and mind has direct relations; the type of food you taking same type of mind develop., one of the Upanishad says, 'Yatha khadyatennam, tatha nigadyate manaha', which means the type of the mind is depend on the type of food eaten. If one goes through scientifically also the food advised in yoga are very good for good health.

### **Satvic Food:**

This type of food is very good for mind. It gives calmness and steadiness of mind. Satvic food increases the duration of life purify ones existence, gives strength, stamina, health and happiness. The food coming under Satvic category are green vegetable, milk and milk products, seeds, sprouted seeds, honey, legumes, fruit, fruit juices etc. Yoga recommends always taking satvic food to get pure body and mind.

### **Rajasik food:**

This type of food stimulates the mind, Even though it may feel good while eating, but it causes the fluctuation of mind. So it will affect the yoga practise. Rajasik food also imbalances the mind body equilibrium. The food coming under this category are very hot, bitter, sour, spicy, salty or dry foods, Tea, coffee, onion, garlic, tobacco, fish, eggs are coming under this category. Eating in hurried also considered as Rajasik food.

### **Tamasik food:**

These types of food cause laziness and are not good for body and mind. The tamasik food leads towards the ignorance. It may be feeling good some time while consuming but, this type of food very harmful to the body. Yoga strictly opposes the tamasik foods. The foods coming under this category are meat, alcohol, tobacco, Fermented food.

- Try to take the food in time always.
- Try to reduce-meat consumption; you need not to be vegetarian
- Take leafy and green vegetables, fruits more.
- Always take small mouthfuls.
- Chew well before eats
- Talk less while eating; try to eliminate all unwanted thoughts and difficulties while eating.
- Main reason for over eating is stress and uncontrolled senses; yoga reduces stress and helpful to control senses; If one follow the yoga with full dedication you will surely feel and understand which type of food is good for your body.

### **Conclusion:**

Now a days yoga plays very important role in our life. By yoga we can maintain our body fit and healthy. We can avoid as well as cure many illnesses. Food plays very important role in Yoga. Eating green vegetables keeps us healthy.

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## **The Role and Responsibilities of the Physical Education Teacher in the School Physical Activity Program**

**Dr.Rajashekhhar M.Hiremath Assistant Professor  
University Of Horticultural Science, Bagalkot  
Mr.Basavaraj .S.Lokapur Physical Director  
Basaveshwar Science College,Bagalkot**

### **Introduction**

The NASPE recommends that children obtain a minimum of 60 minutes of physical activity in a day. It is not possible in most of the schools to provide the 60 minutes of daily physical activity for every student through the physical education program alone; this has led to development of the idea of having comprehensive school physical activity programs. Some students attend physical education one day in a week; Others attend Two or Three days in a Week; and a few have daily physical education activities. The physical educator is to provide maximum physical activity time within the class period, teach skills and activities that transfer into physical activity outside of physical education class, motivate children to be physically active. If students are to receive the amount of physical activity they need each day, other opportunities to be physically active within the school day must be provided. The physical education teacher has unique responsibilities in the school physical activity program to ensure that students are physically active within the physical education class.

Maximum Physical Activity in a Class Room Physical education class is just one avenue during a school day that provides the opportunity for physical activity. During the allotted class time it is recommended that children be moderately or vigorously active for at least half of the class period. Several factors can contribute to making this happen: Effectively organize Ground, equipment, and students. Provide adequate equipments that allows all children to be active at the same time Limit Teacher Talks and more instruction. Plan to practice children's that are structured for maximum participation Structure the class so that learning occurs while students are being physically active.

With maximum and quality activity time, children become more skilled, knowledgeable, and physically fit.

### *Teach Activities And Skills, That Transfer Into Physical Activity Outside the Class*

Physical education programs have the responsibility to teach skills that students will need to participate in physical activity outside of the physical education class and skills they will need for a lifetime of physical activity. Skills learned in physical education class transfer to skills used in a child's play. From the kindergarten-age child playing tag, to the second grade child jumping rope, to the older child playing a game of kickball, the skilled child is more likely to participate in physical activity. If a child is confident in his or her skills, there is typically no hesitation to play; however, the low-skilled child, especially in the upper grades, is less inclined to take part in group activities for fear of failure and peer ridicule. Students need skills to be participants in physical activity.

Good physical education programs take the time to teach children activities they may do on their own. Examples of these are jump rope chants, none elimination tag games, hopscotch, Four Square, tetherball, and basketball activities such as Horse and Around the World. Including these activities briefly in a physical education class and then encouraging children to play them on their own is likely to promote more physical activity on the playground and in their neighborhoods.

### *Motivate the Children's to Be Active*

Another role of the physical educator is to encourage and motivate children to be active. There are many ways to do this, including promoting community activities, assigning physical activity homework or home fun, showing an interest in the out-of-class physically activity in which children participate, and leading by example.

### **Promote the Community Activities**

There are typically numerous activities in communities that promote physical activity, such as organized recreational sports, dance classes, gymnastics programs, and martial arts. A bulletin board

in the gym, the school Web site, and regular announcements are simple ways to promote these opportunities. Brochures, Web sites, or newspaper announcements are available from most physical activity venues.

#### Homework and "Home Fun"

While homework is often not a pleasant part of a child's evening, physical activity homework or home fun can be. Home fun may be practicing jump rope tricks with or without a jump rope; participating in simple exercises when commercials come on television; playing outside; walking the dog; talking a walk with a parent or guardian; participating in electronic games that specifically promote physical activity; or practicing manipulative skills such as throwing, kicking, and striking. Encouragement Sports Participation

A word of encouragement is a simple way to promote physical activity. Praising young students for play may sound somewhat strange to most of us; but for a generation that experiences limited physical activity, it may be necessary. Simply inquiring about student involvement in physical activity and praising students for that involvement carry weight with young children. To take this a step further, if a teacher shows up at a youth league sporting event or a dance recital, the child will be elated.

#### Positive Influence Towards Sports

One final way to motivate children to be active is for the physical education teacher to lead by example. A physically active and fit physical education teacher is a positive influence. The physical education teacher should occasionally share with the students how physical activity fits into his or her life.

By maximizing physical activity time in physical education class, aiding students in transferring skills and activities to out-of-class play, and making efforts to motivate children to be physically active, the physical educator can greatly influence the daily physical activity needs of students.

#### *Play a Leadership Role In Development of Physical Activity Program*

The increase in the number of overweight children and the decrease in physical activity time in school make for a national problem. Curtailing this national epidemic can be addressed at a local level, and the physical education teacher must be the "go-to" person to promote change in the schools. The physical education teacher is the physical activity expert in the building and should take on the role of physical activity director for the school. The responsibilities should include the following:

Being an active member of the school wellness committee ,Helping in the evaluation and planning process for the school,Actively learning about and promoting opportunities for physical activity in the community,Provide the financial benefits for the development of sports activity's,Provide incentives' and awards to the sports achievers ,.Provide sports specialties in the schools ,Serving as a resource person for classroom teachers ,Informing classroom teachers about the need for and benefits of adding small bouts of physical activity to the school dayProviding resources and training to the classroom teachersAiding teachers in understanding and implementing appropriate practices for physical activity .Providing opportunities for the teachers to engage in physical activity before or after schoolOrganizing wild Physical Educations ActivatesPlanning school wide activities such as sports day, Recreations Tracking, walking program, and morning jogging exercise.Encouraging fund-raisers that promote physical activity Organizing Inter Class and Inter Schools sports and Games Meets. Planning before- and after-school clubs for activities such as walking, Dance etc

#### **Conclusion**

School and community programs that promote regular physical activity among young people could be among the most effective strategies for reducing the public health burden of chronic diseases associated with sedentary lifestyles. Programs that provide students with the knowledge, attitudes, motor skills, behavioral skills, and confidence to participate in physical activity may establish active lifestyles among young people that continue into and throughout their adult lives. These programs can promote physical activity by establishing physical activity policies; providing physical and social environments that enable safe and enjoyable participation in physical activity; providing personnel training in methods to effectively promote physical activity

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## Yoga As A Good Science In Modern Life

Mr. Basavaraj Lokapur  
Physical Education Director, Basaveshwar Science College, Bagalkot

### Introduction

The science of yoga applies it self to all aspects of life. The effect of yogic practices during and after performance is currently being researched by scientist and doctors around the world. Their results show that asanas, pranayamas, mudras and bandhas [different branches of science of yoga] are a potent means to restore and maintain physical and mental health. In the near future we hope to see an increasing application of yoga in all walks of life

### The Secret Science Behind Yoga

Have you ever seen people peering though windows of main line yoga studios and thinking, "What a waste of an hour. This isn't even really exercise!" Well, maybe they're right, but there is certainly a scientific basis behind the tangible benefits of practicing yoga.

#### Increased Activation of Autonomic Nervous System

Most people find it difficult to achieve the perfect balance between work, family and other parts of life. This unbalance creates anxiety and causes our overall stress levels to increase. The more stress a person experiences, the more likely they are to suffer from stress-related health problems, such as ulcers, migraines, diabetes and heart attacks. The autonomic nervous system controls the stress levels and determines how a person reacts to external and internal stressors; and almost all of this happens to us unconsciously.

#### Reduced Inflammation

According to the research conducted by Ohio State University, the human body secretes cytokine interleukin-6 in response to inflammation.

This protein is secreted during trauma to the body and works as an anti-inflammatory and pro-inflammatory.

Researchers found during the course of the study that women who practiced yoga had lower levels of this protein in general and experienced lower increases in the protein levels after a stressful situation compared to women who did not practice yoga.

#### Improvement In Neuroplasticity

Yoga is known to affect the body as well as the mind. If you do yoga on a daily basis, it helps your brain develop memory networks for the muscles that you use during the poses. Also, there is evidence that the brain is constantly evolving and undergoes changes with new experiences. This process is referred to as Neuroplasticity.

#### Enhanced Mental Energy

Exercise tends to increase the levels of endorphins in the body. These are the feel-good hormones that not only keep you alert, but also make people have a positive outlook towards life.

However, if you have pain or an injury, you may not be able to enjoy your regular exercise, and this can be extremely frustrating. This frustration can adversely affect your mental health.

According to the Johns Hopkins Arthritis Center, yoga is a low-impact exercise that facilitates the release of endorphins which helps to reduce stress and keep an alert mind. Both of these things have a significant positive effect on a person's well being.

### Benefits Of Yoga

#### Yoga is reduce anxiety and depression

The effect of yoga on symptoms of anxiety and depression is one of the well-studied aspects of yoga's effect on the body and mind. Although researchers are optimistic about the effectiveness of yoga in alleviating depression, a 2010 review of research says that studies to date, while suggestive, are not yet conclusive.

However, some research says that regular yoga practice (at least once weekly) helps to decrease levels of

depression significantly. Twice weekly yoga practice for two months showed a significant decrease in levels of depression as well as levels of both state and trait anxiety. Some studies also indicate that hatha yoga has a significant effect on lowering levels of anxiety and accompanying stress.

Attention deficit hyperactivity disorder

A 2010 Cochrane Review concludes that there is insufficient evidence to assess the effectiveness of meditative practices such as yoga in the management or improvement of attention deficit hyperactivity disorder. Other research shows that there is little support for yoga as treatment for alone, but it has merit as a complementary treatment to medication.

Reduce Back pain

There is evidence that yoga may be effective in the management of chronic, but not acute, low back pain. A pilot study using a modified hatha yoga treatment showed that this was an effective treatment for chronic lower back pain, but further examination is needed specifically through studies with larger sample sizes.

Cancer

Practice of yoga may improve quality-of-life measures in cancer patients. It is unclear what aspect(s) may be beneficial or what populations should be targeted.

Other studies show improvements in how participants cope with symptoms from more physical conditions, like cancer. Learning breathing and relaxation techniques help patients manage pain, depression, anxiety, insomnia, and fatigue. The patients reported that their overall quality of life significantly improved in addition to mood, distress, sleep quality, Dementia

#### **Epilepsy**

A Cochrane Review found no evidence to support the use of yoga in treatment of epilepsy as of 2009. According to Yona Barash, some asanas can temporarily decrease pressure placed on hernias, while awaiting proper care from a physician.

#### **Menopause**

Yoga has not been shown to have any specific effect for the treatment or management of symptoms of menopause.

#### **Conclusion**

There are many "virtues" of your ordinary life which will drop entirely away from you when you reach unity. Many things you admire will be no longer helps but hindrances, when the sense of unity begins to dawn. All those qualities so useful in ordinary life—such as moral indignation, repulsion from evil, judgment of others—have no room where unity is realized. When you feel repulsion from evil, it is a sign that your Higher Self is beginning to awaken, is seeing the dangers of evil: he drags the body forcibly away from it. That is the beginning of the conscious moral life.

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Ramdev Guruji yoga Asanas and benefits books

## High Intensity Aerobic Exercise Reduces Resting State Plasma Fibrinogen And Ldl Cholesterol

<sup>1</sup>Dr. Rajasekhar Kali Venkata, Ph.D  
Centre for Physical Fitness and Sports Sciences  
University of Hyderabad Hyderabad, India.

<sup>2</sup>Mr. VVS Naidu,  
Lecturer in Physical Education, VRS Degree college, Veerapunyanapalle, A.P.

### Abstract:

Exercise has been recognized as an effective intervention program in controlling several markers of the atherosclerosis like LDL cholesterol, Plasma Fibrinogen, platelet count etc. Different forms of exercise could bring variable effect on these markers, the study on aerobic exercise has been conducted but the results are many a time controversial. Hence, the study aimed to know the effect of low, medium and high intensities of aerobic running on LDL and Plasma Fibrinogen of aged men. Sixty volunteer men in the age range of +50 but not above sixty yrs were assigned randomly to four groups, low, medium, high intensity aerobic exercise (either brisk walk or jogging) and control groups. Baseline and post training measures were analysed with Analysis of Covariance with level of significance of 0.05. Scheffe's post hoc comparison was used to find out the source of significant effect and to test hypothesis. Significant differences were found both for LDL (F 17.32,  $p < 0.0001$ ) and Fibrinogen (F 111.73,  $p < 0.0001$ ) due to the aerobic running. Both high intensity and medium intensity aerobic running were effective in controlling the LDL cholesterol (-17 and -13.69), whereas only high intensity aerobic running was effective in controlling the plasma fibrinogen (-21.27). Hence, high intensity and at least moderate intensity aerobic running is effective in bringing down the LDL cholesterol and Plasma fibrinogen and in prevention of atherosclerosis.

**Key words:** Exercise, atherosclerosis, LDL cholesterol, Plasma fibrinogen, aerobic exercise.

### Introduction:

Hyperlipidemia, especially the presence of LDL cholesterol (Davidson, MH, Gandhi, SK., et.al. 2009) in higher quantities could cause for vigorous precipitation to the condition of atherosclerotic plaque (Bots, ML., Palmer, MK., Dogan, S., et.al. 2009) in arterial endothelium. Injury to the intima of the arteries initiate for the migration of smooth muscle cells to the site of injury and the excessive presence of LDL cholesterol could expedite the plaque conditions. Natural repair process from the smooth muscle cells also cause for the stimulation of smooth muscle cells to migrate into the damaged site and fill the injury area (George, BA., Thomas, FD. 1990). Hence, the combined effect of proliferation of cholesterol along with the migration of smooth muscle cells and mixing with them makes the plaque increased and thereby making the lesion of the arteries further increased. This process will be more intense with the presence of hyperlipidemia or higher circulating fats especially the Low Density Cholesterol. The LDL fraction of the cholesterol of the total cholesterol is considered as one of the strong precipitating factors of atherosclerosis of arteries (Bots, ML, Palmer, MK., Dogan, S., et.al.2009, Davidson, MH, Gandhi, SK., et.al. 2009). Along with the circulating lipids in the blood there are other factors which may precipitate the atherosclerotic condition of arteries and among them platelet aggregation stimulated by the presence of plasma fibrinogen levels (Canseco Avila, LM, Jeries-sanchez, C., et.al. 2006). Though it is still uncertain about the precise mechanism through which the plasma fibrinogen could cause for the precipitation of plaque condition at the damaged lesion sites of the endothelium, it is clear that the presence of fibrinogen could aggravate the plaque condition. The research studies in this area indicate clearly that the plasma fibrinogen may be considered as a strong and potential factor that may precipitate the atherosclerotic condition and aggravation of the condition (Ernst, E., Koenig, W., 1997).

Exercise could bring certain changes in the markers of the atherosclerosis through changes in the cascades of metabolism and these changes can cause for the reduction of LDL cholesterol, change in HDL cholesterol and can bring some positive changes in the plasma fibrinogen content. But, generic form of exercise may not be linked to these effects, as observed aerobic exercise with different intensities and different volumes of training could bring these positive changes.

It was also observed, training status and training duration could also bring different changes in these markers of atherosclerosis there by exercise could be considered as one of the effective interventions for prevention of arterial atherosclerosis. Since, the physical activity has been recognized as a powerful preventive measure as a controlling factor of LDL cholesterol and Plasma fibrinogen of the individuals, the research activity targeting this area is very hectic and the researches are conducted with different combinations of exercises. The aerobic exercise which oxidizes the lipids for the metabolic purposes has been recognized as an effective form of exercise in reducing the LDL cholesterol (Halverstadt, A., Phares, DA., et.al. 2007) and Plasma fibrinogen levels of the individuals (Kakafika, Al., Liberopoulos, ES., Mikhailidis, DP. 2007). Also different forms of exercises like resistance training also had some impact on these markers significantly (Le Murra, LM., Van Duvvillard., SP. et.al. 2000), but effect of physical exercises on the status of the plasma fibrinogen have contradictory opinions. The studies with the aerobic exercises have identified that aerobic exercise could bring significant decrements in the values of LDL cholesterol and plasma fibrinogen levels (Koenig, W., Ernst, E. 2000) in the individuals, the comparative studies which studied the effects of different intensities of same kind of aerobic form of exercise are very minimum and hence the present study was aimed to study the effect of three different intensities of the aerobic running training on the resting LDL cholesterol and resting plasma fibrinogen levels in the individuals.

#### **Methods:**

Sixty men volunteers in the age range of 50-60 yrs were randomly assigned to four groups of study, which were trained at different intensities of aerobic exercise, either brisk walking or jogging depending on the maximum heart rate. The intensities for the study were low, medium and high, control group did not perform any exercise, except their daily routine. The control group were assured of professional help in enhancing their fitness once the study period was over. All the individuals were explained about the study and obtained written consent and followed all the necessary guidelines and measures as per the human subjects protocol according to Helsinki 2004 human subjects experimentation guidelines. All the individuals were healthy but previously not regularly trained.

Intensity of the running protocol was mainly based on the percentage heart rate maximum as per the traditional Miller's formula ie  $220 - \text{age}$ . For low intensity aerobic exercise protocol the intensity was between fifty percent and sixty percent of the maximum heart rate, for moderate intensity aerobic exercise the intensity was between above sixty to seventy percent maximum heart rate and for high intensity aerobic exercise the intensity was between above seventy and eight percent of maximum heart rate. All the groups exercised in their prescribed intensity for twenty five minutes of duration after a brief warming up and stretching session. All the exercising groups practiced the specific protocol for four times in a week allowing one day rest in between the two sessions. All the individuals cooperated by having their own individuals heart rate monitors and this made the researcher to conduct the proceedings at very accurate level. This also helped in understanding the status of heart response of individuals for taking necessary precautions, like controlling the effort and rest periods of the study for each individual of the study. Baseline and post training measures were analysed with Analysis of Covariance with level of significance of 0.05. Scheffe's post hoc comparison was used to find out the source of significant effect and to test hypothesis.

#### ***Resting Total HDL cholesterol:***

Direct HDL method: HDL was measured directly in serum. The apoB containing lipoproteins in the specimen are reacted with a blocking reagent that renders them non reactive with the enzymatic cholesterol reagent under conditions of assay. The apoB containing lipoproteins are thus effectively excluded from the assay and only HDL cholesterol is detected under assay conditions. The reagents are from Roche/Boehringer Mannheim. The method used sulphated alpha cyclodextrin in the presence of Mg<sup>+2</sup> which forms complexes with apoB containing lipoproteins and polyethylene glycol coupled cholesterol esterase and cholesterol oxydase for the HDL cholesterol measurement.

#### ***Resting Plasma Fibrinogen:***

Concentration of fibrinogen in plasma was determined quantitatively by 'Clauss clotting method'. This test method involves measuring the rate of fibrinogen to fibrin conversion in diluted sample under the influence of excess thrombin. Clot detection by the STA-compact involves an electromagnetic mechanical system. The oscillation of a steel ball within the cuvette with the thrombin and diluted plasma is monitored by the STA-Compact. When the oscillation of the steel ball is stopped by the clot formation, the sensor registers the time in seconds. The time is translated into fibrinogen concentration from a fibrinogen standard curve, stored on the STA-Compact.

**Results:**

**Analysis for resting LDL cholesterol:**

Significant reduction in LDL cholesterol was observed (Table I) due to the training protocols of the study (F= 17.32 at P= <0.0001) hence, the experimental intensities of aerobic exercise caused significant variance among the three groups of individuals. Comparison with baseline

**Table I. Analysis of Covariance for resting LDL cholesterol**

Source	SS	df	MS	F	P
Adjusted means	1540.821	3	513.607	17.32	<0.0001
Adjusted error	1690.278	57	29.654		
Adjusted total	3231.099	59			

**Table II. Mean values for LDL Cholesterol**

Groups/Mean	Baseline	Post Training	Adjusted post Training
LI Gr	128.423	122.165	121.39
MI Gr	126.9	119.63	113.84
HI Gr	131.217	115.38	110.53
CN Gr	128.43	127.945	127.53

mean values of LDL, adjusted post raining mean values of LDL cholesterol showed significant decrements (table II). Further analysis through the Scheffe's Post Hoc individual comparison (table III) revealed that the moderate intensity and high intensity aerobic exercise protocols

**Table III. Scheffe's Post Hoc Test for resting LDL cholesterol ( $\alpha$  0.05 = 6.94)**

Groups and Values	HI Gr 110.53	MI Gr 113.84	LI Gr 121.39
MI Gr 113.84	-3.31 N. Sig		
LI Gr 121.39	-10.86 Sig	-7.55 Sig	
CN Gr 127.53	-17 Sig	-13.69 Sig	-6.14 N. sig

alone caused significant decrements in LDL cholesterol, but there was no significant effect because of the Low intensity aerobic running protocol. When compared to the control group high intensity (-17) and moderate intensity (-13.69) are effective in bringing the significant variance in LDL cholesterol decrements. Low intensity aerobic running protocol could not cause any significant variance in decrements of LDL cholesterol when comparing the control group.

**Analysis for resting Plasma Fibrinogen:**

Significant reduction in Plasma Fibrinogen was observed (Table IV) due to the training protocols of the study (F= 111.73 at P= <0.0001) hence, the experimental intensities of aerobic exercise caused significant variance among the three groups of individuals. Comparison with baseline mean values of Plasma Fibrinogen, adjusted post raining mean values of Plasma Fibrinogen showed significant decrements (table V). Further analysis through the Scheffe's Post Hoc

**Table IV. Analysis of Covariance for resting Plasma fibrinogen**

Source	SS	df	MS	F	P
Adjusted means	11473.887	3	3824.629	111.73	<0.0001
Adjusted error	1951.167	57	34.231		
Adjusted total	13425.054	59			

**Table V. Mean values for Plasma fibrinogen**

Groups/Means	Baseline	Post Training	Adjusted post Training
LI Gr	288.21	284.37	285.71
MI Gr	300.43	286.73	282.96
HI Gr	295.52	277.19	271.38
CN Gr	291.6	293.68	292.65

individual comparison (table VI) revealed that only the high intensity aerobic exercise protocols alone caused significant decrements in resting Plasma fibrinogen, but there was no significant effect because of the Low intensity aerobic running protocol. Even moderate intensity protocol also could not bring any significant variance in decrements of resting Plasma fibrinogen when comparing the control group.

**Table VI. Scheffe's Post Hoc Test for resting Plasma Fibrinogen ( $\alpha$  0.05 = 10.21)**

Groups and Values	HI Gr 271.38	MI Gr 282.96	LI Gr 285.71
MI Gr 282.96	-11.58 Sig		
LI Gr 285.71	-14.33 Sig	-2.75 N. Sig	
CN Gr 292.65	-21.27 Sig	-9.69 N. Sig	-6.94 N. Sig

Table VI indicates that the high intensity aerobic running activity group has maximum difference between the baseline and post physical activity intervention adjusted mean values in resting plasma fibrinogen with -21.27 when compared to the moderate intensity aerobic running activity group (-9.59) and low intensity aerobic running activity group (-6.94).

**Discussion:**

All the experimental intensities of aerobic running caused significant decrease in the resting state LDL cholesterol of the individuals, indicating aerobic running per se seems effective intervention program in controlling the LDL cholesterol. But, high intensity aerobic protocol of the experimentation seems more effective in controlling the LDL cholesterol, when compared to the medium and low intensity running of the study. Metabolic cascades of the aerobic running could initiate LDL cholesterol metabolism effectively, causing reduction (Durstine, JN., Grandjean, PW., et.al. 2001). But, with respect to the plasma fibrinogen levels, it is observed that only high intensity aerobic running protocol of the study helped in reducing significantly. Both medium and low intensity aerobic running were not effective in controlling the resting state plasma fibrinogen. More effective intensity of the investigation seems to be high intensity aerobic running even when compared to the moderate intensity in reducing the resting levels of LDL cholesterol of the individuals since there is no significant difference between the effect of moderate intensity aerobic running of the investigation and low intensity aerobic running of the investigation. Hence, it is necessary for individuals to run aerobically at high intensity levels i.e. at above seventy percent maximum heart rate (MHR) to eighty percent MHR for a minimum duration of twenty five minutes for four times in a week to get the significant effects on resting LDL cholesterol. Running at low and moderate intensities might enhance the aerobic capacity and strength endurance of the individuals which may allow the individuals to increase the intensity of the aerobic running. Both moderate intensity and high intensity aerobic running protocol of the investigation brought significant reductions in the resting plasma fibrinogen values of the individuals when compared to the baseline values. The low intensity aerobic running protocol of the investigation could not bring any significant decrements in the resting plasma fibrinogen values of the individuals. Since, the plasma fibrinogen is considered as one of the factors in evaluating the risk levels of the atherosclerosis and coronary heart disease it is ideal to run aerobically either at moderate intensity i.e. above sixty percent to seventy percent MHR or at high intensity i.e. above seventy percent to eighty percent MHR. Those individuals who are well accustomed to the aerobic running, they can get more benefits by running aerobically at high intensity, since high intensity aerobic running can bring more positive benefits on the LDL (Kelley GA, Kelley KS, et.al. 2012) and on the resting plasma fibrinogen levels of the individuals.

**Conclusion:**

At least medium intensity aerobic exercise for an optimum duration for three to four times in a week will reduce LDL cholesterol significantly in a span of four to five months and only high intensity aerobic exercise can reduce the resting state plasma fibrinogen significantly.

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## Loss of lung function and Upper Respiratory Tract Infection status among Professional marathon runners due to very high intensity competitive marathon running

Dr. Rajasekhar Kali Venkata, Ph.D  
Asst. Director of Physical Education  
University of Hyderabad  
Hyderabad, India.  
Mob: +91-9949513504E-mail: jatinsriraj@yahoo.co.in

### Abstract:

Prolonged and acute high intensity aerobic physical activity like high intensity marathon running may cause for the suppression of the mucosal immunity factors thereby causing Upper Respiratory Tract Infections. These infections could initiate certain inflammatory responses at the respiratory tract, causing temporary obstructive condition, leading to loss in lung function capacity and loss of form immediately after the acute marathon running. This study analysed the effect of marathon competition on the URTI status and consequent lung function status among the professional runners. Seventy five professional marathon runners in four age groups, with fifteen runners in each group were studied on their URTI and FEV<sub>1</sub>. Wisconsin Upper Respiratory Symptom Survey (WURSS-21) and Digital spirometer respectively were used respectively to measure the URTI symptom score and FEV<sub>1</sub> capacity of the runners. Age groups were 20-25yrs, 25-30, 30-35 and 35 above. Pre run and post run URTI and FEV<sub>1</sub> were analysed with Analysis of Covariance (ANCOVA). Highest scores of the URTI and FEV<sub>1</sub> within the first seven days of post run were included. No significant difference was observed for the URTI symptom scores for the four groups due to the marathon running as per the Analysis of Covariance ( $P < 0.05$ ) for URTI. But, significant decrement in FEV<sub>1</sub> was observed for post run FEV<sub>1</sub> as per the Covariance analysis. Tukey HSD post hoc comparison indicated that 30-35 (pre run 84.67 and post run 81.74) and 35+ (81.93 and 77.87) groups experienced significant reduction in the FEV<sub>1</sub>. professional marathon runners who train regularly with high intensity of aerobic running may not get affected much to URTI symptoms though they are prone for reduction in lung function due to reductions in FEV<sub>1</sub> and the same may be for reasons like bronchial inflammation apart from respiratory infections.

Key words: Upper Respiratory Tract Infection, High intensity, lung function, Forced Expiratory volume

### Introduction:

Regular exercise especially aerobic form of exercise like long running could bring positive changes in the immune system and lead for adaptations causing effective prevention from respiratory infections, which are common among individuals (Romeo J, Wörnberg J, et.al. 2010). Though medium intensity and optimally comfortable high intensity aerobic endurance exercise programs or involving in such type of endurance activities are viewed as healthful, especially in vitalizing and enhancing the immunity functions of such individuals, it has been observed in many studies that extreme intensities of aerobic activities like marathon running etc could impose excessive demands on the respiratory system causing disturbances in the immunity levels. Though it is still a debated issue, there were evidences in exercise immunology (Gleeson M, Bishop N, et.al. 2013), that extreme intensities like high to supra high intensities of sustained aerobic efforts like marathon running, ultra marathon running could seriously disturb the mucosal immunity of the runners, leading to bronchial inflammation and subsequent respiratory disturbances. This could cause for loss in aerobic capacity, which may be manifested in loss in FEV<sub>1</sub> capacity of the individuals. Keeping in view of the importance of the competitive season, this temporary loss of form or decrements in the aerobic capacity could hamper the success rate of the serious professional runners. Many a time this temporary loss of form may not be noticeable as the respiratory tract infection symptoms may not surface in some of the well aerobically trained individuals.

This latent and unnoticed loss of lung function could lead to loss in aerobic capacity of the marathon runners causing loss of precious minutes in their total time of marathon running. Though the most common form of respiratory tract infection, the Upper Respiratory Tract Infections (URTIs) are

prominently symptomatic and can be easily identified with the individuals basing on the symptoms they are experiencing, sometimes, it may be possible the intensity of URTI symptoms are very less or sometimes undetectable, and hence could not be assessed about the intensity of the URTI. This may be explained with the training status of the individuals concerned (Midgley A. 2003), or sometimes as observed this may be attributed for the genetic susceptibility, neurogenic mediated immune inflammation and epithelial barrier dysfunction (Couto M et.al. 2013). Another reason for this variation in experiencing the URTI symptoms with respect to intensity of the URTI, may be gene orientation of specific athletic populations (Zehsaz F, Farhangi N, et.al. 2014). and hence temporary respiratory disturbances. Temporary suppression of mucosal immunoglobulins like salivary IgA<sub>1</sub>, sIgA<sub>2</sub> has been identified as a strong cause of temporary loss of respiratory tract immunity causing respiratory tract infections, especially URTIs post a very high intensity competitive marathon running including half marathon running. Sometimes, it may happen that athletes might experience decline in lung function due to respiratory tract infections of bronchial inflammation due to cytokine challenge to antigen presence, or hyper reactive stress due to excessive involvement in exercise conditions etc. Loss of lung function may be attributed to aging. Since, there are several issues not clearly studied or understood, still more research is needed in this regard.

**Methodology:**

Seventy five male professional marathon runners, who participated in various half marathon events in the city of Hyderabad, were included in this study, with their complete willingness after explaining the protocol of the study. No invasive procedure was adopted in the study. Fifteen runners were studied for each age group and the age groups studied were 20-25 yrs, 25-30 yrs, 30-35 yrs and above 35 years. Among the accepted marathon runners, fifteen were assigned to the respective age group on random basis. URTI symptom score of the runners was measured by using the Wisconsin Upper Respiratory Symptom Survey (WURSS-21) and the Forced Expiratory Volume of first second (FEV<sub>1</sub>) of the individuals was measured through the Digital spirometry system at the Centre for Physical Fitness and Sports Sciences of University of Hyderabad. The URTI symptom score of the individuals and the FEV<sub>1</sub> were obtained once before the marathon event and post marathon values for five days continuously after the event. Pre run and post run URTI and FEV<sub>1</sub> were analysed with Analysis of Covariance at 0.05 level of significance (ANCOVA). Highest scores of the URTI and FEV<sub>1</sub> within the first five days of post run were included. Tukey HSD post hoc comparison was also used to find out the significantly affected age group for the selected criterion variables.

**Results:**

Analysis on URTI symptoms score: There was no significant influence on the URTI symptom scores of the individuals due to the high intensity marathon running as per the Analysis of Covariance as per Table I and since the obtained F (2.4, P = 0.0776) was not significant. But, the mean analysis (Table II & figure I) reveals that

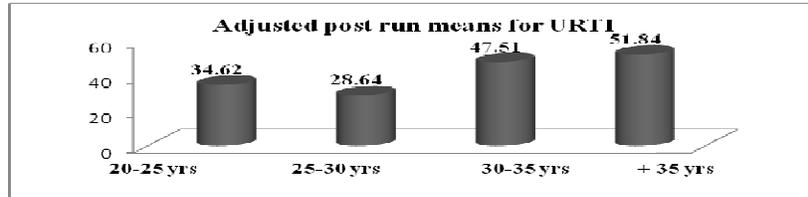
Table I. Analysis of Covariance for URTI symptom scores

Source	SS	df	MS	F	P
Adjusted means	4586.32	3	1528.77	1.965 N. sig	0.0564
Adjusted error	42724.864	55	776.815		
Adjusted total	47311.184	58			

Table II. Mean values for URTI symptom scores

Groups/Mean	Pre run	Post run	Adjusted post run
20-25 yrs	9.17	32.68	34.62
25-30 yrs	8.94	25.37	28.64
30-35 yrs	13.6	45.62	47.51
+35 yrs	15.07	48.93	51.84

Figure I



the adjusted post run URTI symptom scores of the four groups been optimally high when compared to the pre run URTI symptom scores. 25-30 yrs group professional runners adjusted post run mean for URTI symptoms score was lowest at 28.64, followed by 20-25 yrs group (34.62), 30-35 yrs group (47.51) and +35 yrs group (51.84). +35 years group of professional half marathon runners recorded with highest URTI symptoms score after the competitive half marathon running. Analysis on FEV<sub>1</sub> value: Analysis of Covariance (Table III) indicates that the four groups had experienced significant changes in their FEV<sub>1</sub> value, post the half marathon event, since the obtained F value (23.83, P <0.0001) was highly significant indicating the four different age groups of professional marathon runners experienced significant differences in their FEV<sub>1</sub> capacities due to acute competitive maximal intensity half marathon running. The 25-30 yrs age group runners of the

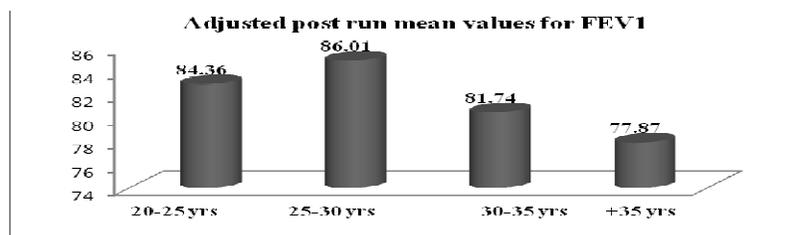
Table III. Analysis of Covariance for FEV<sub>1</sub>

Source	SS	df	MS	F	P
Adjusted means	186.46	3	48.38	23.83	<0.0001
Adjusted error	111.65	55	2.03		
Adjusted total	298.11	58			

Table IV. Mean values for FEV<sub>1</sub>

Groups/Means	Pre run	Post run	Adjusted post run
20-25 yrs	86.12	84.83	84.36
25-30 yrs	88.91	86.21	86.01
30-35 yrs	84.67	80.54	81.74
+35 yrs	81.93	77.95	77.87

Figure II



study had highest FEV<sub>1</sub> (86.01) even after the half marathon running though reduced when compared to the pre half marathon running value (86.12). The 20-25 yrs age group of the study showed next highest value for FEV<sub>1</sub> (84.36) followed by 30-35 yrs group (81.74) and +35 yrs group with 77.87. The values of the means for the FEV<sub>1</sub> clearly indicated that all the four groups of runners of the study experienced reduction in their mean FEV<sub>1</sub> capacities post their competitive high intensity half marathon running. Tukey post hoc analysis (table V) at 0.05 level of significance

Table V. Tukey HSD post hoc test for FEV<sub>1</sub> (CD at 0.05 = 1.47)

Groups / Means	25-30 yrs	30-35 yrs	+ 35 yrs
20-25 yrs 84.36	1.65 Sig	2.62 Sig	6.49 Sig
25-30 yrs 86.01		4.27 Sig	8.14 Sig
30-35 yrs 81.74			3.87 Sig

(Comparative difference = 1.47) indicated, that all the four groups were significantly differ from one another including the 20-25 and 25-30 years age groups. 30-35 yrs group and + 35 yrs group of the study showed significant decrements in their FEV<sub>1</sub> capacities when compared to both 20-25 yrs and 25-30 yrs groups of runners of the study. 25-30 yrs age group of marathon runners has highest FEV<sub>1</sub> even after the very high intensity marathon running.

**Discussion:**

The observation of no significant change occurring to all the four groups of the study with respect to their URTI symptom scores, indicate that regular training could lead to adaptation for all the cytokine challenges (Gleeson M and Bishop NC. 2013) on bronchial epithelium and also adaptations in mucosal as well as cell mediated immunity (Bermon S. 2007). This could cause the individuals to be more resistant to the respiratory tract infections. Sometimes, it may be that the highly trained marathon runners might not show physical symptoms due to many reasons, and making the assessment of the respiratory infection status much more complicated leading to loss of form or further infectious complications (Martin S. A. et.al. 2009). Though the mean values showed increases in their URTI symptom scores slightly these regular aerobically trained individuals seems to be more protective with respect to the URTIs due to better adaptation at mucosal and cell mediated immunity causing enhanced immunity. It has been observed that the regular and scientific aerobic exercise stress could cause certain adaptations when compared to the less trained or irregularly trained individuals. Variations in genetic orientation, training status, present condition levels, environmental stress etc could also differential effects o the infection status of these well trained athletes with respect to the URTIs. Loss of lung function may be correlated to the decrements in FEV<sub>1</sub> capacity of individuals and been postulated as diagnostic criterion even clinically (Fabio Cibella, Giuseppina Cuttitta, Vincenzo Bellia, et.al. 2002). The runners of the present study across all the four age groups experienced considerable decrements in their post half marathon running FEV<sub>1</sub> values indicating latent upper respiratory infections or bronchial epithelial inflammatory conditions due to excessive respiratory stress during the competitive half marathon running (Ahmadinejad Z, Alijani N, et.al. 2014). Despite insignificant manifestation of URTI symptoms among the professional half marathon runners of the study, the observed decrements in FEV<sub>1</sub> values were observed.

**Conclusions And Recommendations:**

There was no significant effect due to competitive high intensity marathon running on the URTI symptom status of professional marathon runners, who were well trained, though they have experienced slight increases in the URTI symptom scores. But, the FEV<sub>1</sub> capacity of the professional marathon runners significantly decreased across all the age groups after their high intensity competitive marathon running. Among all the four groups of runners, +35 years age group professional marathon runners were at high risk of losing their lung function significantly when compared to the younger age group runners, indicating the aging could affect the lung function of the runners and might affect on the performance of the runners. But, keeping in view of the increase in the URTI symptom scores of all the groups of runners of this study, it would be essential to monitor the respiratory infection status of the marathon runners during the training for not only avoiding the temporary loss of form, but also to prevent the secondary infection leading to aggravated health damage.

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## Universal Magnetism and Bio Magnetism and their Relationship

Mr. Nagarjunasangem, Physical Director University Sports Board, Kakatiya University,  
 Warangal – Telangana – India – Email Id: nagarjunasangem@gmail.com  
 Dr. K. Savithri, Physical Director, Singareni Collieries Womens Degree College, Kothagudem,  
 Kakatiya University, Warangal – Telangana – India.  
 Prof. B. Digamber Rao, Secretary & Incharge Director of Physical Education, University sports  
 Board, Kakatiya University, Warangal – Telangana – India.

### Abstract

#### The Evolution of five Senses:

The universe is made of five physical elements. The first bootha is Fundamental energy particle or Akash which is self rotating at very high speed. The dust particles come out of fundamental energy particle as bio magnetic waves. This bio magnetism in the field of akash is felt as pressure. All living beings are bestowed with skin which feels as pressure when comes into contact with any object.

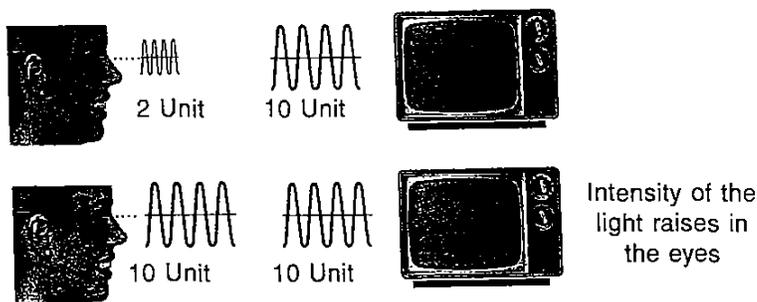
Due to variations in the density of Akash the other four elements have come into existence. A particular proportion in the variation, the Akash becomes gas or air. Three fundamental energy particles, an electron, a proton and a neutron join together to form gas called air in philosophy. The functional part of the air is sound. it is felt by ears.

When the whirling self rotatory speed becomes a little less more energy particles get collected and the third element 'heavy air' is formed. i.e., Oxygen is generated. Heat is produced due to compression and this is also called 'fire'. Its functional aspect is 'light'. Eyes feel the light. The fourth element is liquid state called water. Its functional aspect is taste. Tongue feels it. The fifth element 'solid' state and came into existence. It is smell in its functionality. Nose feels it.

All functions in the universe are perceived by the senses. So, all these five sense functions are called sensory perceptions.

#### Universal Magnetism and Bio Magnetism and their relationship:

Fundamental energy particle is the base for physical body and Astral body. Because of the variations in the intensity of these energy particles five physical elements are formed. Human body is made of these five elements. These energy particles generate bio-magnetic waves. Inside the living beings it is bio-magnetism. Outside the body of living beings, it becomes Universal magnetism. The whirling velocity of bio magnetic waves inside the body energizes each cell. Polarity between cells gets created because of this force. Thus based on the intensity and variation in speed it gets self transformed into pressure, smell, light, taste and sound.



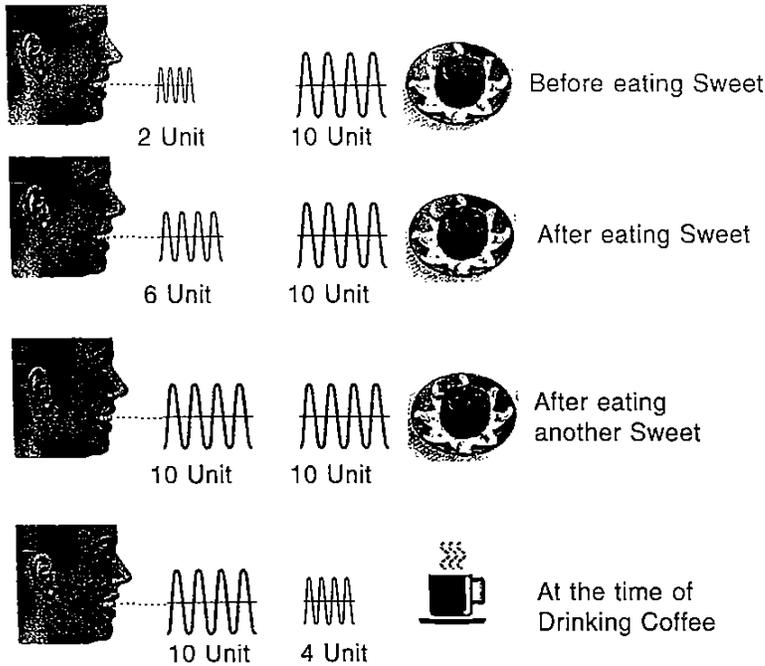
Picture: Sensing the light

When the bio-magnetism passes through the compressed energy particles its speed is interrupted with fluctuations. These fluctuations cause friction. This is an obstruction in perception. When the bio magnetism raises to the level of the light coming from the object then one sees the object.

therwise if the forces are imbalanced the bio-magnetic force depletes. Ultimately the sense loses its ability. In all the senses this fluctuation remains from the birth.

**Vision: -**

Only when stimulated from some external force the senses get activated. During that process through the bio-magnetism the life force is spent. The light of an external stimulus should be equal with the light generated from the eyes to make the eyes 'see' the object. When the light force in eyes is low and the light force in object is high the brightness of light stimulates the eye light to



Picture: Sensing the Taste

raise to its level. Thus raised difference becomes vision. One is able to see the object.

For example, from a person's eyes 2 units of bio magnetic force is formed. The television produces 10 units of light. The person's eyes also raise the biomagnetic force from 2 units to 10 units (difference is 8 Units). Now, the person could see the picture'.

On the other hand if the light produced by the object is lesser than that of the eyes, the eyes are not stimulated, so eyes can't see that object. When electric power supply stops for a moment one can feel sudden darkness around him. It takes at least a minute to adjust ourselves to the darkness.

Bring back your mind, to your own experience in a cinema hall when you went in after the film had started. You were not able to walk through. Because the intensity of the light waves generated from the hall is less than the light that your eyes generated.

**Taste in the tongue:**

The taste in the tongue should rise to the level of the taste of stimulus. Then only the tongue can feel the taste. For example one's tongue has 2 units of bio-magnetism. The sweet that he eats has 8 units of magnetism. The difference is 6 units. The bio-magnetism rises to 8 units and feels the taste. If he eats another sweet with 10 units his tongue has to rise from 8 units to 10 units to feel the taste. Then, the tongue remains at 10 units for some time. Then he drinks coffee which has only 4 units of magnetism. Now he cannot feel the sugar in the coffee. But after a few minutes his tongue automatically comes down to 4 units. Now he can feel the taste of the sugar. This is how all sense organs operate.

Life-force particles are capable of 'increasing its energy level to suit the energy level of stimuli available in the atmosphere. Atmospheric disturbance or stimulation decides the "quantum of spending of the bio-magnetism". Sense organs function at the expense of life particles. i.e., bio magnetic wave force. Emotions are at the expense of bio-magnetic power. Feeling pleasure or pain both create depletion in the bio-magnetic stock.

**Sensuousness and lust for materials:**

Senses are not responsible for feeling pleasure or pain. For both, life force particles in turn the bio-magnetism is spent. When a person thinks senses are responsible for the pleasure or pain it is called an illusion. Materials also stimulate the life force particles to enjoy them. Here again there is an 'illusion'. When these two enjoyments become habits, life force particles deplete very fast. Though it is a pleasure it is actually the pain for the soul. So there is no gain without pain. At this point one needs to be conscious to develop immunity against the loss. Panchendriya meditation comes to one's rescue here.

**Reference:-**

Vethathiri Maharishi institute for spiritual and intuitional education. Temple of consciousness, Arutperumjothi nagar, ALIYAR- 642 101, Pollchi  
The World community service centre. 156, Gandhiji road, Erode- 638 001.

## A Study On Thyroid Hormone And Its Effects On Exercise

B.David.

Physical Director

M.V.S. Govt. Degree College, Mahabubnagar.

### Abstract

Physical Activity influences energy metabolism in human beings. Increases BMR to about 150% for several hours after exercise. Investigating the effect of acute aerobic exercise on thyroid hormone values. The effect of different intensity levels of acute aerobic exercise on thyroid hormones was investigated in 20 male athletes by performing bicycle ergometer, low intensity, moderate intensity, and high intensity. These intensities were scored according to their maximum heart rate. At each intensity level, heart rate, free thyroxine (fT4), serum total thyroxine (T4) total triiodothyronine (T3), free triiodothyronine (fT3), blood lactic acid and thyroid stimulating hormone (TSH) values were measured. The study showed that exercise performed at the (70% of maximum heart rate, lactate level  $4.59 \pm 1.75$  mmol/l) aerobic threshold caused the most prominent changes in hormone values. While the rate of T4, fT4, and TSH continued to rise at 90% of maximum heart rate, the rate of T3 and fT3 started to fall.

### Introduction

Exercise affects the activity of many glands and the production of their hormones. One of the glands is the thyroid. Thyroid gland secretes two hormones 3-5-3'-5' tetraiodothyronine (T4, thyroxine) and 3-5-3' triiodothyronine (T3) both of which also occur as free form (fT4, fT3). Thyroid hormones act in fatty acid oxidation and thermoregulation. Thyrotropin-releasing hormone (TRH) secreted from hypothalamus stimulates anterior pituitary to release thyrotropin (TSH, thyroid stimulating hormone). During exercise, pituitary-thyroid reaction is coordinated by increasing turnover of thyroid hormones. Training disturbs the athlete's energy homeostasis in an attempt to invoke beneficial adaptations. At the same time, body weight and food intake controlling systems send the signal to save energy. The purpose of this study is to uncover the acute effect of increasing metabolic activity through exercise on thyroid hormones, if an effect is observed – to see whether it is related to the intensity of exercise and which of the thyroid hormones are more intensely affected.

### Methodology.

**Subjects.** 20 trained men athletes participated in this study and their ages were between 20–26 Years, heights were  $178 \pm 7.8$  cm, and weights were  $74 \pm 6.7$  kg. All subjects were informed about the purpose and procedures of the study. Subjects were selected randomly. They had a complete medical examination. **Study Design.** Total of 9 minutes of exercise was undertaken by the subjects with a gradually increasing intensity every 3 minutes. Each subject performed in different intensities using bicycle ergometer at the 45%, 70%, and 90%. These rates were calculated of maximum heart rates (MHR). Carvenon method was used for selecting intensity. Blood was taken for determination levels at the ergometer tests and during the training cycle.

**Laboratory analysis.** At the end of each three minutes, they were interrupted for 30 seconds and blood samples were taken. From the blood samples, T4, T3, free T4, free T3 and TSH values were measured.

### Results

In this study, hormone values at all heart rate categories were compatible with the values of healthy and euthyroid adults

Euthyroid adult values*	Percentage of maximum heart rate (Mean value $\pm$ standard deviation)		
	45%	70%	90%
Lactate (mmol/l)	$2.86 \pm 0.658$	$4.59 \pm 1.75$	$8.25 \pm 2.74$
TSH ( $\mu$ IU/ml)	$1.69 \pm 0.55$	$1.78 \pm 0.60$	$1.89 \pm 0.74$
T3 (ng/ml)	$1.47 \pm 0.23$	$1.78 \pm 0.42$	$1.48 \pm 0.26$
Free T3 (pmol/l)	$5.30 \pm 1.20$	$6.46 \pm 1.62$	$6.17 \pm 1.29$
T4 (ng/ml)	$71.10 \pm 19.02$	$84.35 \pm 24.86$	$86.35 \pm 28.36$
Free T4 (pmol/l)	$16.97 \pm 3.86$	$19.49 \pm 3.82$	$20.16 \pm 4.80$

\* Reference values of kits

In all hormones, with the exception of TSH, the maximum rate of increase was observed at the anaerobic threshold (70% of maximum heart rate, lactate level  $4.59 \pm 1.75$  mmol/l). The rate of increase of TSH was similar, going from 45% to 70% and from 70% to 90% of MHR. T<sub>4</sub>, fT<sub>4</sub> continued to increase, going from 70% to 90% of MHR and this rise was statistically significant when compared to the values seen at 45% MHR, but T<sub>3</sub> and fT<sub>3</sub> began to decrease and for T<sub>3</sub> almost to the same level as was seen at the 45% of the MHR

### Discussion

Thyroid hormones regulate the transcription of several genes expressed in skeletal muscle, such as the gene coding for myosin heavy-chain, actin, and sarcoplasmic reticulum Ca<sup>2+</sup> ATPase pump. Hypothyroidism and hyperthyroidism states might respectively reduce and increase Ca<sup>2+</sup> uptakes. Within physiological limits, increased thyroid activity might be associated with a higher efficiency of the mechanical work performed by exercising muscles. The biological effects of short-term changes in the thyroid hormone levels important in the body's stressful or catabolic state. If exercise related energy expenditure exceeds calories consumed hypothyroidism may be induced. In female athletes, four days of low energy availability reduced T<sub>3</sub>, fT<sub>3</sub>, increased rT<sub>3</sub>, and slightly increased T<sub>4</sub>. While the role of a hypo caloric diet in producing alterations in thyroid hormones has been demonstrated in several studies, the role of exercise in thyroid hormone metabolism is not very clear. A connection is established between increasing training to 80 km/week and elevated hormone levels. In study, men with six months of endurance training, T<sub>4</sub> and free T<sub>4</sub> concentrations reduced a little but no change in thyrotropin. Koistinen *et al.*'s study on unacclimatized top class skiers showed that training at moderate altitude for 12 days resulted in a significant decrease in serum total T<sub>3</sub> levels and an increase in fT<sub>3</sub> levels with no significant change in TSH, T<sub>4</sub>, fT<sub>4</sub> and reverse T<sub>3</sub> (rT<sub>3</sub>). Pakerinen study on the effects of one week of very intense strength training on the thyroid hormones of male weight lifters showed a significant decrease in TSH, T<sub>3</sub> and T<sub>4</sub> with unchanged fT<sub>4</sub>, rT<sub>3</sub> and thyroid binding globulin. Untrained subjects experienced reductions in cortisol and rT<sub>3</sub> and an increase in T<sub>3</sub> after exercise. However, trained subjects had an increase in cortisol and rT<sub>3</sub> and a decrease in T<sub>3</sub> with exercise. Concentration of T<sub>4</sub> was unchanged in both groups. Zarzeczny R, *et al.*, studied effects of thyroid hormone deficit, and triiodothyronine (T<sub>3</sub>) treatment on exercise performance; blood lactate (LA) concentrations and LA threshold (TLA) were studied in trained and untrained rats found that T<sub>3</sub> treatment markedly increases maximal LA levels. This current study shows that as compared to the thyroid hormone values during low-intensity exercise (45% max. heart rate), there is an increase in TSH values at moderate intensity (70% max. heart rate) and high intensity exercise levels (90% max. heart rate). An increase then a decrease is seen in T<sub>3</sub> and fT<sub>3</sub> levels at moderate and high intensity exercise conditions respectively and an increase in fT<sub>4</sub> and T<sub>4</sub> values in moderate intensity with continued increase at high intensity levels. As a conclusion it can be said that a rise in cell metabolism change the thyroid hormone levels. Thyroid function depends to a certain degree on the exercise intensity.

### Conclusions:

Increase in aerobic exercise increases the level of circulating thyroid hormones.

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## Effect of Exercise Training on hs-CRP, Adipokinand Insulin Resistance levels in Obese Men

Amin Mohammadi<sup>1</sup>

1. Department of Physical Education, Gachsaran Branch, IslamicAzad University, Gachsaran, Iran

### Abstract:

Obesity has been known as major public health problem, was reported to be associated with insulin resistance, type 2 diabetes mellitus and cardiovascular disorders. Therefore the purpose of this study was to examine the effects of Aerobic exercise training on Insulin Resistance and plasma lipocalin2 (as Lcn2) in obese young men. Thirty healthy young men (aged  $27.83 \pm 1.69$  years, height  $1.71 \pm 0.05$  m, BMI  $30.1 \pm 1.49$  kg/m<sup>2</sup>, mean  $\pm$  SD) participated as subjects in this study. The subjects were randomly assigned to aerobic training group (n=15) or control group (n= 15). Aerobic training group underwent an 8-week intervention, with a frequency of 3 d/wk at an intensity corresponding to 65 – 80% maximum heart rate for 35 – 55 min. The results showed that body fat percent, WHR, BMI, were decreased ( $P < 0.05$ ), in the training group compared with control group. Maximum oxygen consumption ( $VO_{2max}$ ) on the other hand, increases significant ( $P < 0.05$ ) in the training group compared with the control group. Adipokin lcn-2, LDL-c, TG, TC, and insulin resistance determined by HOMA-IR decreased ( $P < 0.05$ ) and HDL-c increased ( $P < 0.05$ ). hs-CRP, did not change in the aerobic training group compared with the control group.

It seems that 8 weeks aerobic training induced change in adipose tissue, decrease plasma Lipocalin2 and improve insulin resistance in young obese men.

*Key words:* Aerobic training, adipokin, Insulin Resistance, obese men.

### Introduction

One of the most prevalent and well documented health problems in adults of the developed world is obesity. It is a serious health problem for increases the risk of developing cardiovascular diseases, type 2 diabetes, hyperlipidemia, hypertension, and increased mortality (Yang, 2005). It's also an increase in fasting glucose, blood pressure, triglycerides and a decrease in high density lipoprotein (HDL) So it's known as metabolic syndrome (Wang, 2007). The increasing prevalence of obesity in individuals is linked with the metabolic syndrome which greatly increases disease risk. Studies have demonstrated close associations between obesity and increased circulating concentrations of proinflammatory molecules, including acute-phase proteins, cytokines, adipokines, and chemokines (Tataranni, 2005; Weisberg, 2003). In obese states, these proinflammatory factors are produced predominantly from enlarged adipocytes and activated macrophages in adipose tissue and liver. Many of these inflammatory factors, such as interleukin-6 (IL-6), tumor necrosis factor- $\alpha$  (TNF- $\alpha$ ) and hs-CRP, can directly induce glucose intolerance and insulin resistance by antagonizing insulin's metabolic actions at peripheral tissues, especially in liver and skeletal muscle (Fantuzzi, G. 2005). Insulin resistance usually connotes resistance to the effects of insulin on glucose uptake, metabolism, or storage. Insulin resistance in obesity and type 2 diabetes is manifested by decreased insulin-stimulated glucose transport and metabolism in adipocytes and skeletal muscle and by impaired suppression of hepatic glucose output. Adipokin Lipocalin2 (Lcn2) also known as neutrophil gelatinase associated lipocalin, sidrocalin and 24p3, is another member of the lipocalin family recently reported to have possible metabolic roles. (Fantuzzi, G. 2005). Lipocalin2 is expressed in many tissue, including neutrophils, macrophage, kidney, liver, lung, thymus, small intestine mammary tissue as well as adipocytes and is known to play a role in inflammation. Lcn2 has been recognized as an adipocyte drive acute phase protein that is positively correlated with potential effect in obesity inflammation and insulin resistance in mice and humans (Choi, 2009; Wang, 2007).

It also has been showing that circulating levels of this adipokin has a strong direct correlation with other inflammation factors as an acute phase protein (Van Dam. 2007). With the increased prevalence of obesity and insulin resistant disorders, research has attempted to elucidate the potential mechanisms driving these disease processes, with the hope of ultimately providing cost effective interventions. Aerobic exercise training has been well documented to improve glucose tolerance and insulin action in patients who are obese (Goodpaster, Kelley, 2003). The lack of physical activity in daily life induces obesity and increases the risk of hypokinetic diseases; diabetes mellitus, hypertension, heart diseases etc. It's also well known as the cornerstone treatment for obesity-related metabolic complications, including insulin resistance, hypertension, impaired glucose tolerance or diabetes, hyperinsulinemia, and dyslipidemia, that are characterized by elevated adipose accumulation (Hu, 2001; Tuomilehto. 2001). Therefore one of the best strategies for preventing obesity and its associated inflammation is participation in regular physical activity (Petersen & Pedersen, 2005). On the other hand, exercise has been shown to have beneficial effects on obesity, type 2 diabetes and the metabolic syndrome. Although the changes in Lcn2 levels might be an important clue for understanding the beneficial effects of exercise, data on exercise-induced changes of inflammation factors such as adipokin Lipocalin2, insulin resistance and hs-CRP... is still unclear. Recently, Damirchi (2011) reported that Lcn2 increased after single bout graded exercise in obese and normal weight men. Choi et al (2009) in an only available study, isn't reported that any change in Lcn2 level in obese women after 12 weeks moderate exercise training. The physiological and biochemical responses to resistance exercise are different from those exhibited in response to aerobic exercise (Kraemer, 1994). Despite the numerous studies demonstrating the benefits of exercise training intervention in obesity and/or insulin resistant states, there are no studies to date that have examined the effects of this aerobic exercise protocol on obese young men. In order to develop appropriate treatment programs in obese patients, we need to understand how exercise affects insulin resistance and inflammatory adipokin secretion in this disease process. Therefore the present study was designed to determine the effects of aerobic training on insulin resistance, hs-CRP and Lcn2 concentration in obese young men.

## **Material and Methods**

### *Subjects*

Thirty healthy and university students aged (aged  $27.83 \pm 1.69$  years, mean  $\pm$  SD) enrolled in this study. The inclusion criteria were men who had body mass index (BMI)  $\geq 29.9$  kg/m<sup>2</sup> did not engage in regular exercise training at the time of their enrolment. Student who were afflicted with heart diseases, hypertension, pulmonary diseases and diabetes, who needed orthopedic treatment, and who had neurological limitations to physical exercise were excluded. All the subjects were asked to complete a personal health and medical history questionnaire, which served as a screening tool. The subjects were given both verbal and written instruction outlining the experimental procedure, and written informed consent was obtained. All the subjects completed the 3-day diet recall forms and were instructed to maintain their normal physical activity and dietary habits throughout the study. The subjects were randomly assigned to one of the experience group (n=15) and control group (n=15)

### *Exercise training*

The participant's of experience group (aerobic training) underwent three exercise training sessions per week for 8 weeks. The training exercise consisted of a 10-minute warm-up period, as well as muscle stretches. It's also consisted of walking and running at 65-80% of maximal heart rate (HR<sub>max</sub>) for 35-55 min per day, 3 days per week, for 8 weeks. The programme started with 30 min running for the first few sessions, and this was then changed to 45 min per session until the end of training. Each training session finished with a cool down. The exercise intensity was controlled by the authors, using a heart rate monitor, who ensured that it was between 65 and 80% of HR<sub>max</sub> throughout the trial.

### *Measurements: (Anthropometric and body composition measurements)*

Height and body weight were measured, and body mass index (BMI; kg/m<sup>2</sup>) was calculated from height and weight of each subject. Waist circumference was determined by obtaining the minimum circumference (narrowest part of the torso, above the umbilicus) and the maximum hip circumference while standing with their heels together. The waist to hip ratio (WHR) was calculated by dividing waist by hip circumference (cm) (ACSM, 2005). Subcutaneous body fat was measured at 3 sites (chest, abdominal, and thigh) with a Lafayette caliper. Body fat percent was calculated from the formula developed by Jackson and Pollock (1985). VO<sub>2max</sub> was determined by Rockport One-Mile fitness walking test. In this test, an individual walked 1 mile (1.6 km) as fast as possible on a track surface. Total time was recorded and HR was obtained in the final minute (ACSM, 2005) VO<sub>2max</sub> was calculated by following formula:

$$VO_{2max} = [139.68 - (0.388 \times \text{age (year)})] - [0.077 \times \text{body mass (pb)}] - [3.265 \times \text{time (min)}] - [0.156 \times \text{HR}]$$

### Biochemical analyses:

Approximately 10 milliliters of blood was collected into plain and EDTA filled vacutainer tubes after an overnight fast of at least 12 hours at the same time before and after 8 weeks intervention. The tubes were then centrifuged and serum and plasma were drawn off and stored at -80°C until analysis. Plasma glucose was determined by the enzymatic (GOD-PAP, Glucose Oxidase-Amino Antipyrine) colorimetric method (Pars Azmoun, Tehran, Iran). The intra and inter-assay coefficients of variation for glucose were <1.3% and a sensitivity of 1 mg/dl. The serum insulin level was measured by a radioimmunoassay (RIA) and the insulin resistance index was calculated according to the homeostasis model assessment (HOMA-IR) which correlates well with the euglycemic hyperinsulinemic clamp in people with diabetes (Matthews, 1985). hs-CRP levels were determined in duplicate via an ELISA kits (Diagnostics Biochem Inc, Canada). The intra and inter-assay coefficients of variation for hs-CRP were <5.7% and a sensitivity of 10 ng/ml. The adipokin Lcn2 level was measured in duplicate using an enzyme-linked immunosorbent assay (ELISA) kits (Uscn Life Science Inc, Wuhan, China). The sensitivity of kit was 0.12 ng/ml. Serum cholesterol, triglycerides, HDL-c and LDL-c were assayed with automated techniques.

### Statistical Analysis

Statistical analyses were performed with SPSS program (version 16, SPSS, Inc., Chicago, IL). Values were expressed as mean  $\pm$  standard deviation (SD). Independent t-test and paired t-test were used to evaluate changes in variables. General linear regression analysis and Pearson's correlation were performed to calculate a correlation between variables in response to training. P-values less than 0.05 were considered statistically significant.

### Results

Anthropometric, physiological and metabolic characteristics of subjects are shown in Table 1. The results showed that body weight, body mass index (BMI), body fat percent and WHR were decreased ( $P < 0.05$ ) after aerobic training. Maximum oxygen consumption, on the other hand, increases significantly ( $P < 0.05$ ) in the training group compared with the control group. Plasma lipocalin-2, LDL-c, TG, TC, and insulin resistance determined by HOMA-IR decreased ( $P < 0.05$ ) and HDL-c increased ( $P < 0.05$ ) after 8 weeks aerobic training (Table 1). For hs-CRP, there was no significant difference between aerobic training group and control group after 8 weeks exercise. Pearson's correlation demonstrated a positive relationship between, adipokin (Lcn-2) levels at baseline ( $P < 0.05$ ) with body fat percent, WHR and BMI. No significant relationship between HOMA-IR with biochemical variables were found in the endurance group after 8 weeks intervention.

Table 1. Anthropometric and metabolic characteristics of study subjects (mean  $\pm$  SD)

Variables	Control group		Training (Endurance group)	
	Pre test	Post test	Pre test	Post test
Body weight (kg)	81.30 $\pm$ 6.76	81.29 $\pm$ 6.40	83.65 $\pm$ 7.04	80.90 $\pm$ 6.77 *
BMI (kg/m <sup>2</sup> )	28.49 $\pm$ 10.45	28.50 $\pm$ 10.43	28.67 $\pm$ 1.50	27.67 $\pm$ 1.41 *
%Body fat	23.56 $\pm$ 1.53	23.36 $\pm$ 1.65	23.66 $\pm$ 2.22	22.48 $\pm$ 2.0 *
WHR	.90 $\pm$ .03	.90 $\pm$ .03	.93 $\pm$ .02	.89 $\pm$ .03 *
VO <sub>2max</sub> (ml.kg <sup>-1</sup> .min <sup>-1</sup> )	35.76 $\pm$ 3.37	35.96 $\pm$ 3.23	35.9 $\pm$ 2.77	43.68 $\pm$ 2.39 *†
Triglyceride (mg/dl)	1.61 $\pm$ 2.03	1.58 $\pm$ 2.03	1.71 $\pm$ 4.56	1.48 $\pm$ 4.41
Cholesterol (mg/dl)	1.89 $\pm$ 2.7	1.88 $\pm$ 2.6	1.96 $\pm$ 4.22	1.85 $\pm$ 3.33
LDL-c	1.27 $\pm$ 2.57	1.27 $\pm$ 2.39	1.32 $\pm$ 3.1	1.24 $\pm$ 2.74 *
HDL-c	38.01 $\pm$ 4.98	38.23 $\pm$ 5.27	35.4 $\pm$ 6.81	42.1 $\pm$ 6.51 *
Lipocalin2 (ng/ml)	23.56 $\pm$ 2.26	23.02 $\pm$ 2.8	23.79 $\pm$ 2.82	19.33 $\pm$ 2.45 *†
HOMA-IR	52.56 $\pm$ 12.54	51.41 $\pm$ 11.93	55.65 $\pm$ 10.99	54.12 $\pm$ 12.66
Hs-CRP	.83 $\pm$ .88	.86 $\pm$ .88	.78 $\pm$ .73	.72 $\pm$ .55

\* $P < 0.05$  for between-group differences.

†  $P < 0.05$ , pretraining vs. posttraining values.

## Discussion

Insulin resistance can be defined as a condition in which normal concentrations of insulin produce an inadequate metabolic response by insulin sensitive tissues (skeletal muscle, liver, and adipose tissue) (Kahn, 1978). The hallmarks of impaired insulin sensitivity in these three tissues are decreased insulin-stimulated glucose uptake into skeletal muscle, impaired insulin-mediated inhibition of hepatic glucose production in liver, and a reduced ability of insulin to inhibit lipolysis in adipose tissue. On the other hand, Lipocalin2 has been identified as a novel adipokine associated with obesity, type2 diabetes and the metabolic syndrome. The effects of aerobic training on Insulin resistance and plasma Lcn2 are still unclear, thus this study aimed to investigate the effects of aerobic training on these factors in obese young men. In this study, results showed that Plasma Lipocalin-2 decreased ( $P < 0.05$ , 11.2%) in response to 8 weeks aerobic training compared to the control group. Choi (2009) indicated that there was no significant change in the Lcn2 in obese women after 12 weeks moderate exercise training. This discrepant result may be attributed to variation in the exercise protocols and differences in subject. On the other hand, there was the positive relationship between plasma lipocalin2 and body fat percent at baseline populations. The results showed that body weight; body mass index (BMI), body fat percent and WHR were decreased after aerobic training, thus exercise-induced changes in body fat, especially visceral adipose tissue, may attribute to plasma Lipocalin2 decrease and after the training. The results are in agreement with previous reports showing that there was a significant positive relationship between plasma lcn2 levels with body mass, body fat percentage and WHR, suggesting that the increased fat mass might account for the elevated blood levels of this adipokine in obese individuals. Wang (2007), showed a higher concentration of Lcn2 in obesity and this adipokine is positively related to the BMI, Waist circumference and body fat percentage. Choi et al (2008) demonstrated that a positive relationship between Lcn2 and body mass and Damirchi et al. (2011) showed a positive relationship between Lcn2 level with waist circumference, fat mass and BMI. Body fat percent decreased 8.8% after 8 weeks aerobic training, thus it seems that the aerobic training could offer a sufficient stimulus for plasma Lcn2 decreases. We found a significant related between Lcn2 and insulin resistance determined by HOMA-IR. A number of previous studies have investigated the effect of aerobic exercise training on insulin sensitivity in obese humans with impaired glucose tolerance. These studies have demonstrated that chronic aerobic exercise training resulted in improved glucose tolerance during glucose clamp conditions and ultimately improved insulin sensitivity. Arciero et al showed that effect of aerobic exercise training in humans with impaired glucose tolerance or mild T2DM resulted in increased whole-body glucose disposal during hyperglycemic clamp conditions (Arciero, 1999). Choi et al reported that HOMA-IR is not a very sophisticated measure of insulin resistance, although it has been used widely in clinical and epidemiological studies (Choi et al, 2009). Results showing no significant relationship between Lcn2 and hs-CRP after 8 weeks aerobic training. Suggesting that decrease of the other inflammatory markers might decrease Lcn2 and CRP concentration. Serum CRP levels correlated with serum IL-6 and TNF- $\alpha$  concentration in this study, which then affects the production of CRP by the liver. Additional research is needed to examine whether exercise induced change in IL-6 and TNF- $\alpha$  concentrations, decreases CRP. We did not measure IL-6 and TNF- $\alpha$  in the present study. If we could measure these inflammatory markers, we could carefully explain the decrease of plasma Lcn2 in response to 8 weeks exercise training in obese men.

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## **A Comparative Study of Self Confidence between Physically Challenged Male Sportspersons and Non-Sportspersons**

**Pramod Kumar Tiwari**  
Asstt. Prof., Deptt. of Physical Education,  
Set RCS Arts and Commerce College, Durg C.G.

### **Abstract**

To succeed in any field, belief in own ability i.e. self confidence is essential. In this background self confidence of physical challenged male sportspersons and non sportspersons were compared with each other. To conduct the study 100 physically challenged male sportspersons (Av. age 22.99 yrs) were selected as sample. The criterion for selection of physically challenged male sportspersons was participation in any sporting event of national level tournament organised for people with physical disability. To fulfill the objectives of the study, 100 physically challenged male non sportspersons (Av. age 22.11 yrs.) were also selected as sample. To assess self confidence of selected subjects, Pandey's Self Confidence Inventory (1983) was used. Results reveal that self confidence of physically challenged male sportspersons was found to be significantly higher as compared to physically challenged male non-sportspersons. Therefore it may be concluded that participation in competitive sports boost the self confidence in physically challenged male population.

### **Introduction**

Physically challenged persons comprises of people with deficient physical, cognitive, mental, sensory, emotional functions. A person affected by these deficiencies unable to perform normal day-to-day task with ease. This disability not only affects motor but also sound psychological functioning in physically challenged population. In the past the ill effects of physical disability on various psychological, physiological and socio-cognitive aspects have been highlighted by many researchers (Telford and Sawery, 1967; Harper, 1978; Bandyopadhyay, 1987; Sepasi et al. 2012). The literature also consists of some studies where psychological profiles of physically disabled athletes have been assessed (Ferreira et al. 2007; Polatidou et al. 2013).

It has also been highlighted in the past that like normal population, physically challenged persons also benefit from regular participation in sports and physically activity, but surprisingly one of the major psychological aspect i.e. self confidence among physically challenged males has not been assessed in the light of their participation in sports. Self confidence means belief in own ability, power and judgement to execute certain tasks. In view of the above the present study was planned to compare self confidence between physically challenged male sportspersons and non sportspersons.

### **HYPOTHESIS**

Self confidence in physically challenged male sportspersons will be significantly higher as compared to physically challenged male non sportspersons .

### **MATERIALS AND METHODS**

#### **Sample :-**

To conduct the study 100 physically challenged male sportspersons (Av. age 22.99 yrs) were selected as sample. The criterion for selection of physically challenged male sportspersons was participation in national level tournament for any sports event. To fulfill the objectives of the study, 100 physically challenged male non sportspersons (Av. age 22.11 yrs.) were also selected as sample.

#### **Tools:**

To assess self confidence of selected subjects, Pandey's Self Confidence Inventory (1983) was used. This inventory which consists of 60 questions and is highly reliable and valid. The pattern of scoring in this inventory is such that lower the score, higher the self confidence of the subject.

Procedure:

Pandey's Self Confidence Inventory (1983) was administered to selected subjects as per their convenience, and availability. After scoring of the responses according to author's manual, obtained data was tabulated according to their respective groups. 't' test was used to compare the data between two study groups. The results are presented in table 1.

**ANALYSIS, RESULTS AND CONCLUSION**

Table No. 1

**Comparison of Self Confidence between Physically Challenged Male Sportspersons and Non-Sportspersons**

Variable	Physically Challenged Sportspersons (N=100)		Physically Challenged Non-Sportspersons (N=100)		Mean Diff.	t'
	M	S.D.	M	S.D.		
Self Confidence	20.34	5.84	25.16	7.52	4.82	5.05**

\*\* Significant at .01 level

A perusal of entries reported in table 1 reveal that statistically significant difference exists in self confidence of physically challenged male subjects on the basis of their participation in sports. The calculated  $t=5.05$  indicate that self confidence in physically challenged male sportspersons was significantly higher ( $M=20.34$ ) as compared to physically challenged male non-sportspersons ( $M=25.16$ ) at .01 level of statistical significance. The results can also be justified by the self confidence inventory in which scoring pattern is such that lower the score higher the self confidence.

**Results**

Self confidence of physically challenged male sportspersons was found to be significantly higher as compared to physically challenged male non-sportspersons.

**Conclusion**

Participation in sports in any form i.e. competitive or recreational has been considered to be beneficial for overall psychological well-being of human being. This fact is also scientifically proven by various sports psychologists in their studies also. In the present study it was observed that physically challenged males participating in competitive sports possess more self confidence as compared to physically challenged male non sportspersons. It shows that benefits of active participation in sports are not only observed in physically non challenged population but also in the physically challenged population. Hence it can be concluded that regular participation in competitive sports activity is the answer when it comes to boosting the self confidence among physically challenged male population.

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