

# Periodic Research

## Twelve Weeks SAQ Equipment Training on Selected Motor Fitness Variables among School Athletes



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### Abstract

The purpose of the study was to determine the effects of twelve weeks SAQ equipment training on selected motor fitness variables (speed, flexibility, agility, reaction time, dynamic balance, co-ordination, power and endurance) among school athletes. For the present study, 30 school athletes of Jawahar Navodaya Vidyalaya, Longowal, Sangrur (Punjab) were randomly selected as subjects. Their age of the subject ranged from 14 to 17. Thirty subjects were distributed into two equally groups, control group (N=15) and experimental group (N=15). The experimental groups undergo their SAQ equipment training programme for 2 days per week (Wednesday and Saturday) during 12 weeks. To compare the mean difference between the pre-test and post-test data, 't' test was applied. The analysis was carried out using SPSS version in 16.0 and statistical significance was set at 0.05. All selected motor fitness variables (speed, flexibility, agility, reaction time, dynamic balance, coordination, power and endurance) significant improvement after the 12 weeks of SAQ equipment training. The control group showed no significant differences in the same measures post-intervention.

**Keywords:** Motor Fitness, Speed, Agility, Quickness, School Athletes.

### Introduction

Our playfulness is the noblest part of our basic nature. In this generous conception, play harmlessly and experimentally permits us to put our creative forces, fantasy and imagination into action. Play is release from the tedious battles against scarcity and decline which are the incessant and inevitable, tragedies of life. Our sports, in this rather happy, non-fatalistic view of human nature, are more splendid creation of the non dateable, Trans-species play impulse (*Mandell, 1999*).

Today's in the field of sports level of competition is very high and tough. This is very right that athlete can development in the sports only through the means of competition and enthusiasm. Growth is linear and quantitative whereas the development is dependable and qualitative process. Within the competitive structure of any physical activity and sport event experiences are countless opportunities for teaching important sports values. The creation of new records shows a continuous upward trend and improvement in the standards of sports performances. The acquisition of new standard may be attributed to better understanding of the human organism in relation to physical, mental and motor performance qualities that underline success in any sports endeavor, besides intensive research in the areas of training methods, exercise physiology, sports medicine, biomechanics, sports psychology, sports sociology and many other areas related and specific to sports (*Carpenter, 1938*).

Motor fitness is a more comprehensive term which included all the ten fitness components including additional five motor performance components-powers, speed, agility, balance, and reaction time which are important mainly for success in sports. In other words fitness refers to the efficiency of basic movements in addition to the physical fitness (*Kansal, 1996*).

Speed, agility, and quickness training can cover the complete spectrum of training intensity, from low to high intensity. Every individual will come into a training programme at a different level; thus training intensity must coincide with the individual's abilities. Low intensity speed, agility, and quickness drills can be used by everyone for different

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applications. SAQ drills can also be used to teach movement, warm-up, or to condition an athlete. No significant preparation is needed to participate at this level of speed, agility, and quickness training. Every sport requires fast movements of either arms or legs and SAQ training can improve skill in precisely these areas. Hence, all athletes can benefit when SAQ training integrated into their training programme (Brown et al., 2005).

### Aim of the Study

The objective of the study was to find out the effects of twelve weeks SAQ equipment training on selected motor fitness variables (speed, flexibility, agility, reaction time, dynamic balance, co-ordination, power and endurance) among school athletes.

### Hypotheses of the Study

There would be no significant effects of twelve weeks SAQ equipment training on selected motor fitness variables (speed, flexibility, agility, reaction time, dynamic balance, co-ordination, power and endurance) among school athletes.

### Method and Procedure

The objective of the study was to determine the effects of twelve weeks SAQ equipment training on selected motor fitness variables (speed, flexibility,

agility, reaction time, dynamic balance, co-ordination, power and endurance) among school athletes. For the present study, 30 school athletes of Jawahar Navodaya Vidyalaya, Longowal, Sangrur, Punjab were randomly selected as subjects. Their age of the subject ranged from 14 to 17. Thirty subjects were distributed into two equally groups, control group (N=15) and experimental group (N=15). The experimental groups undergo their SAQ equipment training programme for 2 days per week (Wednesday and Saturday) during 12 weeks. To compare the mean difference between the pre-test and post-test data, 't' test was applied. The level of significance was set at 0.05. The exercises were followed in progression of speed, agility, quickness exercise for the 1 to 6 weeks and combination of speed, agility and quickness, combination of speed and quickness, combination of agility and quickness exercise for the 7 to 12 weeks. After twelve week, the post-test data on selected motor fitness variables (speed, flexibility, agility, reaction time, dynamic balance, coordination, power and endurance) were collected again from both groups to compare the initial and final score of the athletes.

**Figure 1**  
Illustrations of Dynamic Balance, Endurance, Flexibility, Coordination, Reaction Time and Agility Measurement



The comparison of initial and final scores on selected motor fitness variables i.e., speed, flexibility, agility, reaction time, dynamic balance, coordination, power

and endurance for experimental group are presented in table 1.

**Table-1**  
Comparison of Pre-Test and Post-Test for SAQ Equipment Training Group with Regard to Selected Motor Fitness Variables Among Male School Athletes

Variable	Testing Condition	Mean	SD	MD	SEM	't'	Sig.
Speed	Pre-Test	8.09	0.48	0.45	0.05	10.03*	0.00
	Post-Test	7.64	0.31				
Flexibility	Pre-Test	3.27	1.43	1.67	0.15	10.78*	0.00
	Post-Test	4.94	1.67				
Agility	Pre-Test	11.97	0.59	0.48	0.03	14.30*	0.00

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	Post-Test	11.49	0.52				
<b>Reaction Time</b>	Pre-Test	5.07	0.48	0.37	0.7	5.56*	0.00
	Post-Test	4.70	0.32				
<b>Dynamic Balance</b>	Pre-Test	67.13	10.52	7.40	1.39	5.31*	0.00
	Post-Test	74.53	10.73				
<b>Co-Ordination</b>	Pre-Test	21.27	2.27	1.25	0.09	14.33*	0.00
	Post-Test	20.02	2.02				
<b>Power</b>	Pre-Test	1.69	0.22	0.20	0.03	7.07*	0.00
	Post-Test	1.89	0.14				
<b>Endurance</b>	Pre-Test	2411.33	203.18	306.67	46.81	6.56*	0.00
	Post-Test	2718.00	278.42				

Table-1 indicates the obtained 't' value on selected motor fitness components of school athlete. The obtained t-values were 10.03 (speed), 10.78 (flexibility), 14.30 (agility), 5.56 (reaction time), 5.31 (dynamic balance), 14.33 (coordination), 7.07 (power) and 6.56 (endurance). The obtained t-value on selected motor fitness components was greater than the critical value of 2.14 for degrees of freedom 14. It was observed that the mean gains and losses made from pre-test and post-test were statistically significant resulting that twelve weeks practice of SAQ equipment training group produced significant improvement with mean difference in speed (0.45),

flexibility (1.67), agility (0.48), reaction time (0.37), dynamic balance (7.40), coordination (1.25), power (0.20) and endurance (306.67), whereas the standard error mean in speed (0.05), flexibility (0.15), agility (0.03), reaction time (0.7), dynamic balance (1.39), coordination (0.09), power (0.03) and endurance (46.81).

The comparison of initial and final scores on selected motor fitness variables i.e., speed, flexibility, agility, reaction time, dynamic balance, coordination, power and endurance for control group is presented in table 2.

**Table-2**  
Comparison of Pre-Test and Post-Test of Control Group With Regard to Selected Motor Fitness Variables among Male School Athletes

Variable	Testing Condition	Mean	SD	MD	SEM	't'	Sig.
<b>Speed</b>	Pre-Test	8.08	0.50	0.01	0.003	1.20	0.250
	Post-Test	8.07	0.51				
<b>Flexibility</b>	Pre-Test	3.21	2.10	0.01	0.01	0.85	0.412
	Post-Test	3.22	2.08				
<b>Agility</b>	Pre-Test	11.61	0.43	0.01	0.003	2.10	0.540
	Post-Test	11.60	0.43				
<b>Reaction Time</b>	Pre-Test	5.01	0.45	0.01	0.01	0.18	0.861
	Post-Test	5.00	0.43				
<b>Dynamic Balance</b>	Pre-Test	66.53	8.84	0.94	0.81	1.15	0.270
	Post-Test	67.47	7.14				
<b>Co-Ordination</b>	Pre-Test	21.24	2.34	0.01	0.01	0.64	0.534
	Post-Test	21.23	2.33				
<b>Power</b>	Pre-Test	1.69	0.24	0.02	0.01	2.06	0.059
	Post-Test	1.71	0.23				
<b>Endurance</b>	Pre-Test	2474.0	197.19	9.30	9.54	0.96	0.344
	Post-Test	2483.3	188.33				

Table-2 indicates the obtained t value on selected motor fitness components of school athlete. The obtained t- values were 1.20 (Speed), 0.85 (Flexibility), 2.10 (Agility), 0.18 (Reaction time), 1.15 (Dynamic balance), 0.64 (Coordination), 2.06 (Power) and 0.96 (Endurance). The obtained t-value on selected motor fitness components was lesser than the critical value of 2.14 for degrees of freedom 14.

It was observed that the mean gains and losses made from pre-test and post-test were statistically insignificant resulting that twelve weeks practice of SAQ equipment training group produced insignificant improvement with mean difference in speed (0.01), flexibility (0.01), agility (0.01), reaction time(0.01),dynamic balance(0.94),coordination (0.01), power (0.02) and endurance (9.30) whereas the

standard error mean in speed (0.003), flexibility (0.01), agility (0.003), reaction time (0.01), dynamic balance (0.81), coordination (0.01), power (0.01) and endurance (9.54).

### Result and Discussion

An analysis of the results shows that there was significant difference between mean scores of pre-test and post-test of motor fitness variables of male school athletes in SAQ equipment training group. The probable reason attributed to the significant differences in the above mentioned parameters might be that the twelve weeks of SAQ equipment training program was sufficient to bring about significant improvements in motor fitness variables. No significant difference was existed between pre-test and post-test of control group. Similar finding pertaining to agility,

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vertical jump from squat, broad jump from standstill and vertical jump from standstill, in a statistically significant ( $p < 0.05$ ) after the SAQ training in football players *Rajkovic et al. (2014)*. The results of this study agreeing with the findings of *Prasad (2014)* who have reported that SAQ drills training of eight weeks have significant effect on selected physical fitness variables speed, agility, reaction time, explosive strength, and flexibility of cricket players.

## Conclusion

On the basis of findings of the study, the following conclusions were framed

1. The experimental group (SAQ equipment training) showed significant changes on selected motor fitness variables i.e., speed, flexibility, agility, reaction time, dynamic balance, coordination, power and endurance of male school athletes.
2. No significant was found between pre-test and post-test of control group on selected motor fitness variables.
3. Twelve weeks SAQ equipment training programme has a positive impact on motor fitness variables.

## Suggestions

In the light of the results and conclusions of the study the following suggestions appear to be adequate for further studies

1. Similar study may be conducted on females of same age group.
2. Similar studies may be undertaken with age group other than those employed in this study.
3. Similar studies may be undertaken by increasing the duration of the training programme.

## References

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