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## Effect of assisted and resisted sprint training on anaerobic power performance of athletes

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### Abstract

Point of the investigation was intended to discover the impact of helped and opposed preparing on Anaerobic Power execution of competitors. With the end goal of the examination sixty (N=60) competitors contemplating different partnered colleges to Rani Channamma University, Belagavi, Karnataka state, India, were arbitrarily chosen as subjects. The subjects were doled out indiscriminately into four groups of fifteen each (n=15). Group-I experienced Assisted Sprint Training (n=15), Group-II experienced Resisted Sprint Training (n=15), Group-III experienced consolidated Assisted and Resisted Sprint Training (n=15) and Group-IV went about as Control. Anaerobic Power just chose and it was evaluated through Margaria-Kalamen Anaerobic Power Test. The Experimental groups experienced their particular preparing for 12 weeks span. What's more, the quantity of session was adjusted into three days out of each week. Every one of the subjects was tried before and following the preparation for the chose variable. Information was gathered and factually broke down utilizing ANCOVA. Scheffe's post hoc test was connected to decide the noteworthy distinction between the matched methods. In every one of the cases 0.05 dimension of criticalness was settled. The consequences of the examination demonstrated that there was a huge distinction among all the Experimental groups' to be specific helped preparing, opposed preparing and helped and opposed preparing. Further the outcomes demonstrated consolidated helped and opposed preparing bunch was found to have more noteworthy effect on the gathering worried than the helped preparing gathering, opposed preparing gathering and control amass in upgrading the execution of Anaerobic Power.

**Keywords:** Assisted training, resisted training, combined assisted and resisted training, anaerobic power

### Introduction

Dashing is a game action which puts a premium on the unstable improvement of intensity for brief timeframes and this sudden arrival of a lot of vitality request, must be given by anaerobic vitality pathway. There are many preparing strategies which endeavor to enhance run capacity, for example, run helped preparing techniques (downhill running, treadmill running) and dash opposed preparing strategies (tough running, running with gauged, towing). Despite the fact that these preparation techniques are generally utilized, there is minimal logical proof concerning their impacts on the execution (Tharp *et al.*, 1985) [2].

Resisted sprint (RS) preparing is usually utilized as a way to enhance speed and increasing speed in running. This strategy for preparing may include the competitor run with an additional heap utilizing a weighted sledge, a weighted vest, or a speed parachute, or performing tough or sand rise preparing. The basic presumption in RS preparing is that it will in the end lead to increments in walk length amid typical un opposed running, by expanding the power and quality. In spite of the fact that RS preparing is regularly drilled over a wide assortment of games, review of the writing indicates constrained logical proof to help the utilization of RS preparing as a strategy for speed advancement. Different examinations have concentrated on the impact of RS preparing on the kinematics of dashing, however there is little research looking at the more extended term impacts of RS preparing program on quality and running rate execution (Costello, 1985) [1].

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**Method and procedure**

For the purpose of the study sixty (N=60) athletes studying various affiliated college to Rani Channamma University, Belagavi, Karnataka state, India, were randomly selected as subjects. The subjects were assigned at random into four groups of fifteen each (n=15). Group-I underwent Assisted Sprint Training (n=15), Group-II underwent Resisted Sprint Training (n=15), Group-III underwent combined Assisted and Resisted Sprint Training (n=15) and Group-IV acted as Control. Anaerobic Power only selected and it was assessed through Margaria-Kalamen Anaerobic Power Test. The Experimental groups underwent their respective training for 12 weeks duration. And the number of session was conformed into three days per week. All the subjects were tested prior to and immediately after the training for the selected variable.

**Analysis of the data**

The information gathered from the test gatherings and control bunch on earlier and after experimentation on those factors were measurably analyzed by investigation of covariance (ANCOVA) was utilized to decide contrasts, if any among the balanced post test implies on chosen standard factors independently. At whatever point they acquired f-proportion esteem was noteworthy the Scheffe's test was connected as post hoc test to decide the matched mean contrasts, assuming any. In every one of the cases 0.05 dimension of noteworthiness was settled.

The results of the Analysis of Covariance on Anaerobic Power of the pre, post, and adjusted test scores of Assisted Sprint Training group, Resisted Sprint Training group and Combined Assisted and Resisted Sprint Training group and Control group are presented in Table –1.

**Table 1:** Analysis of Covariance on Anaerobic Power of Experimental Groups and Control Group

Test	Assisted Sprint Training Group	Resisted Sprint Training Group	Combined Assisted and Resisted Sprint Training Group	Control Group	Source of Variance	Sum of Squares	df	Mean Squares	F ratio
Pre Test Mean	87.81	87.44	87.07	87.07	Between	5.70	3	1.90	0.03
					Within	3262.28	56	58.25	
Post Test Mean	98.69	98.00	109.58	87.11	Between	3791.37	3	1263.79	14.68*
					Within	4822.60	56	86.12	
Adjusted Post Test Mean	98.39	97.95	109.76	87.28	Between	3791.22	3	1263.74	19.89*
					Within	3494.10	55	63.53	

\* Significant at 0.05 level of confidence

(Anaerobic Power Scores in Seconds)

Table value for df (3, 56) at 0.05 level = 2.76 Table value for df (3, 55) at 0.05 level = 2.78

The above table-1 shows that the pre-test mean values on Anaerobic Power of Assisted Sprint Training group, Resisted Sprint Training group and Combined Assisted and Resisted Sprint Training group and Control group are 87.81, 87.44, 87.07 and 87.07 respectively. The obtained 'F' ratio of 0.03 for pre-test scores was lesser than the table value of 2.76 for degrees of freedom 3 and 56 required for significance at 0.05 level of confidence on Anaerobic Power.

The post test mean values on Anaerobic Power of Assisted Sprint Training group, Resisted Sprint Training group and Combined Assisted and Resisted Sprint Training group and Control group are 98.69, 98.00, 109.58 and 87.11 respectively. The obtained 'F' ratio of 14.68 for post-test scores was higher than the table value of 2.76 for degrees of freedom 3 and 56 required for significance at 0.05 level of confidence on Anaerobic Power.

The adjusted post-test means on Anaerobic Power of Assisted Sprint Training group, Resisted Sprint Training group and Combined Assisted and Resisted Sprint Training group and Control group are 98.39, 97.95, 109.76 and 87.28 respectively. The obtained 'F' ratio of 19.89 for adjusted post-test scores was higher than the table value of 2.78 for degrees of freedom 3 and 55 required for significance at 0.05 level of confidence on Anaerobic Power.

The results of the study indicate that there are significant differences among the adjusted post test means of Assisted Sprint Training group, Resisted Sprint Training group and Combined Assisted and Resisted Sprint Training group and Control group in Anaerobic Power performance.

To determine which of the paired means have a significant difference, the Scheffe's test is applied as Post hoc test and the results are presented in Table – 2.

**Table 2:** The Scheffe's test for the differences between the adjusted post test paired means on Anaerobic Power

Adjusted Post-test Means				Mean Difference	Confidence Interval
Assisted Sprint Training Group	Resisted Sprint Training Group	Combined Assisted and Resisted Sprint Training Group	Control Group		
98.39	97.95			0.44	8.39
98.39		109.76		11.37*	8.39
98.39			87.28	11.10*	8.39
	97.95	109.76		11.81*	8.39
	97.95		87.28	10.66*	8.39
		109.76	87.28	22.47*	8.39

\* Significant at 0.05 level of confidence

Table-2 shows that the adjusted post test mean differences on Anaerobic Power between Assisted Sprint Training group and Combined Assisted and Resisted Sprint Training group, Assisted Sprint Training group and Control group, Resisted Sprint Training group and Combined Assisted and Resisted Sprint Training group, Resisted Sprint Training group and

Control group and Combined Assisted and Resisted Sprint Training group and Control group are 11.37, 11.10, 11.81, 10.66 and 22.47 respectively, which are greater than the confidence interval value of 8.39 on Anaerobic Power at 0.05 level of confidence.

Table-2 shows that the adjusted post test means differences on

Anaerobic Power between Assisted Sprint Training group and Resisted Sprint Training group, is 0.44, which is less than the confidence interval value of 8.39 on Anaerobic Power at 0.05 level of confidence.

The results of the study showed that there was a significant difference between Assisted Sprint Training group and Combined Assisted and Resisted Sprint Training group, Assisted Sprint Training group and Control group, Resisted Sprint Training group and Combined Assisted and Resisted Sprint Training group, Resisted Sprint Training group and Control group and Combined Assisted and Resisted Sprint Training group and Control group on Anaerobic Power.

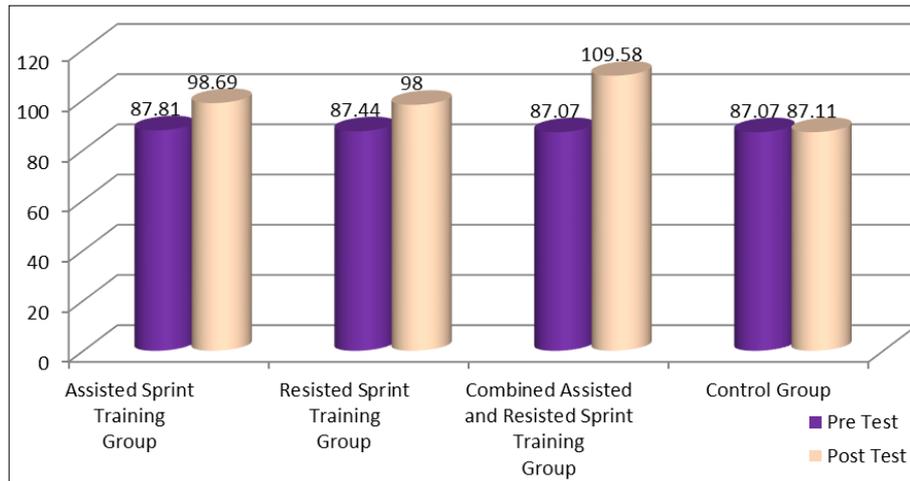
Further the results of the study showed that there was no significant difference between Assisted Sprint Training group

and Resisted Sprint Training group on Anaerobic Power.

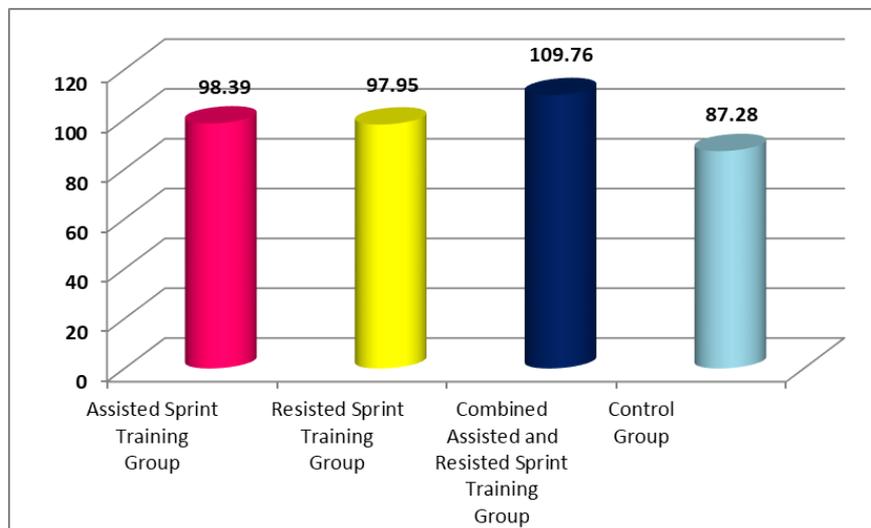
The above data also reveal that Combined Assisted and Resisted Sprint Training group had shown better performance than Assisted Sprint Training group, Resisted Sprint Training group and Control group in Anaerobic Power.

The pre and post mean values of Assisted Sprint Training group, Resisted Sprint Training group and Combined Assisted and Resisted Sprint Training group and Control group on Anaerobic Power are graphically represented in the Figure -1.

The adjusted post mean values of Assisted Sprint Training group, Resisted Sprint Training group and Combined Assisted and Resisted Sprint Training group and Control group on Anaerobic Power are graphically represented in the Figure -2.



**Fig 1:** The Pre and Post test Mean values of Assisted Sprint Training group, Resisted Sprint Training group and Combined Assisted and Resisted Sprint Training group and Control group on Anaerobic Power (In Seconds)



**Fig 2:** The Adjusted Post Mean values of Assisted Sprint Training group, Resisted Sprint Training group and Combined Assisted and Resisted Sprint Training group and Control group on Anaerobic Power (In Seconds)

### Conclusion

From the analysis of the data, the following conclusions were drawn.

1. The Experimental groups in particular, Assisted Sprint Training group, Resisted Sprint Training group and Combined Assisted and Resisted Sprint Training group had altogether enhanced in Anaerobic Power.
2. The Combined Assisted and Resisted Sprint Training group was found to have more noteworthy effect on the gathering worried than the Assisted Sprint Training

group; Resisted Sprint Training group and Control amass in upgrading the execution of Anaerobic Power.

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