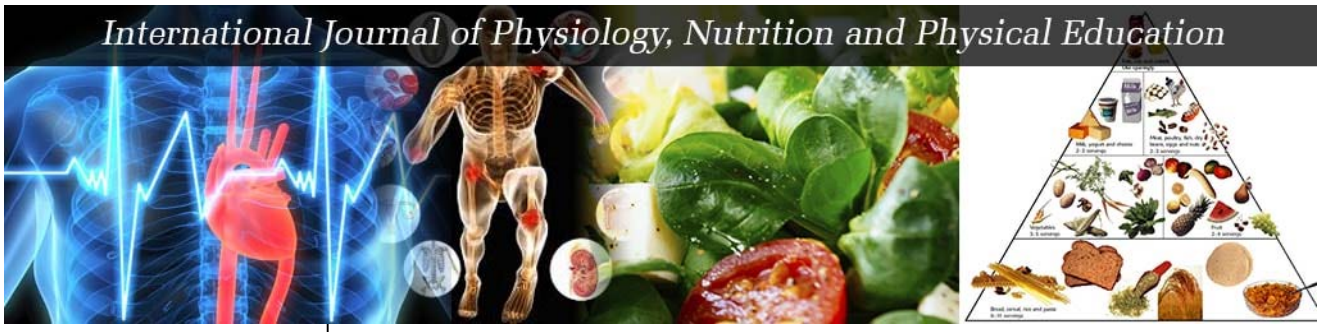

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Effect of six weeks conditioning workout plan on physiological variables of track cyclists

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Abstract
The present study was designed to determine the effect of six weeks conditioning workout plan on Physiological variables of track events. Total twenty (N= 20) male track cyclists from Punjabi University Patiala were selected to act as subjects for the present study. The study was conducted on 18- 27 years of age group. To effect of six weeks conditioning workout plan on motor fitness variables of track events samples were taken for every training program, there would be a change in various structure and systems in human body. Further three physiological parameters i.e. systolic blood pressure and diastolic blood pressure as dependent variables of the study. The level of significance choose in to test the hypotheses was 0.05, $P<0.05$. Results of the study explicated statistically that there was significant difference in systolic blood pressure and diastolic blood pressure.

Keywords: Physiological, Male, Systolic blood pressure and Diastolic blood pressure

Introduction
The physique of sprint track cyclists is characterized by large muscle mass and low body fat levels. A high percentage of fast twitch muscle fibers helps maintain high cadences. Endurance track cyclists are typically lean and light, similar to road cyclists. Sprinters need to optimize muscle mass and minimize body fat levels to achieve an optimal power: weight ratio. This requires a carefully balanced intake. Consuming excess total energy can lead to an increase in body fat. However, restricting energy intake in an attempt to achieve an ultra-lean physique can cause loss of muscle mass. Sprinters need to consume a variety of nutrient-dense foods and match carbohydrate needs to their training load. Protein requirements are similar to other sprint athletes, being around 1.6-1.8g/kg of body weight. Overall, a healthy balanced diet containing a wide variety of nutrient dense wholegrain breads and cereals, fruits and vegetables will help a sprint cyclist meet their nutritional requirements and manage weight. Regular serves of lean meats, poultry, fish, eggs, legumes and low-fat dairy products will help to meet protein, calcium and Iron requirements. If body fat levels become a problem, it may be necessary to increase energy expenditure. The addition of some extra-long sessions or cross training sessions may be required to get weight down. Recovery is crucial to track cyclists. Recovery can be optimized by consuming a mix of carbohydrate and protein before and after training sessions (Morton, 1997) [3].

Body fuel stores are not a limiting factor for single sprint events. However, when contesting a number of races over a day, fuel demands can be high. Cyclists should aim to begin competition hydrated, with a comfortable stomach and with sufficient fuel on board. In most cases, track cyclists can prepare for competition by maintaining their usual healthy eating habits. Generally, carbohydrate loading is not required for sprint events. Longer events such as the Madison may be an exception. Elite track cyclists compete worldwide. Athletes often fly in to compete only 1-2 days before racing. Managing jetlag, in particular minimizing dehydration, is important to see cyclists ready for competition on arrival. Athletes, who travel regularly, need to be aware that traveling reduces training loads therefore reduce energy requirements. This is also a consideration for endurance trained road cyclists coming back to compete on the track. Adjusting food intake to accommodate the reduced requirements can help avoid unwanted weight gain (Coyle, 1999) [1]. Professional road cyclists are often tested in the laboratory to assess their physiological capabilities.

Even though elite cyclists often express their preference for sport-specific field tests performed with equipment with which they are most familiar, laboratory testing on adapted cycle ergometers has been shown to be a valid means to evaluate a cyclist's physiological and performance potential. Indeed, the response to exercise does not depend on the type of resistance the cyclist must overcome (i.e. friction force exerted by the cycle ergometer vs. air resistance and rolling resistance when cycling in the field). Nevertheless, it has been shown that when elite cyclists are tested under laboratory conditions, physiological values expressed relative to anthropometric characteristics predict performance in the field more accurately than absolute values. From a metabolic viewpoint, road cycling is an endurance sport. with very high aerobic demands. Indeed, high maximal oxygen uptake and power output values at the lactate threshold have often been reported among competitive road cyclists under laboratory conditions. However, it has been suggested that, for a more accurate prediction of the cyclist's performance level in the field, physiological values obtained in the laboratory should be expressed relative to anthropometric variables, because of their influence on road cycling performance. Indeed, road cycling is a sport that requires performing in a great variety of terrains (e.g., level or uphill roads) and competitive situations (e.g., individual cycling or drafting at the back of a group of cyclists in pack formation). In any of these above-mentioned situations, the amount of work performed by a cyclist is determined to a great extent by anthropometric variables. These include body mass and frontal area, which are among the most important performance-determining anthropometric variables, as the former determines gravity-dependent resistance, having thus a major influence on uphill cycling performance, whereas the latter affects performance during individual time trials, due to its influence on aerodynamic resistance. Therefore, a road cyclist's performance on each type of terrain is conditioned by his morphological characteristics. This has contributed to the appearance of morph type dependent specialists in professional cycling, with clearly defined roles during the different phases of a race (Padilla, et. al. 2000) [4].

Methodology

The purpose of present study was to scrutinize the effect of six weeks conditioning workout plan on motor and physiological components of track cyclists. To achieve this purpose total twenty (N=20) male track cyclist between age group of 18- 27 years from Punjabi University Patiala, Punjab were selected as subjects.Based on the above mentioned concept, the investigator had selected six weeks conditioning workout plan as dependent variables. For every training program, there would be a change in various structure and systems in human body. Hence, investigator had selected three physiological parameters i.e. systolic blood pressure and diastolic blood pressure as dependent variables of the study.

Table 1: Comparison of Mean, SD and t-value for Pre and Post Test of Systolic Blood Pressure of Track Cyclists

Physiological Variable	Pre-Test Mean	Pre-Test SD	Post-Test Mean	Post-Test SD	t-Values
Systolic Blood Pressure	143.55	13.43	129.95	7.57	5.35*

$t_{.05}$ (19) = 2.09

The table no. 1 statistically depict that the calculated t value 5.35 for systolic blood pressure is greater than table value that is 2.09. Hence, the values of table shows that, after six - weeks conditioning workout there was significant difference in pre and post systolic blood pressure in track cyclists. The results of table no 4 are also illustrated in figure no. 1

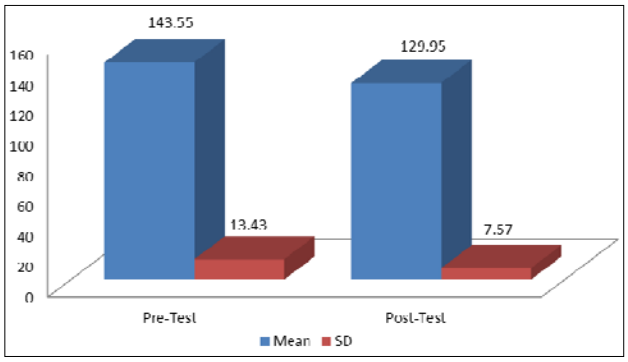

Fig 1: Comparison of Mean, SD and t-value for Pre and Post Test of Systolic Blood Pressure of Track Cyclists

Table 2: Comparison of Mean, SD and t-value for Pre and Post Test of Diastolic Blood Pressure of Track Cyclists

Physiological Variable	Pre-Test Mean	Pre-Test SD	Post-Test Mean	Post-Test SD	t-Values
Diastolic Blood Pressure	83.01	1.21	81.10	0.91	3.91*

$t_{.05}$ (19) = 2.09

The findings of pre and post-test namely Mean, SD and t values diastolic blood pressure are shown in table no 5. The table statistically reveals that the calculated t value 3.91 for diastolic blood pressure of track cyclists is greater than table value 2.09. Therefore the values of table shows that, after six – weeks conditioning workout there was significant change in diastolic blood pressure of track cyclists. The results of table no 3 are also depicted in figure no. 5.

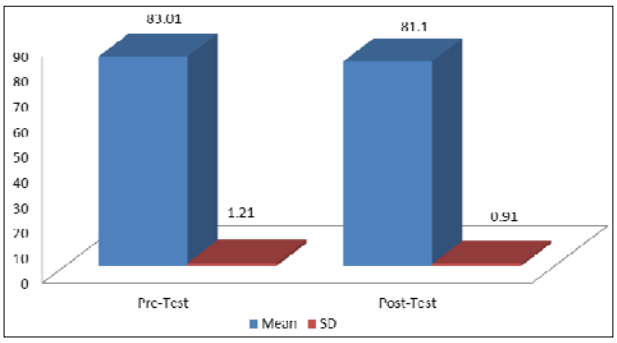

Fig 2: Comparison of Mean, SD and t-value for Pre and Post Test of Diastolic Blood Pressure of Track Cyclists

Discussion of Findings

Based on the statistical analysis of data following findings were drawn by the researcher:

1. The result of the study proved that systolic blood pressure decrease significantly in track cyclists due to the application of six weeks conditioning workout. These results of the study confirm the findings of (Jeukendrup, et.al. 2000) [2] who also found that cross training induced significant change in systolic blood pressure.
2. The result of present study proved that diastolic blood pressure decrease significantly in track cyclists due to the application of six weeks conditioning workout. These results of the study confirmed the findings of

(Jeukendrup *et al.* 2000) [2] who also reported that cross training induced significant change on diastolic blood pressure.

Conclusions

Based on the results of the study the following conclusions were drawn by the investigator

1. The result authenticates that, during six weeks conditioning workout the systolic blood pressure decreased significantly in track cyclists.
2. The result validates that, during six weeks conditioning workout the diastolic blood pressure decreased significantly in track cyclists.

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