



EFFECT OF HIGH INTENSITY INTERVAL TRAINING ON SPEED AND AGILITY AMONG 15-18 YEAR OLD BOYS HOCKEY PLAYERS

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Abstract:

Field hockey is a high-intensity intermittent sport requiring players to repeatedly sprint, change direction, and react quickly. Speed and agility are therefore crucial motor fitness components for hockey performance. The purpose of this study was to examine the effect of High Intensity Interval Training (HIIT) on speed and agility among 15-18 year old boys hockey players. Thirty male hockey players were randomly selected and divided into two groups: an experimental group (HIIT training) and a control group (regular practice). The training programme lasted eight weeks with three sessions per week. Speed was measured using the 30-meter sprint test and agility was assessed through the Illinois Agility Test. Data were analyzed using paired t-test and independent t-test at a 0.05 level of significance. The results showed significant improvement in speed and agility in the experimental group compared to the control group. The findings indicate that HIIT is an effective training method to enhance motor fitness components in young hockey players.

Key Words: HIIT, Speed, Agility, Hockey Players, Adolescents, Motor Fitness

Introduction:

Field hockey is one of the fastest team sports in the world. Players must perform rapid accelerations, sprints, sudden stops, and frequent changes in direction throughout the game. These demands require high levels of speed, agility, and anaerobic capacity. Speed refers to the ability to move the body or body parts quickly, while agility is the ability to change direction rapidly with balance and coordination. Both are essential for hockey players to execute skills such as dribbling, tackling, and counter attacking. High Intensity Interval Training (HIIT) is a training method that alternates short bursts of intense exercise with periods of recovery or low intensity activity. HIIT is widely used in sports training because it improves both aerobic and anaerobic fitness in a relatively short period. Research indicates that systematic training programmes such as plyometric and interval training significantly improve speed and agility in hockey players. Similarly, HIIT training has been shown to enhance speed and performance variables in young hockey athletes compared to traditional skill training. Therefore, investigating the effectiveness of HIIT in improving speed and agility among adolescent hockey players is important for developing scientific training programmes.

Objectives of the Study:

To determine the effect of High Intensity Interval Training on speed among 15-18 year old hockey players, 30 hockey players are selected from Pondicherry schools aged between 15-18 years. The selected subjects were divided into two groups namely training group and control group. The training group undergoes HIIT for three days a week for 8 weeks along with routine hockey practice. The control group underwent only hockey practice. All the subjects were given oral instruction about the training programme. The subjects were tested for the variables speed and agility before and after the training period of 8 weeks.

Hypotheses:

- There will be a significant improvement in speed after HIIT training.
- There will be a significant improvement in agility after HIIT training.

Methodology:

The study adopted an experimental pre-test and post-test design with two groups:

- Experimental group (HIIT training)
- Control group (regular hockey practice)

Thirty male hockey players aged 15-18 years were selected from a school hockey academy.

Group	Number of Subjects
Experimental Group	15
Control Group	15
Total	30

Variables:

Independent Variable	Dependent Variables
High Intensity Interval Training (HIIT)	Speed Agility

Tests Used:

Variable	Test
Speed	30 Meter Sprint Test
Agility	Illinois Agility Test

These tests are widely used in sports science research to evaluate sprint performance and change-of-direction ability in athletes.

Training Programme:

The experimental group underwent HIIT training for 8 weeks, three days per week.

Exercise	Duration
Warm-up jogging	10 min
40 m sprint	6 repetitions
Shuttle run	5 repetitions
Ladder drills	5 sets
Cone zig-zag run	5 repetitions
Recovery interval	30-60 sec
Cool down	10 min

Each session lasted 45-60 minutes.

Data Analysis:

Descriptive Statistics of Speed (Seconds):

Group	Pre Test Mean	Post Test Mean	Mean Difference
Experimental	4.9	4.45	0.45
Control	4.88	4.8	0.08

Paired t-test for Speed:

Group	Mean Difference	t-value	Significance
Experimental	0.45	5.72	Significant
Control	0.08	1.21	Not Significant

Descriptive Statistics of Agility (Seconds):

Group	Pre Test Mean	Post Test Mean	Mean Difference
Experimental	17.5	16.6	0.9
Control	17.4	17.2	0.2

Paired t-test for Agility:

Group	Mean Difference	t-value	Significance
Experimental	0.9	6.1	Significant
Control	0.2	1.4	Not Significant

Results and Discussion:

The results indicated significant improvements in speed and agility among the experimental group after eight weeks of HIIT training. The improvement may be attributed to neuromuscular adaptations, increased muscle power and improved anaerobic capacity produced by high intensity interval training. HIIT also enhances quick directional movement patterns which are essential for hockey players. The findings of the present study are consistent with previous research indicating that interval training improves motor fitness variables among athletes.

Conclusion:

High Intensity Interval Training significantly improves speed and agility among 15-18 year old boys hockey players.

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