International Journal of Academic Research and Development
ISSN: 2455-4197, Impact Factor: RJIF 5.22
www.academicsjournal.com
Volume 1; Issue 9; September 2016; Page No. 96-98

Study of Aerobic and Anaerobic capacity in defenders and attackers in male hockey player

Lakhmi Chand
V.P.O Sangwari, Distt. Rewari, Haryana, India

Abstract
The aim of the present review is to study of aerobic and anaerobic of defenders and attackers in male hockey players. To lead the review, 20 defenders and 20 attackers of various groups which had taken an interest in open hockey tournament in Rewari (Haryana) were picked of age between 19-24 years as test. Cooper's 12-minute run/walk was utilized for measuring aerobic capacity and 50 meters dash was utilized for measuring anaerobic capacity. Result demonstrates that defenders and attackers have no significant difference in aerobic and anaerobic capacity.

Keywords: Aerobic, Anaerobic, Football, Professionalism

1. Introduction

Hockey is a family of sports in which two teams play against each other by trying to manoeuvre a ball or a puck into the opponent's goal using a hockey stick. In many areas, one sport (typically field hockey or ice hockey) is generally referred to simply as hockey.

The first recorded use of the word *hockey* is in the 1773 book *Juvenile Sports and Pastimes, to Which Are Prefixed, Memoirs of the Author: Including a New Mode of Infant Education* by Richard Johnson (Pseud. Master Michel Angelo), whose chapter XI was titled "New Improvements on the Game of Hockey". The belief that hockey was mentioned in a 1363 proclamation by King Edward III of England is based on modern translations of the proclamation, which was originally in Latin and explicitly forbade the games "Pilam Manualem, Pedivam, & Bacularem: & ad Canibucam & Gallorum Pugnam". The English historian and biographer John Strype did not use the word "hockey" when he translated the proclamation in 1720.

The word *hockey* itself is of unknown origin. One supposition is that it is a derivative of *hoquet*, a Middle French word for a shepherd's stave. The curved, or "hooked" ends of the sticks used for hockey would indeed have resembled these staves. Another supposition derives from the known use of cork bungs, (stoppers) in place of wooden balls to play the game. The stoppers came from barrels containing "hock" ale, also called "hocky"

Field hockey is played on gravel, natural grass, or sand-based or water-based artificial turf, with a small, hard ball approximately 73 mm (2.9 in) in diameter. The game is popular among both males and females in many parts of the world, particularly in Europe, Asia, Australia, New Zealand, South Africa, and Argentina. In most countries, the game is played between single-sex sides, although they can be mixed-sex.

The governing body is the 126-member International Hockey Federation (FIH). Men's field hockey has been played at each Summer Olympic Games since 1908 except for 1912 and 1924, while women's field hockey has been played at the Summer Olympic Games since 1980.

Modern field hockey sticks are constructed of a composite of wood, glass fibre or carbon fibre (sometimes both) and are J-shaped, with a curved hook at the playing end, a flat surface on the playing side and a curved surface on the rear side. All sticks are right-handed – left-handed sticks are not permitted.

While field hockey in its current form appeared in mid-18th century England, primarily in schools, it was not until the first half of the 19th century that it became firmly established. The first club was created in 1849 at Blackheath in south-east London. Field hockey is the national sport of Pakistan. It was the national sport of India until the Ministry of Youth Affairs and Sports declared in August 2012 that India has no national sport.

Oxygen consuming limit portrays the useful limit of the cardiorespiratory framework, (the heart, lungs and veins). Vigorous limit alludes to the most extreme measure of oxygen devoured by the body amid extraordinary activities, in a given time allotment. It is a capacity both of cardiorespiratory execution and the most extreme capacity to expel and use oxygen from flowing blood. To quantify maximal high-impact limit, a practice physiologist or doctor will play out a VO2 max test, in which a subject will experience continuously more strenuous practice on a treadmill, from a simple stroll through to weariness. The individual is regularly associated with a respirometer to quantify oxygen utilization, and the speed is expanded incrementally over a settled span of time. The higher the deliberate cardiorespiratory perseverance level, the more oxygen has been transported to and utilized by practicing muscles, and the higher the level of force at which the individual can work out. All the more basically, the higher the high-impact limit, the higher the level of high-impact wellness. The Cooper and multi-arrange wellness tests can likewise be utilized to survey useful vigorous limit with respect to specific employments or exercises.

How much oxygen consuming limit can be enhanced by practice fluctuates change generally in the human

populace: while the normal reaction to preparing is a roughly 17% expansion in VO2max, in any populace there are "high responders" who may as much as twofold their ability, and "low responders" who will see almost no advantage from preparing. Contemplates show that roughly 10% of generally is sound people can't enhance their oxygen consuming limit with practice by any means. The level of an individual's responsiveness is profoundly heritable, recommending that this quality is hereditarily determined.[

Anaerobic digestion system, or anaerobic vitality use, is a characteristic piece of entire body metabolic vitality consumption. Quick jerk muscle (when contrasted with moderate jerk muscle) works utilizing anaerobic metabolic frameworks, to such an extent that any enlistment of quick jerk muscle filaments prompts to expanded anaerobic vitality use. Extraordinary practice enduring upwards of around four minutes (e.g., a mile race) may in any case have an impressive anaerobic vitality consumption part. High-power interim preparing, albeit in view of high-impact practices like running, cycling and paddling, successfully gets to be distinctly anaerobic when performed in abundance of 90% most extreme heart rate. Anaerobic vitality use is hard to precisely measure, albeit a few sensible strategies to evaluate the anaerobic segment to practice are accessible.

Interestingly, vigorous practice incorporates bring down power exercises performed for longer timeframes. Exercises, for example, strolling, long moderate runs, paddling, and cycling require a lot of oxygen to produce the vitality required for delayed work out (i.e., vigorous vitality use). In games which require rehashed short blasts of practice be that as it may, the anaerobic framework empowers muscles to recuperate for the following burst. In this way preparing for some games requests is that both vitality delivering frameworks be created.

1.1 Statement of Problem

Study of aerobic and anaerobic of defenders and attackers in male hockey players.

2. Methodology

2.1 Selection of Subjects

To lead the review, 20 defenders and 20 attackers of various groups which had taken an interest in open hockey tournament in Rewari (Haryana) were picked of age between 19-24 years as test.

2.2 Collection of Data

The information was gathered by controlling the particular tests and by taking particular estimations on various days. Test relating to Body organization were led in the Research lab and lodgings. Test for high-impact limit and anaerobic limit were directed in the college track. The crude information relating to tests are given in supplements. Time for taking test was from morning 6AM to 8AM. The Coefficient of correlation of Aerobic Ability (12 min run/walk) and Anaerobic Ability (50 meter) is 0.883 ad 0.906 respectively.

2.3 Administration of Test

1. Aerobic Capacity

The college track was utilized to lead the test. The track was partitioned into 20 zones of 20 meters each and lines were checked. A stopwatch was utilized to work the time. The subjects were approached to keep running for a time of twelfth minutes consistently. Toward the finish of eleventh moment a long shriek was blown, so that the subjects could see just a single moment is left and could play out their best. Toward the finish of the twelfth moment the last shriek was blown and the subjects were requested that stop were they were. The exploration researcher measured separation from the closest last zone line crossed by the competitor to the correct spot at where the player ceased. This separation was added to the aggregate number of Laps and Zones kept running by the subjects and went into the score sheet.

2. Anaerobic Capacity

The university track was used to conduct the test. A straight was chosen where the 50 meters distance was marked. The stopwatch was used to calculate the time. At a time, two subjects were tested on clapper voice. Time taken is up to cover the finishing line. The time scored in seconds.

3. Statistical Procedure

To compare the aerobic capacity and anaerobic capacity of defenders and attackers in football ‘T’ test was used to test the hypothesis. The level of significance for the ‘T’ test was 0.05.

2. Result

Table 1: Compression of Aerobic in Defenders and Attackers in Male Hockey Player

Variable	Mean		‘t’ value
	Attackers	Defenders	
Aerobic Capacity	3173	3162	0.04

Tabulated value is 1.686 at 0.05 level of significance

An examination of Table No.1 reveals that there is no significant difference in the Aerobic ability between Attackers and Defenders, as the mean score of aerobic capacity in attackers is 3173 and in defenders is 3162. And ‘t’ value is 0.04 which is less than tabulated value is 1.686 at 0.05 level of significance.

Table 2: Compression of Anaerobic in Defenders and Attackers in Male Hockey Player

Variable	Mean		‘t’ value
	Attackers	Defenders	
Aerobic Capacity	6.52	6.54	0.08

Tabulated value is 1.686 at 0.05 level of significance

An examination of Table No.2 reveals that there is no significant difference in the Anaerobic ability between Attackers and Defenders, as the mean score of anaerobic capacity in attackers is 6.52 and in defenders is 6.54. And‘t’ value is 0.08 which is less than tabulated value is 1.686 at 0.05 level of significance.

3. Conclusion

On the basis of the findings of the study the following conclusions were drawn:

- Attackers and Defenders have no significant difference in Aerobic ability.
- Attackers and Defenders have no significant difference in Anaerobic ability.

4. References

1. Barry L. Johnson, Jack K. Nelson. Practical Measurement for Evaluation in Physical Education, 3rd Ed, Delhi, sarjeet publications. 1982, 143. https://en.wikipedia.org/wiki/Anaerobic_exercise
2. Narayan Meneon VA. Unpublished Master Degree Thesis LNCPE, Gwalior, 1992, 38-40. https://en.wikipedia.org/wiki/Aerobic_exercise
3. Clive Gifferd. Football the ultimate guide to the beautiful game, King fischer publications, 2002. https://en.wikipedia.org/wiki/Football
4. Donald K. Mathew, Edward L. Fox. The physiological Basis of Physical Education and Athletics.