

# AIT Research





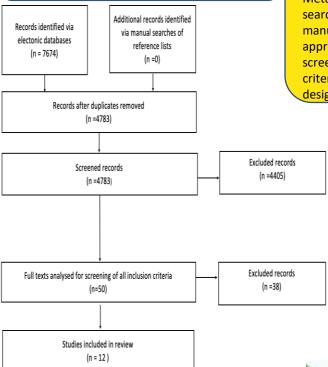
# The Effects of Sprint Interval Training on Performance in Team Sport Athletes: A Systematic Review

Grassick, S., Ó Catháin, C., Kelly, D., Ward, C., Ní Chéilleachair, N.

#### Introduction

Sprint interval training (SIT) is a form of high intensity interval training (HIIT) in which intervals are performed in a maximal 'all out' fashion for 10 to 30 seconds with 2 to 4 minutes of recovery to ensure each bout is performed maximally [1]. SIT is a practical method of sprint training often used by team sport athletes as it does not require testing prior to prescribing training [2]. Due to its time efficient nature and ability to increase aerobic capacity, SIT is becoming a popular alternative to traditional endurance training among invasion team sport athletes. Aerobic capacity is key for team sport athletes, with a higher maximal oxygen uptake seen as vital for maintaining high intensity efforts without displaying fatigue, enhancing repeated sprint ability and maintaining power outputs and distance covered during match play [3, 4]. No SLR exists that examines the effects of SIT with team sport athletes.

Aim: To evaluate the effectiveness of SIT at improving aerobic capacity, repeated sprint ability and high intensity endurance capacity.



### Methods

The search strategy and systematic review protocol was conducted following the "Preferred Reporting Items for Systematic Reviews and Meta- Analyses" (PRISMA) guidelines [5]. A comprehensive literature search of PubMed, SPORTDiscus and Web of Science in addition to manual searches of article reference lists was conducted to identify appropriate articles. Once duplicates were removed, all article's were screened by two reviewers to identify which studies met the inclusion criteria, including variables such as the duration of intervention, study design, and training status of the participants.



"Invasion Sport" "Team Based Sport\*" OR "Team-based sport\* 'Field Sport\* OR "Field-sport\*" OR Field Based Sport\* 'Field-based sport' OR "Team Sport Athlete\*" OR "Team-sport athlete\*" 'Team Sport Player\*" OR OR "Field Sport Player\*" OR "Field-sport player\*" OR "Field Sport Athlete\*" OR "Field-sport athlete\*" OR 'Gaelic Football' Camogie OR Hurling OR OR Football 'American Football" OR OR "Field Hockey Rugby OR "Australian Rules" 'Australian Football'

# **Expected Outcome**

Figure 1: PRISMA flow chart

The aim of this review is to determine the effectiveness of SIT interventions, compared to traditional methods of training, at enhancing aerobic capacity in team sport athletes. The results of this review will demonstrate how effective SIT can be for these athletes with regards to improving aerobic repeated sprint ability and high intensity endurance capacity.





Figure 3: Team sport athletes in action

- 1. Buchheit, M. and P.B. Laursen, High-intensity interval training, solutions to the programming puzzle, Sports Medicine, 2013, 43(10): p. 927-954
- Laursen, P. and M. Buchheit, Science and Application of High Intensity Interval Training: Solutions to the Programming Puzzle. 1st ed. 2019, Champaign, IL, United States: Human Kinetics Publisher
- 3. Bangsbo, J. and F. Lindquist, Comparison of various exercise tests with endurance performance during soccer in professional players. International Journal of Sports Medicine, 1992. 13(02): p. 125-132.
- 4. Bishop, D.J. and O. Girard, Determinants of team-sport performance: implications for altitude training by team-sport athletes. British Journal of Sports Medicine, 2013. 47(Suppl 1): p. 117-121.

  5. Moher, D., et al., Preferred reporting items for systematic reviews and meta-analyses: the PRISMA statement. Annals of Internal Medicine, 2009. 151(4): p. 264-269.



