

# Contribution of Hand Grip Strength in Badminton Players: A Review

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## ABSTRACT

**Introduction:** Hand grip strength is an objective indicator of hand and upper extremity function. Since badminton requires agility and frequent movements, strong muscles are essential to reduce the risk of injury. This sport demands accuracy and precision, and the hand is the only point of contact with the equipment. Therefore, a stronger grip is necessary to generate more force and maintain precision during the game.

**Aim:** The review aimed to find the role of hand grip strength in badminton players.

**Materials and Methods:** Electronic databases, including SCOPUS, PubMed, Science Direct, Google Scholar, and Springer Nature, were used for the literature search. Articles published between 2010 and 2024 were selected. The studies focused on the importance of hand grip strength, its effect on badminton

players, force distribution on the hand during strokes, and smash accuracy.

**Results:** A total of 31642 articles were identified from the database search and 8 articles were included in this review. The comprehensive review shows that hand grip strength plays an important role in increasing shuttle velocity, forehand smash speed and forehand smash accuracy in badminton players.

**Conclusion:** The review concluded that there is a positive correlation between hand grip strength and initial shuttle velocity, as stronger finger force increases shuttle speed. It was also found that left-handed badminton players have a higher forearm smash speed than right-handed players due to greater grip strength. Since badminton requires both strength and accuracy, the study also highlights a relationship between hand grip strength and forehand smash accuracy.

**Keywords:** Shuttle velocity, Smash, Upper extremity function

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