

Effect of Caffeine Consumption on Rehabilitation Outcomes and Return to Sports Readiness among Athletes: A Literature Review

KASHVI SHAH¹, JOYDIP SAHA², PRATEEK SHARMA³

ABSTRACT

Caffeine is one of the most widely used ergogenic aid in sports for its effect of enhancing strength, endurance, reaction time and perceived exertion in healthy athletes yet its specific role within the context of injury rehabilitation and return to sports readiness remains under-explored compared to its acute performance-enhancing effects. This review aimed to see the current evidence on the effects of caffeine on rehabilitation outcomes and Return to Sports (RTS) readiness in athletes, with specific emphasis on the potential risk of false clearance due to altered neuromuscular and perceptual responses. An extensive search was done via PubMed (352), ScienceDirect (628), Embase (369) and Cochrane (1101) database using [(caffeine) AND (rehabilitation OR recovery OR performance OR return to sport)] as per PRISMA guidelines. Studies were included publish from 2020 to 2026 which were examining caffeine's effects on neuromuscular function, pain perception, fatigue, proprioception,

motor control, and psychological factors related to rehabilitation and RTS. Both male and female athletic populations were considered. After extensive data screening, total eight articles were selected for this review. Total population was 149 which included both males and females. Result indicates that caffeine has a positive effect on muscle strength, power, reaction time, and endurance as well as reducing pain perception and perceived exertion. These effects may temporarily improve rehabilitation performance, potentially masking underlying impairments in neuromuscular movement or tissue healing. Limited evidence also suggested alter risk-taking behaviour and confidence levels after caffeine ingestion, which may affect RTS decision-making. Caffeine has positive impact on the short-term physical and perceptual performance in athletes; however, its ergogenic and analgesic properties raised concerns regarding the accuracy of functional testing and RTS clearance.

Keywords: Decision making, Endurance, Performance.

PARTICULARS OF CONTRIBUTORS:

1. Postgraduate Student, Abhinav Bindra Sports Medicine and Research Institute, Bhubaneswar, Odisha, India.
2. Associate Professor, Department of Movement Science, Abhinav Bindra Sports Medicine and Research Institute, Bhubaneswar, Odisha, India.
3. Postgraduate Student, Abhinav Bindra Sports Medicine and Research Institute, Bhubaneswar, Odisha, India.

NAME, ADDRESS, E-MAIL ID OF THE CORRESPONDING AUTHOR:

Kashvi Shah,
Postgraduate Student, Abhinav Bindra Sports Medicine and Research Institute, Bhubaneswar-751024, Odisha, India.
Email: shahkashvi03@gmail.com.