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The Quality of Athletic Playing Surface and its Influence on Performance

CONFERENCE ABSTRACT

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Abstract

This narrative review examines how the quality of outdoor athletic playing surfaces influences injury risk and overall human performance. It focuses on how surface type, consistency, and maintenance practices affect athlete stability, movement efficiency, and exposure to injury. The central question explores how variability in field conditions contributes to injury prevention and what standards are necessary to ensure safe and optimal performance environments. This study uses a narrative review methodology, synthesizing existing literature on outdoor athletic surfaces, including natural grass and artificial turf. Sources include peer-reviewed journal articles, sports governing body guidelines, and field maintenance reports. The review qualitatively analyzes findings related to surface hardness, traction, and upkeep practices to identify patterns linking surface quality with injury rates and performance outcomes. Understanding the relationship between playing surface quality and injury prevention is critical for athletes, coaches, and facility managers. Poorly maintained or inconsistent fields can increase the likelihood of acute and overuse injuries, while high-quality surfaces may enhance performance and safety. This review contributes to the field by highlighting key risk factors and emphasizing the importance of standardized maintenance and surface evaluation. The findings can inform best practices,

improve athlete safety, and support the development of guidelines for safer athletic environments.

Keywords: athletics, playing surface, human performance, injury