INTERNATIONAL SEVEN JOURNAL
OF MULTIDISCIPLINARY
ISSN: 2764-9547

COMPREHENSIVE INJURY PREVENTION STRATEGIES FOR FOOTBALL PLAYERS

https://doi.org/10.56238/isevmjv1n1-013

Receipt of the originals: 03/01/2022 **Acceptance for publication:** 25/01/2022

Giulliana Iafrate da Fonseca

ABSTRACT

Injury prevention in football is a critical issue for athletes, coaches, and health professionals, given the sport's dynamic movements that elevate the risk of muscle and joint injuries. Effective strategies should incorporate specialized physical training and physiotherapeutic interventions to optimize player protection and performance. Preventive training programs, emphasizing muscle strengthening and proprioception, are essential for reducing injury risks. Specific exercises targeting the hamstrings, quadriceps, calves, and core enhance joint stability and mitigate overload injuries. Neuromuscular training, which includes balance exercises and plyometrics, improves proprioception and helps prevent falls and twists. Flexibility through regular stretching and dynamic warm-ups, such as the FIFA 11+, is crucial for preparing players physically and lowering injury incidence. Additionally, physiotherapists play a vital role in injury prevention through functional assessments to identify muscle imbalances and develop corrective exercise programs. Manual therapy techniques, joint stabilization exercises, and preventive rehabilitation further contribute to maintaining soft tissue quality and preventing muscle strains. Monitoring training load is another fundamental aspect of injury prevention, as abrupt changes in training intensity can lead to injuries. Using tracking technologies allows for better control of players' physical efforts. Studies indicate that implementing structured injury prevention programs significantly reduces injury rates and enhances athletic performance. Research highlights the importance of a multicomponent approach, individualized training, and load management to lower hamstring injuries. Collaboration among athletes, coaches, and health professionals is crucial to create a safe training environment. As football evolves, prioritizing injury prevention is essential for players' health, success, and career longevity.

Keywords: Injury Prevention. Football. Physiotherapy. Strength Training. Proprioception.

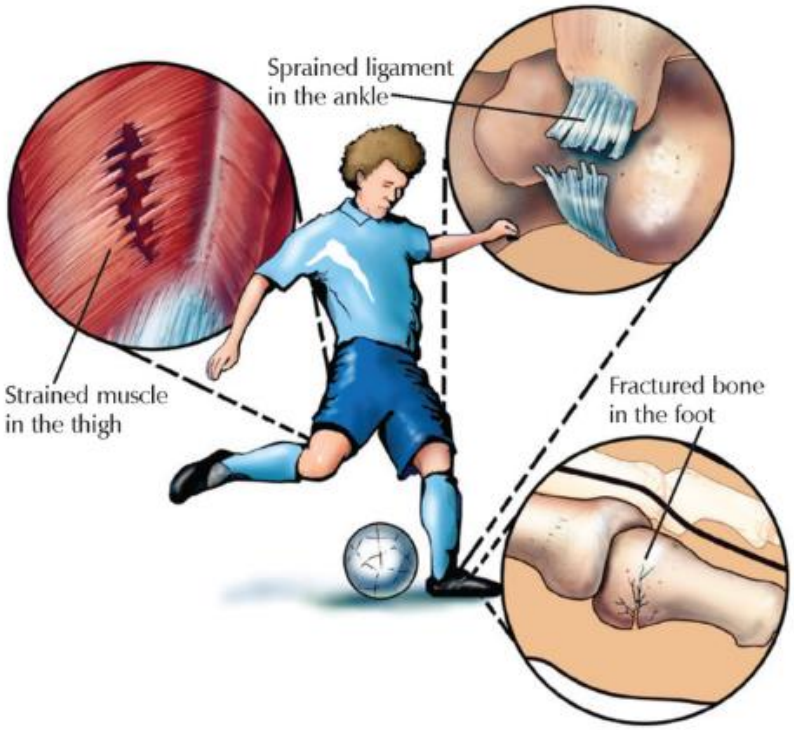
INTERNATIONAL SEVEN JOURNAL
OF MULTIDISCIPLINARY
ISSN: 2764-9547

INTRODUCTION

Injury prevention in football players is a central concern for athletes, coaches, and health professionals, as the sport involves intense and dynamic movements that increase the risk of muscle and joint injuries. To mitigate these risks, it is essential to adopt effective preventive strategies that combine targeted physical training and physiotherapeutic interventions, creating an integrated approach that protects players and optimizes their performance throughout their careers.

Preventive training focuses on developing essential physical skills to reduce the risk of injuries. Muscle strengthening programs are crucial for increasing joint stability, protecting them from overload injuries. Exercises that strengthen muscles such as hamstrings, quadriceps, calves, and core muscles (abdomen and lower back) are particularly effective in preventing lower limb injuries, such as sprains and ligament tears.

Figure 1: Common injuries in soccer.



Source: Physiolabs.

Furthermore, neuromuscular training aims to enhance proprioception, which is the body's ability to perceive its position and movement in space, through balance exercises, plyometrics, and functional movements. This type of training improves

athletes' neuromuscular response, helping to prevent falls and twists. Maintaining flexibility is also crucial, as a lack of mobility can predispose players to injuries in high-intensity situations. Therefore, regular stretching, both dynamic and static, becomes an indispensable part of training routines.

A good warm-up is another essential element in injury prevention. Specific programs, such as FIFA 11+, which combine mobility exercises, muscle activation, and coordination, prepare the body for the physical demands of the game and significantly reduce the incidence of injuries.

Alongside physical training, physiotherapeutic intervention plays a crucial role in injury prevention. Physiotherapists conduct detailed functional assessments, identifying muscle and joint imbalances that may predispose players to injuries. Based on these assessments, corrective exercise programs are developed to optimize biomechanics and improve movement efficiency. Manual therapy techniques, such as joint mobilization and myofascial release, are also used to maintain the quality of soft tissues and joint mobility, preventing injuries caused by muscle strains. Additionally, joint stabilization exercises, especially targeting the knees and ankles, aim to strengthen the supporting structures of these joints, protecting the ligaments from common injuries in football.

Even in the absence of evident injuries, preventive physiotherapy operates through corrective and stabilizing exercises, promoting preventive rehabilitation, which helps reduce the recurrence of injuries and keeps players in optimal performance conditions. In some cases, therapeutic technologies such as electrotherapy and ultrasound are employed to treat mild inflammation or accelerate muscle recovery.

Another fundamental aspect of injury prevention is monitoring training load. Abrupt variations in training intensity and volume can significantly increase the risk of injuries. The use of tracking technologies, such as GPS and heart rate monitors, allows coaches to accurately control players' physical effort, adjusting training sessions to avoid overload and prevent injuries.

The study by Pérez-Gómez et al. (2020) presents a systematic review of injury prevention programs for adult male football players. The research, which utilized the PubMed and EMBASE databases, initially identified 2,512 studies, of which only 11 met the inclusion criteria. The results indicate that injury prevention programs in football focus on strength training, proprioception, multicomponent programs (balance, core

stability, functional strength, and mobility), and dynamic warm-ups. The research concludes that implementing dynamic warm-up programs, combined with preventive exercises, strength training, balance, and mobility, can significantly reduce the incidence of injuries during games and training.

Another study, conducted by Fanchini et al. (2020), evaluated the effectiveness of exercise-based strategies to prevent muscle injuries in elite football players. The systematic review included 15 studies, encompassing systematic reviews, randomized controlled trials (RCTs), and non-randomized clinical trials. The results revealed inconsistencies in the evidence regarding the effectiveness of these strategies, with three systematic reviews presenting divergent conclusions. While five RCTs and seven non-randomized trials supported the use of eccentric exercises, proprioception exercises, and multidimensional prevention programs, most studies had a high risk of bias. Only one RCT, with low risk of bias, indicated that eccentric exercises are effective in preventing injuries in the groin area. Thus, the study concludes that there is limited scientific evidence to support exercise-based strategies in preventing muscle injuries in elite football players.

The research by Suárez-Arrones et al. (2020) investigated the preventive effect of a complex training program based on a holistic approach to hamstring health in elite professional football players. The study was conducted at a European elite club over 12 seasons, with the last two serving as the intervention period and the others as control. During the intervention period, players participated in a multifaceted program primarily focused on athlete health, with weekly interventions. The results showed that the injury rate was three times lower during the intervention seasons compared to the control seasons, with a significant reduction in both match and training injuries. Additionally, the injury load was almost four times lower during the intervention seasons, and recurrences of hamstring injuries were completely eliminated. The study concludes that a multicomponent injury prevention program, with individualized approaches and training load management, can significantly reduce hamstring injuries in elite football players.

Finally, the study by Krutsch et al. (2017) investigated current opinions on injury prevention strategies in football from the perspective of elite players and coaches. With a sample of 486 players and 88 coaches from divisions 4 to 6 of German football, the research revealed that physiotherapy and screening exams were rated as the most

important preventive strategies. The most valued training topics included warm-up exercises, recovery, and core stability, although the practical application of these exercises on the field was limited. Knee injuries were identified as the main concern among participants, and the decision-making regarding return to play after injuries showed discrepancies: players preferred to decide for themselves, while coaches considered doctors as the main decision-makers. The study concluded that although basic knowledge about injury prevention is adequate, its practical implementation is insufficient.

The research conducted by Meurer, Silva, and Baroni (2017) aimed to describe the perceptions of physiotherapists and current injury prevention practices in elite football clubs in Brazil. This cross-sectional study involved 16 of the 20 clubs that participated in the Brazilian Premier League in 2015. Physiotherapists completed a structured questionnaire, revealing that approximately 88% were actively involved in developing, testing, and implementing prevention programs. The main risk factors for injuries identified by all respondents included previous injuries, muscle imbalances, fatigue, hydration, fitness, diet, sleep/rest, and age. The most common methodologies for assessing athletes' injury risk included monitoring biochemical markers (100% of clubs), isokinetic dynamometry (81%), and functional movement screenings (56%). All clubs incorporated strength training, functional training, core exercises, and balance/proprioception exercises into their injury prevention programs, with 94% using Nordic exercises for hamstrings and other eccentric exercises. Additionally, the prevention program "FIFA 11+" was adapted by 88% of clubs. The study concluded that the perceptions and practices of physiotherapists regarding injury prevention in elite football clubs in Brazil were similar to those in developed countries, highlighting the disparity between clinical practice and scientific evidence in high-performance football.

Injury prevention for football players is a multifaceted topic that requires an integrated approach, involving specialized physical training and physiotherapeutic interventions. The adoption of preventive training programs, which include muscle strengthening, proprioception exercises, and dynamic warm-ups, is fundamental to minimizing the risk of injuries, especially in a sport characterized by intense and dynamic movements. Scientific evidence, although still limited in some areas, highlights the effectiveness of specific strategies, such as the use of eccentric exercises and multicomponent programs, in reducing the incidence of injuries.

Furthermore, the importance of functional assessment by physiotherapists, combined with careful monitoring of training load, is crucial for identifying imbalances that may predispose players to injuries. The reviewed studies show that the implementation of prevention programs not only reduces the frequency of injuries but also improves the overall performance of athletes throughout their careers. Ongoing research in this area is essential, as it allows for the development of increasingly effective practices aligned with the players' needs and ensures that interventions are based on solid evidence.

Thus, it is evident that collaboration among athletes, coaches, and health professionals is vital to establish a safe and effective training environment. As football evolves, injury prevention must remain a priority, promoting not only the health of players but also their success and longevity in their sporting careers.

REFERENCES

1. Fanchini, M., Steendahl, I., Impellizzeri, F., Pruna, R., Dupont, G., Coutts, A., Meyer, T., & McCall, A. (2020). Exercise-Based Strategies to Prevent Muscle Injury in Elite Footballers: A Systematic Review and Best Evidence Synthesis. *Sports Medicine*, 1-14. https://doi.org/10.1007/s40279-020-01282-z.

2. Krutsch, W., Angele, P., Nerlich, M., & Loose, O. (2017). Decision making in the return to play and prevention strategies – analysis of elite football players and team coaches' view. *British Journal of Sports Medicine*, 51, 346–347. https://doi.org/10.1136/bjsports-2016-097372.160.

3. Meurer, M., Silva, M., & Baroni, B. (2017). Strategies for injury prevention in Brazilian football: Perceptions of physiotherapists and practices of premier league teams. *Physical Therapy in Sport*, 28, 1–8. https://doi.org/10.1016/j.ptsp.2017.07.004.

4. Pérez-Gómez, J., Adsuar, J., Alcaraz, P., & Carlos-Vivas, J. (2020). Physical exercises for preventing injuries among adult male football players: A systematic review. *Journal of Sport and Health Science*, 11, 115–122. https://doi.org/10.1016/j.jshs.2020.11.003.

5. Porter, T., & Rushton, A. (2015). The efficacy of exercise in preventing injury in adult male football: a systematic review of randomised controlled trials. *Sports Medicine - Open*, 1. https://doi.org/10.1186/s40798-014-0004-6.

6. Suárez-Arrones, L., Nakamura, F., Maldonado, R., Torreño, N., Salvo, V., & Méndez-Villanueva, A. (2020). Applying a holistic hamstring injury prevention approach in elite football: 12 seasons, single club study. *Scandinavian Journal of Medicine & Science in Sports*, 31, 861–874. https://doi.org/10.1111/sms.13913.

7. Pessoa, E. G. (2024). Pavimentos permeáveis uma solução sustentável. *Revista Sistemática*, 14(3), 594–599. https://doi.org/10.56238/rcsv14n3-012.

8. Pessoa, E. G., Feitosa, L. M., Padua, V. P., & Pereira, A. G. (2023). Estudo dos recalques primários em um aterro executado sobre a argila mole do Sarapuí. *Brazilian Journal of Development*, 9(10), 28352–28375. https://doi.org/10.34117/bjdv9n10-059.

9. Pessoa, E. G., Feitosa, L. M., Pereira, A. G., & Padua, V. P. (2023). Efeitos de espécies de al na eficiência de coagulação, Al - residual e propriedade dos flocos no tratamento de águas superficiais. *Brazilian Journal of Health Review*, 6(5), 24814–24826. https://doi.org/10.34119/bjhrv6n5-523.

10. Silva, S. C. R. (2024). O papel vital da saúde periodontal no controle do diabetes. *International Seven Journal of Multidisciplinary*, 1(1). https://doi.org/10.56238/isevmjv1n1-012.

11. Bonon, M. R. C. D. (2024). Polidesoxirribonucleotídeo (PDRN): inovações e potencial na regeneração e cicatrização tecidual. *International Seven Journal of Multidisciplinary*, 1(1). https://doi.org/10.56238/isevmjv1n1-011.

12. Lopes, A. R. (2024). Cirurgia tradicional e cirurgia guiada: uma abordagem comparativa. *International Seven Journal of Multidisciplinary*, 2(6). https://doi.org/10.56238/isevmjv2n6-020.

13. Lopes, A. R. (2024). Previsibilidade em implantes dentários na área estética. *Revista Sistemática*, 14(5), 1355–1364. https://doi.org/10.56238/rcsv14n5-025.