

The Burden of Injuries in Padel: A Systematic Synthesis of Risk Factors and Biomechanical Implications

Ana Maia¹, Tiago F. Venâncio^{1,2,3,5}, Nelson Valente^{1,2,5}, Pedro Forte^{6,7,8,9,10}, José E. Teixeira^{3,11}, Pedro Afonso^{1,5,6,9,12}, Ricardo Ferraz^{10,13}, and Luís Branquinho^{1,2,5,7,10}

¹ Biosciences Higher School of Elvas, Polytechnic University of Portalegre, Portugal

² Life Quality Research Centre (LQRC-CIEQV), Santarém, Portugal

³ SPRINT—Sport Physical Activity and Health Research & Innovation Center, Rio Maior, Portugal

⁴ Training Optimization and Sports Performance Research Group (GOERD), Faculty of Sport Science, University of Extremadura, Espanha

⁵ Sport, Performance & Exercise Applied Research (SPEAR LAB), Portalegre, Portugal

⁶ Department of Sports, Higher Institute of Educational Sciences of the Douro, 4560-708 Penafiel, Portugal

⁷ Centro de Investigação do Instituto Superior de Ciência Educativas (CI-ISCE), Penafiel, Portugal

⁸ Department of Sports Sciences, Polytechnic Institute of Bragança, 5300-253 Bragança, Portugal

⁹ Research Center for Active Living and Well-Being (Livewell), Polytechnic Institute of Bragança, 5300-253 Bragança, Portugal

¹⁰ Research Center in Sports Sciences, Health Sciences and Human Development, Covilhã, Portugal

¹¹ Department of Sport Sciences, Polytechnic Institute of Cávado e Ave, Guimarães, Portugal

¹² Department of Sport, Exercise and Health Sciences, University of Trás-os-Montes e Alto Douro, VilaReal, Portugal

¹³ Department of Sport Sciences, University of Beira Interior, Covilhã, Portugal

*Email: tiagovenancio@ipportalegre.pt

Summary

Background: To synthesize the recent literature on injuries in padel players, identifying patterns of occurrence, risk factors, and preventive strategies, with a focus on amateurs, youth, and recreational players.

Methods: Thirty studies published between 2014 and 2025 were included, comprising cross-sectional studies, systematic reviews, and biomechanical analyses. Article selection was based on searches in PubMed, ScienceDirect and Google Scholar, using keywords such as “padel”, “injuries” and “musculoskeletal injuries”. Inclusion criteria encompassed studies analyzing musculoskeletal injuries in padel players, while studies involving other sports or lacking injury assessment were excluded.

Results: The prevalence of injuries among amateur players ranged from 40% to 55%, with an average incidence of 3–8 injuries per 1,000 hours of training or matches. Tendinous and muscular injuries were most common, predominantly affecting the shoulder, elbow, knee, and ankle. Risk factors included limited experience, high training volume, inadequate warm-up, psychological load, lifestyle, and specific biomechanical patterns. Sex and age differences were observed, with women more prone to upper limb tendinous injuries and men to muscular and ligament injuries. Imaging techniques and biomechanical analyses were effective in early injury identification and prevention.

Conclusions: Padel carries a significant risk of injury, particularly among amateurs and youth. Preventive strategies should include structured warm-up and strengthening programs, training load monitoring, biomechanical assessment, and attention to psychophysiological factors. Future studies should investigate preventive interventions and longitudinal cohorts to reduce injury incidence in this sport.

Keywords: padel; sports injuries; injury prevention; musculoskeletal injuries; amateur athletes.

Resumo

Introdução: Sintetizar a literatura recente sobre as lesões em praticantes de padel, identificando os padrões de ocorrência, os fatores de risco e as estratégias de prevenção, com especial enfoque em praticantes amadores, jovens e recreativos.

Métodos: Foram incluídos 30 estudos publicados entre 2014 e 2025, compreendendo estudos transversais, revisões sistemáticas e análises biomecânicas. A seleção dos artigos baseou-se em pesquisas nas bases de dados PubMed, ScienceDirect e Google Scholar, utilizando palavras-chave como padel, injuries e musculoskeletal injuries. Os critérios de inclusão abrangeram estudos que analisavam lesões musculoesqueléticas em praticantes de padel, tendo sido excluídos estudos relativos a outras modalidades desportivas ou que não incluíssem a avaliação de lesões.

Resultados: A prevalência de lesões entre os praticantes amadores variou entre 40% e 55%, com uma incidência média de 3 a 8 lesões por cada 1.000 horas de treino ou competição. As lesões tendinosas e musculares foram as mais frequentes, afetando predominantemente o ombro, o cotovelo, o joelho e o tornozelo. Os principais fatores de risco identificados incluíram a reduzida experiência na modalidade, elevados volumes de treino, aquecimento inadequado, carga psicológica, estilo de vida e padrões biomecânicos específicos. Observaram-se diferenças relacionadas com o sexo e a idade, sendo as mulheres mais suscetíveis a lesões tendinosas dos membros superiores e os homens a lesões musculares e ligamentares. As técnicas de imagiologia e as análises biomecânicas revelaram-se eficazes na identificação precoce e na prevenção de lesões.

Conclusões: O padel apresenta um risco significativo de lesão, particularmente entre praticantes amadores e jovens. As estratégias preventivas devem incluir programas estruturados de aquecimento e fortalecimento muscular, monitorização da carga de treino, avaliação biomecânica e atenção aos fatores psicofisiológicos. Estudos futuros deverão avaliar a eficácia de intervenções preventivas e desenvolver estudos longitudinais, de forma a reduzir a incidência de lesões nesta modalidade desportiva.

Palavras-chave: padel; lesões desportivas; prevenção de lesões; lesões musculoesqueléticas; atletas amadore

Introduction

Padel is a racket sport of Spanish origin that combines elements of tennis and squash. It is played on a smaller court surrounded by walls, which significantly affects the dynamics of the game. The sport is characterized by intermittent high-intensity actions, involving rapid movements, sudden changes of direction, trunk rotations, frequent accelerations and decelerations, as well as the repetitive execution of technical overhead movements, such as smashes and volleys (Alhammad et al., 2025; Muñoz et al., 2022). These demands place a high mechanical load on the musculoskeletal and neuromuscular systems, particularly in the upper and lower limbs. The sport has experienced exponential growth worldwide, becoming one of the fastest-growing racket sports, especially in Europe and Latin America (Alhammad et al., 2025; Dahmen et al., 2023). This growth is particularly evident among amateur players, young people, and recreational players, many of whom take up the sport without specific physical preparation, adequate technical supervision, or previous sporting history, which can increase their vulnerability to injury (Declève et al., 2025; Rocamora-López & Mateo-Orcajada, 2025).

Despite the recognized benefits of padel for cardiovascular health, overall physical fitness, and psychosocial well-being, recent literature has warned of a considerable incidence and prevalence of injuries associated with its practice (Ferreira et al., 2025; Muñoz et al., 2022). Epidemiological studies indicate that musculoskeletal injuries predominantly affect the shoulder, elbow, knee, and ankle, with emphasis on tendon, muscle, and ligament injuries (de Sire et al., 2024; Tagliafico et al., 2023). The so-called “padel elbow,” like lateral epicondylitis observed in other racket sports, has

been frequently reported, as well as shoulder pathologies related to overload and muscle imbalances.

Several risk factors have been associated with injuries in padel players, including limited experience, high training volume and intensity, inadequate warm-up, deficits in strength and neuromuscular control, as well as specific biomechanical patterns of the technical movement (Marotta et al., 2025; Muñoz et al., 2022; Pérez et al., 2023; Ryman Augustsson & Durdal, 2025).

In addition to physical factors, psychophysiological aspects such as stress, perceived well-being, fatigue, and lifestyle have emerged as relevant elements in injury predisposition, particularly in young and recreational populations (Alhammad et al., 2025; Rocamora-López & Mateo-Orcajada, 2025).

Despite the increase in the number of studies on padel injuries, the literature still shows significant methodological heterogeneity, with a predominance of cross-sectional studies, frequent use of self-reported questionnaires, and a scarcity of longitudinal studies and structured preventive interventions. In addition, most studies focus on professional players, with a clear gap in knowledge regarding amateur, young, and recreational players, who constitute most of the population practicing the sport (Dahmen et al., 2023; Declève et al., 2025).

In this context, it is pertinent to conduct a literature review that integrates epidemiological, physiological, and biomechanical data, allowing the identification of injury patterns, risk factors, and specific preventive strategies for padel (Belmar-Arriagada et al., 2025; Rocamora-López &

Mateo-Orcajada, 2025). A structured synthesis of the available scientific evidence can help guide health professionals, coaches, and practitioners in implementing effective prevention measures, promoting safer and more sustainable practice of the sport (Declève et al., 2025; Thomas et al., 2025).

The objective of this review is to synthesize recent scientific literature on injuries associated with playing padel, analyzing their prevalence, the most frequent types and locations, as well as the main risk factors involved. Additionally, it aims to integrate epidemiological, physiological, and biomechanical evidence, identifying differences related to age, gender, and level of experience, and to discuss strategies for prevention and early identification of injuries. This review focuses particularly on amateur, young, and recreational players, with the aim of providing scientific support for the implementation of preventive practices and for guiding future research in this sport.

Methodology

The bibliographic search was conducted in the PubMed, ScienceDirect, and Google Scholar databases. The search approach integrated free-text and controlled vocabulary terms associated with sports injuries and padel. In order to increase the identification of pertinent research and refine the searches, boolean operators (AND/OR) were employed. In order to find additional publications that were not found by the first database search, reference lists of eligible articles were additionally manually searched, selected for their comprehensiveness and relevance to the literature on sports and musculoskeletal injuries. The keywords used included: “padel,” “injuries,” and “musculoskeletal injuries.”

The period considered covered studies published between 2019 and 2025, ensuring the inclusion of recent articles on padel injuries. Original studies, systematic reviews, and biomechanical analyses published in English or Spanish and focusing on amateur, young, and recreational players were included. Studies that did not specifically address padel injuries, articles on other sports, reports without injury assessment, or without full access to the text were excluded.

The selection of sources was carried out in two stages. Initially, titles and abstracts were screened to identify thematic relevance. Subsequently, potentially eligible articles were evaluated in full, recording information on the study population, type and location of injuries, risk factors, and main results. This analysis allowed us to synthesize epidemiological, physiological, and biomechanical data, ensuring the integrity and comparability of the information included in the review.

No AI-assisted tools were used during the literature search or study selection process.

In total, 30 studies met the inclusion criteria and were incorporated into the review, providing a solid basis for the analysis of injury patterns, risk factors, and preventive strategies in padel. Seventeen of these studies were not

cited throughout this article (Alito et al., 2024; Arteaga et al., 2025; Cocco et al., 2024; de Almeida Fagundez et al., 2024; de Sire, 2022; Demeco et al., 2022; Foesch et al., 2025; García-Fernández et al., 2019; García-Fernández et al., 2019; Latino et al., 2025; Palacio, 2024; Priego Quesada et al., 2018; Quesada et al., 2014; Sánchez-Alcaraz et al., 2021; Teixeira et al., 2025; Thomas et al., 2025; Tooth et al., 2023; Viera et al., 2025).

There were two phases to the selecting procedure. First, titles and abstracts were examined to make sure they were pertinent to the review's goals. Second, the pre-established inclusion and exclusion criteria were used to evaluate the entire texts of possibly eligible research. The final synthesis did not include any research that did not specifically address injury occurrence, risk factors, prevention, or biomechanical elements of padel.

Results

Analysis of the studies included identified consistent patterns of injury occurrence, risk factors, and physiological and biomechanical characteristics in padel players.

Table 1: Characteristics and main findings of selected studies on padel-related injuries

Author	Country	Type of study	Sample	Player Level	Main results
(Dahmen et al., 2023)	Various	Systematic review	—	Amateur and professional	Prevalence between 40–95%; shoulder and elbow most affected
(Muñoz et al., 2022)	Spain	Transversal	n=120	Amateur	Incidence 3–8 lesions/1,000 hours; predominance MS
(Ferreira et al., 2025)	Portugal	Transversal	n=164	Recreational	Differences by gender; frequent shoulder and knee injuries
(Declève et al., 2025)	Belgium	Transversal	n=278	Recreational	High prevalence among recreational users
(Alhammad et al., 2025)	South Arabia	Transversal	n=310	Amateur	Relationship between psychological stress and injuries
(de Sire et al., 2024)	Italy	Biomechanics	n=30	Competitive	Kinematic changes in the shoulder are associated with risk
(de Sire et al., 2024)	Italy	Biomechanics	n=20	Amateur	Predictive sEMG of shoulder injury
(Ryman Augustsson & Durdal, 2025)	Sweden	Transversal	n=89	Youth	Association between training load and injuries

Prevalence of Injuries

The prevalence of injuries in amateur players ranged from 40% to 55%, while systematic reviews indicate values between 40% and 95%, depending on the population studied and the assessment method used (Dahmen et al., 2023; Muñoz et al., 2022; Rocamora-López & Mateo-Orcajada, 2025). The average incidence reported was 3 to 8 injuries per 1,000 hours of training or games (Ferreira et al., 2025; Muñoz et al., 2022). Studies show that young players are more vulnerable to overuse injuries, while more experienced players tend to have more localized and predictable injury patterns (Alhammad et al., 2025; Ryman Augustsson & Durdal, 2025).

Table 2: Prevalence and incidence of injuries reported in padel players according to population and assessment method

Author	Sample	Prevalence (%)	Incidence	Evaluation method
(Dahmen et al., 2023)	Amateurs/professionals	40–95	—	Systematic review
(Muñoz et al., 2022)	Amateurs	45–55	3–8 / 1.000 h	Questionnaire
(Ferreira et al., 2025)	Recreational	42	4,2 / 1.000 h	Questionnaire
(Declève et al., 2025)	Recreational	50	—	Online Questionnaire
(Belmar-Arriagada et al., 2025)	Amateurs	48	—	Cross-sectional evaluation

Type and Locations of Injuries

Upper limbs: the shoulder and elbow were the most affected, with a predominance of tendon and muscle injuries. “Padel elbow” was reported as frequent (de Sire et al., 2024; Muñoz et al., 2022; Tagliafico et al., 2023).

Lower limbs: knee, ankle, and foot, usually with ligament and muscle injuries, especially in rapid change of direction movements (Ferreira et al., 2025; Rocamora-López & Mateo-Orcajada, 2025).

Gender differences: women had a higher incidence of tendon injuries in the upper limb, while men had more muscle and ligament injuries (Ferreira et al., 2025; Ryman Augustsson & Durdel, 2025).

Table 3: Most frequently affected anatomical regions and types of injuries reported in padel players

Body region	Type of injury	Studies reporting
Shoulder	Tendinitis, overload	(de Sire et al., 2024; Marotta et al., 2025; Muñoz et al., 2022)
Elbow	Lateral epicondylitis	(Muñoz et al., 2022; Tagliafico et al., 2023)
Knee	Ligament/muscle injuries	(Ferreira et al., 2025; Rocamora-López & Mateo-Orcajada, 2025)
Ankle	Sprains	(Declève et al., 2025; Ferreira et al., 2025)
Foot	Plantar overload	(Quesada et al., 2014; Rocamora-López & Mateo-Orcajada, 2025)

Table 4: Differences in injury patterns according to sex, age, and playing experience in padel players

Variable	Key findings	Studies
Female	More tendon injuries MS	(Ferreira et al., 2025; Ryman Augustsson & Durdel, 2025)
Male	More muscle and ligament injuries	(Ferreira et al., 2025)
Young people	Increased risk due to excessive use	(Alhammad et al., 2025; Ryman Augustsson & Durdel, 2025)
Experienced adults	More localized injuries	(Muñoz et al., 2022)

Risk Factors

Multiple factors associated with an increased risk of injury have been identified:

Training and experience: less experience (<35 years) and high weekly training volume increase the incidence of injuries (Muñoz et al., 2022; Ryman Augustsson & Durdel, 2025). Physical preparation: inadequate warm-up and lack of specific strengthening (Pérez et al., 2023; Rocamora-López & Mateo-Orcajada, 2025).Psychophysiological and lifestyle: high stress, low well-being, diet, and lifestyle habits influence risk, especially in young athletes (Alhammad et al., 2025; Ryman Augustsson & Durdel, 2025).Biomechanics and technique: shoulder movement patterns and poor posture contribute to increased risk, according to studies using sEMG (surface electromyography) and kinematic analysis (de Sire et al., 2024; Marotta et al., 2025).

Table 5: Main modifiable and non-modifiable risk factors associated with injuries in padel players.

Category	Risk factor	Studies
Training	High volume	(Muñoz et al., 2022; Ryman Augustsson & Durdel, 2025)
Physical preparation	Inadequate heating	(Pérez et al., 2023; Rocamora-López & Mateo-Orcajada, 2025)
Biomechanics	Kinematic changes in the shoulder	(de Sire et al., 2024; Marotta et al., 2025)
Psychophysiological	Stress and low well-being	(Alhammad et al., 2025; Rocamora-López & Mateo-Orcajada, 2025)
Lifestyle	Diet and recovery	(Rocamora-López & Mateo-Orcajada, 2025)

Diagnosis and Prevention

Imaging techniques (ultrasound) and biomechanical analyses have proven effective for early identification of injuries (Pérez et al., 2023; Thomas et al., 2025). The literature recommends integrated preventive programs, including warm-up, strengthening, training load monitoring, and individualized technical assessment (Declève et al., 2025; Rocamora-López & Mateo-Orcajada, 2025).

Discussion & Conclusions

This review consistently shows that injuries in padel are frequent and result from a complex interaction between biomechanical, physiological, psychosocial, and contextual factors. The studies analyzed converge in identifying the shoulder, elbow, knee, and ankle as the most affected anatomical segments, reflecting the specific demands of the sport, characterized by high-speed repetitive movements, rapid changes of direction, and predominantly asymmetrical actions (Ferreira et al., 2025; Muñoz et al., 2022; Rocamora-López & Mateo-Orcajada, 2025). The high prevalence of tendon and muscle injuries, especially in the upper limbs, seems to be directly associated with the repetitive nature of the technical movements in padel, namely the smash, volley, and overhead shots. These movements place high loads on the structures of the shoulder and elbow complex, especially when performed with inadequate biomechanical patterns or in conditions of fatigue. At the same time, lower limb injuries reflect the demands of frequent acceleration, deceleration, and rotation in confined spaces, which increases mechanical stress on the knee and ankle (Dahmen et al., 2023; Pérez et al., 2023; Ryman Augustsson & Durdel, 2025).

The literature also shows consensus on the role of modifiable factors in injury risk, including limited experience, high training volumes, and inadequate warm-up strategies. Recreational and beginner players seem particularly vulnerable, possibly due to lower technical proficiency, deficits in strength and neuromuscular control, as well as lower literacy in injury prevention. These findings reinforce the importance of an early preventive approach, even in non-competitive contexts (Ryman Augustsson & Durdal, 2025). Additionally, recent studies have highlighted the relevance of psychophysiological factors, such as high stress levels, lower perceived well-being, and accumulated fatigue, in predisposing individuals to injuries. These factors can negatively influence motor control, reaction time, and decision-making during play, increasing the risk of uncoordinated or delayed movements. The integration of psychophysiological assessments with biomechanical data, namely through sEMG and kinematic analyses, has allowed the identification of inadequate muscle activation patterns and functional asymmetries associated with a higher risk of injury, especially in young players and in the early stages of sports specialization (Alhammad et al., 2025; de Sire et al., 2024; Marotta et al., 2025).

Despite these convergences, there is considerable heterogeneity in the reported prevalence and incidence of injuries, ranging from 40% to 95% of injured players and from 3 to 8 injuries per 1,000 hours of practice. These discrepancies can be attributed to substantial methodological differences between studies, including the use of self-reported questionnaires versus clinical assessments, variations in the recall period, differences in the competitive level of participants, and distinct geographical contexts. This heterogeneity limits the direct comparability of results and highlights the need for standardized protocols for injury surveillance in padel (Dahmen et al., 2023; Ferreira et al., 2025; Muñoz et al., 2022; Rocamora-López & Mateo-Orcajada, 2025).

Among the main limitations of the available literature is the predominance of cross-sectional and observational studies, often with small samples, which hinder causal inference and understanding of the temporal evolution of injuries. The scarcity of longitudinal studies and limited research on structured preventive programs represent significant gaps, particularly considering the exponential growth of padel at the recreational level. In addition, the application of advanced biomechanical analyses has been largely restricted to high-performance contexts, reducing the transfer of knowledge to the general population of practitioners. Furthermore, pertinent material published in other languages might have been overlooked due to the restriction to research published in English and Spanish.

Given these limitations, future research should focus on longitudinal designs, with objective monitoring of external and internal training load, integration of detailed biomechanical assessments, and consideration of psychosocial factors. The implementation and evaluation of multimodal preventive programs, adapted to the specific characteristics of padel and different levels of practice, could contribute significantly to

reducing the incidence of injuries and promoting safer and more sustainable practice of the sport (Declève et al., 2025; Rocamora-López & Mateo-Orcajada, 2025).

This review demonstrates that injuries associated with playing padel are common and result from a multifactorial etiology, predominantly affecting the shoulder, elbow, knee, and ankle, with a higher incidence of tendon and muscle injuries (Ferreira et al., 2025; Muñoz et al., 2022; Rocamora-López & Mateo-Orcajada, 2025). Evidence suggests that amateur, young, and less experienced players are more vulnerable to injury, particularly when exposed to high training volumes, inadequate warm-up strategies, unfavorable biomechanical patterns, and high levels of psychophysiological load (Alhammad et al., 2025; Dahmen et al., 2023; de Sire et al., 2024).

Additionally, the literature shows that variability in assessment methods and study designs limits the comparability of available epidemiological data. Nevertheless, the results converge on the need for an integrated preventive approach that simultaneously considers physical, biomechanical, and psychosocial factors. In summary, injury prevention in padel should be understood as a multidimensional and continuous process, essential to ensure safe, effective, and sustainable practice of the sport (Declève et al., 2025; Rocamora-López & Mateo-Orcajada, 2025).

Practical Applications

From a practical application standpoint, the results suggest that injury prevention programs for padel should include integrated strategies such as: Implementation of sport-specific warm-ups and muscle strengthening programs (Pérez et al., 2023; Ryman Augustsson & Durdal, 2025); Systematic monitoring of training load to prevent overload and fatigue (Belmar-Arriagada et al., 2025; Dahmen et al., 2023); Biomechanical assessment of movement patterns, especially at the shoulder and lower limbs (de Sire et al., 2024; Marotta et al., 2025); Consideration of psychophysiological and lifestyle factors is essential for promoting the overall well-being of practitioners and reducing the risk of injury (Alhammad et al., 2025).

Regarding future research, it is recommended that the following be carried out:

Longitudinal studies to monitor the evolution of injuries over time (Belmar-Arriagada et al., 2025); Development and evaluation of the effectiveness of structured preventive interventions, including specific training programs and appropriate recovery strategies (Declève et al., 2025); Exploring the use of biomechanical analysis and surface electromyography (sEMG) technologies in recreational settings to identify risk patterns that have not yet been properly detected (Marotta et al., 2025; Thomas et al., 2025).

References

Alhammad, A., Almalki, H., Ghulam, H., Al-Harbi, R., Al-Harbi, S., Al-Shareif, S., ... & Taiar, R. (2025, February).

- Assessing the Spread of the Sport of Padel and the Prevalence and Causes of Injuries Among Padel Players. In *Healthcare* (Vol. 13, No. 4, p. 367). MDPI. <https://doi.org/10.3390/healthcare13040367>
- Alito, A., Leonardi, G., Portaro, S., Fenga, D., Filardi, V., Bruschetta, A., ... & Tisano, A. (2024). The padel phenomenon after the COVID-19: an Italian cross-sectional survey of post-lockdown injuries. *European Journal of Translational Myology*, 34(2), 12331. <https://doi.org/10.4081/ejtm.2024.12331>
- Arteaga, J., Cancino, J., Silva, L., Rondanelli, R., & Figueroa, D. (2025). Lesiones deportivas en jugadores de pádel chilenos. *Revista Chilena de Ortopedia y Traumatología*, 66(02), e90-e97. <https://doi.org/10.1055/s-0045-1811710>
- Belmar-Arriagada, H., Gajardo-Burgos, R., Armstrong, R., & Bascour-Sandoval, C. (2025). Padel related injuries: prevalence and characteristics in chilean amateur players—a cross sectional analytic study. *BMC Sports Science, Medicine and Rehabilitation*, 17(1), 1-10. <https://doi.org/10.1186/s13102-025-01141-2>
- Cocco, G., Ricci, V., Corvino, A., Abate, M., Vaccaro, A., Bernabei, C., ... & Pizzi, A. D. (2024). *Musculoskeletal disorders in padel: from biomechanics to sonography*. *Journal of Ultrasound*, 27(2), 335-354. <https://doi.org/10.1007/s40477-023-00869-2>
- Dahmen, J., Emanuel, K. S., Fontanellas-Fes, A., Verhagen, E., Kerkhoffs, G. M., & Pluim, B. M. (2023). Incidence, prevalence and nature of injuries in padel: a systematic review. *BMJ open sport & exercise medicine*, 9(2), e001607. <https://doi.org/10.1136/bmjsem-2023-001607>
- de Almeida Fagundez, N., Lara, S., Teixeira, L. P., & Graup, S. (2024). Análise de sintomas musculoesqueléticos em atletas de padel e sua relação com o tempo de treinamento na modalidade. *Interfaces Científicas-Saúde e Ambiente*, 9(3), 816-828. <https://doi.org/10.17564/2316-3798.2024v9n3p816-828>
- de Sire, A. (2022). Sports-related musculoskeletal injuries: From diagnostics to rehabilitation. *Journal of Back and Musculoskeletal Rehabilitation*, 35(4), 687-689. <https://doi.org/10.3233/BMR-225002>
- de Sire, A., Demeco, A., Frizziero, A., Marotta, N., Spano, R., Carozzo, S., ... & Ammendolia, A. (2023). Risk of injury and kinematic assessment of the shoulder biomechanics during strokes in padel players: a cross-sectional study. *The Journal of Sports Medicine and Physical Fitness*. <https://doi.org/10.23736/s0022-4707.23.15418-1>
- Declève, P., Nourissat, G., Neyens, D., Cools, A., & Borms, D. (2025). Prevalence and injury profiles for recreational padel players: A cross-sectional survey-based study. *Physical Therapy in Sport*, 75, 8-14. <https://doi.org/10.1016/j.ptsp.2025.07.002>
- Demeco, A., De Sire, A., Marotta, N., Spanò, R., Lippi, L., Palumbo, A., ... & Ammendolia, A. (2022). Match analysis, physical training, risk of injury and rehabilitation in padel: Overview of the literature. *International Journal of Environmental Research and Public Health*, 19(7), 4153. <https://doi.org/10.3390/ijerph19074153>
- Ferreira, R. M., Fernandes, L. G., Campos, L. D., & Gonçalves, R. S. (2025). Sport-Related Injuries in Portuguese Padel Practitioners and Their Characteristics. *Medicina*, 61(9), 1707. <https://doi.org/10.3390/medicina61091707>
- Foesch, E. A., Coelho, E. M. L., de Rosso Krug, R., & Vieira, C. D. M. V. (2025). Prevalência de lesões musculoesqueléticas em atletas amadores de padel. *Revista Contemporânea*, 5(11), e9554-e9554. <https://doi.org/10.56083/RCV5N11-036>
- García-Fernández, P., Guodemar-Pérez, J., Ruiz-López, M., Rodríguez-López, E. S., García-Heras, A., & Hervás-Pérez, J. P. (2019). Epidemiology of injuries in professional and amateur Spanish paddle players. *International Journal of Medicine & Science of Physical Activity & Sport/Revista Internacional de Medicina y Ciencias de la Actividad Física y del Deporte*, 19(76). <https://doi.org/10.15366/rimcafd2019.76.006>
- García-Fernández, P., Guodemar-Pérez, J., Ruiz-López, M., Rodríguez-López, E. S., García-Heras, A., & Hervás-Pérez, J. P. (2019). Epidemiología lesional en jugadores españoles de padel profesionales y amateur/Epidemiology of injuries in professional and amateur spanish paddle players. *Revista Internacional de Medicina y Ciencias de La Actividad Física y Del Deporte*, 19(76), 641-654. <https://doi.org/10.15366/rimcafd2019.76.006>
- Ji, P. Q., Kerr, Z. Y., & Alcantara, E. (2016). Examination of the risk factors associated with injured recreational padel players in Spain. *The Journal of sports medicine and physical fitness*, 58(1-2), 98-105. <https://doi.org/10.23736/s0022-4707.16.06729-3>
- Latino, F., Limone, P., Cassese, F. P., Martinez-Roig, R., & Tafuri, F. (2025). The role of heart rate variability in the prevention of musculoskeletal injuries in female padel players. <https://doi.org/10.62617/mcb1350>
- Marotta, N., Lopresti, E., Demeco, A., Prestifilippo, E., Moggio, L., Longo, U. G., ... & Ammendolia, A. (2025). Predictive role of surface electromyography and shoulder kinematic analysis on injury risk in padel players: A proof-of-concept study. *Journal of Back and Musculoskeletal Rehabilitation*, 10538127251344494. <https://doi.org/10.1177/10538127251344494>
- Muñoz, D., Coronado, M., Robles-Gil, M. C., Martín, M., & Escudero-Tena, A. (2022). Incidence of upper body injuries in amateur padel players. *International journal of environmental research and public health*, 19(24), 16858. <https://doi.org/10.3390/ijerph192416858>

- Palacio, E. S. (2024). Epidemiología de las lesiones en pádel y recomendaciones preventivas. *Ciencia y Deporte*, 9(2), e248-e248. <https://doi.org/10.34982/2223.1773.2024.V9.No2.004>
- Pérez, F., de la Rubia, A., Cañadas, E., Lorenzo-Calvo, J., Marquina, M., & García-Sánchez, C. (2023). Musculoskeletal injury prevalence in professional padel players. A retrospective study of the 2021 season. *Physical therapy in sport*, 63, 9-16. <https://doi.org/10.1016/j.ptsp.2023.06.003>
- Quesada, J. I. P., Melis, J. O., Belloch, S. L., Soriano, P. P., García, J. C. G., & Almenara, M. S. (2014). Estudio presurométrico y biomecánico del pie en el pádel. *riccafd: Revista Iberoamericana de Ciencias de la Actividad Física y el Deporte*, 3(1), 21-26. <https://doi.org/10.24310/riccafd.2014.v3i1.6191>
- Rocamora-López, G., & Mateo-Orcajada, A. (2025). Analysis of Differences in Injuries in Padel Players According to Sport-Specific Factors, Level of Physical Activity, Adherence to the Mediterranean Diet, and Psychological Status. *Sports*, 13(7), 228. <https://doi.org/10.3390/sports13070228>
- Ryman Augustsson, S., & Durdal, L. (2025). Training Load, Injuries, and Well-Being in Youth Padel Players: A Cross-Sectional Study. *Sports*, 13(10), 356. <https://doi.org/10.3390/sports13100356>
- Sánchez-Alcaraz, B. J., Martínez-Gallego, R., Llana, S., Vučković, G., Muñoz, D., Courel-Ibáñez, J., ... & Ramón-Llin, J. (2021). Ball impact position in recreational male padel players: implications for training and injury management. *International Journal of Environmental Research and Public Health*, 18(2), 435. <https://doi.org/10.3390/ijerph18020435>
- Tagliafico, A. S., Torri, L., & Righetto, R. (2022). Injuries in non-professional padel tennis players. Results of a survey of the Italian Federation of Tennis in Liguria, Italy. *The Journal of Sports Medicine and Physical Fitness*, 63(4), 566-569. <https://doi.org/10.23736/s0022-4707.22.14280-5>
- Teixeira, M. A. C., Engers, P. B., da Costa, T. M., Lara, S., Dias, S. M. B., & Graup, S. (2025). Análise da prevalência de lesões musculoesqueléticas em praticantes de padel: Analysis of the prevalence of musculoskeletal injuries in padle tennis practitioners. *Saúde e Pesquisa*, 18, e13221-e13221. <https://doi.org/10.17765/2176-9206.2025v18e13221>
- Thomas, E., Giustino, V., Ferrisi, E., Patti, A., Cassarino, M., Drid, P., & Bianco, A. (2025). Correction to: Incidence of injuries and associated risk factors in a sample of Italian recreational padel players. *The Journal of sports medicine and physical fitness*, 65(8), 1126. <https://doi.org/10.23736/S0022-4707.25.17439-2>
- Tooth, C., Croisier, J. L., Forthomme, B., Delvaux, F., Leclerc, S., Le Garrec, S., ... & Kaux, J. F. (2023). Prévention lésionnelle et sports de raquette: quand ReFORM et SportS 2 s'associent au service du sportif Injury prevention and racquet sports: When ReFORM and Sports 2 join forces for the benefit of sportspeople. *Journal de Traumatologie du Sport*, 40(3). <https://doi.org/10.1016/j.jts.2023.06.009>
- Viera, H. L. S., Leite-Nunes, T. D., Gidiel-Machado, L., Laporta, L. I., Royes, L. F. F., Forgiarini Saccol, M., & Lanferdini, F. J. (2025). Assessment of shoulder joint and muscle characteristics side-asymmetry in professional padel players. *Sports Biomechanics*, 1-17. <https://doi.org/10.1080/14763141.2025.2468320>