

Injury Prevention and Rehabilitation in Latin Dance Sports Training

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Abstract:

Background/Purpose: Latin Dance Sports is a high-intensity sport, demanding a combination of physical fitness, flexibility, and complex technique. This study aims to analyze the most prevalent injury patterns, identify biomechanical risk factors, and propose specific prevention and rehabilitation strategies for Latin dancers/athletes.

Methods: This article synthesizes findings from epidemiological and biomechanical studies on Latin Dance Sports. The analysis focuses on overuse injuries and acute (traumatic) injuries, particularly in the lower extremities and the spine. Prevention strategies are proposed based on the principles of optimizing specific physical fitness (core strength, balance, and muscular endurance).

Results: Injuries to the lower extremities (ankles, feet, knees) and the lumbar spine are the most common. More than 60% of injuries are due to overuse, associated with the high repetition frequency of rotational movements, bouncing (Samba/Jive), and torso dissociation (Cuban Motion). Key risk factors include core-hip strength imbalances and improper floor contact technique.

Conclusion: The implementation of a comprehensive supplementary training program, focusing on hip-spinal joint stabilization strength and proprioception training, is the most effective strategy to mitigate injury risk and optimize the recovery process for Latin dancers/athletes.

Keywords: Injury, Latin Dance Sport, Biomechanics, Injury Prevention, Rehabilitation.

1. Introduction

Latin Dance Sports (comprising Rumba, Cha-cha-cha, Samba, Paso Doble, Jive) is classified as a high-intensity sport, demanding considerable aerobic and anaerobic energy, especially during prolonged competitions. Similar to other aesthetic and technically demanding sports, Latin Dance Sports has a high injury rate, primarily related to training volume and specific technical intensity. The aim of this article is to provide a scientific basis for the health management of Latin dancers/athletes, emphasizing preventive measures based on the biomechanical understanding of characteristic Latin movements.

2. Injury Pattern Analysis

Epidemiological data indicates that injuries in Latin Dance Sports are primarily focused on specific body regions and injury types.

2.1. Injury Site Distribution

Lower Extremities: The most frequently injured area (accounting for 57.5% of total injuries), primarily involving the ankles, feet, and knee joints. Lateral ankle sprain is the most common acute injury. **Spine and Torso:** This region accounts for a significant proportion (27.5%) and is the second most common injury site. The cause is

attributed to repetitive rotary-dissociations required for Cuban Motion and the arching/flexion postures in Rumba/Paso Doble, which place stress on the lumbar vertebrae and the sacroiliac joint (SIJ).

2.2. Characteristic Injury Types

Overuse Injuries: Predominant (accounting for approximately 64% to 68% of injuries). These include Achilles Tendinitis, Plantar Fasciitis, and Stress Fractures of the Tibia and Metatarsals, particularly due to the high bouncing intensity of Samba and Jive.

Hip Joint Injuries: Including Hip Flexor Tendinitis and Labral Tears, resulting from the requirement for extreme hip range of motion and high rotational forces.

3. Scientific Prevention Strategie

Injury prevention in Latin Dance Sports must be a comprehensive supplementary training program, focused on counterbalancing the strenuous biomechanical demands.

3.1. Stabilizing Strength

Core Stability: Core strength is a critical factor in maintaining proper posture and controlling force transmission, helping to reduce stress on the lumbar spine during rotation and lateral bending movements. Practice exercises such as static Plank and Side Plank to strengthen the oblique and stabilizer muscles.

Hip Stability: Focus on exercises for the Gluteus muscles and the Adductors. Strength imbalances in the lower extremities are associated with back and lower limb injuries.

3.2. Proprioception and Balance Training

Objective: To enhance the ability to perceive joint and muscle position in space, which is particularly crucial for preventing recurrent ankle sprains.

Practice: Single-leg balance exercises on unstable surfaces (such as a balance board or foam pad), simulating the rapid weight shifts in Jive and Cha-cha-cha.

3.3. Training Load Management and Recovery

Workload Management: Avoid sudden increases in training duration and intensity, especially during the preparation phase for major competitions.

Specific Warm-up: The warm-up should include dynamic stretching exercises to activate the major muscle groups (hips, lower back) and prepare the joints for rotational and bouncing movements.

Static Stretching: Perform post-training to improve Range of Motion (ROM) and muscle elasticity, helping to reduce the risk of muscle strain and joint stress.

4. Rehabilitation and the Instructor's Role

4.1. Initial Response and Professional Rehabilitation

The PRICE Principle: Should be applied immediately to acute injuries (such as ankle sprains).

Professional Rehabilitation: Injured athletes should always undergo rehabilitation under the supervision of a physician or a sports physiotherapist. Professional rehabilitation helps shorten the recovery time and prevent functional loss.

4.2. The Role of the Instructor/Coach

The instructor plays a vital role in injury prevention by:

Early Recognition: Detecting early signs of pain or discomfort in students/dancers.

Technical Correction/Adjustment: Ensuring biomechanically accurate dance technique to avoid unnecessary stress on joints and muscles.

Footwear Consulting/Advice: Recommending appropriate supportive footwear, especially for high-intensity and rotational steps.

5. Conclusion

Injuries in Latin Dance Sports are predominantly overuse injuries, concentrated in the lower extremities and the spine. A strong integration of training load management, core/hip stabilization strength training, and

optimization of dance technique is key to protecting the long-term career and health of the athletes/dancers. Further research is needed on the effectiveness of specific injury prevention programs for Latin Dance Sports.

6. References

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