



PODIATRY

# Foot & Practice

A foot health message from  
Friendly Feet Podiatry

## Ballet and foot injuries



### PODIATRIC INJURIES FOR BALLET DANCERS

Repetitive strain and force of impact through the lower extremities is the highest cause of injury for ballet dancers. Ballet shoes have no shock absorption and unlike the shoes worn by other athletes, they provide no support to the active foot. Podiatric ballet injuries fall into 3 major pathological categories: those caused by poor technique, pre-existing structural anomalies not suited to ballet, and ballet footwear and surfaces.

**Poor technique:** the majority of ballet postures are founded in external rotation of the hip joint. Dancers who have not built up the required flexibility in the hip often compensate by forcing rotation at the knee, ankle and foot. Injuries resulting from improper technique include medial structural damage caused by forced eversion of the hindfoot and excessive pronation of the midfoot and forefoot.

**Structural anomalies:** dancers with pre-existing structural problems including cavus foot, Morton's foot and splayed feet will be at increased risk of ligament strain, fasciitis, stress fracture, corns, hallux vagus and bunions due to the structural restrictions of these conditions, making it difficult to absorb shock, balance stress equally through the metatarsals, and a tendency for hypermobility, for each condition respectively. Furthermore, some dancers will never develop the extreme level of dorsiflexion required by the metatarsophalangeal joint to be able to safely perform the movements required by ballet, adding increased pressure to the feet.

**Footwear and surfaces:** ballet shoes are handmade from satin, a thin layer of cardboard for shock absorption, a thin cotton insole, and canvas to fill the toe of the shoe to allow the dancer to perform en pointe. Ballet shoes wear out quickly and contribute to injury as they wear due to decreased support, causing the foot to roll as the shoe is unable to bear weight. The floor surface of the dance studio is another significant factor contributing to podiatric injuries. A wooden floor is the most common surface, with the wood providing superior shock absorption over concrete. Floors with too much flexibility contribute to muscle fatigue due to increased exertion transferring energy from one movement to the next. Floors that are too hard lack shock absorption and lead to stress fractures.

On patient examination, ballet shoes should be checked for signs of wear that indicate underlying pathology. Orthotics can be fitted into pointe shoes to provide additional stability and shock absorption to avoid injury, with the benefit of decreasing pain, reducing muscle fatigue and preventing long-term damage.

## TREATING THE PROFESSIONAL DANCER

Advanced dance work is demanding and painful on the feet almost by design. Unlike other sports injuries, dancers train on injured feet on a daily basis, and in many cases for hours at a time. Most dancers suffer from blisters, corns and calluses from unforgiving and completely unsupportive pointe shoes, many suffer from bunions as early as their late teens and many more develop stress fractures. Toenails become blackened and bruised from stress and are prone to fall off, making infection in many cases inevitable, although easily avoidable. These conditions form the daily existence of a ballet dancer, on top of the performance-related injuries such as sprains and spiral fractures that can be considered a common side-effect for any elite athlete.

Although recommendations for the treatment of an injury in the general population may be to discontinue the activity that is causing the injury, to tell a professional dancer to quit dancing has much the same effect as telling a professional footballer to give up football. Trust will be lost, the patient will be disheartened, will most likely remain untreated and will ignore treatment options going forward. Unlike the football player who has a medical team on standby to attend to injuries as they happen, the dancer's environment is one in which the medical team is usually non-existent and injury can leave one dropping down the company hierarchy and out of a career.

Dancers mask pain to 'stay in the game'. The fact is that dancers are so accustomed to dealing with pain that they are skilled at remaining in control, overly depend on NSAIDs to get through training sessions, and in many cases the daily endurance of pain makes it difficult for a dancer to distinguish between different types of pain when a new injury strikes. Understanding the dancer's mindset is crucial to treatment, as it will lead to patient trust, increased communication for a more-accurate patient history, and improved patient adherence to recommended therapies.

Treat dancers with respect for their athleticism and an understanding of the demands of their art. Sometimes the most effective course of treatment is the least effective for a professional dancer with a long career ahead of them. As for all athletes — and indeed for the general population — prevention and maintenance are the best forms of treatment. Remind dancers that prevention and maintenance are the best protection for a long ballet career and you'll have them on side.



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