



PDDIATRY

FootScope

A foot health message from

Foot care for dancers



As for any sport that places a lot of stress on the feet, ballet dancers should get regular foot assessments, particularly if the feet are still growing. Constant strain on the feet 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.

Ballet dancers turn their hips outwards to get into the correct position for the main ballet moves. This turn of the hip requires a lot of flexibility and dancers who have difficulty getting the hip into the correct position will often turn the knee, ankle or foot out instead, forcing other joints into unnatural poses rather than allowing the joints to follow naturally from the line of the hip. Forcing the joints on a regular basis can lead to serious injuries to the feet and ankles, especially if the feet are still growing and the joints are not fully developed.

Ballet shoes are handmade from satin and ribbon, with 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*. Flimsy construction means that ballet shoes will always wear out quickly and contribute to injury as they wear. As the shoe wears, it becomes softer and less able to support the foot, this can cause ankle injuries and sprains and the foot rolls more when the shoe is less rigid and supportive.

The flooring of the dance studio can also have an impact on foot injuries. Most dance studios use a wooden floor, as wood is naturally flexible, allowing it to absorb shock, but also rigid enough that dancers can conserve energy when moving from one position to another. Floors with too much flexibility (such as older floors, that have perhaps seen better days) make the feet tired as more energy is needed to shift from one movement to the next. Floors that are too hard (such as concrete) don't have enough shock absorption for constant hard landings, and lead to stress fractures and overuse injuries.

Therapies such as orthotics are available to help to relieve pain, prevent injury and provide additional support not available in ballet shoes. Regular treatment prevents long-term damage and can also provide the extra support required to maximise performance.

Common ballet injuries

There's no getting around the fact that ballet is tough on the feet. Here's a short list of the most common injuries affecting ballet dancers:

Sprains: ankle sprains are common in ballet dancers, particularly for female dancers, who perform *en pointe*. A dancer's performance is dependant on ankle stability, so any injury to the ankle will result in a poor performance as well as increasing the risk of further injury. Ballet dancers should be encouraged to rest and to allow the injury to fully heal before returning to a normal training schedule. Orthotics can be useful to provide support and stability to the arches, and in turn, the ankles, and can be fitted inside *pointe* shoes.

Joint pain: joint pain is common in all dancers, and in teens, pain in the joint of the big toe is very condition. In teenage dancers, the big toe joint is affected by a form of growing pains that causes swelling and discomfort during activity. Rest is the best cure and the problem will go away when the joint is fully developed.

Bunions: dancers place extraordinary pressure on the joint of the big toe, leaving them at an increased risk of bunions, even at a young age. Bunions can appear from late teens and may be painful, particularly at the end of a training session. Cushioning the area with lambs wool can provide some pain relief and a podiatrist may recommend the insertion of a spacer between the first and second toe to relieve pressure and allow the joint more room to move. Surgery is becoming common for the treatment of bunions in the general population, but should be avoided by professional dancers, as joint flexibility is unlikely to be regained after an operation making surgery a career-ending decision.

Dislocation: partial or full dislocation of the big toe joint can be very painful and affect performance. Dislocation is often the result of overuse, so is more common in older, experienced and professional dancers. Surgery is usually the best option to get the joint back into position.

Fractures: the most common fractures among dancers are stress fractures in the toes, due to the huge amounts of pressure placed on them. Ballet dancers are also prone to a fracture known as 'dancer's fracture', affecting the long bone on the outside of the foot that usually results from landing with the foot turned in. Rest is usually the best treatment and a podiatrist will recommend the amount of rest needed depending on how bad the fracture is. Minor fractures can have dancers back in training after only a week of rest, however dancer's fractures, which are more serious can take months of recovery time involving physical therapy. It's important to allow a fracture to completely heal before getting back to training so as to avoid further injury.

Ankle injuries: pain and swelling at the back and front of the ankle is common among professional dancers with long training sessions. A podiatrist can suggest strengthening exercises to improve the flexibility of the ankle.

Tendonitis: tendonitis is common among dancers as the tendon works harder than it would normally need to in order to support and stabilise the ankle during jumps and leaps, and to compensate for the lack of support available from ballet shoes. The pain associated with tendonitis can lead to poor technique that contributes to other injuries. Surgery is rare for the treatment of tendonitis and most podiatrists will recommend rest and medication to reduce swelling.

Importance of foot assessments for pre-pointe ballerinas

Ballet dancers train toward the goal of dancing *en pointe*. Dancing *en pointe* involves balancing on the very tip of the toes and requires a huge amount of strength in the feet, ankles and legs. Most dancers begin *pointe* work after approximately 5 years of training and a number of factors need to be assessed before a dancer should begin to dance *en pointe*.

Technique: dance history will need to be considered including the number of years of traditional ballet training the dancer has received, the level of the training, and details of any previous injuries. These details will help to determine whether the dancer has the required skill to dance *en pointe* safely.

Muscle strength: the legs and feet will be examined and tested to assess muscle strength, control and the degree to which the muscles will be able to provide the stability needed to support *pointe* work.

Foot structure: the structure of the feet and alignment through the ankle to the lower leg will help to determine any structural limitations that may make *pointe* work difficult. Some feet are naturally more suited than others for *pointe* work, with square feet, with a broad toe area being ideally suited to the advanced technique due to the added stability in the structure of the foot.

Age: young children should not perform *pointe* work because the bones of the feet are too soft to support the amount of stress that going *en pointe* places on the feet. The bones of the feet are usually harder by the age of 11, although feet should be assessed to check that they have developed enough to withstand *pointe* work.

Without adequate assessment and consideration of technique, muscle strength, foot structure and a dancer's age, a dancer risks injury and long-term damage to the feet. Dancing *en pointe* is the goal of many a ballerina as *pointe* shoes provide an added level of difficulty to dance work, and so too to the demands on the feet and legs. A full foot assessment can help to provide the dancer with exercises and treatments such as orthotics that can help to prepare the feet and strengthen the muscles. Ensuring readiness for the demanding nature of *pointe* work will reduce permanent damage to growing feet — damage that may affect a dancer's performance over time — and ensure that the ballerina is fully prepared to dance *en pointe* when the appropriate time comes.



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