



PERFORMING ARTS

SPECIAL INTEREST GROUP



ORTHOPAEDIC SECTION

AMERICAN PHYSICAL THERAPY ASSOCIATION



American Physical Therapy Association
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METATARSAL STRESS FRACTURES IN DANCERS – CITATION SUMMARY

OCTOBER, 2007

Injuries at the metatarsals and associated forefoot joints are among the most common injuries in the elite athlete population. The unique demands of technique and training on ballet dancers and gymnasts predispose these performing artists to higher incidence of injuries in these areas. The common sites of pathology demonstrated in the literature include stress fractures at the base (proximal aspect) of the second metatarsal,

sesamoid stress fractures of the hallux, inflammation of the Lisfranc joint, and spiral fractures at the distal aspect of the fifth metatarsal. The etiology of metatarsal and forefoot stress fractures is largely considered to be the result of overuse, a combination of repetitive loading activities and heavy training schedules. Other mechanisms implicated include pathomechanics, structural abnormalities (including second toe length), poor nutrition and amenorrhea.

Efficient diagnosis begins with a thorough patient history, evaluation of relative risk factors, careful palpation and technique specific symptomology. Imaging studies, such as magnetic resonance imaging, plain radiographic studies and bone scans are integral for successful diagnosis of metatarsal injuries. Prompt diagnosis and appropriate intervention results in decreased absence from training and/or work. Metatarsal stress fractures in performing artists can be managed non-operatively by incorporating medical management, decreased or non-weight bearing casting and modified training. When conservative treatment is not indicated or fails, metatarsal injuries in performing artists can be managed operatively with successful outcomes.

The following annotated bibliography includes research studies, case reports, and review articles pertaining to the diagnosis, incidence, treatment, and outcome of metatarsal injuries with emphasis placed on performing artists.