



COMMON INJURIES IN DANCERS

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Dancers are aesthetic athletes who are highly susceptible to musculoskeletal injuries throughout their careers. Dance requires a combination of high-level strength, flexibility, and coordination, and dancers must complete intense performance activities while simultaneously making them appear effortless. They also spend hours during classes, rehearsals, and performances repeating similar tasks in order to perfect their art form. 20%-84% of professional dancers have at least one musculoskeletal injury in their career,¹ and professional dancers can expect to be injured at least once per year.²

Overuse injuries are common in dancers³ likely due to the high volumes of training, decreased rest breaks, and the lack of an “off-season.” Dancers often use their “rest breaks” to supplement their training programs with summer or winter intensives or practicing multiple genres throughout the week.⁴ Overtraining patterns can lead to chronic pain and overuse injuries if not addressed by a healthcare provider.

Foot and Ankle

Ankle Sprain

Up to 77% of dance injuries occur in the lower extremity.⁵ The foot and ankle is the most common area of injury in many dance forms,^{1,3} with sprains, tendinopathies, and stress fractures occurring frequently. Ankle sprains are the most common, particularly in ballet and modern dancers.⁶ This injury is often attributed to an unexpected landing from a jump or a turn, improper alignment of the foot and ankle during demi-pointe or pointe work, or poorly fitted shoes. Despite ankle sprains being common in the performing arts, many dancers do not seek medical advice and they often experience long-term problems after ankle sprains.^{3,6}

Tendinopathies and Posterior Impingement

Tendinopathies or tendinitis of the foot and ankle in dancers is often related to muscle-tendon overuse and an imbalance of muscle strength. Common tendinopathies in dancers occur at the Achilles tendon and the Flexor Hallucis Longus.⁵ Overuse at the Achilles tendon occurs from repetitive landing from jumps, and over-performed demi plie and grand plie. The Flexor Hallucis Longus muscle assists dancers en pointe and in demi-pointe positions. Inflammation of the flexor hallucis longus tendon can occur proximally near the rearfoot and/or distally at the great toe. Flexor hallucis longus tendinitis is so common that it is called dancer’s tendinitis by the medical community.⁷ Posterior ankle impingement syndrome is also common in dancers, usually presenting as deep posterior ankle pain aggravated by both passive and active plantar flexion, and may occur concurrently with flexor hallucis longus tendinopathy.⁸

Stress Fractures

Repetitive loading can also be associated with stress fractures and stress injuries in dancers. Common sites include fractures of the 2nd metatarsal or sesamoids (common in ballet dancers)⁷ and medial tibial stress injuries (common in hip hop and Irish dancers).^{9,10}

Knee

Knee injuries are the second most common injury in dance after the foot/ankle, accounting for 16% of overall injuries.² In hip hop, the knee is reported as the most common site for injury. Meniscal, ligament, and patellofemoral injury is frequently seen in hop hop forms, likely associated with high impact demands, acrobatic movement, deep squats, “knee drops” and “knee rolls.”^{9, 11, 12.}

Overall, traumatic knee injuries, such as ACL tears, are not as common in dancers vs. other athletes. Knee injuries in dancers are more often related to repetitive use combined with poor mechanics. A common contributing factor in ballet is when dancers force their turnout, which increases stress inside the knee. The twisting force from this compensation can lead to locking or inability to fully straighten the knee.⁷

Another common injury occurs at the iliotibial band (ITB) that attaches at the knee. Increase in friction from the IT band can cause pain to the inner or outer knee with repetitive jumping, running, and change in directions.¹³

Hip

Labral Tears, Impingement, Snapping Hip Syndrome

Hip injuries are also common with dancers, and tend to occur with female-identifying dancers more than male-identifying dancers.^{2,14} Hip injuries are complex and often multifactorial. Contributing factors to hip injuries include genetics, bony alignment, body type, muscle strength, and flexibility. Forcing turnout in dance class can be a common factor in hip pain. This compensatory strategy can lead to hip impingement, labral irritation, or snapping hip syndrome.

Hip impingement is described as a pinching sensation at the front or side of the hip with basic movements such as passé, développé, or battements. This condition typically occurs due to weakness in the gluteal muscles or altered activation patterns of the quadriceps and hip flexors. Dancers with labral irritation may experience a catching or locking sensation in the hip, causing them to suddenly stop and readjust their hip in order to proceed with dancing.⁵

Snapping hip syndrome occurs when ligaments or muscular tendons roll over the bones of the hip to “click” or “snap” with repetitive motions. Internal snapping hip syndrome refers to the iliopsoas tendon rubbing over the head of the femur, and external snapping hip syndrome typically involves the iliotibial band and the greater trochanter of the femur. Typically, treatment focuses on developing balanced muscle strength and coordination around the hip.⁷

Hip Muscle Strains

Muscular strains in the hip are common with repetitive battements, leaps, or high kicks. The most common muscles to strain in dancers are the iliopsoas muscle, or hip flexors, and the gluteal or hamstring muscles. Proper dance mechanics should be addressed to limit reoccurring of strains in the future⁷ with a focus on balanced strengthening and eccentric loading as appropriate.

Lumbar Spine

Low back injuries were the third most common injury in dancers, accounting for 12% of all injuries.² Unlike injuries at the hip, low back pain is more likely to occur in male-identifying dancers. According to Swain in 2019, dancers are just as likely to experience low back pain as the general population.¹⁵ The most common injury occurring in the low back is lumbar muscular strain. With muscle strains, pain occurs on the sides of the back with forward flexion and back extension. Other common injuries in the low back are spondylolysis and spondylolisthesis. These injuries occur from excessive forward flexion and extension, potentially creating excessive movement or excessive loading. These injuries tend to occur in adolescent dancers or dancers experiencing growth spurts.^{5,7}

The Upper Extremity and Cervical Spine

Injuries to the shoulder, wrist/hand, and cervical spine appear more common in breakers than in other dancers. In closed kinetic chain movements during breaking, the cervical spine, shoulder and wrist are placed in intense weight bearing positions, sometimes in an extreme range of motion.¹⁶

Traumatic injuries of the upper extremity are more common in breakers, including fractures to the clavicle, radius, ulna, carpal bone, and phalanx. Wrist fractures and dislocations can be incurred with power moves such as power moves involving spinning and handsprings. Head spins place weight bearing on the cervical spine, leading to a risk of cervical strains and related injury.¹⁶

Many modern and contemporary forms of dance are also increasingly involving weight bearing of the upper extremity, with potential for the development of increased shoulder and wrist injury during handstand-like positions known as inversions, or during lifting of partners.

References

1. Ramkumar et al. Injuries in a Professional Ballet Dance Company: A 10-year Retrospective Study. *Journal of Dance Medicine and Science*. 2016; 20(1):30-7.
2. Prakash A. Medical attention seeking dance injuries: systematic review of case reports. *The physician and sports medicine*. 2017; 45(1): 2326-3660.
3. Jacobs CL, Hincapie CA, Cassidy JD. Musculoskeletal injuries and pain in dancers: a systematic review update. *Journal of Dance Medicine and Science*. 2012; 16(2): 74-84.
4. Weiss Kelly, A. Non-contact sports: running, swimming and dance- identifying common injuries. *Pediatric Annals*. 2010; 39(5): 279-285.
5. Rietveld ABM. Dancers' and musicians' injuries. *Clinical Rheumatology*. 2013; 32: 425-434.
6. O'Loughlin PF, Hodgkins CW, Kennedy JG. Ankle Sprains and Instability in Dancers. *Clinics in Sports Medicine*. 2008; 27: 247-262.
7. Malkogeorgos A, et al. Common dance related musculoskeletal injuries. *Journal of Physical Education and Sport*. 2011; 11(3): 259-266.
8. Reitveld ABM, Haitjema S. Posterior Ankle Impingement Syndrome and Flexor Hallucis Longus Tendinopathy in Dancers: Results of Open Surgery. *Journal of Dance Medicine and Science*. 2018; 22(1): 3-10.

9. Jubb C et al. Injury Patterns in Hip Hop Dancers. *Journal of Dance Medicine and Science*. 2019; 23 (4): 145-149.
10. Stein CJ et al. Injuries in Irish Dance. *Journal of Dance Medicine and Science*. 2013; 17(4): 159-164.
11. Tjukov et al. Injury Profile of Hip Hop Dancers. *Journal of Dance Medicine and Science*. 2020; 24(2): 66-72.
12. Ursej E and Zaletel P. Injury Occurrence in Modern and Hip Hop Dancers. *Slovenian Journal of Public Health*. 2020; (59)3: 195-201.
13. Deleget A. Overview of thigh injuries in dance. *Journal of Dance Medicine and Science*. 2010; 14 (3): 97-102.
14. Trentacosta N., Sugimoto D, Micheli LJ. Hip and Groin Injuries in Dancers. A Systematic Review. *Sports Health*. 2017;9(5):422-427.
15. Swain, CTV et al. The epidemiology of low back pain and injury in dancers: a systematic review. *JOSPT*. 2019; 49(4): 239-252.
16. Hyun Cho C et al. Musculoskeletal injuries in break-dancers. *Injury*. 2009; 40(11): 1207-1211.