

**National University of Medical Sciences Spain**

# **How Osteopathy benefits Dancers**

**Doctor of Osteopathy**

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## **Topic: How Osteopathy benefits Dancers**

### **Introduction**

Dancing is a beautiful form of self-expression, but there is no denying the fact that it is also challenging for the body. We have all heard accounts of passionate performers who work long hours and practice relentlessly, often pushing through the pain to complete projects. Not only does this reduce the quality of life, but also takes a toll on their body and mental health, resulting in chronic pain and musculoskeletal damage. It also causes performers with high potential to deliver diminished performances and the pain ensures that their careers are not long-lasting.

The physical strain put on a dancer's body that requires a lot of vigor, litheness, and endurance along with rigorous training which involves rhythmic movements for hours at a time, with minimal recovery time are not the only factors exposing them to a high risk of injury. Strict diets and lifting body weights contribute to problems as well. Other physical, mental, personal, and economic issues increase stress which can result in higher risk for injuries and also cause them to bear the pain and refuse to seek medical management. There is an everlasting, underlying fear of injuries witnessed amongst dancers universally because injuries can advance to permanent disability and the end of their professional career. This is especially concerning because the early management of many of these injuries is critical. There are three major reasons why injuries are under-reported in dancers due to hesitancy in pursuing medical treatment. The first being the competitive nature of the dance culture where dancers do not want to lose their role. Secondly, the internal and external pressures due to which they do not want to take time off to recover and be deemed an unreliable part of projects. Lastly, due to detrimental conceptions of pain, they think pain is an inherent aspect of art and that it is natural to cope with it.

One would not be wrong to think of dancers as “the athletes of the arts” because like other professional athletes, they go through years of tough physical training in the quest for achieving excellence and reaching the pinnacle of their careers. Prior research has suggested that performers develop high pain thresholds, and prefer to neglect and shove past their pain barriers. This behavior has serious repercussions for their health during or after their career as dancers. Many dancers develop chronic pain which lasts them a lifetime. This is another area, where osteopathic management can help.

This means that effective management for dancers is not just treating injuries and easing pain, but to assist the body to operate at its optimum level; to prevent injuries, and maintain healthy posture and movement. Of course, osteopathic medicine is the holistic approach that fulfills these needs to the fullest, especially knowing that there are many extremely talented individuals out there who depend on their bodies to make a living.

## **Common injuries seen in dancers**

Common injuries faced by dancers include stress (hairline) fractures, muscle pulls, ligament strains and imbalances in joints (especially the pelvis and sacroiliac). A lot of performers complain of lower back, shoulder, and ankle pains at least once in their career and many suffer from tendonitis or bursitis. Other frequently seen grievances are the rupture of the Achilles tendon, which is seen in athletes much more than the general population and Psoas syndrome, which is caused by the unsatisfactory functioning of the psoas muscle. Psoas syndrome causes symptoms of lower back, groin, or buttock pain.

These kinds of injuries do not always manifest as aches and soreness, sometimes it may just be a restriction in movement or tightness felt in certain areas. Some signs of these inflictions include: favoring one side over the other, change or decrease in flexibility, sharp pain while executing certain movements, or being unable to lift appendages as high as was possible earlier.

There has been a substantial amount of research showing that dancers across different genres and disciplines all tend to have injuries in similar regions of the body: lumbar spine and lower extremity with emphasis on the ankle and foot. It has also been reported that overuse related injuries are much greater than traumatic injuries overall, amongst performers.

Additionally, a lot of dancers have mechanical dysfunctions like joint imbalances or hypermobility, and the incidence of dull aches, muscle tension, and discomfort in this subset of the population is higher.

## **Osteopathic Management**

Trained osteopathic physicians can identify the source of the agony and disability and can manipulate or massage the particular area to reduce inflammation or swelling to relieve the body. They can also direct the patient towards certain hands-on exercises, offer technical tips, and guide the patient about when to train and when to let their body rest for maximum recovery. Occasionally, further laboratory or radiological tests like X-rays, CT, or MRI scans may be recommended.

Apart from mechanical and musculoskeletal management, it is vital to take a complete history and to assess whether their body is fit and functioning satisfactorily in other parameters and that they are well-nourished. Early Osteoporosis, amenorrhea, and an imbalanced diet are seen in dancers very often. It is imperative to treat the patient and not the condition, which is why it is also necessary to find out about the patient's well-being and make sure they are not struggling under the extreme pressures and not suffering from any eating disorders or addictions. Patients diagnosed with these conditions may require further referrals.

Long term practice, observations, and studies have proven that supplementary exercise cause improvements to fitness parameters and bring a decline to the occurrence of dance-related injuries without intruding with the strict creative and aesthetic requisites.[1]

Another very common injury in athletes is rupture of the Achilles tendon, the largest tendon in the human body is shaped from the convergence of the gastrocnemius and soleus muscle tendons and enclosed in a thin vascularized sheet known as the *paratenon*, which is reperfused by branches from the posterior tibial and peroneal arteries. However, the tendon itself is chiefly avascular, which is why once damaged, it heals poorly. The diagnosis is usually made clinically and the current therapeutic regimen includes a multimodal approach that integrates osteopathic manipulative treatment (OMT).

The use of OMT in treating Achilles tendon disorders has not been extensively researched but the counterstrain (CS) technique has shown promising results by easing surplus pressure situated on the Achilles tendon, thus lessening nociceptor activity.

This method is carried out by making the patient lie in prone position and placing the Achilles tendon at a point where it encounters the slightest resistance and simultaneously flexing the knee and plantar flexing the foot. This arrangement ought to be upheld for roughly 90 seconds while observing the site of tenderness, which is generally found along the tendon or at the initial point of insertion. Then the foot must be re-assessed after putting it in the neutral position. To further facilitate healing of the tendon, the eccentric stretching practice has been proposed to promote tendon remodeling. [2]

The CS technique is also used to treat Psoas syndrome along with muscle energy treatment (MET). MET is a technique where the muscle is taken into a limiting barrier and is expected to supply isometric muscle contraction against the one performing. Subsequent to the isometric contraction, the muscle relaxes, and the physician further obstructs the affected muscle into the restraining barrier. The most common MET protocol employs three to five reiterations of isometric contraction pursued by relaxation. MET is contraindicated in patients with fractures or unstable hip joints. CS is a more passive mode of management and appropriate for someone in unbearable pain, in contrast to MET which is an active treatment and requires the patient to tolerate the discomfort and provide muscle contraction against the physician's resistance. [3]

Another well-researched area where OMT can assist dancers is the management of chronic pain. Manual therapies like OMT have shown effectiveness in reducing chronic pain in several areas of the body including the neck and lower back pain. Patients receiving spinal manipulative therapy have also shown improvement in overall health, with OMT not only alleviating their physical pain but was also found to be effective in reducing co-morbid mental conditions like anxiety and fear of avoidance.

## Research

Studies have shown dancers often have a dietary intake of lower than 70-80% of their required daily allowance and female (ballet) performers often present with a triad of amenorrhea, disordered eating, and osteoporosis.[1]

Achilles tendon injuries can happen to athletes and non-athletes; amid athletes, the predominance of acute tendon rupture and chronic tendinopathy is 8.3% and 23.9%, correspondingly, whereas, in the general population, these statistics are 5.9% and 2.1%. The utility of modified eccentric exercises has been shown to improve outcomes in 32% of the cases in people with insertional tendinosis.[2] The precise prevalence of Psoas syndrome is not known but it is thought to be more common in people with prior back or hip conditions and a study reported the pervasiveness of iliopsoas tendonitis in total hip arthroscopy patients to be at 24%.[4]

A research found that ankle sprains accounted for 69.8% of injuries in certified dancers and 42.1% in non-professional dancers, which consisted of 90% of the women's injuries, but the most common injuries seen in men were muscle sprains as seen in 54.5%. [5]

A lot of research has also been focused on the righteously concerning risk factors which contribute to the large number of injuries seen in performers, which vary from the cost of treatment, time constraints, fear of unemployment, fear of reaction from teachers and peers as well as an adverse impact on their identity as a dancer. A study about 26 professional dancers showed that after an injury the most common emotions felt by the dancers were fear, distress, anger, and depression.[6] The physical strain, emotional and social stress, and lack of time to recover, have shown to induce bigger health issues. One such pertinent issue is eating disorders; around 6.5% of female performers suffer from an eating disorder like anorexia or bulimia in an effort to attain the aspired visual standard of beauty and art.[7][8]

Up till now, there is only one qualitative study that has investigated the impact of osteopathic treatment and the dancers' experiences after seeking it.[9] The study focused on 8 professional ballet dancers' experience of osteopathic management for dance associated injuries in the UK. Taken as a whole, all subjects had a positive view about osteopathy and they believed it centered on treating both the site of disability and the rest of the body as a whole, in a way that the primary reason for the injury was also corrected. They reported that the osteopathy helped with their posture, alignment, and dance technique, bring them long-lasting benefits.[9]

To date, there is only one qualitative study that investigated the same as above; (the direct relationship between the impact of osteopathic treatment on dancers' and obstacles to them seeking it) and it chronicles the accounts of 4 professional dancers in New Zealand. 3 of those dancers said that they appreciated the holistic approach osteopaths took towards treating them; addressing not only the physical aspect but also the psychological, behavioral, and emotional aspects and treating

them as a whole. This is in contrast to another recent survey of 211 American dancers in university, out of which 55% of dancers were discontented with their healthcare providers, and of that subset, 70% of the performers cited the cause of the dissatisfaction the healthcare provider not being appreciative or completely understanding the dancer, 43% said that the provider offered unhelpful advice and 20% said that they felt that the provider just did not care for them. This shows, that in general dancers in these studies are more satisfied with services from an osteopathic healthcare provider who is sympathetic and caters to their overall health. [10]

## **Conclusion**

Studies have provided ample evidence that dancers are a high-risk group for occupational hazards and that they continue to suffer injuries and unhealthily cope through the pain. Some recent literature has also reinforced that perhaps dancers are beginning to employ suitable strategies to practice self-care and to seek adequate healthcare. Out of the finite research available, dancers who have experience with osteopathic medicine recommend it and appreciate the holistic approach physicians had towards treatment.

Dance medicine is a young field of study and the literature is heterogeneous, which means there are limitations to the conclusions we can draw from it. Other limitations include all studies having small sample sizes and selection bias because the participants included were those who volunteered to take part in the study, and this might mean they had an interest or emotional experience with dance injuries and/or osteopathy.

Further research is needed to raise awareness of pain management and injury prevention schemes for dancers; research which will hopefully involve more candidates and evaluate their knowledge and awareness of pain, treatment options, and coping strategies. More research is also required from the healthcare physicians' point of view to look into the extent of awareness amongst the medical community and to assess the level of confidence in healthcare providers while treating and managing dancers.

## References

1. Koutedakis Y, Jamurtas A. The dancer as a performing athlete: physiological considerations. *Sports Med.* 2004;34(10):651-61. doi: 10.2165/00007256-200434100-00003. PMID: 15335242.
2. Saini SS, Reb CW, Chapter M, Daniel JN. Achilles Tendon Disorders. *J Am Osteopath Assoc* 2015;115(11):670–676. doi: <https://doi.org/10.7556/jaoa.2015.138>.
3. Eldemire F, Goto KK. Osteopathic Manipulative Treatment: Muscle Energy & Counterstrain Procedure - Psoas Muscle Procedures. 2020 Aug 16. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2020 Jan–. PMID: 32809634.
4. Adib F, Johnson AJ, Hennrikus WL, Nasreddine A, Kocher M, Yen YM. Iliopsoas tendonitis after hip arthroscopy: prevalence, risk factors and treatment algorithm. *J Hip Preserv Surg.* 2018 Dec;5(4)
5. Costa MS, Ferreira AS, Orsini M, Silva EB, Felicio LR. Characteristics and prevalence of musculoskeletal injury in professional and non-professional ballet dancers. *Braz J Phys Ther.* 2016 Jan 19;20(2):166-75. doi: 10.1590/bjpt-rbf.2014.0142. PMID: 26786085; PMCID: PMC4900039.
6. Macchi, R., & Crossman, J. (1996). After the fall: reflections of injured classical ballet dancers. *Journal of Sport Behavior*, 19(3).
7. Mainwaring, L., & Finney, C. (2017). Psychological risk factors and outcomes of dance injury: a systematic review. *Journal of Dance Medicine & Science*, 21(3), 87–96. <https://doi.org/10.12678/1089-313X.21.3.87>
8. Ravaldi, C., Vannacci, A., Zucchi, T., Mannuci, E., Cabrasa, P., , Boldrini, M., ... Ricca, V. (2003). Eating disorders and body image disturbances among ballet dancers , gymnasium users and body builders. *Psychopathology*, 36, 247–254. <https://doi.org/10.1159/000073450>
9. Pollard-Smith, T., & Thomson, O. P. (2016). Professional ballet dancers' experience of injury and osteopathic treatment in the UK: a qualitative study. *Journal of Bodywork and Movement Therapies*, 21(1), 148–156. <https://doi.org/10.1016/j.jbmt.2016.06.009>
10. Maddren, K. (2019). Dancers' experience of osteopathy and their attitudes towards dance injuries. (Unpublished document submitted in partial fulfilment of the requirements for the degree of Master of Osteopathy). Unitec Institute of Technology, Auckland, New Zealand. Retrieved from <https://hdl.handle.net/10652/4613>