

# WHAT ARE STATED GAPS IN INJURY PREVENTION AND TREATMENT AVAILABLE ON COLLEGE CAMPUSES FOR DANCERS?

## Statistics of Injury in Dance

The most commonly injured area for dancers is the lower extremities, especially in Western concert dance forms like ballet, modern, and contemporary. Some of the more common injuries include knee cartilage injuries, patellar tendon injuries, anterior hip pain, anterior cruciate ligament injuries, and ankle sprains (Junck et al., 2017). Overuse injuries are typical of dancers due to their extended rehearsal and class schedules and lack of recovery periods.

Injuries by body region		
Foot and ankle	61	(29)
Knee	90	(43)
Hip	39	(19)
Shoulder	20	(10)

This data table shows the number of people who sustained an injury to a certain area of the body from a study performed by Emily Junck and associates (Junck et al., 2017).

## Contributions to Injury Prevalence Cultural

Unlike most traditional athletes, dancers aren't given an off season in which they can take time away from their training and recover. Fewer recovery periods can result in fatigue, which can be a consistent risk factor for injuries. Students at universities studying dance are especially at risk for becoming "burnt out" because on top of their rehearsal and dance class requirements, they are also enrolled in academic classes that may consume any rest time they might have after a day of dancing (Dirickson, 2017). This burnout and mental fatigue can lead to injury.

## Contributions to Injury Prevalence Psychosocial

It is common that dancers will injure themselves while trying to achieve the aesthetic nature of dance. For example, many dancers might force their turnout, or hip external rotation, in ballet, resulting in injuries to the knees, ankles, or low back. In a study performed in the Netherlands in 2008 at the Medical Center for Dancers and Musicians, the Brief Symptom Inventory (BSI), a screening tool used to identify psychological distress, was used to discover that 60.1% of the dancers met the criteria for a referral to a clinical psychologist or psychiatrist. 46.6% of dancers demonstrated "above average" distress and 19.6% of dancers demonstrated "high" or "very high" distress levels compared to the general population (Mary Elizabeth Air, 2013). Dancers tend to present with perfectionist tendencies. The unattainable goals set by perfectionists only result in disappointment and feelings of inferiority. The aesthetic value of dance causes dancers to constantly judge their appearance and to have their appearance evaluated by others, such as teachers, choreographers, and audience members. This can lead to the development of eating disorders or excessive exercise in order to maintain a certain weight and body image. All of these behaviors and tendencies can eventually lead to injury (Resource Paper: Perfectionism - International Association for Dance Medicine & Science, n.d.).

## Treatment Availability

In an article written by Jatin Ambegaonkar and Shane Caswell, they state that "despite the physical demands and rigor involved with dance, relatively little attention has been devoted to the unique health care needs of dancers" (J. Ambegaonkar & Caswell, 2009). In a study performed by Ambegaonkar and Caswell, emails were sent to the administrators of 175 institutions with dance programs to complete a survey about their current availability of medical care on campus and what their thoughts were on the need of medical care for their students. While response levels were low in this study, the researchers found that few collegiate dance programs offer access to medical services offered to intercollegiate athletics or externally contracted medical providers. While the dance backgrounds and knowledge of dance is unknown about these individuals treating the dancers in this study, research suggests that access to performing arts medicine is severely limited in collegiate and professional dance (J. Ambegaonkar & Caswell, 2009).

## Language Barriers

According to a study performed by Mary Elizabeth Air, dancers tend to cite misunderstandings by physicians as their primary reason for not seeking immediate medical care after an injury (Mary Elizabeth Air, 2013). "80% of university dancers surveyed reported that they felt their health care providers did not understand dancers and 43% indicated that their health care providers gave unhelpful advice," according to a study performed by Russell and Wang (JA Russell & TJ Wang, 2012).

## Recommendations Participation Alternatives

There are many ways that dance students can still participate or improve their technique while being injured. An article by the International Association for Dance Medicine and Science (IADMS) outlines three evidence-based options for students to continue their dance education while being injured. The first way is participating while modifying movements in class. The second option is considering alternative forms of participation, to include written note taking, mental practice, and assisting the teacher or choreographer. The last method centers around finding useful alternatives to class attendance and participation. Working on conditioning and somatic practices are ways that a dancer can continue to work on their technique and improve as a dancer while healing from an injury (Weiss, n.d.). Options such as Pilates are useful alternatives to class participation. Pilates is often used as a cross training method for dancers because it focuses on developing important muscles dancers use frequently and has a history of being popular among dance communities.

## Recommendations Dance Medicine Facilities

By creating resources that dancers can utilize and a comfortable environment where dancers can get help to treat or prevent an injury, a critical gap can be closed and could result in healthier dancers. An example of a university that has created a dance medicine facility within their dance department is Brigham Young University (BYU). This facility is complete with mirrors, barres, an ice machine, resistance machines, a treadmill, a bike, a stretch station machine, and other equipment that would be useful for the staff to assess, treat, and rehabilitate any of the dancers' injuries. The facility has three certified, full-time athletic trainers along with athletic training students who work in the facility to assist as well as further their clinical education. Outside of the facility, the athletic trainers attend dance team competitions to ensure the well-being of the students. They supervise conditioning and cross-training for dance students, as well as develop individualized conditioning programs (Kaiser, 2002). This model is significant because it represents potential for other programs to invest in and build similar facilities.



This picture shows part of BYU's dance medicine facility. Equipment shown include Pilates reformers, ellipticals, and a rowing machine, all of which can help dancers strengthen their bodies to prevent or rehabilitate an injury (Kaiser, 2002).

## Recommendations Closing the Language Barrier

In a study at Stockton University, 20 students took part in an interdisciplinary educational experience, of which 10 students were dance majors and 10 were graduate doctor of physical therapy students. The purpose of this experience was to teach the dancers more about injury prevention and the physical therapy students more about the nature of dance related injuries. Some of the parts of this experience included physical assessments of the dancers, including the use of the Functional Movement Screen (FMS), ballet classes in which the dancers participated in class and the physical therapy students observed, and Pilates classes in which all students participated. If more experiences like this were made available and more dancers and medical professionals were willing to learn from one another, this interdisciplinary experience could be a model for a solution to the gap in medical assistance availability to the dance community (Lim et al., 2018).

**TABLE 2 Common Terminology**

Common Dance Terminology	Common Physical Therapy Terminology
Plié	Manual muscle testing
Relevé	Gait analysis
Développé	Myotome testing/dermatome testing
Sauté	Flexion/extension/abduction/adduction
Pirouette	Palpate
Battement	

This table describes terminology that is specific to dance and terminology that may be used by a physical therapist. The dance terms are French and typical of ballet, while the physical therapy terms are more scientific. This makes it clear why it may be confusing for the two populations to understand each other (Lim et al., 2018).

## Recommendations Screenings

Screenings are important in helping dancers maintain a healthy physical and mental state. As an aggregate of data, they can be used to gain information about a dancer in order to prevent injuries, improve performance quality and create training programs to further aid in the success of a dancer. Individually, screenings establish baseline data for medical professionals to identify areas of potential weakness and provide evidence-based programming to help prevent injury incidence. Another benefit of screenings is introducing dancers to a medical professional that they can get to know and who can get to know them. This gives them a familiar resource to reach out to if they ever are struggling physically or mentally with their dance training (Karen Potter et al., 2008).

