2017

Low Back Injuries in Male Ballet Dancers: A Review of the Literature

Dr. Karin Steere  
*University of Puget Sound- School of Physical Therapy*

Amanda Duncan  
*University of Puget Sound- School of Physical Therapy*

Kaitlyn Johnstone  
*University of Puget Sound- School of Physical Therapy*

Emma Lux  
*University of Puget Sound- School of Physical Therapy*

Follow this and additional works at: https://soundideas.pugetsound.edu/ptsymposium

Part of the Physical Therapy Commons

Recommended Citation  
https://soundideas.pugetsound.edu/ptsymposium/36

This Poster is brought to you for free and open access by the Physical Therapy, School of at Sound Ideas. It has been accepted for inclusion in Physical Therapy Research Symposium by an authorized administrator of Sound Ideas. For more information, please contact soundideas@pugetsound.edu.
Dancers are at risk for injury likely due to demands that involve extremes in hip and lumbar spine range of motion and the repetitive practice of such motions. Male dancers tend to have greater number of dancing days lost due to injury and might be at greater risk of injury from techniques such as lifts with female dancers. The following study was a review of the available literature to date that looked at dancers and spine injuries. PubMed, CINAHL, PEDRO, and the Cochrane Library were searched with keywords: male, ballet, dancer, low back pain, back, pain, and injury. The results of this search were that there are very few studies investigating dancers and their injuries as well as strategies to prevent such injuries. In conclusion, there needs to be more high-quality studies investigating risk factors for injury, prevention and rehabilitation in dancers.

**Introduction**

Aesthetic athletes such as dancers are particularly at risk for injury.² They face physical and technical as well as aesthetic demands that often involve movement at extremes of hip and lumbar spine range of motion and repetitive practice of these movements from a young age.³,⁴ In addition to the techniques directly causing stress on the hip and lumbar spine, compensatory strategies to achieve the techniques also contribute to negative effects on those tissues.²

Research has shown that the yearly injury rate for a professional ballet dancer is one new injury per year, commonly to the lumbar spine in the form of muscle spasms, strains, and tears.¹,³ It is hypothesized that male ballet dancers have a higher risk of injury to the lumbar spine than do female dancers due to the lifts they perform in partnering.¹ In addition, male dancers have been found to experience greater injury severity than female dancers, as measured in days of dancing lost.¹ In spite of the acknowledgment that dancers experience high risks of injury, there is relatively little research concerning dancers and their injuries.¹ ³ The limited existing research related to dance injury rehabilitation cites a need to further study and better understand dance injury risk factors and to develop prevention strategies.¹

There are very few studies that investigate the types and frequency of injuries in male ballet dancers. For the studies that examine male ballet dancer spine injuries, they do not provide evidence for prevention of such injuries. Overall, there are very few studies on this topic with only one systematic review in 2008. We recommend that future research focus on rehabilitation and injury prevention in male ballet dancers.

**Abstract**

Dancers are at risk for injury likely due to demands that involve extremes in hip and lumbar spine range of motion and the repetitive practice of such motions. Male dancers tend to have greater number of dancing days lost due to injury and might be at greater risk of injury from techniques such as lifts with female dancers. The following study was a review of the available literature to date that looked at dancers and spine injuries. PubMed, CINAHL, PEDRO, and the Cochrane Library were searched with keywords: male, ballet, dancer, low back pain, back, pain, and injury. The results of this search were that there are very few studies investigating dancers and their injuries as well as strategies to prevent such injuries. In conclusion, there needs to be more high-quality studies investigating risk factors for injury, prevention and rehabilitation in dancers.

**Authors**

<table>
<thead>
<tr>
<th>Authors</th>
<th>Year</th>
<th>Objective</th>
<th>Sample Size</th>
<th>Conclusion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Allen et al.</td>
<td>2009</td>
<td>Compare the L5/S1 peak lumbar anterior shear force (PLASFP) in male ballet dancers performing two lifts using 3D biomechanical analysis.</td>
<td>8 male, 5 female</td>
<td>1. PLASFP occurs at the beginning of a lift. 2. Distance between the male and female dancers is a sensitive predictor of PLASFP.</td>
</tr>
<tr>
<td>Allen et al.</td>
<td>2014</td>
<td>A research report surveying professional ballet dancer on injuries to provide a foundation for future interventions.</td>
<td>NA</td>
<td>1. Male dancers reported at least 1 injury. 2. Overuse injuries accounted for majority of male and female injuries.</td>
</tr>
<tr>
<td>Homecourt, P.A., Luke, A.</td>
<td>2012</td>
<td>Identify distinct characteristics of aesthetic athletes that lead to different injury patterns.</td>
<td>NA</td>
<td>1. The hip can only attain 60° of turnout. Compensation can come from either ER or foot pronation. 2. Anterior pelvic tilt occurs with fatigue; landing a jump or lifting with anterior pelvic tilt increases lumbar compression.</td>
</tr>
<tr>
<td>Udida et al.</td>
<td>2013</td>
<td>A cross-sectional observational study that investigated the cross-sectional area (CSA) of trunk muscles in professional ballet dancers with and without LBFP.</td>
<td>14 male, 17 female ballet dancers</td>
<td>1. Multifidi CSA was larger in dancers without LBFP. 2. CSA’s of other muscles did not differ between groups.</td>
</tr>
</tbody>
</table>

**Methods**

An online literature search was performed using PubMed, Cochrane Library, CINAHL, and PEDRO using keywords: male, ballet dancer, low back pain, back pain, injury. In the papers that were identified, the references were examined for further studies to use. Studies were included if they were about ballet dancers and spine injuries.

**Results**

There are very few studies that investigate the types and frequency of injuries in male ballet dancers. For the studies that examine male ballet dancer spine injuries, they do not provide evidence for prevention of such injuries. Overall, there are very few studies on this topic with only one systematic review in 2008. We recommend that future research focus on rehabilitation and injury prevention in male ballet dancers.

**Conclusion**

Based on this literature review, it is clear there is a need for more updated literature that focuses on injury prevention and rehabilitation in male ballet dancers. Very few studies on this topic have been conducted in the last five years; the only systematic review on this topic was written in 2008. It is clear that spinal injuries are common in male ballet dancers, but there is not conclusive evidence on how to prevent these injuries. More focused high-quality research is needed to determine risk factors for spinal injury, and to better prevent future injuries in this population.