

# A Systematic Review of the Epidemiology and Aetiology of Foot and Ankle Injuries in Professional Ballet Dancers



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## INTRODUCTION

Ballet has been described as the most technically demanding dance modality that has a substantial injury rate, particularly foot and ankle injuries (FAIs).

Evidence on the prevalence, incidence and causes of these injuries has yet to be synthesized.

## AIM

To assemble and synthesise the literature on the epidemiology and aetiology of FAIs in professional ballet dancers (PBDs).

## METHODS

- Systematic review conducted in accordance with PRISMA guidelines.
- 4 online databases (CINAHL, PubMed, SPORTDiscus, and Web of Science) searched & screened by 2 independent reviewers.
- Inclusion criteria: Primary research studies that reported injury rates in PBDs and recorded incidence of FAIs.
- Primary outcome of interest: incidence of FAIs.
- Secondary outcomes of interest:
  - Mechanisms of FAIs.
  - Associated risk factors.
  - Diagnosis.
- Data was extracted into evidence tables using Microsoft Excel.
- Study quality: assessed using checklists from the Joanna Briggs Institute.

## RESULTS

- 9 studies were included.
- Mean age of combined study group: 27.8 years.
- 2,914 injuries reported in 1,432 PBDs.
- Mean injury incidence rate/1,000 dance hours: 1.30.
- Mean injury incidence rate/dancer/annum: 1.94.
- Every year a PBD can expect to sustain at least 1 new injury.
- $n=1,173$  FAIs (40.3% of all injuries).
- Mechanisms of FAIs: Overuse FAIs more common than traumatic FAIs (7 studies).
- Preliminary evidence to suggest being younger and having less years of professional dance experience is associated with higher rates of FAIs.
- Most common diagnoses: tendinopathies, metatarsalgia, stress fractures ( $n=5$  studies).
- Injury definitions used:
  - Time-loss or modification to participation in dance class, rehearsal/performance (3 studies).
  - Medical attention (1 study).
  - Any physical complaint resulting from dance (1 study).
  - Workers' compensation-reported injuries (1 study).
  - Did not define injury (3 studies).



## CONCLUSION

Undoubtedly high rate of FAIs among PBDs, irrespective of the injury definition or reporting method used, with overuse being the mechanism for the majority of these injuries.

This may be attributable to the highly repetitive nature of ballet, high training loads and potentially inadequate rehabilitation of previous injuries.

Future studies should aim to calculate injury rates as a ratio of injuries/1,000 hours of dance in an effort to improve the quality and consistency of reporting in dance injury research.

