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## A Systematic Review And Meta-analysis Of The Incidence Of Injury In Professional Female Soccer

Lawrence Mayhew, Jamie McPhee, Peter Francis, Gareth Jones.

The epidemiology of injury in male professional football is well documented and has been used as a basis to monitor injury trends and implement injury prevention strategies. There are no systematic reviews that have investigated injury incidence in women's professional football. Therefore, the extent of injury burden in women's professional football remains unknown. **PURPOSE:** The primary aim of this study was to calculate an overall incidence rate of injury in senior female professional soccer. The secondary aims were to provide an incidence rate for training and match play.

**METHODS:** PubMed, Discover, EBSCO, Embase and ScienceDirect electronic databases were searched from inception to September 2018. Two reviewers independently assessed study quality using the Strengthening the Reporting of Observational Studies in Epidemiology statement using a 22-item STROBE checklist. Seven prospective studies (n=1137 professional players) were combined in a pooled analysis of injury incidence using a mixed effects model. Heterogeneity was evaluated using the Cochrane Q statistic and I<sup>2</sup>. **RESULTS:** The epidemiological incidence proportion over one season was 0.62 (95% CI 0.59 - 0.64). Mean total incidence of injury was 3.15 (95% CI 1.54 - 4.75) injuries per 1000 hours. The mean incidence of injury during match play was 10.72 (95% CI 9.11 - 12.33) and during training was 2.21 (95% CI 0.96 - 3.45). Data analysis found a significant level of heterogeneity (total incidence,  $X^2 = 16.57$   $P < 0.05$ ;  $I^2 = 63.8\%$ ) and during subsequent sub group analyses in those studies reviewed (match incidence,  $X^2 = 76.4$  (d.f. = 7),  $P < 0.05$ ;  $I^2 = 58.8\%$ ).

Appraisal of the study methodologies revealed inconsistency in the use of injury terminology, data collection procedures and calculation of exposure by researchers. Such inconsistencies likely contribute to the large variance in the incidence and prevalence of injury reported. **CONCLUSIONS:** The estimated risk of sustaining at least one injury over one football season is 62%. Continued reporting of heterogeneous results in population samples limits meaningful comparison of studies. Standardising the criteria used to attribute injury and activity coupled with more accurate methods of calculating exposure will overcome such limitations.