Body composition and injuries in professional ballet dancers

Chloë Naalchigar¹, Moira McCormack², Jackie Pelly³, Matthew Wyon⁴, and Lygeri Dimitriou⁵

¹ Royal Academy of Dance, UK
² Royal Ballet Company, UK
³ English National Ballet, UK
⁴ Research Centre for Sport, Exercise, and Performance, University of Wolverhampton, UK
⁵ London Sport Institute, Middlesex University, UK

Dancers are at a high risk of becoming injured, and most dancers sustain at least one injury per year. Research into injury risk factors is, therefore, imperative in order to identify strategies for prevention. The aim of this study was to examine professional ballet dancers, investigating their bone mineral density (BMD), body composition (lean and fat mass), menstrual history, company position, incidence and severity of musculoskeletal injury, and the relationships among these variables. One hundred and eleven dancers (39 male and 72 female) volunteered for the study. BMD and body composition were measured by DXA. Questionnaires recorded menstrual, medical and family history, medications, use of oral contraceptives, smoking, and alcohol intake. Injury incidence and severity data were collected using physiotherapy records from the two consecutive years following DXA. Statistical analysis was performed using SPSS, with statistical significance set at p<0.05. Frequency and severity of injury were not found to be significantly associated with body composition, nor company position. In dancers, where negative mean z-score values at the ultra-distal (UD) radius were observed, their below-normal upper body BMD values may suggest an increased risk of developing osteoporosis, with an associated risk of injury. Results suggest supplemental conditioning, aimed at increasing and maintaining normal levels of upper body BMD, may elicit health and performance benefits for professional ballet dancers.

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Address for correspondence

Chloë Naalchigar, 57 Highfield Way, Rickmansworth, Hertfordshire WD3 7PP, UK;
Email: chloe_naalchigar@hotmail.com