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Does landing technique displayed during volleyball training replicate the demands of competition?

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Recommended Citation

Wild, C; Munro, Bridget J.; and Steele, Julie R.: Does landing technique displayed during volleyball training replicate the demands of competition? 2006.
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Does landing technique displayed during volleyball training replicate the demands of competition?

Abstract

Despite chronic lower extremity syndromes being extremely problematic in volleyball internationally, there is a lack of research pertaining to the demands experienced by volleyball players in terms of landings performed during competition and whether these are replicated during training. Therefore, the purpose of this study was to examine the differences in landing mechanics displayed by volleyball players during competition compared to training. Video data (25 Hz) of the Australian Men's volleyball team were collected for three training sessions and two competition matches at the Asian men's Volleyball Championships in 2003. Frequency data for six players were analysed (Chi-square analysis) to determine whether situation (training versus competition) was significantly ($p < 0.05$) related to a qualitative assessment of knee angle, landing style or movement task. The results revealed that, although players performed a greater number of landings during training (65%) compared to competition (35%) over similar duration, there was no significant relationship between situation and landing style. However, there were significant differences between training and competition when landings were classified according to movement task, landing style and knee angle. Interestingly, players landed with larger knee flexion angles than expected during both training (73% acute, 26% > square, 1% obtuse) and competition (59% acute, 38% square, 2% obtuse), possibly increasing knee joint loading and contributing to overuse syndromes. It was concluded that the effects of variations in landing knee angle on knee loading and the imbalance in landing demands between competition and training require further investigation as the basis of volleyball injury prevention initiatives.

Disciplines

Arts and Humanities | Life Sciences | Medicine and Health Sciences | Social and Behavioral Sciences

Publication Details

Wild, C., Munro, B. & Steele, J. R. (2006). Does landing technique displayed during volleyball training replicate the demands of competition?. In 2006 ASICS Conference of Science and Medicine in Sport, Sports Medicine in Paradise: Perspectives from the Pacific, 19-21 October, Yanuca, Fiji Islands. Journal of Science and Medicine in Sport, 9 (6), 47.

4

Does landing technique displayed during volleyball training replicate the demands of competition?

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4

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