

Morphology of spine and footprint in athletes from different sports: an integrate approach to evaluate posture

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Posture is a complex process determined by the interaction of several body structures. In the past years, different direct and indirect procedures have been proposed to understand how these anatomical structures could be modified by forces exerted during sport practice (Queen et al, 2007). A particular attention has been focused on the variations in athletes from different sports to highlight eventual correlations between morpho-functional modifications, postural diseases and injuries (Cain et al, 2007). The aim of this work is to study the morphological aspects of the footprint and the spine in different athletes by an integrate approach. 115 subjects were tested and divided accordingly to the specific sport activity (control, basketball, volleyball, football, gymnastics); only subjects without previous or current diseases of the bones, joints and muscles have been considered. The electronic baropodometry has been used to measure the pressure distribution exerted on each foot during static and dynamic conditions; the Surfacer has been used to record the position of chosen points on the back. Our results indicated that, in comparison with controls, athletes from different sports displayed specific and significant modifications in foot type and in the back morphology; in particular, statistical analysis showed that in basketball and gymnastics athletes, significant changing in foot type and in the back morphology were present; moreover, in volleyball athletes, significant changing were found in foot type. Therefore, our results suggest that each sport could determinate specific postural changes during sport practice. Our data could be useful to develop specific training protocols aimed to prevent alterations in spine morphology and foot type that are associated with sport practice and could determine injuries or other postural diseases.

References

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Key words

Baropodometry, Surfacer, posture, foot, spine.