



Stress fractures in 2011: practical approach

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Résumé en anglais	<p>Stress fractures occur when excessive loads are applied to a bone whose mechanical strength is normal. Bone insufficiency fractures, in contrast, are due to physiological loads applied to bone of inadequate mechanical strength [1]. This contradistinction is obviously an oversimplification. In practice, a continuum exists between these two clearly defined situations.</p> <p>The objective of the third ODISSEE meetings [2,3] held under the aegis of the GRIO was to review current knowledge on stress fractures. The pathophysiology of stress fractures is still poorly understood. When loads are applied to a bone, particularly in a repetitive manner, an elastic deformity occurs, followed by a plastic deformity and, finally, by microfractures. Bone strength varies across individuals. It depends not only on the intrinsic qualities of the bone tissue, but also on the magnitude and repetitiveness of the loads applied to the bone. Bone tissue fatigue is an inability to repair the microdamage caused by mechanical loading. The number and length of the microfractures increase, resulting in a fracture with clinical symptoms and radiographic changes [4]. Stress fractures are a common reason for physician visits among athletes and military recruits. They account for 5% to 14% of all physician visits, depending on the study population [5,6].</p> <p>Although stress fractures can arise at any site, the most common locations are the tibia, particularly in runners; the metatarsals (most notably the second and third metatarsals) in hikers, runners, dancers, and military recruits; the iliopubic and ischiopubic rami of the pelvis in military recruits, gymnasts, dancers, and soccer players; and the femur in cross-country runners. The calcaneus is also a common site of involvement in all populations. Stress fractures are rare at the upper limbs, except in high-level gymnasts country runners. The calcaneus is also a common site of involvement in all populations. Stress fractures are rare at the upper limbs, except in high-level gymnasts.</p>

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