

Ultrasound in Diagnosing Bone Stress Injuries



Ultrasound was compared to MRI in assessing lower stress injuries in a study recently published in

The Journal of Ultrasound in Medicine.

Bone stress injuries are common among athletes. Evaluating these injuries early is paramount to treating them effectively. Although MRI is commonly used to evaluate bone injury and is considered the diagnostic standard, it is not widely accessible at the point-of-care. X-ray and CT also are ineffective during the early stages of bone stress injuries. In contrast, ultrasound is more affordable and accessible. Thus, ultrasound offers clinicians the advantage of evaluating local soft tissue sites in real-time as part of the clinical evaluation.

The researchers compared the sensitivity and specificity of ultrasound to MRI in 37 athletes with suspected lower extremity bone stress injuries in an academic sports medicine clinic between 2016 and 2020. Thirty (81%) had bone stress injuries, with the most common being in the metatarsal bones (54%) and the tibia (32%). Compared to MRI, ultrasound demonstrated 0.80 sensitivity (the ability correctly identify patient with bone injury) and 0.71 specificity (the ability correctly identify patient without bone injury). For ultrasound, the ratio of patients diagnosed as with bone injuries to all those with positive test results (positive predictive value) was 0.92, and the ratio of patients with negative test results without bone injuries (negative predictive value) was 0.45.

The research team concluded: 'ultrasound imaging is potentially useful point-of-care tool for practicing sports medicine providers to combine with their clinical evaluation in the diagnosis of bone stress injuries.'

Source: [The Journal of Ultrasound in Medicine](#)

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