

## **Title: The Use of Musculoskeletal Ultrasonography in the Diagnosis of Tendinopathy in a Multidisciplinary Sports Medicine Clinic**

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**OBJECTIVES:** The term tendinopathy is broadly used to describe pathological changes within or about a tendon. Common tendon pathology seen in a sports medicine practice include partial or complete tendon tears, degenerative changes in a tendon or tendinosis, and inflammatory changes in the tendon or its associated structures such as peritendinitis, peratendinitis, peratenosynovitis, paratenosynovitis, and tenosynovitis. These conditions each require different and specific care plan for successful outcomes. Musculoskeletal ultrasonography can be used to visualize pathological changes within a tendon to determine the correct diagnosis and the subsequent management plan.

**METHODS:** Musculoskeletal ultrasonography is a relatively inexpensive non-invasive new imaging technology that can objectively differentiate between degenerative and inflammatory tendon pathologies. These tendinopathies require different treatment approaches and a correct assessment is important.

**RESULTS:** Musculoskeletal ultrasonographic findings in tendinosis characteristically include focal or diffuse thickening of the tendon, irregular tendon structure with focal hypoechoic areas within the body of the tendon. When the Doppler ultrasonography is also used, evidence of hypervascularization may be present within the hypoechoic areas. These findings are consistent with the histological changes of tendinosis. Management should minimally consist of eccentric exercise, mechanical irritation, and local pain management. The treatment by heavy load eccentric training has shown good clinical results, with decreased pain level and ability to return to previous activity level.

There are different musculoskeletal ultrasonographic findings in the less common inflammatory type tendon pathology. When visualized via ultrasonography, inflammatory changes are characterized by accumulation of hypoechoic fluid in the tendon and/or surrounding structures. In paritendonitis and tenosynovitis, for example, a “halo” of fluid will be seen around tendon on axial or short axis views. Treatment for inflammatory tendinopathies may require rest, ice, compression, anti-inflammatory medication, range of motion exercise and light soft tissue mobilization to prevent adhesion formation.

**CONCLUSION:** Musculoskeletal Ultrasonography is a good, cost effective method for investigative studies of tendinopathies. Because of this type of clinical application, this diagnostic imaging modality is becoming increasingly popular in clinical sports medicine. Advances in ultrasonography technology have also led to improved clinical outcomes related to the ability to rapidly achieve a correct diagnosis in tendinopathies.