

QUPTI – Quantitative Ultrasound to Prevent Tendon Injuries

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In the United States alone, over 200,000 college and 1 million high school athletes each year suffer an overuse injury, putting themselves at a high-risk of developing long-term musculoskeletal disorders. Currently, the standard of care is reactive, after the athlete complains of pain or is injured. There is no clinical standard of care to prevent overuse injuries or evaluate tendon health in real-time. QUPTI is an ultrasound based medical device capable of quantitatively tracking the health of commonly injured tendons in real-time. QUPTI can be used to proactively target athletes and tendons that are at a high-risk of injury due to their repetitive use.

Technology Description

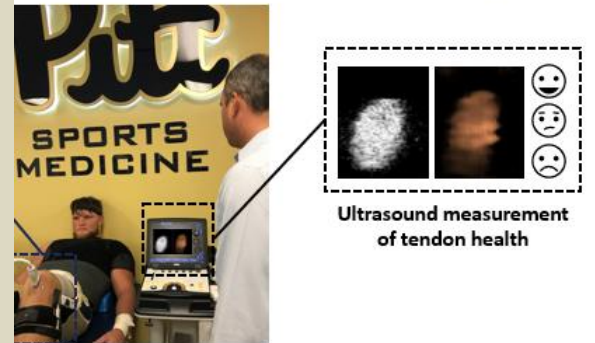
QUPTI is a back-pack sized, portable ultrasound device coupled with a positioning brace that can position the joint and probe in a repeatable location without the need for manual intervention from the clinician. The probe itself will be flexible to account for the patient's size and the tendon being imaged. QUPTI utilizes a novel ultrasound technique known as Acoustic Radiation Force Impulse (ARFI) imaging where the tendons can be 'remotely palpated' and the resulting tendon displacement can be measured. The measured displacement can be related to tendon health, providing clinically relevant information of tendon health in real-time.

Advantages

- Proactively treats overuse injuries
- Non-invasive
- Real-time feedback of tendon health

Applications

- Athlete training intensity
- In game sports decisions (ie. when to take a baseball pitcher out of the game)
- Surgical planning



Example of QUPTI use on athlete's knee

Stage of Development

Cadaveric testing data

IP Status

Invention disclosure filed

Notable Mentions

2018 PInCh Finalist