Researchers at the University of South Florida have designed a novel device and method to elicit a deep tendon reflex in patients.

Deep tendon reflexes are muscle contractions that occur in response to stretching within a tendon. They are normally present uniformly within all of a person’s limbs. In neurology, reflexes are used to quickly determine the location of injuries to the nervous system. Reflexes are typically tested using a percussive reflex hammer, which a physician swings in an arc-like motion onto the tendon. However, this method can be limited if the tendon is obstructed. Severe muscle contractures may limit a patient’s range of motion and give insufficient room for an adequate reflex hammer swing. Morbid obesity may cause parts of a patient’s upper arm to physically block a reflex hammer from contacting the tendon site. Hence, there is a need for a more effective device to test deep tendon reflexes in challenging scenarios.

USF researchers have invented a device which specifically tests deep tendon reflexes. This device improves upon current methods and is effective when used on patients with limb contractures or obesity. To operate, the device is pressed against the desired tendon. Pressure against the patient’s skin releases a spring-loaded mass which delivers force to the tendon, generating a reflex. After release, the device automatically returns to the ready position. This device has the potential to improve assessment of deep tendon reflexes.

ADVANTAGES:
- An easy to use, repeatable and consistent operation
- Compact, durable, and reusable
- Effective in obesity and muscle contractures
- Cost-effective

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