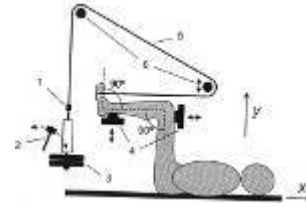


**Patent: Device and Method for Measuring the Visco-elastic Characteristics of the Triceps Surae by means of Free Rotational Vibration of the Foot around the Ankle**

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**Description**

This invention consists of a **device for the measurement *in vivo*, using a one hundred per cent non-invasive procedure, of the visco-elastic properties of the triceps surae**. Said method is based on the association of the free vibration of the foot to the free vibration of a system with a degree of freedom, said degree of freedom being the rotation of the foot around the ankle joint. The movement which is going to be associated with the system of a degree of freedom is the rotation of the foot around the ankle joint with the subject seated or lying down and, in both cases, resting the metatarsal arch on a support connected in series with a device enabling a measurement to be made of the force the individual transmits. Initially a weight is placed on the system and a mechanical system transmits said weight to the individual's metatarsal arch. The action of an impulse, a tap with hammer, for example, causes the free vibration of the foot, thus causing the rotation around the ankle joint.

**Need or problem it solves**

- The invention is of interest to **centres training sportspersons to carry out periodical checks measuring the fitness level of the subject**.
- It is of interest for **monitoring the state of training and/or recovery of muscular tone after a period of inactivity arising from operations or injuries**.

**Innovative features/competitive advantages**

- This procedure is **one hundred per cent non-invasive**.
- **The procedure and, therefore, the results, are independent of the subject**. In other tests to measure the fitness level of a subject, using runs, lifting weights etc., the subject can voluntarily interfere with the results. In the case of this invention, the will of the subject has no influence on the properties measured.
- The **procedure invented is very fast** due to the decoupling of the taking of measurements and the information processing procedure. One of the tests comprising the procedure lasts between 20 and 30 seconds and the total procedure takes some 15 minutes.
- The device invented is **portable**, thus facilitating its being taken to sports training centres in order for periodical checks to be carried out with minimal impact on habits and schedules.

**Types of businesses interested**

Sports Training Centres