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Review Article **Published Date:- 2017-02-21**

[Achilles Tendon Injuries: Comparison of Different Conservative and Surgical Treatment and Rehabilitation](#)

Despite its high incidence and the great development of literature, there is still controversy about the optimal management of Achilles tendon rupture. The several techniques proposed to treat acute ruptures can essentially be classified into: conservative management (cast immobilization or functional bracing), open repair, minimally invasive technique and percutaneous repair with or without augmentation. Although chronic ruptures represent a different chapter, the ideal treatment seems to be surgical too (debridement, local tissue transfer, augmentation and synthetic grafts). In this paper we reviewed the literature on acute injuries.

Research Article **Published Date:- 2017-02-13**

[Foot Arch Differences in Elderly People at Standing: Considering Gender and Age](#)

Background: The foot is an important and complex structure that provides support, balance and propulsion to locomotion, thus, its proper care can help to have a better life quality avoiding pain. The medial longitudinal arch is an important structure that is related to injury risks when it shows some impairment. The purpose of this study was to characterize the foot arch index in people in relation to age and gender.

Methods: The sample was composed of a total of 122 subjects, 79 healthy young subjects (40 women and 39 men) and 43 healthy elderly subjects (32 women and 11 men). Ten seconds of standing barefoot plantar pressure was measure through Tekscan F-Scan device, and the data processing, filtering, and arch index (AI) calculation were performed using MATLAB™ 7.0.

Findings: The elderly group presented a lower arch (AI-0.23) than the young group (AI-0.13) ($p=0.000$); young female and male groups show similar AI, while the elderly female group showed lower arch (AI-0.23) than the elderly male group (AI-0.18) ($p=0.033$).

Interpretation: The foot arch has a trend to be lower with aging, and even lower within elderly female subjects, probably due to some decrease within plantar muscle's stiffness, that in turn may be related to lower physical activity and footwear choices.

Research Article **Published Date:- 2017-02-10**

[Comparison of two types of strengthening exercises in upper limbs for improvement of wheelchair propulsion in paraplegics](#)

Introduction: A reduction in physical activity due to spinal cord injury leads to deconditioning and increased dependency. Manual wheelchair propulsion is a straining form of ambulation and propulsion is based on the use of upper extremities, which are usually capable of producing less force with less efficiency. Theraband can be an exercise mode, which resembles wheelchair activity. Mat exercises are also given for strengthening of upper limb muscles in persons with paraplegia. The aim of this study is to compare effects of both elastic resistance strength training and strengthening by mat activity of upper limb muscles on wheelchair propulsion efficiency in persons with paraplegia.

Materials and Method: The selected subjects were randomly assigned into Theraband and Mat exercise groups with 15 subjects each. Theraband group received theraband strengthening of wheelchair propulsion muscles, whereas mat activity group received mat strengthening of wheelchair propulsion muscles. Total duration of treatment was 5 days per week for 5 weeks.

Results: Results of the study showed both mat exercise and theraband groups showed significant improvement in wheelchair 15 meter sprint test and wheelchair propulsion for 50 meters in paraplegics due to spinal cord injury. However, theraband group showed significantly more improvement.

Conclusion: The study revealed that theraband exercises for improving upper limb strength for wheelchair propulsion is superior to strengthening through mat exercise.

Case Report

Published Date:- 2017-01-27

[Pulsed Shortwave Diathermy and Joint Mobilizations Restore a Twice Fractured Elbow with Metal Implants to Full Range of Motion](#)

A 21-y-old recreationally active male lacking the last 30° of elbow extension from a fractured and dislocated elbow sustained while wakeboarding came to our clinic November of 2015. A regimen was applied of 20-minutes of pulsed shortwave diathermy (PSWD) treatments delivered at 100 watts to heat the affected tissue prior to approximately 40°C followed by 10 minutes of joint mobilizations. This was followed by application of an ice pack to the area for 30 minutes. Measurements and treatments were given on Nov 3, 5 and 10. The changes in AROM extension were as follows: Nov 3, from 30° to 20°; Nov 5, from 24° to 10°; Nov 10, from 10° to 0°. Over the course of the treatment the PSWD/ joint mobilizations improved extension AROM of the elbow 30° (full AROM) in just 3 treatments. There was also no post-treatment pain.

Research Article

Published Date:- 2017-01-20

[Effects of Fast-Walking on Muscle Activation in Young Adults and Elderly Persons](#)

Coactivation of agonist and antagonist muscles participates in the regulation of joint stiffness and postural instability. Alterations on muscle activity have been revealed as an important falling risk factor. It is unclear the effects, and age-related differences, of a prolonged demanding task on the muscular coactivation levels. We compared muscle activation amplitude and coactivation of the vastus medialis, biceps femoris, tibialis anterior, and gastrocnemius medialis from surface EMG in 16 young adults (age 21-33) and 8 elderly adults (age 66-72) while fast-walking at 70% of their maximum heart rate. Overall, the elderly demonstrated higher coactivation indexes than the young individuals. Ankle coactivation decreased in the first half of the swing phase, while coactivation at the knee increased in the latter half of the swing phase in our elders. Alterations of muscle activation and coactivation on the knee and ankle were more prominent close to landing and in the swing phase. Our results suggest that these alterations may suggest potential concerns with respect to the risk of falls.

Research Article

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[Postural Stability Induced by Supervised Physical Training may improve also Oxygen Cost of Exercise and Walking Capacity in Post-Menopause, Obese Women](#)

We utilized the training impulses method to numerically quantify the volume of physical exercise to be prescribed to postmenopausal obese women in such a way of obtain the best possible improvement of their health-related quality of life. Nine women (57 ± 4 years, 89 ± 2 kg, 157 ± 9 cm) carried out 3-months of exercise training (3 session/week each lasting 80 min) under the supervision of skilled operators which indirectly calculated the volume of physical exercise by assessing heart rate values while patient exercised and making sure that the workload corresponded to 50-60% of their maximum oxygen uptake. Before and after training anthropometric, functional and biomechanical variables were assessed. After training patients showed statistically significant ($P<0.05$) reduction in body mass (-2%) and body mass index (-4%), waist circumference (-4%), total (-6%) and LDL (-26%) serum cholesterol and glycaemia (-8%), diastolic arterial blood pressure (-14%), and oxygen cost (-14%) at the maximum workload during incremental cardiopulmonary test, the sway area from unipedal stance (right leg) of 20 s on a pressure platform (-49%), while increased both free fat body mass percentage (+3%) and space covered during the six minute walk test (+11%). It was concluded that, when an exercise protocol is carried out by postmenopausal obese women and the volume of exercise is instrumentally controlled by experienced operators, it could result in an effective benefit on the quality of life of these patients since they ameliorate some critical anthropometric and functional parameters.
