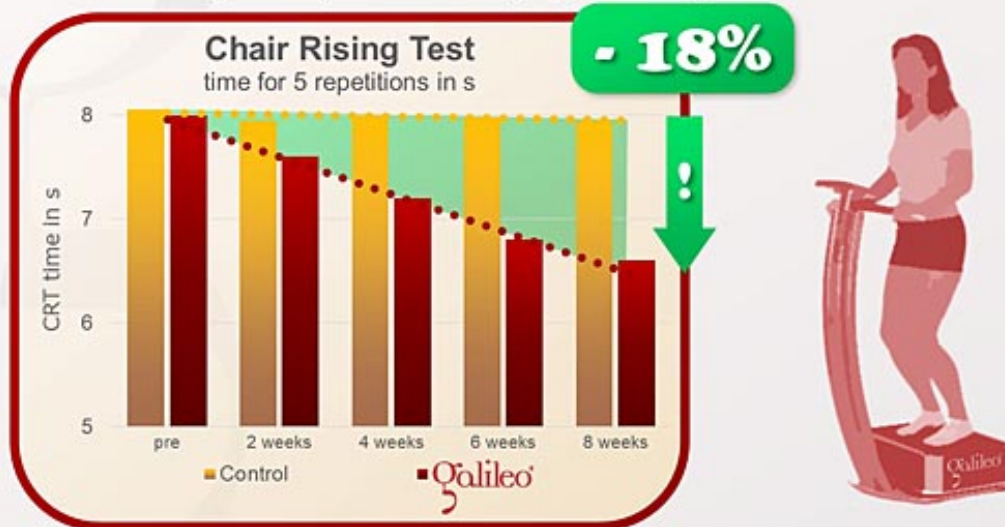


Can Galileo Therapy improve muscle power significantly even in the aged ?

The answer is: YES

This study tested the effect of Galileo Therapy on muscle power using the chair rising test for geriatric out-patients (age 61-85, 27 Hz, bent knees, 3*2 minutes, 3 per week, 8 weeks). The Galileo Therapy group decreased chair rising time in average by 18% (in 34 patients improvement of up to 36%) the control group of the cross-over designed study did not show any significant changes.



Runge M, Rehfeld G, Resnick E: Balance training and exercise in geriatric patients; J Musculoskelet Neuronal Interact., 1(1):61-5, 2000; PMID: 15758528; GID: 194

It is always astonishing how little is quite often needed with Galileo Training to achieve positive effects: In this early Galileo study published already in 2000 the patients simply stood with legs slightly bent for 3x3 minutes, at 27Hz, position 2, 3 times per week over 8 weeks on the Galileo.

The used frequency (27Hz) in principle should help to build up muscle (#GRFS29) but the used posture hardly addresses the muscle of thighs and gluteus muscles which are used for the Chair Rising Test (CRT) as the outcome parameter.

Nevertheless the time for CRT improved by 20% in many even up to 36%. This translates into a significant improvement of muscle power, because a value of 10 seconds for 5 repetitions as fast as possible means already an impairment for every-day living and fall-risk) while on the other hand a value of 5 seconds is already the shortest possible without cheating.

According to up to date knowledge an exercise like 2 to 3 sets of the skiing-squat at 27 to 30Hz and a time per set of 60 to 90 seconds would have been more effective because it specifically targets thigh and gluteus while the training time would have been cut half (Exercise 41 or to make it even harder exercise 22 or exercise 44).



[J Musculoskelet Neuronal Interact.](#) 2000 Sep;1(1):61-5.

Balance training and exercise in geriatric patients.

[Runge M](#), [Rehfeld G](#), [Resnicek E](#).

Objective measures of gait and balance which meet the criteria of reliability and validity are required as a basis for exercise regimens. We established reference values of clinically relevant locomotor and balance performances for geriatric patients.

We are using these data for evaluating the effects of different therapeutic approaches to locomotor and balance disorders. Reference values for chair rising.

We administered a battery of five tests concerning neuromuscular function, locomotion and balance to a sample of 212 participants without apparent locomotor deficits (139 women, 73 men, mean age 70,5 years, SD 6,78 , median 70 years, range 60 to 90 years, recruited by public announcements).

The test battery comprised the 'chair rising test' for measuring lower extremity neuromuscular function (five repetitions of rising from a chair as quickly as possible with arms crossed over the chest).

The test has been proven reliable, valid, sensible and predictive for falls and future locomotor status and ADL-status. Chair rising [sec/5x], Range: 5.4-19.4, Mean: 9.1 (women:9.2, men:9.0), SD: 1.97, Median: 8.9.

Training of balance and muscle power with Galileo 2000 - preliminary results. Galileo is a device for whole body vibration/oscillatory muscle stimulation.

The subject stands with bended knees and hips on a rocking platform with a sagittal axle, which thrusts alternatively the right and left leg 7-14 mm upwards with a frequency of 27 Hz, thereby lengthening the extensor muscles of the lower extremities.

The reflexive reaction of the neuromuscular system is a chain of rapid muscle contractions. We conducted a randomized controlled trial, n=34 (age: mean 67y, range 61-85, 11 female), cross-over design, intervention group 2 months training program three times a week (each session 3x2 minutes), performance tests of all participants every two weeks).

The first 19 subjects have finished the intervention period. They reached mean performance gains in chair rising of 18%, strikingly different to the constant values of the controls! We interpret the findings as improvements in muscle power by the oscillative muscle stimulation.

PMID: 15758528