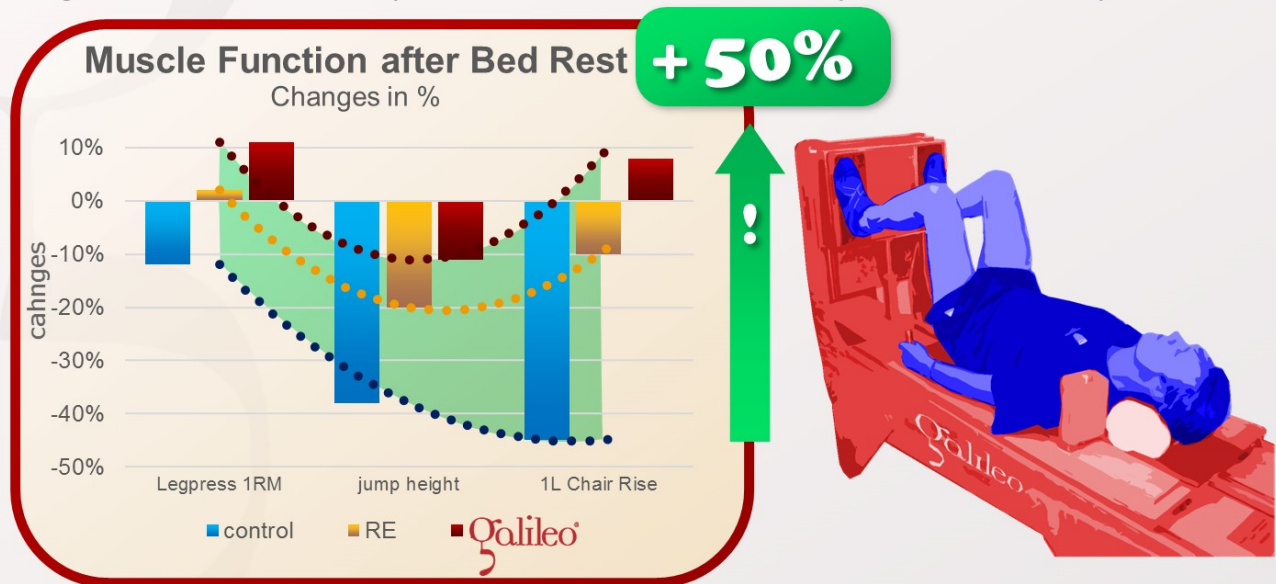


Can Galileo Training during 55 days bed rest improve muscle function ?

The answer is: YES

In the 2nd Berlin Bedrest Study (BBR2) the effects of Galileo Training against the expected bone loss was tested (55 days, 24Hz, 6x1 min. exhaustive, 3/week). The control groups receive no training or identical training with-out vibration (RE). Galileo showed in almost all. In many aspects of muscle function Galileo Training was most effective to compensate effects of bed rest in some aspects it could even improve function.



Gast U, John S, Runge M, Rawer R, Felsenberg D, Belavy DL: Short-Duration Resistive Exercise Sustains Neuromuscular Function after Bed Rest.; Med Sci Sports Exerc., (44):1764-72, 2012; PMID: 22460472; GID: 2943

Like the first Berlin Bedrest Study (BBR1) also the second (BBR2) not only showed that Galileo Training can prevent bone loss in bedrest but also that it can very efficiently compensate the negative effects of bed rest on muscle function (as measured e.g. in jumping or chair rising).

Some aspects of muscle function could even be improved during bed rest.

This is quite astonishing when considering that the Galileo training time was reduced from 50 minutes per week (BBR1) to 3*6 minutes per week (18 minutes!).

When further considering that current training time on the ISS I sat least 60 minutes per day and muscle and bone loss cannot be compensated in many Astronauts, then this shows the extreme efficiency of Galileo Training

– maximum result in a minimum of time.



[Med Sci Sports Exerc.](#) 2012 Sep;44(9):1764-72. doi: 10.1249/MSS.0b013e318256b53b.

Short-duration resistive exercise sustains neuromuscular function after bed rest.

Gast U¹, John S, Runge M, Rawer R, Felsenberg D, Belavý DL.

Abstract

PURPOSE:

The study's purpose was to assess the effectiveness of a short-duration three-times-weekly high-load resistive exercise program on preventing deterioration in neuromuscular function after prolonged bed rest.

METHODS:

Twenty-four male subjects performed high-load resistive exercise (n = 8), high-load resistive exercise with whole-body vibration (n = 9), or no exercise (control, n = 9) during 60-d head-down tilt bed rest as part of the 2nd Berlin Bed Rest Study. Peak countermovement jump power and height, sit-to-stand performance, sprint time over 15 and 30 m, and leg press one-repetition maximum were measured before and after bed rest.

RESULTS:

The exercise interventions were capable of ameliorating losses of peak countermovement jump power ($P < 0.001$) and height ($P < 0.001$), deterioration of sit-to-stand time from 45-cm ($P = 0.034$) and 30-cm ($P < 0.001$) sitting positions, increases of 15-m ($P = 0.037$) and 30-m ($P = 0.005$) sprint time, and losses of leg press one-repetition maximum ($P < 0.001$).

CONCLUSIONS:

The short-duration (6-min time under tension per training session) exercise countermeasure program performed three times a week was capable of reducing the effect of prolonged bed rest on many neuromuscular function measures.

PMID:22460472