

Galileo Research Fact Sheet #93: Can 5*10 min./week Galileo Training prevent loss of muscle function during 55 days bedrest?

Galileo Training Can 5*10 min./week Galileo Training prevent loss of muscle function during 55 days bedrest?

The answer is: YES

During the 1st Berlin Bedrest Study (BBR) individuals had to stay in bed for 55 days completely. The control group did no training at all, the Galileo group received 10 Min., 5 days/week 12-26Hz of intense Galileo Training while in bed. The Galileo group could prevent loss of muscle function almost completely while the control group lost muscle function by up to 28%.

Muscle Function
Changes in % pre/post bedrest

+26%

0%
-10%
-20%
-30%

Force Jump Power Jump Height

Control (no training) Galileo

Buehring B, Belavy DL, Michaelis I, Gast U, Felsenberg D, Rittweger J: Changes in lower extremity muscle function after 56 days of bed rest.; J Appl Physiol, 111(1):87-94, 2011; PMID: 21527664; GID: 2665

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During the 1st Berlin Bedrest Study (#BBR1) young men had to stay in bed completely for 55 days (Including shower, toilet and the Galileo exercises). As usual in such studies the control group did not receive any training while the Galileo Group received intense Galileo Training with high loads (5* 10 minutes per week, 12-26Hz, extra loading of up to 130% of body weight).

In direct comparison before and after the bedrest phase (directly after getting out of bed) the control group showed a loss of up to 28% of muscle function in jumping (force, power, jumping height). The Galileo Group could compensate this loss almost completely.

The second Berlin Bedrest study (#BBR2) showed similar results (#GRFS69, #GRFS87, #GRFS90, #GRFS127, #GRFS145, #GRFS147) - here less but more intense Galileo Training was used and the muscle function could even be improved.

Both studies could almost compensate all negative effects on bone loss at the same time. Considering the short training time (in this study 50 minutes per week) this is quite remarkable since Astronauts on the ISS currently train up to two hours a day and still show massive loss in muscle and bone during long-term missions - Another proof of how efficient Galileo Training can be.

Space Research - Muscle Function
#GRFS93 #GRFS