



# Osteoporosis Information for Healthcare Professionals

## Heavy resistance training is safe and improves bone, function and stature in postmenopausal women with low to very low bone mass: Novel early findings from the LIFTMOR trial

The aim of the LIFTMOR (Lifting Intervention For Training Muscle and Osteoporosis Rehabilitation) trial is to determine the safety and efficacy of brief, bone-targeted, high-intensity progressive resistance training (HiPRT) with impact loading for post-menopausal women with low bone mass. Preliminary findings indicate the LIFTMOR program is safe and effective.

For example, walking is frequently prescribed for osteoporosis, despite representing very low-intensity loading and being largely ineffective for improving bone BMD.

The LIFTMOR study is a single-blind randomized controlled exercise intervention trial. Eligible participants are block randomized to either 8 months of 30-min, twice-weekly, supervised HiPRT and weight-bearing impact loading or an unsupervised low-intensity home-based exercise program of a similar duration.

### Participants

Post-menopausal women over 60 years of age with T-score ranging from -0.6 to -3.31 but otherwise in good general health were recruited from the community.

### Intervention exercise program

One to two months, familiarization phase followed by the three HiPRT exercises (dead lift, squat, and overhead press) are then performed in five sets of five repetitions for the remainder of the intervention, progressively increasing weight to maintain an intensity of 80–85 % 1RM.

### Control exercise program

Two 30-min sessions per week, consisting of a 10-min walking warm-up, and four stretches (lunges, calf raises, standing forward raise, and shrugs).

### Outcome measures

Bone mineral density was assessed via DXA for femoral neck and lumbar spine.

### Bone Mineral Density and body composition

Resistance trained group saw a 3.2% and 2.8% greater improvement respectively for LS and FN BMD c/w control group.

### Physical performance

65% vs. 17% increase in back extensor strength. Increased back extensor strength has been associated with a reduced risk of vertebral fractures and decreased thoracic kyphosis.

## Practice changes for women with osteoporosis and physical therapy:

Clinicians now know that a low-intensity exercise regime (walking, stretching) is not effective in management of osteoporosis. Gaylord Physical Therapy staff are actively changing best practice. Our patients will benefit in the long term by implementing exercise protocols for osteoporosis using the LIFTMOR study results. These study results have been validated in follow-up research as well.

Early findings clearly indicate that HiPRT and impact exercise is safe and sufficient to improve bone mass and physical function.

Gaylord physical therapists take each patient through an assessment and create an individualized program based on exam findings, medical history, bone density and blood work. We encourage communication between your practice and ours to ensure safe, active and comprehensive care.

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