

OSU Researchers to Shake-Up Hip Replacement Therapy

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SOURCE: Gianni Maddalozzo, 541-737-6802

CORVALLIS, Ore. - Good vibrations may be the key for Oregon State University researchers seeking to aid hip replacement patients.

To study the benefits of a whole body vibration exercise regime - similar to that used by astronauts and Olympians - OSU scientists will put volunteers through workouts on vibrating platforms designed to improve strength, flexibility and balance, said Gianni Maddalozzo, a researcher in OSU's College of Health and Human Sciences.

Customized workouts will be created for volunteers ages 60-75 who have had partial hip replacement surgery in the past two years, said Maddalozzo, whose appointment is in the college's Department of Exercise and Sport Science.

Participants will then undergo supervised workouts for two days a week in Salem or Corvallis. A control group will also be recruited and will perform the same exercises, but won't use the vibrating platform.

"Most people, when they hear about whole body vibration therapy, they tend to laugh," Maddalozzo said. But as the population ages, he added, osteoporosis, or "brittle bones," and related fractures are becoming an increasing problem and hip fracture is the most devastating complication of osteoporosis.

"A number of animal studies, examining sheep, turkeys and rats, show that vibration treatment has a significant effect on bone formation and muscle mass," Maddalozzo said. "When researchers tried a vibration platform regime with sheep, they saw huge increases in bone mass among the animals."

But in hip fracture patients, bone mass is not the primary concern.

"The bone heals itself; that's not the issue," Maddalozzo said. "The issue is increasing muscle mass, strength and balance with a workout program that is safe and practical."

"Whole body vibration training has been promoted as an efficient, safe alternative for resistance training," he added. "Even if performed to exhaustion the increases in heart rate, blood pressure and oxygen uptake during whole body vibration training are negligible. Moreover, vibration training has been shown to be as efficient as standard resistance training for improving strength and balance in older women."

In addition to customized workouts volunteers will receive free bone scans to measure bone mass.

The vibrating work stations resemble giant home scales with upraised handles. Vibration levels will be set at 30 hertz, giving muscles 30 cycles of vibration per second, making them contract and relax 30 times per second. Individuals will probably start at about 10 minutes of exercise for each session and gradually build to 20-minute workouts.

"You can get the benefits of a 45- to 50-minute workout for less than half that time with a whole body vibration workout," Maddalozzo pointed out.

The slight shaking may momentarily startle newcomers, but people usually adjust to it in a few moments, Maddalozzo said. A support harness can be used for participants who fear losing their balance.

The therapy period will last six months. Anyone interested in volunteering for the study can contact Maddalozzo at 541-737-6802 or herronja@onid.orst.edu. *About the OSU College of Health and Human Sciences: Emphasizing a holistic approach to optimal health and disease prevention, researchers focus on nutrition, physical activity, the psychology of aging improving the health of children and older adults, public policy, access to health care, and maximizing environmentally friendly materials and structures.*