SPECTRUM SYSTEM

OsteoStrong uses Spectrum, a Robotic Musculoskeletal Development System (RMDS) to deliver unprecedented results.

Spectrum consists of 4 separate devices. Under the supervision of a trained technician, each Spectrum device allows members to briefly self-load many multiples of their body weight onto their musculoskeletal system.

OSTEOGENIC LOADING RESEARCH

1- Individuals over the age of 64 are unable to achieve the osteogenic minimum dose response levels of higher impact forces being, 4.2 multiples of bodyweight through activity-based impact.

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Tobias, J. H. (2014). Physical activity and bone: may the force be with you. Frontiers in endocrinology, 5, 20.

2- Hip joint affixed accelerometer data cross-referenced with bone turnover marker analysis indicates 4.2 G forces as the minimum dose response for osteogenesis via high-impact type activity.

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Deere, K., Sayers, A., Rittweger, J., & Tobias, J. H. (2012). Habitual levels of high, but not moderate or low, impact activity are positively related to hip BMD and geometry: results from a population based study of adolescents. Journal of bone and mineral research, 27(9), 1887-1895.

3- In world-class skiers weight-bearing bones were 10–60% stronger than those of the normally active men. Skiers at this level are known to absorb beyond 4G forces.

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Nikander, R. Sievanen, H. Heinonen, A. Karstila, T. and Kannus, P. (2008). Load- specific differences in the structure of femoral neck and tibia between world-class moguls skiers and slalom skiers. Scandinavian Journal of Medicine & Science in Sports 18, 145-153.

4- Static tensioning forces can increase osteogenic gene expressions in mandible testing suggesting that not impact itself, but rather impact level forces can induce mechanotransduction of bone.

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Ku, S. J., Chang, Y. I., Chae, C. H., Kim, S. G., Park, Y. W., Jung, Y. K., & Choi, J. Y. (2009). Static tensional forces increase osteogenic gene expression in three-dimensional periodontal ligament cell culture. BMB reports, 42(7), 427-432.

5- High impact absorption exceeding 3.9 g forces/multiples of body weight has significant association with bone density increase.

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Vainionpää, A., Korpelainen, R., Vihriälä, E., Rinta-Paavola, A., Leppäluoto, J., & Jämsä, T. (2006). Intensity of exercise is associated with bone density change in premenopausal women. Osteoporosis International, 17(3), 455-463.

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Vainionpää, A. Korpelainen, R. Leppaluoto, J. and Jamsa, T. (2005). Effects of high-impact exercise on bone mineral density: a randomized controlled trial in premenopausal women. Osteoporosis International 16, 191-197.

6- Higher impact type activity is significantly associated with higher bone mass density in the post menopausal females.

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Stiles, V. H., Metcalf, B. S., Knapp, K. M., & Rowlands, A. V. (2017). A small amount of precisely measured high-intensity habitual physical activity predicts bone health in pre-and post-menopausal women in UK Biobank. International journal of epidemiology, 46(6), 1847-1856.

OSTEOSTRONG RESEARCH

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or visit below link to view research studies.
www.osteostrong.me/osteostrong-science

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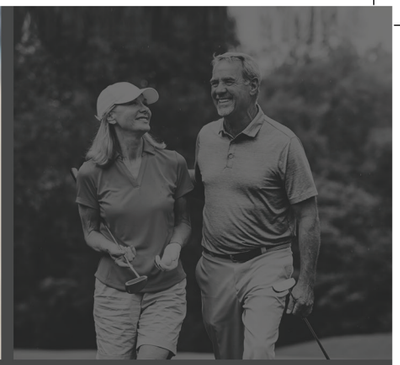

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OSTEO STRONG®

AGING WELL & OSTEOPOROSIS

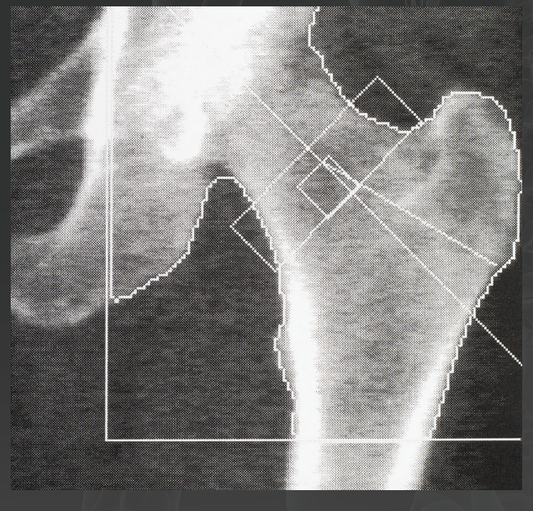
OSTEOSTRONG FOR MEDICAL PROFESSIONALS

WE UNDERSTAND

Bisphosphonates are generally the first line of defense for patients diagnosed with osteoporosis. Unfortunately, the risk of side effects can make this a complicated decision. **Until now there were few exercise-based non-pharmaceutical options** that offered significant increases in bone density in a safe manner for even the most high-risk patients. **OsteoStrong offers a highly effective, evidence-based musculoskeletal strengthening program that can be used to complement pharmaceutical treatment and as a preventative protocol.**

1 IN 2 WOMEN OVER AGE 50 WILL BREAK A BONE
DUE TO OSTEOPOROSIS.

A MAN OVER 50 IS MORE LIKELY TO BREAK A BONE
DUE TO OSTEOPOROSIS THAN HE IS TO GET PROSTATE CANCER.



WHAT IS OSTEOSTRONG?

OsteoStrong is a membership-based Integrated Health and Wellness Center with a focus on Musculoskeletal Strengthening.

The four device circuit takes only minutes once per week to complete. Under the direction of a skilled technician, users engage in a safe controlled movement on each device that results in a stimulus to the central nervous system triggering osteogenesis or new bone growth.

Each device provides instant biofeedback with a member's impact emulation force exertion measured in pounds and multiples of body weight.

Data is recorded and a report is sent to the member detailing their progress at the conclusion of each session.

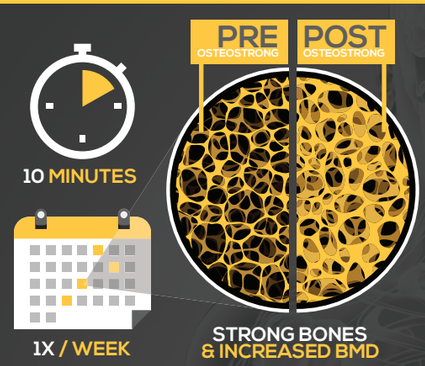
RESULTS

CLIENTS REPORT:

- **UP TO 14% INCREASES IN BMD** OVER 12 MONTHS BETWEEN DEXA SCANS
- **INCREASED** AGILITY
- **DECREASED** JOINT PAIN
- **SIGNIFICANT IMPROVEMENTS** IN STRENGTH AND BALANCE
- **BETTER** POSTURE

*INDIVIDUAL RESULTS MAY VARY

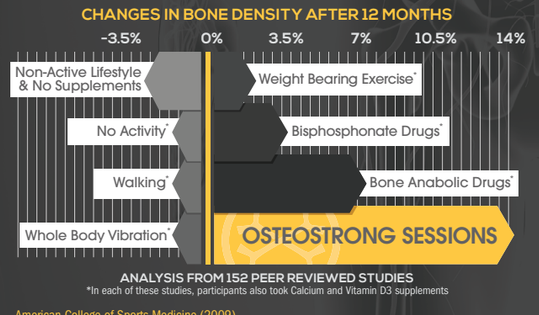
10 MINUTES • 1X / WEEK



WHO CAN BENEFIT?

- Anyone with Osteopenia or Osteoporosis
- Pre and Post-Menopausal women
- Anyone resistant to pharmaceutical treatment
- Deconditioned patients needing strength and balance training
- Anyone with balance and fall risk
- Individuals experiencing chronic pain or poor posture
- Anyone in need of post-physical therapy strengthening

BONE DENSITY ANALYSIS



American College of Sports Medicine (2009).
ACSM's Guidelines for Exercise Testing and Prescription, 8th ed. LWW, Philadelphia, PA.

WHY IT WORKS

The greatest effect on bone strength and health is the result of high-impact activity, and hundreds of studies have confirmed this, even identifying the minimum dose of force required through bone as being over 4 times bodyweight in the hip joint [1-3].

As adults, impact becomes associated with injury therefore adults intentionally avoid impact and thus even those who engage in exercise often fail to maintain bone health.

OsteoStrong utilizes a series of robotic musculoskeletal treatment devices utilizing high impact emulation, so that people can get the benefit of impact without the associated risks, providing a physical medicine option that has no side effects.