

The Physiological Impact of bioDensity

bioDensity™ makes possible a safe, self-induced, neuro-musculoskeletal stimulus that provides loading up to multiples of an individual's body weight. Such loads are normally associated with impact loading¹. The U.S Surgeon General states that activities that "involve impact are most useful for increasing or maintaining bone mass"².

Bone Mass Density

User volunteered unsolicited patient DXA Scans have shown an average 4.5% bone mass gain for individuals in the bioDensity program for 3 years (n=7; users/patients from initial Napa Valley, CA test facility). In 1993 The Center for Sports Medicine, at Pennsylvania State University, published a study examining the relationship of bone mineral density to muscular strength in elite junior Olympic weightlifters. The purpose was to better understand the influences of the heaviest types of bone loading on bone mass density. The results of the DXA scans compared the weightlifters to a control group, and showed that the weightlifters had a 133% greater bone mass density in the lumbar vertebrae (L2–4)³ for standard vertebrae BMD testing. This reaction involves the habitual nature of imposing load on musculoskeletal structure, and illustrates the loading and adaptive response process that bioDensity allows.

Myofibril Muscular Development

By generating load in only the optimal biomechanical

position, users stimulate a greater amount of muscular tissue than with conventional exercise, as well as apply greater loads on the skeletal system. This can facilitate both a muscular and bone adaptive response. Significant muscular strength gains can be seen from just a single optimal biomechanical Load Exposure⁴. This Load Exposure in the optimal biomechanical range is the stimulus that bioDensity allows to its users. This is a result of myofibril muscular development⁵, where individual muscles increase myofibril count, which produces a higher power-to-weight ratio in the user, as well as a faster metabolism. From high performance athletes to compromised, elderly individuals, all can greatly benefit from stronger bone tissue and increased muscular strength.

Impact Level Loading - Sports Performance

The bioDensity Device normative data⁶ shows the 75th percentile Leg Press Load Exposure for males between the ages of 20 to 29 (n=104) is 1,974 pounds. This output represents a load many times the typical athlete's body weight.

Impact Level Loading - Aging Population

The bioDensity Device normative data⁶ shows the 75th percentile Leg Press Load Exposure for females between the ages of 80 to 99 (n=33) is 612 pounds. This output represents a load many times the typical body weight of a female in this age group.

References

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