



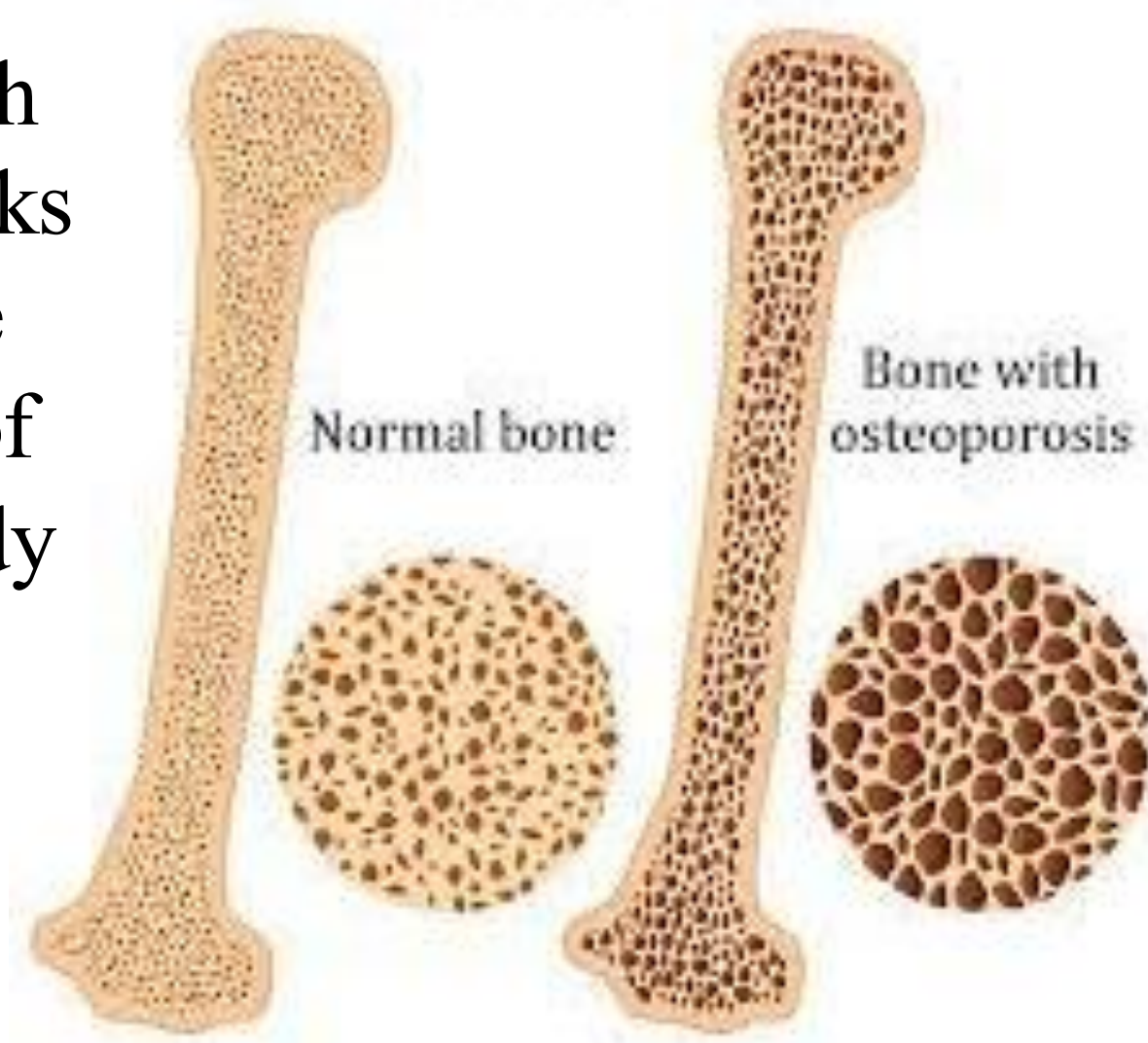
Effectiveness of Hatha Yoga on Bone Mineral Density Levels in Postmenopausal Women

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Abstract

The purpose of this research was to investigate the effects that yoga techniques have on low bone mineral density levels in women post-menopause. Previous research and studies have seen a positive impact that yoga has had on improving bone mineral density levels in women post-menopause, who are facing osteopenia and osteoporosis. Osteoporosis is defined as -1 to -2.5 Standard Deviations (SD) below the mean for young, healthy adults. Different forms of yoga have seen to be impactful, however Hatha yoga has the most positive effects. Focusing on building bone strength even after menopause, which breaks down the bones in females, can be impactful in decreasing the risks of osteoporosis later in life. This study involved 62 participants, divided into a Hatha yoga Group ($n = 31$) and a Control Group ($n=31$). Bone Mineral Density (BMD) levels were measured using a DEXA (Dual Energy X-ray Absorptiometry) scan, and a T-score was to be derived from this.



Methods

Prescreening involved:

- Current Age (yr)/Age of Menopause Diagnosis (yr)
- Weight (kg)/Height (m)/BMI (kg/m²)
- Bone Mineral Density Levels (SD)

Participants randomly divided into 2 groups:

- Group 1: Hatha Yoga
 - Instructed yoga 3x's a week, 1 hour per day, 12 months
- Group 2: Control
 - Limited activity 3x's a week, 1 hour per day, 12 months

6 months screening:

- Current Age (yr)
- Weight (kg)/Height (m)/BMI (kg/m²)
- Bone Mineral Density Levels (SD)

12 months screening:

- Current Age (yr)
- Weight (kg)/Height (m) /BMI (kg/m²)
- Bone Mineral Density Levels (SD)

Data Analysis

- All data was collected from all 3 screenings.
- Data was compared from all 3 point for both the Hatha Yoga group and the Control group.
- Data was then compared and contrasted between the Hatha Yoga group and the Control group.

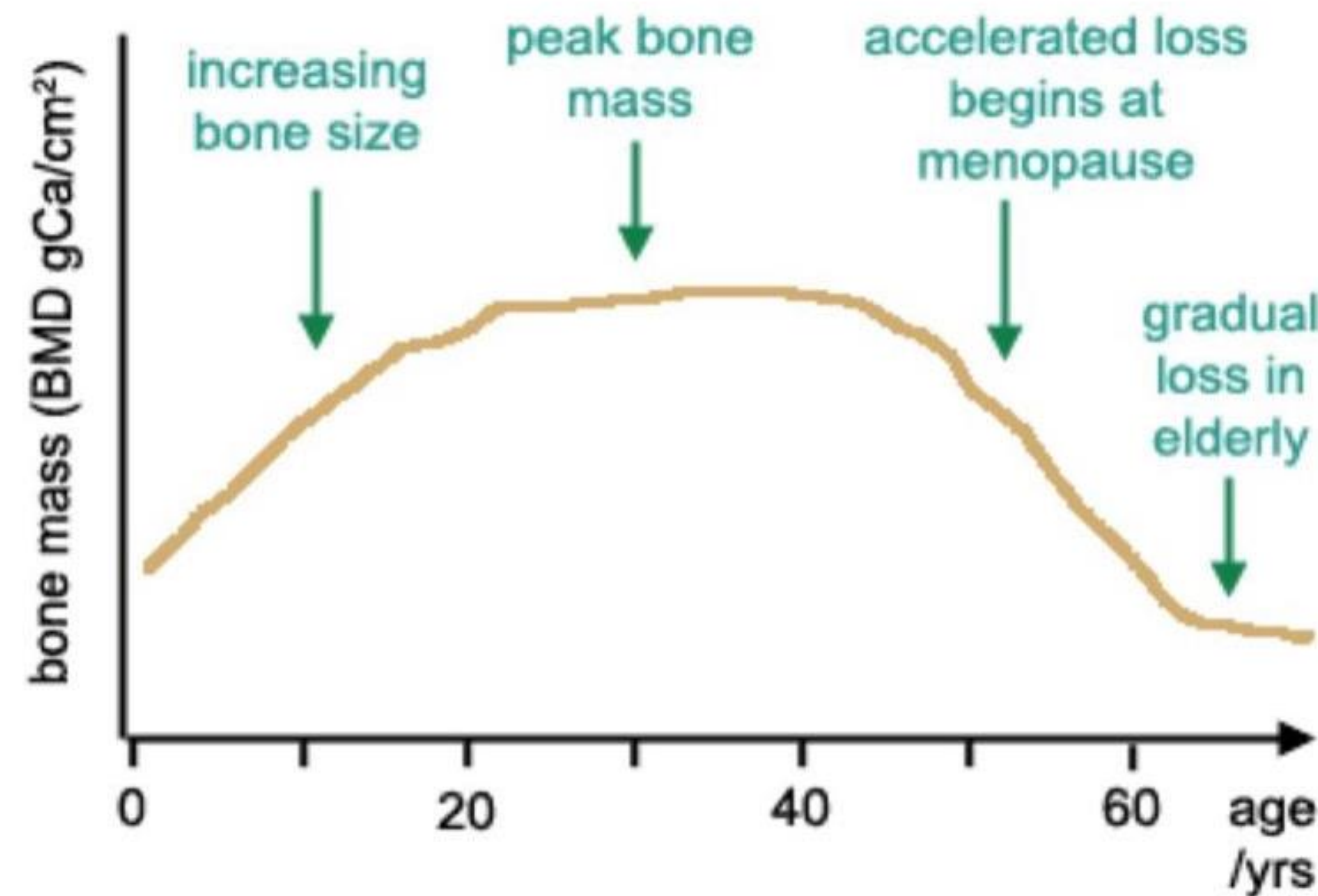
Discussion

- ❑ 60 total participants were included for this study with the following criteria:
 - ❑ Low Bone Mass: 1 to 2.5 Standard Deviations below the mean for young adults (Driver, 2020).
 - ❑ Ages 55-75
 - ❑ Low to moderate activity level.
 - ❑ Previously been through menopause 1+ years prior.
- ❑ Bone Mineral Density was positively affected by Hatha Yoga techniques.
 - ❑ BMD levels increased from -1 to -2.5 standard deviations to $+2$ on average for the participants who involved in Hatha Yoga.
- ❑ Mental health, as well as stress, depression, anxiety, flexibility and posture was seen to have improvements as well.
- ❑ There was seen to be weight loss in those who participated in Hatha yoga, causing BMI scores to positively decrease.
- ❑ Limitations included small population.
 - ❑ It is recommended that a middle group is added to this study that participates in either moderate yoga, or normal exercise.

Introduction

- Women begin to see a decline in the bone-forming cell activity as they get closer to the age of menopause. Maintaining a sufficient bone mass becomes a difficult thing to do and can lead to serious concerns (Okman-Kilic, 2015).
- As bones begin to break down, osteoporosis can become a leading risk factor in older women (Driver, 2020).
- Osteoporosis is commonly known as the “**silent disease**” because one may not even recognize any changes until there is a bone break, when in turn the bones had been deteriorating many years ahead of time (National Institute on Aging).
- Yoga is one exercise that has been studied in order to better osteoporotic postmenopausal women (Jorge, et. al., 2016).
- Not only can it affect overall bone health, but it can affect cardiovascular health, respiratory health, and muscle structure health.
- It is important to get involved in different exercises throughout all stages of life in order to decrease the risk of osteoporosis in the future and to help maintain an overall healthier lifestyle (Troy, et. al., 2018).

BMD Changes Overtime



Keywords: Bone Mineral Density (BMD), Osteoporosis, Osteopenia, Menopause, Hatha Yoga



DID YOU KNOW?

Hatha Yoga is the most effective form of yoga because it focuses on movement, as well as posture and breathing.

References

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