



# BONE HEALTH CASE STUDY

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Conducted & Written by Atkins Health Exercise Physiologists  
Zachary Gonzalez, Practice Manager  
Bella Faranda, Exercise Physiologist  
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# Introduction

Osteopenia and osteoporosis pose significant challenges in Australia. According to a report by Osteoporosis Australia, it is estimated that 4.74 million Australians over the age of 50 have osteoporosis or osteopenia. The major problem lies in the underdiagnosis and undertreatment of these conditions, which in turn gives rise to certain challenges and consequences. Some of these consequences include increased risk of fractures, health complications and costs, impaired mobility and suboptimal quality of life. Furthermore, a lack of awareness and knowledge among the general public contributes to the problem. Addressing these issues through improved education, early detection, and proactive management is crucial to reducing the burden of osteopenia and osteoporosis in Australia. Atkins Health Bone Health program focuses on educating the participants, along with creating exercise programs for both prevention and management of good bone health.

This case study examines the findings of the Exercise Physiology team responsible for overseeing the Atkins Health program. As part of the bone health program, clients who have completed exercise pathways and protocols undergo tests every six weeks. The objective is to identify the key factors that significantly contribute to improved results and promote strong bone health. By analyzing the observations, this study aims to uncover the three critical factors that play a vital role in achieving favorable outcomes and maintaining robust bone health.





## Key Findings of The Study

The Bone Society program, like all programs at Atkins Health, follows 4 principles for successful outcomes. These are 1) Consistency 2) Compliance 3) Technique and 4) Progression. In addition, Atkins Health have pathways that are recommended to our clients after an initial consultation and check or after these 6-week test periods. These were the key findings from a group of clients who followed the Results Pathway.

- Those on results pathway (2 or more sessions per week) and who had a compliance of 50% or lower saw on average lower results achieved in testing week (average 66.6%)
- Those on results pathway (2 or more sessions per week) who had a compliance of over 50% saw on average higher results achieved in testing week (85.7%)
- Those who had a compliance of 50% or more, 85.71% saw an improvement in 2 or more testing measures and the remaining 14.29% remaining saw improvement in 1 testing measure

## What is the Importance of Testing?

Testing an exercise program, especially in the context of chronic health challenges or health challenges related to aging, holds several important benefits. Here are three key points on the importance of testing:

1. **Individualised Assessment:** Testing allows for a comprehensive evaluation of an individual's current physical capabilities, limitations, and overall health status.



2. **Progress Monitoring:** Regular testing provides a means to monitor the progress and effectiveness of the exercise program. It enables the exercise professionals to track improvements in strength, endurance, flexibility, balance, and other relevant parameters. Additionally, bone health is improved by progressively increasing the exercise stimulus over time. By assessing the impact of the program, adjustments can be made to optimise results and ensure ongoing engagement and motivation.
3. **Safety and Risk Management:** Testing helps identify any potential risks or contraindications that may arise during exercise. It allows for the detection of physical limitations, existing injuries, or specific health conditions that need to be considered to ensure safe participation. By understanding these factors through testing, exercise professionals can design appropriate modifications, adaptations, or safeguards to mitigate potential risks and ensure participant safety.

**4. Evidence-Based Decision Making:** There are specific parameters that have been recently proven in studies to positively influence bone health. This involves exercise activity that includes progressive resistance training and impact loading activities. Through testing, this allows our exercise physiologists to make informed choices regarding exercise intensity, duration, frequency, and safe progression. By relying on objective measurements and assessments, we can work with the client and their goals and design programs that are grounded in scientific principles and have a higher likelihood of delivering positive health outcomes.

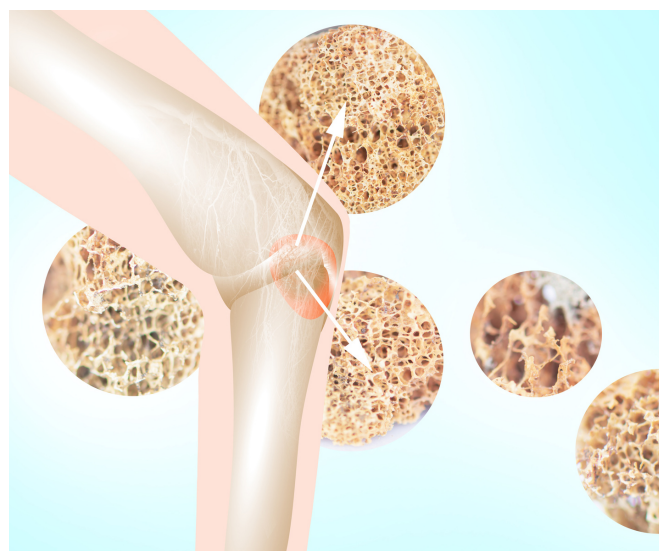
At Atkins health, the Bone Health program provides its participants with a 6-week testing period to assess, monitor progress, manage risks and progressively change the program to allow for better results for the clients.

## Conclusions From The Study

Bone mineral density is a critical factor in maintaining strong and healthy bones as we age. As we get older, our bones naturally become less dense, making them more prone to fractures and breaks. Low bone mineral density can result in conditions like osteoporosis, which significantly increases the risk of bone fractures. Maintaining healthy bone mineral density through specific exercise, proper nutrition, and lifestyle changes is essential for preventing bone-related complications and maintaining overall health and wellness. The study indicated how clients could continue to improve their bone mineral density through specific exercise programs.

The study produced a few critical conclusions:

- The data suggested that an increased compliance of clients with their exercise group class session directly correlated to those same clients achieving better results
- Over 12-week testing blocks, those who had over 50% compliance saw a 100% increase in at least 1 testing measure, and 86.61% increased improvement in 2 or more testing measures.
- The data also suggested that in bone health exercise group classes, the compliant clients achieved great strength over 3 strength-based training measures – the deadlift, the back squat and the bench press. As these exercises are shown to improve bone mineral density, these exercises would be highly beneficial to the clients improved bone health.
- As the individuals within these testing groups progressed, we also saw progress in other measures including grip strength and balance.





## Recommendations

Based on the results of the bone health program study, several recommendations can be made for the clients:

1. **Emphasis on compliance:** Encourage participants towards keeping a high level of compliance with their exercise group class sessions. The data showed a direct correlation between compliance and better results, indicating the importance of consistently attending and actively participating in the classes.
2. **Incorporate specific strength-based training:** Focus on incorporating and progressively increasing the quality and quantity of strength-based exercises such as the deadlift, back squat, and bench press into the bone health exercise group classes. These exercises demonstrated significant improvements in bone mineral density, suggesting their high relevance and potential benefits for enhancing bone health.

3. **Track Progress in Various Measures:** Encourage clients to monitor their progress not only in bone health-related measures but also in other areas such as grip strength and balance. These additional measures showed improvement as individuals progressed within the testing groups, indicating the comprehensive benefits of the exercise program.

In conclusion, the Atkins Health Bone Health study provided valuable insights into the relationship between compliance, exercise group sessions, and client outcomes. The findings highlighted the significance of consistent participation and compliance, leading to improved results. The inclusion of specific strength-based training exercises demonstrated notable benefits for bone health, while overall progress was observed across multiple measures, reflecting the holistic advantages of the program. By implementing these recommendations, clients can optimize their bone health and overall well-being through effective exercise interventions.

