Les Mills Lab:
BODYPUMP and Active-Aging

Background

It is widely recognized that exercise is effective at delaying the progression of biological aging. Two factors that are indicative of biological aging is Telomere length and Tumor Necrosis Factor Alpha (TNF Alpha).

Telomeres are protective caps located at the end of chromosomes. Shortening of these caps is thought to be an indicator of the aging process. TNF Alpha is a cytokine involved in systemic inflammation. Increases in levels of TNF Alpha are indicative of “inflammaging” or the progressive increases in low grade inflammation that is thought to contribute to multiple degenerative diseases that become more prevalent as we age.

Hypothesis

12 weeks of twice weekly BODYPUMP would have a positive influence on telomere length and generate a reduction in TNF Alpha – both indicators of biological aging along with improvements in physical performance measures.

Method

23 sedentary, middle aged adults undertook 12 weeks of BODYPUMP attending 2 classes per week.

Outcome measures including Telomere Length, TNF Alpha, anthropometric variables (height and weight and body fat), strength measures and functional tests were taken at baseline, after the training intervention and at a 12 month follow up.

Results

Telomere length remained unchanged following the intervention. There was a significant reduction in TNF Alpha levels.

There was also a significant reduction in body weight following the 12 weeks.

In terms of functional changes, counter movement jump and a chair stand test increased along with grip strength and isometric leg strength.

Conclusion

Although there were no significant changes in Telomere length, 2 BODYPUMP classes over a 12 week period is sufficient to generate reductions in TNF Alpha (an inflammatory marker) along with significant gains in functional ability, strength and weight loss in a group of sedentary middle aged individuals. Access the study here.