Effects of a physical activity program on functional fitness, oxidative stress and salivary cortisol levels in older adults

Gabriele Morucci1, Jacopo J.V. Branca1, Ferdinando Paternostro1, Alessandra Modesti2, Alessandra Pacini1, Simone Pratesi1 and Massimo Gulisano1

1 Dept. of Experimental and Clinical Medicine, University of Florence, 50134 Florence, Italy
2 Dept. of Experimental and Clinical Biomedical Sciences “Mario Serio”, University of Florence, 50134 Florence, Italy

Quality of life into later life is influenced by multiple factors. The physical ability to perform common everyday activities represents a key factor to maintain a healthy and independent lifestyle. Moreover, aging is a process characterized by physiological alterations resulting in a progressive decline in biological functions, decreased resistance to stress, and increased susceptibility to diseases. Especially in elderly people, alterations such as imbalance between pro and antioxidant activity and/or hormonal dysregulation negatively affect the physical capacity, the emotional status and the overall general health and quality of life [1]. On the other hand, regular physical activity is considered an effective strategy for older adults to prevent and reduce the risk of developing those negative conditions arising from aging. A 24-week regular physical activity program (twice weekly, 1 hour per session) focused on functional fitness exercises was performed by 20 older adults (aged 55 years or more). A set of anthropometric (height, weight, BMI and body fat percentage) and physical measurements (grip strength, chair sit to stand, sit and reach and back scratch) assessing the functional fitness performance [2] were evaluated. Moreover, biochemical markers (d-ROMs and BAP tests as assessment of oxidative stress and antioxidant potential; salivary cortisol levels) were measured before and after the intervention program. The results confirm the benefits of a regular physical activity in older adults resulting in improved physical strength and flexibility in the functional fitness parameters, and in regulating pro and antioxidant activity and cortisol levels.

References

Keywords
Functional fitness, oxidative stress, cortisol