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Once a week is not enough: The effect of different weekly training frequencies on phase angle and physical performance in obese women

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Background: Phase angle (PA) is a strong predictor of sarcopenia, muscular function, fragility and risk of mortality in older adults, while strength and flexibility are required to perform different daily activities.

Aim: This study aimed to compare the effects of different weekly mixed training (aerobic and resistance) frequencies performed over a 24-week exercise program on phase angle, flexibility and handgrip strength (HS) in obese people.

Methods: Forty-two women (56.2 ± 9.1 years, BMI 37.1 ± 4.9 kg/m²) were randomly allocated to one of two groups: a group with a high-weekly training frequency of three times a week (HIGH, n=21) and a group that performed only one weekly session (LOW, n=21). The groups trained with an identical exercise intensity and volume per session for 6 months. In addition, the participants followed a restricted caloric diet throughout the duration of the study. Before and after the intervention period, the participants were assessed for anthropometric measures, bioimpedance analysis, and physical performance tests of flexibility (sit and reach) and handgrip strength (HS).


Results: There was a significant group \times time interaction ($P < 0.05$) for waist circumference (WC), bioimpedance reactance divided by body height (X_c/H), PA, flexibility and HS measures, even after adjusting for weight loss, menopausal status and age. In addition, only the HIGH group increased X_c/H , PA, flexibility and HS after the intervention period ($P < 0.05$).

Conclusions: Physical exercise performed three times a week promotes better adaptations in PA and physical performance when compared with the same program performed once a week in obese women.

Speaker Biography

Francesco Campa is a PhD student at the University of Bologna in Italy. He works at the Department of Biomedical Science and Neuromotor Sciences (DIBINEM). His research interests include body composition, anthropometry and sports sciences. Furthermore, he is interested in the effects of the hydration status on exercise performance. His most recent publication is Bioimpedance Vector Analysis of Élite, Sub-Élite and Low-Level Male Volleyball Players.

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