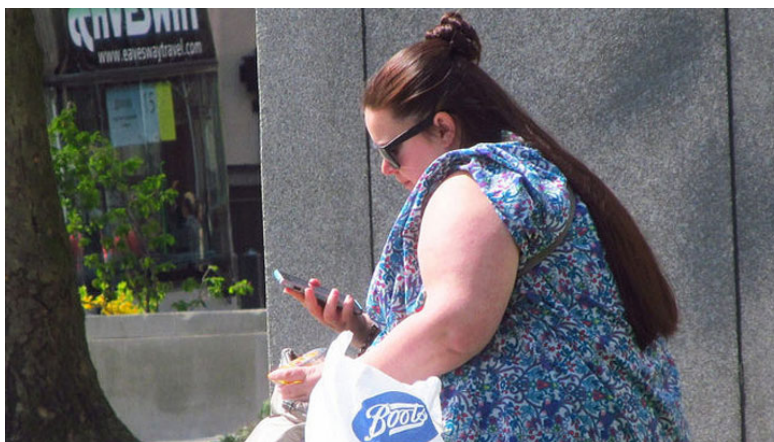


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## Resistance Exercise Improves Cardiovascular Health in Adult Women



Physical inactivity is associated with a higher prevalence of chronic non-communicable diseases such as cardiovascular disease or type 2 diabetes mellitus, and risk factors such as overweight, obesity and high blood pressure. This study evaluated the effects of a high-intensity, low-volume exercise program in overweight sedentary adult women. The results show an improvement in participants' cardiovascular health, but no changes in body weight or composition.

We can define physical inactivity as the lack of regular physical exercise which progressively decreases physical condition. Physical inactivity is associated with a higher prevalence of chronic non-communicable diseases (NCDs) such as cardiovascular disease, type 2 diabetes mellitus and risk factors such as overweight, obesity and high blood pressure. Although there is evidence to suggest that physical exercise is an excellent therapeutic tool to combat conditions such as obesity, sarcopenia and many NCDs, physical inactivity levels are very high, being even, according to some surveys, greater in women than in men.

Today, new types of exercise are proposed, such as high intensity intervals and short duration exercise that promote diverse adaptation mechanisms in muscle tissue which generates an increase in their metabolic capacity and thus, better control of glucose and fat oxidation. Our study aimed to evaluate the effects of a high-intensity resistance and low volume exercise

program in overweight sedentary adult women.

40 sedentary women, aged between 30 and 60 years working at the University of Concepción (UdeC) Campus Los Angeles were divided into two groups; an experimental one (EG, n = 20; 44.3 ± 2.1 age (years), 157.1 ± 1.3 height (cm) and 73.9 ± 2.4 weight (kg)) which did a high intensity resistance and low volume exercise program (ESAIBV) plus to the daily live activities and on the other hand, a control group (CG, n = 20; 45.9 ± 2.6 age (years), 154.8 ± 1.1 height (cm) and 69.2 ± 2.2 weight (kg)) who did only daily live activities without an resistance exercise program. The groups had an anthropometric, body composition and lipid profile assessments before and after ESAIBV program. The exercises selected were: Push-ups, trunk flexion, legs and arms extensions, working 3 sets per exercise, plus an interval pause. The total time of each session was 36 minutes while the uptime was 12 minutes.

We observed that the ESAIBV program was able to improve cardiovascular health in overweight sedentary women compared to their initial assessment. Although, it did not change the weight or body composition, it achieved lower blood lipids and cholesterol compared to the initial assessment. A significant recovery rate was achieved in women who initially had an altered lipid profile, which could imply a potential therapeutic capacity.

Even though more studies with larger sample sizes and more methodological rigor is needed, clinical results indicate that the ESAIBV program could be considered a good therapeutic alternative for normalizing lipid levels and blood cholesterol and thus, counteract cardiovascular risk factors in overweight sedentary adult women.

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### **Igor Cigarroa**

Carrera de Kinesiología, Facultad de Salud, Universidad Santo Tomas, Los Ángeles, Chile,  
Institut de Neurociències - UAB  
Department of Psychiatry and Legal Medicine - UAB  
[icigarroa@santotomas.cl](mailto:icigarroa@santotomas.cl)

### **References**

Zapata-Lamana, R.; Cigarroa, I.; Díaz, E.; Saavedra, C. Reducción del riesgo cardiovascular en mujeres adultas mediante ejercicio físico de sobrecarga. *Revista Médica de Chile*. 2015, vol. 143, num. 3, p. 289-296. doi: 10.4067/S0034-98872015000300002.

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