

The Effect of UCP2 45bp Inversi/Delesi Genetic Variation on the Body Composition of Woman with Obesity in Continuous Training and High-Intensity Interval Training: A Randomized Controlled Trial Study

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Abstract	<p>Background. Continuous Training (CT) is often considered an effective way to reduce obesity. However, recently, a popular protocol called High-Intensity Interval Training (HIIT) has shown up as an alternative to CT. There is another factor affecting obesity named UCP2 45-bp Inversion/Deletion genetic marker. Objectives. This research aims to determine the effect of the UCP2 45-bp I/D gene as a genetic marker in response to obese training (CT and HIIT). Methods. This study was a randomized controlled trial (RCT) in two cycling training groups (CT and HIIT). The purposive sampling method was used to collect 28 women with obesity (BMI \geq 25 kg/m²). Random allocation into two groups using the block randomization method. Exercise training interventions were conducted for 12 weeks, with a frequency of 3 times per week. Results. Body composition data (body weight, BMI, and Body Fat Percentage) before and after the intervention were analyzed with the Dependent T-Test and found that both the CT and HIIT groups had significant improvements in body composition ($P < 0.05$). ANCOVA Test analyzed the effect of training type and UCP2 45-bp I/D variance on body composition. There was no effect of training type and genetic variation on body weight improvement ($P = 0.145$), body mass index improvement ($P = 0.153$), and body fat improvement ($P = 0.159$). Conclusion. Both Continuous and High-Intensity Interval Training can equally improve the body composition of obese patients. There was no UCP2 45-bp I/D variance effect on the response to training in a woman with obesity.</p>
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