

**PENGARUH *HIGH INTENSITY INTERVAL TRAINING* (HIIT) TERHADAP  
WAIST-HIP RATIO (WHR) PADA WANITA DEWASA OBESITAS DI  
KABUPATEN BANYUMAS  
(BERDASARKAN KAJIAN VARIASI GEN UCP2 45-BASEPAIR  
INSERSI/DELESI)**

**ABSTRAK**

**Latar belakang:** Obesitas didefinisikan sebagai kelebihan lemak tubuh, polimorfisme gen UCP2 45-basepairs (bp) *insertion/deletion* (I/D) sering dikaitkan dengan risiko obesitas. *Waist-hip ratio* (WHR) merupakan metode untuk mengukur akumulasi lemak abdomen. Metode latihan yang dinilai efektif untuk orang obesitas adalah *high intensity interval training* (HIIT), namun belum diketahui pengaruhnya terhadap seseorang dengan gen UCP2 45-bp I/D. **Tujuan:** Mengetahui pengaruh HIIT terhadap WHR pada wanita obesitas dengan gen UCP2 45-bp I/D. **Metode:** Penelitian ini menggunakan rancangan penelitian *Quasi Experimental Pre And Post Design Without Control Group*. Subjek terdapat 26 orang. Pengukuran WHR dilakukan sebelum dan setelah intervensi. Pemeriksaan gen dilakukan sebelum intervensi dengan metode *Polymerase Chain Reaction - Restriction Fragment Length Polymorphism* (PCR – RFLP). Data dianalisis secara univariat dan bivariat. **Hasil:** Hasil menunjukkan WHR sebelum intervensi sebesar  $0,79 \pm 0,06$  dan setelah intervensi sebesar  $0,78 \pm 0,06$ . HIIT dapat mengurangi WHR sebesar 0,01 yang dinyatakan signifikan menggunakan uji t-berpasangan ( $p=0,048$ ). Tidak ada perbedaan signifikan diantara genotip DD dan DI pada polimorfisme gen UCP2 45-bp I/D ( $p=0,119$ ) menggunakan uji T-Tidak Berpasangan. **Kesimpulan:** Terdapat pengaruh program intervensi metode HIIT terhadap WHR pada wanita obesitas yaitu menurunkan WHR akan tetapi tidak ada pengaruh gen UCP2 45-bp I/D.

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Kata kunci: *High intensity interval training* (HIIT), Obesitas, UCP2 45-bp I/D, *waist-hip ratio* (WHR).

**THE IMPACT OF HIGH INTENSITY INTERVAL TRAINING (HIIT) ON  
WAIST-HIP RATIO (WHR) IN OBESITY ADULT WOMEN IN BANYUMAS  
(BASED ON STUDY VARIATION OF THE UCP2 45-BASEPAIRS  
INSERTION/DELETION)**

**ABSTRACT**

**Introduction:** Obesity is defined as excess body fat, UCP2 45-basepairs (bp) insertion/deletion (I/D) gene polymorphisms are often associated with obesity risk. Waist-hip ratio (WHR) is a method to measure the accumulation of abdominal fat. The exercise method that is considered effective for obese people is high intensity interval training (HIIT), but its effect on someone with the 45-bp I/D UCP2 gene is unknown. Objective: To determine the impact of HIIT program intervention in obese women with UCP2 45-bp I/D gene. **Method:** This study used Quasi Experimental Pre and Post Design without Control Group. Subject were 26 people. WHR measurement were examined before and after intervention. The gene was examined before intervention with Polymerase Chain Reaction - Restriction Fragment Length Polymorphism (PCR-RFLP) method. Data were analyzed by univariate and bivariate test. **Result:** The result indicated that WHR pre-intervention was  $0,79 \pm 0,06$  and post-intervention was  $0,78 \pm 0,06$ . HIIT can reduce WHR 0,1 which was significant using Paired T-Test ( $p=0,048$ ). There was no significant difference between DD and DI genotypes on the UCP2 45-bp I / D gene polymorphism ( $p = 0,119$ ) using the unpaired T-test. **Conclusion:** There was impacted of HIIT program intervention in obese women by reduce WHR but there was no effect of the UCP2 45-bp I/D gene.

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Keyword: High intensity interval training (HIIT), obesity, UCP2 45-bp I/D, waist-hip ratio (WHR)