

**DAMPAK METODE *HIGH INTENSITY INTERVAL TRAINING* (HIIT)
DAN FLEKSIBILITAS TERHADAP PENINGKATAN VO_{2max} DAN
LACTATE THRESHOLD PADA ATLET RENANG KLUB TIRTAMERTA**

TESIS



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**PROGRAM STUDI PENDIDIKAN OLAHRAGA
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Sebuah Tesis yang diajukan untuk memenuhi salah satu syarat memperoleh gelar
Magister Pendidikan (M.Pd.) pada Jurusan Pendidikan Olahraga

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Abstrak

Volume latihan dalam berenang biasanya sangat tinggi jika dibandingkan dengan waktu kompetisi yang relatif singkat, fleksibilitas salah satu komponen kondisi fisik, pelatihan metode interval intensitas tinggi (HIIT) pelatihan interval yang memiliki intensitas tinggi, pengulangan, dan periode istirahat pendek, telah terbukti meningkatkan kinerja dalam periode pelatihan yang relatif singkat. Penelitian ini bertujuan untuk melihat dampak dari kombinasi metode latihan antara High Intensity Interval training (HIIT) dan Fleksibilitas bahu & pinggul terhadap peningkatan *Lactate Threshold* (LT) dan VO_{2max} (yard). Penelitian ini menggunakan metode eksperimen, dengan *The Randomized Pretest-Posttest Control Group Design*, 16 perenang kompetitif klub Tirtamerta (5 males and 11 females) (age = 13.5 y.o). Subjek sudah menjalani latihan intensif selama (\pm) 4 tahun. Penelitian ini dibagi menjadi dua kelompok (eksperimen dan kontrol) carried out the experimental trial for 3 weeks. Metode *High Intensity Interval Training* (HIIT) dan fleksibilitas bahu & pinggul dengan intensitas tinggi 80%, 90% hingga 100% dari VO_{2max} , atau 92% dari personal best time, pengulangan, dan periode istirahat pendek. Dan fleksibilitas 2—3 pengulangan, durasi per-sets 12 detik. kelompok eksperimen, dan kelompok kontrol melakukan pelatihan metode *Continuous Training* (CT) dengan intensitas 85%, istirahat 30 detik Dilakukan 3 kali dalam seminggu. Cooper Test 12 menit (*Swimming*) digunakan untuk mendapatkan data VO_{2max} (yard), dan untuk mendapatkan data *Lactate Threshold* menggunakan Step test 7 x 200 m swimming. Pengukuran dilakukan 2 kali;baseline (0 minggu), minggu ke 3. Hasil dari penelitian ini diperoleh bahwa metode High Intensity Interval Training (HIIT) dan Fleksibilitas bahu & pinggul meningkat secara signifikan ($p < 0.05$) pada VO_{2max} (38.69 ± 33.19), dan untuk *Lactate Threshold* (LT) pada kelompok kontrol meningkat secara signifikan ($p < 0.05$). Tetapi tidak terdapat hasil peningkatan yang signifikan pada ($P > 0.05$) *Lactate Threshold* (LT) (0.73 ± 0.89) kelompok eksperimen. Kombinasi metode latihan *High Intensity Interval Training* (HIIT) dan Fleksibilitas bahu & pinggul dapat meningkatkan (VO_{2max}).

Kata kunci: *High Intensity Interval Training* (HIIT),fleksibilitas, *Continuous Training*, *Lactate Threshold* (LT), VO_{2max} .

HIGH INTENSITY INTERVAL TRAINING (HIIT) METHOD AND THE FLEXIBILITY EFFECTS ON INCREASING VO₂MAX AND LACTATE THRESHOLD ON TIRTAMERTA CLUB SWIMMERS

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Abstract. The volume of exercise in swimming is usually very high when compared to the relatively short competition time, the flexibility of one component of the physical condition, the High Intensity Interval Training (HIIT) method that has high intensity, repetition, and short rest period, have been shown to improve performance in a relatively short training period. This study aims to look at the effects of a combination of HIIT method and the flexibility of shoulder & hip on increasing Lactate Threshold (LT) and VO₂max (yard). This study is using experimental method with the randomized pre-test – post-test control group design on 16 Tirtamerta Club competitive swimmers (5 males and 11 females) (age = 13.5 years old). Subjects had undergone intensive training for (\pm) 4 years. This study was divided into two groups (experimental and control) with the experimental trial that was carried out for 3 weeks. The HIIT method and the flexibility of shoulder & hip with high intensity of 80%, 90%, to 100% of VO₂max, or 92% of personal best time, repetition, and short rest period, and also the flexibility of 2-3 repetitions with the duration of 12 seconds per set. Experimental group and control group conducted continuous training method with the intensity of 85%, rest for 30 seconds, and done 3 times a week. The 12 minutes Cooper Test (swimming) is used to get VO₂max (yard) data, while the 7 \times 200 m swimming Step Test is used to get the LT data. Measurement were made twice (baseline/0 week and 3rd week). The results of this study show that HIIT method and the flexibility of shoulder & hip increased significantly ($p < 0.05$) on VO₂max (38.69 ± 33.19), and the LT in the control group increased significantly ($p < 0.05$). However, there was no significant increase on ($P > 0.05$) LT (0.73 ± 0.89) in the experimental group. The combination of HIIT method and the flexibility of shoulder & hip can increase VO₂max.

Keywords: High Intensity Interval Training (HIIT), flexibility of shoulder & hip, Continous Training, Lactate Threshold (LT), VO₂max.

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Tesis ini berjudul: “DAMPAK METODE *HIGH INTENSITY INTERVAL TRAINING* (HIIT) DAN FLEKSIBILITAS TERHADAP PENINGKATAN VO_{2max} DAN *LACTATE THRESHOLD* PADA ATLET RENANG KLUB TIRTAMERTA” dan tesis ini dibuat untuk memenuhi salah satu syarat memperoleh gelar Magister Pendidikan (M.Pd). Untuk itu penulis mengharapkan kritik dan saran yang sifatnya membangun demi penyempurnaan tesis ini. Mudah-mudahan buah karya kecil ini dapat bermanfaat bagi penulis pada khususnya dan bagi para pembaca pada umumnya.

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