

Model Prediksi Ambilan Oksigen Maksimal (VO₂maks) Menggunakan Bleep Test pada Atlet Junior Laki-Laki = Model Prediction of Maximum Oxygen Intake (VO₂max) Using Bleep Test in Male Junior Athletes

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Abstrak

Bleep test telah lama di gunakan untuk memprediksi ambilan oksigen maksimal (VO₂maks) pada atlet di Indonesia. Namun hasil pemeriksaan tersebut tidak sebaik hasil yang dilaporkan di luar negeri. Penelitian ini dilakukan untuk mendapatkan rumus koreksi yang dapat memberikan hasil yang lebih mendekati hasil pemeriksaan VO₂maks baku emas.

Penelitian uji potong lintang ini telah merekrut subjek sejumlah 190 orang. Sebanyak 12 subjek dieksklusi karena tidak mengikuti keseluruhan penelitian. Seluruh subjek menjalani pemeriksaan fisis: tanda vital, postur, panjang tungkai dan pemeriksaan laboratorium: treadmill test, asam laktat pre-post treadmill, spirometri, denyut nadi maksimal, serta pemeriksaan lapangan: bleep test, suhu, dan kelembaban ruangan. Data yang diperoleh dianalisis sesuai kaidah yang berlaku menggunakan SPSS.

Hasil analisis mendapatkan pemodelan rumus prediksi baru yaitu rumus Ruli: $VO_{2maks} = 49,795 + 0,238$ (Total Shuttle) + (-0,173) (BB) + (-0,086) (DNM_Lap) + 0,229 (Suhu_Lap). Uji validitas internal dan uji reliabilitas menggunakan Bland-Altman menunjukkan rumus ini cukup baik dan dapat digunakan, namun uji validitas eksternal masih diperlukan sebelum rumus ini dapat digunakan secara luas pada atlet junior laki laki.

.....The bleep test has long been used to predict maximal oxygen uptake (VO₂max) in Indonesian athletes. However, the results of these examinations are not as good as the results reported abroad. This research was conducted to obtain a correction formula that can provide results closer to the gold standard VO₂max examination results.

This cross-sectional study recruited 190 subjects. Twelve subjects were excluded because they did not follow the whole study. All subjects underwent a physical examination: vital signs, posture, leg length, and laboratory tests: treadmill test, pre-post treadmill lactic acid, spirometry, a maximum pulse, and field examinations: Bleep test, temperature, room humidity. The data obtained were analyzed according to the proper method using SPSS.

The results of the analysis obtained a new predictive modeling formula, namely the Ruli formula: $VO_{2maks} = 49.795 + 0.238$ (Total Shuttle) + (-0.173) (BW) + (-0.086) (HRmax Field) + 0.229 (Field Temp). Internal validity and reliability tests using Bland-Altman show that this formula is quite good and can be used. However, an external validity test is still needed before this formula can be widely used in male junior athletes.