

## **Hubungan Intensitas Latihan dan Asupan Suplemen Protein dengan Massa Otot Pegiat Gym**

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### **ABSTRAK**

**Latar Belakang :** Pembentukan massa otot sangat erat kaitannya dengan intensitas latihan beban dan asupan protein. Suplemen protein merupakan salah satu sumber protein yang dapat mempengaruhi kecepatan fraksional sintesis protein otot secara signifikan setelah latihan.

**Tujuan :** Penelitian ini bertujuan untuk mengetahui hubungan intensitas latihan dan asupan suplemen protein dengan massa otot pegiat gym.

**Metode :** Penelitian ini merupakan penelitian dengan pendekatan *cross sectional study*. Subjek penelitian adalah pegiat gym usia 20-40 tahun di dua pusat kebugaran sebanyak 52 orang. Massa otot diukur setelah latihan menggunakan BIA ONEMED 825, data riwayat asupan makanan diperoleh melalui wawancara *Semi-Quantitative Food (SQ-FFQ)*, data asupan suplemen protein (frekuensi, waktu, lama, dosis konsumsi), data kebiasaan latihan (intensitas latihan, jenis latihan, durasi latihan, frekuensi), dan data aktivitas fisik (IPAQ). Analisis bivariat dengan uji *chi-square* dan dilanjutkan dengan uji multivariat dengan regresi logistik berganda.

**Hasil :** Sebanyak 85% responden memiliki massa otot normal. Mayoritas berjenis kelamin laki-laki, berusia 20–30 tahun, dengan frekuensi latihan >5x/minggu dan durasi >1,5 jam. Asupan protein lebih tinggi ditemukan pada laki-laki, asupan karbohidrat dan vitamin A mayoritas defisit Analisis bivariat menunjukkan intensitas latihan, durasi, jumlah suplemen protein, dan jenis kelamin berhubungan signifikan dengan massa otot ( $p < 0,05$ ). Variabel yang paling mempengaruhi massa otot adalah jumlah asupan suplemen protein, jenis suplemen, dan jenis kelamin. Subjek perempuan yang mengonsumsi suplemen *concentrate* dan jumlah suplemen protein >40g memiliki probabilitas 73,3% tidak memiliki massa otot normal.

**Simpulan :** Intensitas latihan dan suplemen protein memiliki hubungan signifikan dengan massa otot.

**Kata Kunci :** intensitas latihan, latihan beban, massa otot, pegiat gym, suplemen protein

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## **Correlation Between Training Intensity and Protein Supplement Intake with Muscle Mass of Gym Enthusiasts**

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### **ABSTRACT**

**Background:** Muscle mass development is closely related to resistance training intensity and protein intake. Protein supplements are one of the protein sources that can significantly influence the fractional synthesis rate of muscle protein after exercise.

**Objective:** This study aimed to determine the relationship between training intensity and protein supplement intake with muscle mass among gym enthusiasts.

**Method:** This study was a cross-sectional study approach. The subjects consisted of 52 gym enthusiasts aged 20–40 years from two fitness centers. Muscle mass was measured post-exercise using BIA ONEMED 825. Dietary intake data were collected through interviews using a Semi-Quantitative Food Frequency Questionnaire (SQ-FFQ), and information on protein supplement intake (frequency, timing, duration, dosage) and exercise habits (intensity, type, duration, frequency), as well as physical activity data (IPAQ), were gathered. Bivariate analysis was conducted using Chi-square correlation tests and continued with multivariate testing using multiple logistic regression.

**Results:** A total of 85% of participants had normal muscle mass. Most were male, aged 20–30 years, exercised more than 5 times per week, and trained for over 1.5 hours per session. Protein intake was higher among males, while carbohydrate and vitamin A intake were predominantly deficient. Bivariate analysis showed a significant relationship between training intensity, duration, protein supplement dosage, and sex with muscle mass ( $p < 0.05$ ). The most influential variables were protein supplement dosage, supplement type, and sex. Female participants who consumed concentrate-type supplements and protein intake  $>40$  g had a 73.3% probability of not having normal muscle mass.

**Conclusion:** Training intensity and protein supplement intake had a significant relationship with muscle mass.

**Keywords:** training intensity, resistance training, muscle mass, gym enthusiasts, protein supplement

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