

***THE RELATIONSHIP BETWEEN ENERGY AND MACRONUTRIENT INTAKE
(PROTEIN, FAT, CARBOHYDRATE) AND VO₂MAX IN CEMPAKA PUTIH PENCAK
SILAT ATHLETES JEMBER BRANCH***

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ABSTRACT

VO₂Max is an indicator of cardiorespiratory fitness that plays a crucial role in supporting the performance of pencak silat athletes. One factor influencing VO₂Max is the adequacy of energy and macronutrient intake—specifically protein, fat, and carbohydrates. This study aimed to analyze the relationship between energy and macronutrient intake and VO₂Max among pencak silat athletes from the Cempaka Putih club in the Jember branch. A cross-sectional design was employed, involving 24 athletes selected via total sampling. Data on energy and macronutrient intake were collected using a 24-hour food recall method, while VO₂Max values were measured using the Multistage Fitness Test (MFT). Data analysis involved the Shapiro-Wilk normality test followed by the Spearman correlation test. The results revealed that the majority of respondents had insufficient intake of energy (91.7%), protein (79.2%), and fat (75.0%), while all respondents (100%) had insufficient carbohydrate intake. The Spearman test indicated not significant relationships between VO₂Max and energy intake ($p=0.346$), protein intake ($p=0.241$), fat intake ($p=0.451$), and carbohydrate intake ($p=0.117$).

Keywords: *energy intake, protein, fat, carbohydrates, VO₂Max, pencak silat athletes.*