

RELATIONSHIP BETWEEN HISTORY OF SMOKING, METABOLIC AND INFLAMMATORY MARKERS, PARAMETERS OF BODY COMPOSITION AND MUSCLE STRENGTH

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Aim: to study the relationship between smoking history expressed by pack years, metabolic and inflammatory markers, parameters of body composition (BC) and muscle strength among heavy smokers.

Methods: detailed smoking history was obtained from 49 heavy smokers (age = 44 ± 12 , pack years = 31 ± 23). Blood samples were analyzed for levels of glucose, lipids, liver enzymes and C-reactive protein (CRP). Anthropometric measurements included waist circumference and assessment of BC by dual energy X-ray absorptiometry (DEXA) and bioelectrical impedance analysis (BIA). Muscle strength was assessed by handgrip dynamometry and predicted 1 repetition maximum (p1RM) tests.

Results: positive correlations were found between pack years of smoking, fasting glucose, alkaline phosphatase and CRP levels. Pack years were also positively correlated with waist circumference, body mass index (BMI), whole-body and trunk fat mass measured by both DEXA and BIA. Negative correlation was found between pack years of smoking and muscle strength measured by p1RM for the leg press exercise. After adjustment for age, sex and BMI, a positive correlation between pack years of smoking and CRP alone remained.

Conclusion: after controlling for possible confounders, smoking history was found to be positively associated with CRP levels among heavy smokers.