

## **Lung function**

### **Influence of morphological traits, fat distribution and smoking on respiratory function in adult women**

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The purpose of the study was to evaluate the influence of selected morphological traits and fat distribution on respiratory function in adult women.

The sample being studied consisted of 107 women aged 17-82 years, patients of pulmonary disorders surgery in Nowy Tomyśl. The morphological traits: height, weight, chest, waist and hip circumferences, abdominal, subscapular and triceps skinfolds were examined. The BMI and WHR was calculated. Forced vital capacity (FVC), forced expiratory volume in a 1-s expiration (FEV1), forced vital capacity (FVC), peak expiratory flow (PEF), maximal expiratory flow (MEF), forced expiratory time (FET) were used as a measure of respiratory functions. Stepwise multiple regression analysis was used to examine effect of selected anthropometric traits, fat distribution and smoking on respiratory functions.

Positive correlations was found between z-scores: of height and VC, FEV1, FVC ( $p < 0.001$ ), of WHR and VC ( $p < 0.01$ ), and of chest circumference and FET ( $p < 0.05$ ). Negative correlations was found between z-scores of BMI and VC, FEV1 ( $p < 0.05$ ), of subscapular skinfold and VC, FEV1, FVC ( $p < 0.05$ ), and of abdominal skinfold and VC ( $p < 0.05$ ). Stepwise multiple regression analysis indicate that groups of variables have influence on respiratory functions. The highest  $R^2$  values applied to vital capacity ( $R^2 = 32\%$ ) and forced vital capacity ( $R^2 = 31\%$ ). Height, WHR ratio and passive smoking significantly affected VC, while height and subscapular skinfold affected FVC.

A significant association between fat distribution described by BMI, WHR and skinfold thickness and spirometry parameters was observed. The obtained results confirm complex effect of analysed variables on respiratory functions.