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Examination of the Factors to Affect the Visceral Fat Area in Workers ―Examination in Visceral Fat Area Measuring Equipment DUALSCAN―

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We performed a noninvasive health measurement from the viewpoint of worker medical care in our facitity and added visceral fat mass measurement that increased more importance in recent years. The purpose of this study was to examine the factors to affect visceral fat area (VFA) and the usefulness of the VFA measurement in company workers who carried out the health measurement which included VFA measurement with DUALSCAN. The study was conducted in 124 male workers, average age of 49.7 ± 8.9 years from 4 companies. The multiple stepwise linear regression analysis was performed with VFA as the dependent variable and the factors which were decided from the health measurement, which included a medical questionnaire, body composition data, VFA measurement as the independent variables. In addition, we decided subjects with VFA≧100 cm^2 as the VFA risk group and subjects with VFA＜100 cm^2 as the VFA non-risk group. Sensitivity, specificity, cut-off point and AUC (Area Under the Curve) were calculated about variables chosen for the multiple regression analysis using the analysis with the ROC curve, with VFA risk or non-risk as the state variable. As a result of the multiple regression analysis, VFA was significantly correlated with abdominal circumference (AC) HR, body fat percentage, and trunk muscle rate. AC was extracted as the factor most related to VFA as previous research shows, and the effectiveness of VFA measurement in DUALSCAN was also shown. But the measurements may be underestimated a little. The nutrition education, aerobic exercise instruction, and exercise instruction of the muscle strengthening exercise for the improvement of trunk muscle rate together were shown to be necessary for weight loss. It is also necessary to pay close attention to HR at the time of exercise prescription because HR was shown to be high in subjects with high VFA.

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