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## Body composition in adults, newly diagnosed with type 2-diabetes: Effect of metformin

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**Background:** The aim of this study was to measure the body composition in adults with newly diagnosed type 2 diabetes mellitus and to explore the effect of metformin therapy on the various components of body composition, insulin sensitivity and glucose homeostasis.

**Methods:** This was an observational study consisted of 51 newly diagnosed people with type 2 diabetes on 1000 mg metformin twice daily for 6 months. The body composition of each subject was measured by dual energy X-ray absorptiometry at enrollment and 24 weeks after metformin mono-therapy. Sarcopenia was defined and compared based on the ratio of appendicular skeletal muscle and height squared, skeletal muscle index and residual methods. Homeostasis model assessment-insulin resistance and Quantitative Insulin Sensitivity Check Index were used for estimating insulin sensitivity. The level of physical activity was assessed using self-administered International physical Activity questionnaire.

**Results:** Forty one subjects (80.4%) completed the study. The mean age of the participants was  $52.67 \pm 10.43$  years. Metformin treatment was associated with a significant decrease in total fat mass (-1.6 kg,  $P=0.000$ ). By week 24, the lean to fat ratio increased ( $P=0.04$ ) with men showing greater significant changes. Twenty percent of the female participants were detected to have sarcopenia. In addition, there was a significant improvement of glucose homeostasis and insulin sensitivity.

**Conclusions:** Metformin therapy results in significant improvement in body composition and insulin sensitivity of adults with newly diagnosed type 2 diabetes. Furthermore, sarcopenia begins in women with diabetes much earlier than expected as an age related phenomenon.

### Biography

Zahra Banazadeh is currently working as Internist at University of Medical Sciences, Iran. She specially works in internal Medicine. She served for about 14 months in school health clinic in the Olympic Village of Tehran. She is having certification in ICDL.

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