



TITLE: The higher NDUFS8 protein serum concentration is associated with higher insulin sensitivity among people with T1DM and might reflect better mitochondrial turnover

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ABSTRACT (upto 300 words)

The aim of the study was to evaluate NADH dehydrogenase [ubiquinone] iron-sulfur protein 8 (NDUFS8) serum concentration as a marker of Complex I and the relationship with insulin resistance in T1DM. Participants were adults with T1DM, recruited during 1 year (2018-2019). NDUFS8 protein serum concentration was measured using the ELISA test. Insulin resistance was evaluated with indirect marker estimated glucose disposal rate (eGDR). The group was divided on the base of median value of eGDR (higher eGDR – better insulin sensitive). The study group consisted of 12 women and 24 men. Medians of eGDR and NDUFS8 protein concentration were 7.6 (5.58-8.99) mg/kg/min and 2.25 (0.72-3.81) ng/ml, respectively. The group with higher insulin sensitivity had higher NDUFS8 protein serum concentration, lower WHR, BMI and they were younger. A negative correlation was observed between NDUFS8 protein serum concentration and WHR ($r_s = -0.35, p = 0.03$), whereas a positive correlation was observed between NDUFS8 protein serum concentration and eGDR ($r_s = 0.43, p = 0.008$). Multivariate linear regression confirmed a significant association between insulin sensitivity and better mitochondrial function ($\beta = 0.54, p = 0.003$), independent of age, duration of diabetes and smoking. Higher NDUFS8 protein serum concentration, which reflects better mitochondrial turnover, is associated with higher insulin sensitivity among adults with T1DM.

BIOGRAPHY (upto 200 words)

Justyna Flotyńska is a PhD student at the Medical University of Poznań. She is a doctor at the Department of Internal Medicine and Diabetology. She has many publications. She is a member of Diabetes Poland. Currently, she is implementing a research grant and deals with physical exercise among patients with type 1 diabetes.

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