

## Urine glucose levels are disordered before blood glucose levels increase in Zucker diabetic fatty rats

**Youhe Gao**

Beijing Normal University, China

Diabetes mellitus is a type of metabolic disease marked by hyperglycemia, and 90% of diabetes cases are type 2 diabetes mellitus (T2DM). More than half of patients are not diagnosed at all or are diagnosed too late to be effectively treated, resulting in nonspecific symptoms and a long period of incubation of the disease. Pre-diabetes mellitus, also known as impaired glucose regulation (IGR), is an early warning signal of diabetes. Impaired fasting glucose and impaired glucose tolerance have long been used for determination of IGR. In this study, Zucker diabetic fatty (ZDF) rats were used to test, if there were changes in urine glucose before blood glucose increases. Six 8-week-old male ZDF rats (fa/fa) and Zucker lean (ZL) rats (fa/+) were fed with Purina 5008 high-fat diet and tested for fasting blood glucose and urine glucose. After 12 weeks of feeding, the urine glucose values of the ZL rats were normal (0-10 mmol/L), but the values of the ZDF model rats increased 10 weeks before their blood glucose levels elevated. The urine glucose values of the ZDF model rats showed a state of disorder that was frequently elevated (>10 mmol/L) and occasionally normal (0-10 mmol/L). This finding may provide an easy early diagnosis. Screening for human diabetes can be considered by frequently monitoring urine glucose levels: pre-diabetes may be revealed by frequently disordered urine glucose levels over a period.

youhegao@163.com