

Winifred P. Wong,¹ Amisha Wallia,¹ Joshua R. Edwards,² and Malek El Muayed¹



COMMENT ON MENKE ET AL.

Metals in Urine and Diabetes in U.S. Adults. *Diabetes* 2016;65:164–171

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It is with great interest that we noted the important work by Menke et al. (1) on the relationship between metal excretion and the incidence of type 2 diabetes. We would like to draw attention to the potential confounders when interpreting data by relying on urinary metal levels as a proxy for environmental exposure to examine potential associations with overt diabetes. Specifically, it has previously been shown that subtle changes in renal physiology as well as changes in insulin and glucose levels result in changes in renal excretion rates of cadmium and other metals (2–10). Therefore, changes in renal physiology that are known to develop early in the course of frank diabetes (11) may present a confounder when examining the association between overt diabetes and urinary metal excretion. For this reason, we believe that including prediabetes as an outcome variable in parallel with type 2 diabetes when examining potential associations between exposure to nonessential transition metals and dysglycemia is a sensible approach to overcome this limitation given the high rate of progression from prediabetes to overt diabetes. Using this approach, we previously reported a nonlinear association between prediabetes and urinary cadmium excretion in the National Health and Nutrition Examination Survey (NHANES) 2005–2010 data set (12).

Duality of Interest. No potential conflicts of interest relevant to this article were reported.

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¹Division of Endocrinology, Metabolism, and Molecular Medicine, Northwestern University Feinberg School of Medicine, Chicago, IL

²Department of Pharmacology, Midwestern University, Downers Grove, IL

Corresponding author: Malek El Muayed, m-muayed@northwestern.edu.

The authors of the cited article did not respond.

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