

Special Issue on  
**Magnesium Deficiency in Diabetes Mellitus: Mechanisms  
and Consequences**

# CALL FOR PAPERS

Magnesium is an essential mineral for human health and acts as a cofactor for hundreds of enzymatic reactions in the body. Magnesium deficiency is prevalent among patients with diabetes mellitus owing to low dietary magnesium intake, decreased intestinal absorption, and, most importantly, enhanced urinary magnesium excretion. One of the causes of urinary magnesium wasting in diabetic patients is insulin resistance because insulin is an important hormone to activate the major magnesium transporter in the distal convoluted tubules, transient receptor potential M6; thus, insulin resistance disturbs magnesium reabsorption in the tubules. Magnesium deficiency, in turn, aggravates insulin resistance since magnesium is essential for insulin signaling such as autophosphorylation of the insulin receptor. In addition, magnesium deficiency is associated with the occurrence of diabetic complications, including retinopathy, neuropathy, and nephropathy, and an increased risk of cardiovascular diseases. It is important to elucidate whether magnesium supplementation breaks the vicious circle between magnesium deficiency and diabetes mellitus.

In this special issue, we invite investigators to contribute original research articles as well as review articles that seek to address the mechanisms and consequences of magnesium deficiency in diabetes mellitus. Both experimental and clinical studies including intervention trials are welcome.

Potential topics include but are not limited to the following:

- ▶ Prevalence of hypomagnesemia in patients with diabetes mellitus
- ▶ Mechanisms of renal magnesium wasting in diabetes mellitus
- ▶ Association between insulin resistance and renal magnesium wasting
- ▶ Impact of magnesium supplementation on glucose metabolism
- ▶ Dietary magnesium intake and insulin resistance
- ▶ Magnesium deficiency and the progression of diabetic complications
- ▶ Magnesium deficiency and osteoporosis in diabetes mellitus
- ▶ Cardiovascular risks among diabetic patients with hypomagnesemia
- ▶ Hypomagnesemia and the risk of new-onset diabetes mellitus after transplantation
- ▶ Hypomagnesemia and its immunological effects in diabetes mellitus

Authors can submit their manuscripts through the Manuscript Tracking System at <https://mts.hindawi.com/submit/journals/jdr/mddm/>.

**Lead Guest Editor**

Yusuke Sakaguchi, Osaka University,  
Osaka, Japan  
*sakaguchi@kid.med.osaka-u.ac.jp*

**Guest Editors**

Steven Van Laecke, Ghent University  
Hospital, Ghent, Belgium  
*steven.vanlaecke@ugent.be*

Fernando Guerrero-Romero, Mexican  
Social Security Institute, Mexico City,  
Mexico  
*guerrero.romero@gmail.com*

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