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Low plasma magnesium in type 2 diabetes.

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QUESTIONS UNDER STUDY/PRINCIPLES: Magnesium depletion has a negative impact on glucose homeostasis and insulin sensitivity in type 2 diabetic patients. Low plasma magnesium concentration is a highly specific indicator of poor magnesium status. In the USA and some European countries, plasma magnesium concentrations have been found to be decreased in diabetics. The aim of this study was to compare plasma magnesium concentrations of type 2 diabetics and healthy controls in Switzerland. METHODS: Plasma magnesium concentrations were determined in 109 type 2 diabetics and 156 age- and sex-matched healthy controls. RESULTS: Mean (+/- SD) plasma magnesium concentrations of the diabetics and controls were 0.77 +/- 0.08 and 0.83 +/- 0.07 mmol/L, respectively ($p < 0.001$). Plasma magnesium concentrations were below the normal reference range in 37.6% of the diabetic patients and 10.9% of the control subjects ($p < 0.001$). Plasma magnesium was not correlated with glycemic control as measured by HbA1c. CONCLUSIONS: Lower plasma magnesium concentrations and poor magnesium status are common in type 2 diabetics in Zurich, Switzerland.

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