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Review [J Clin Hypertens \(Greenwich\)](#). 2011 Nov;13(11):843-7.

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# The role of magnesium in hypertension and cardiovascular disease

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## Abstract

Magnesium intake of 500 mg/d to 1000 mg/d may reduce blood pressure (BP) as much as 5.6/2.8 mm Hg. However, clinical studies have a wide range of BP reduction, with some showing no change in BP. The combination of increased intake of magnesium and potassium coupled with reduced sodium intake is more effective in reducing BP than single mineral intake and is often as effective as one antihypertensive drug in treating hypertension. Reducing intracellular sodium and calcium while increasing intracellular magnesium and potassium improves BP response. Magnesium also increases the effectiveness of all antihypertensive drug classes. It remains to be conclusively proven that cardiovascular disease such as coronary heart disease, ischemic stroke, and cardiac arrhythmias can be prevented or treated with magnesium intake. Preliminary evidence suggests that insulin sensitivity, hyperglycemia, diabetes mellitus, left ventricular hypertrophy, and dyslipidemia may be improved with increased magnesium intake. Various genetic defects in magnesium transport are associated with hypertension and possibly with cardiovascular disease. Oral magnesium acts as a natural calcium channel blocker, increases nitric oxide, improves endothelial dysfunction, and induces direct and indirect vasodilation.

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