

# Abstract

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## Effect of copper supplementation on blood pressure values in patients with stable moderate hypertension

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**BACKGROUND:** Copper (Cu) deficiency is associated with changes in arterial pressure. The effect depends of the age of initiation of the copper-deficient diet. Copper deficiency started at a young age causes hypotension. When initiated in older or adult animals, copper deficiency can cause hypertension.

**OBJECTIVE AND METHODS:** A case-control study was carried out to investigate the effect of administrating 5 mg Cu/d in 60 subjects, both genders, with mild stable hypertension, pharmacologically untreated (treated group) and compared with 60 hypertensives (control group) who were matched by gender, age, body weight, smoking habits, calories, fat and salt intake (NaCl), and physical activity. Hypertension was diagnosed when the blood pressure was > 150/95 mm Hg.

**RESULTS:** Mean age, mean corporal weight and risk factors were similar in both groups. The results suggested the existence of a marginal deficiency of the trace element in 62% of subjects and demonstrated that Cu decreases systolic ( $r = -0.963$ ) and diastolic ( $r = -0.981$ ) blood pressures in treated group ( $p < 0.05$ ). Control patients did not show significant changes in their arterial pressures.

**CONCLUSION:** These findings indicate a functional alteration in human blood pressure regulation during mild copper depletion and suggest that Cu could be used in the treatment of stable moderate arterial hypertension. Further investigation is needed to determine the extent of this influence.

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