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Calcium intake and reducing blood pressure

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THE PROBLEM: Hypertension is a known public health problem that affects both the economically developed and developing world. It affects somewhere between 25 and 33% of the adult population.[1] Hypertension is one of the leading factors attributing to global mortality, and is the third highest risk factor for the global burden of disease.[2] The National High Blood Pressure Education Program in the US suggests that population strategies that aim to achieve a downward shift of the blood pressure distribution in the general population is an effective method to relieve some of this disease burden.[3] One potential population-based method could be dietary supplementation.

CLINICAL BOTTOM LINE: This systematic review shows that an increase in calcium intake will slightly reduce both systolic and diastolic blood pressure.[4] The effect was shown in a dose-response relationship, as well as being confirmed in multiple groups. Although the effect was small, it is based on high-quality evidence and, at the very least, the authors suggest that it should be an objective to make sure there is adequate calcium intake in the population. No adverse events were reported, but this would be an essential factor for any future research to monitor.

Calcium supplementation: effect on systolic and diastolic blood pressure[4]

	Success	Evidence	Harms
Systolic blood pressure (SBP)	Calcium significantly lowered SBP with a difference between the placebo group and the calcium supplementation group of -1.43 mm Hg (-2.15 to -0.72) This effect showed a dose-response treatment effect and was largest in those taking >1500 mg/day and in those studies with patients with a mean age of <35 years of age	This was based on high-quality evidence from 16 individual studies containing 3048 participants in total	There were no reported adverse events
Diastolic blood pressure (DBP)	Calcium supplementation also significantly lowered DBP with a difference between the placebo group and the calcium supplementation group of -0.98 mm Hg (-1.46 to -0.50) This effect showed a dose-response treatment effect and was largest in those taking >1500 mg/day, in men, and in those studies with patients with a mean age of <35 years of age.	This was based on high-quality evidence from 15 studies containing 2947 participants in total	

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