

CONCEPTS IN HYPERTENSION

A Journal Article-Based Approach to Understanding the Clinical Aspects of Hypertension

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Article of Interest

Steffen M et al. The effect of coffee consumption on BP and the development of HTN: a systematic review and meta-analysis. J HTN. 2012. ([Click to Access](#))

Context and Study Objective

"Doc, it's been difficult but I stopped drinking coffee in order to prevent my hypertension from worsening." Because caffeinated coffee consumption acutely raises blood pressure (BP), patients are counseled to minimize or avoid habitual intake to prevent elevations in BP. This meta-analysis examines whether chronic ingestion elevates BP and predisposes one to hypertension.

Design, Setting, Participants

Randomized controlled trials (RCTs) and prospective cohort studies assessing elevations in BP and the incidence of hypertension among caffeinated coffee drinkers were identified. Those in randomized trials consumed either 4-6 cups daily or none. In the cohorts, subjects were followed to assess for an association between the number of cups ingested and the risk of hypertension. Studies less than 1 week in duration were ineligible; both normo- and hypertensive (>140/90 mm Hg) individuals were included. Exclusionary comorbidities were not mentioned.

Results

-The 10 RCTs consisted of 800 mostly Caucasian individuals aged 25-50. 30% were women. 90% were normotensive at study onset. Trials lasted between 6-12 weeks.

-The 5 cohorts included 190,000 participants. A single cohort accounted for 155,000 of them. This particular cohort consisted of normotensive, predominately white women, aged 25-55 who drank between 0-6 cups daily.

-Table: Upon adjusting for confounders, daily coffee consumption, irrespective of the volume, had no effect on BP or the risk of developing hypertension.

-In aggregate, the trials were determined to be of low methodological quality and heterogeneous. For example, neither cup volume nor its caffeine content was standardized.

| Effect of Habitual Coffee Intake on BP | | |
|--|-----------------|---------|
| Mean change in BP | -0.6/-0.5 mm Hg | p > 0.5 |
| Risk ratio for developing HTN | 1.03 | p > 0.5 |

Clinical Perspective

-The available data is too weak to conclude that routine coffee intake affects BP.

-My own reading of the trials suggests particular populations in which routine coffee use increases BP (~3-5 mm Hg systolic).

-However, work by [Ding](#) (figure) suggests that even heavy coffee consumption may be associated with lower cardiovascular (CV) risk. Therefore, even if coffee raises BP, it is immaterial because CV risk remains unchanged.

-Coffee is one of "life's pleasures." This data fails to justify any departure from a patient's level of consumption, no matter how high. I do not advise coffee restriction. Rather, I direct my dietary counseling efforts towards reducing sodium intake, the most potent dietary contributor to hypertension.

-Of interest, caffeinated substances other than coffee (energy drinks, soda) appear to raise BP, an effect partially attributable to their caloric burden.

-Disclosures: I have no conflicts to declare.

