

# **Blood Pressure Control in Hypertensive Smokers**

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## **BACKGROUND**

High blood pressure (BP) is a major risk factor for cardiovascular morbidity and mortality. Hypertension is associated with an elevated risk for several cardiovascular complications, including coronary heart disease, peripheral vascular disease, congestive heart failure, and stroke, as well as an increased risk for renal disease. Although there have been significant advances in the detection and treatment of high BP, approximately one in four adults in the United States is hypertensive. Cigarette smoking is another highly prevalent and preventable risk factor, accounting for more than 400,000 premature deaths each year in this country alone, making it the leading cause of morbidity and mortality. Evidence from several epidemiological studies has demonstrated that, at any level of BP, smoking substantially increases the risk for all cardiovascular complications associated with hypertension. While cigarette smoking and hypertension both increase the risk of cardiovascular disease, these two risk factors act synergistically to produce a greater risk than their combined independent effects. Despite the considerable health risks, smoking among hypertensives is very common, with a prevalence approaching that observed among those with normal BP. Unfortunately, although quitting smoking is especially important for patients with high BP, smoking cessation produces a nontrivial weight gain averaging 5 kg, which may exacerbate hypertension in many patients with the disorder. Indeed, several studies have documented significant elevations in BP following smoking cessation, as well as increases in the prevalence of hypertension after quitting smoking. As such, it is important to develop effective interventions that assist in quitting smoking and preventing weight gain.

## **OBJECTIVES**

The primary endpoint is change in BP among quit smokers at a one-year follow-up. Secondary endpoints include changes in body weight, dietary intake, urinary sodium excretion, physical activity, and relapse to smoking. Exploratory endpoints include changes in hypertensive status (e.g., movement from prehypertensive to hypertensive by JNC VII criteria) and changes in BP medication status. We anticipate that those assigned to the BP control program will demonstrate more favorable changes in BP, weight, physical activity, and dietary intake at six- and 12-month follow-ups.

## **METHODS:**

Given this introduction, we propose the following specific aims: (1) To recruit 750 smokers with hypertension or prehypertension (based on JNC VII criteria). Given that African Americans are at high risk both for hypertension and post-cessation weight gain, the majority of the cohort recruited will be African American; (2) To provide all participants with a brief, validated, combined behavioral and pharmacologic smoking cessation intervention; and (3) To randomize participants who are abstinent from smoking at the completion of the cessation intervention to: (a) a four-month validated combined weight gain prevention and blood pressure control program; or (b) no additional lifestyle modification.

## **FINDINGS / RESULTS:**

No results to report at this time.

**PUBLICATIONS:**None at this time.