Manuscript #328

1. Title: Serum Potassium and Incidence of CVD

2. Writing Group:
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3. Timeline:

   Data available now. Analysis can start immediately. Draft to follow.

4. Rationale:

   An inverse association between potassium content of the diet and several forms of cardiovascular diseases, including hypertension and stroke, have been reported by a number of investigators. In addition, high levels of potassium intake have been shown to provide protection against development of cardiovascular diseases in experimental animals. Recently, Young and associates have found evidence that elevation of potassium serum concentration inhibits cellular functions known to be involved in development of atherosclerotic disease, including formation of oxygen free radicals by white blood cells and vascular endothelial cells in vitro, inhibition of vascular smooth muscle cell growth in vitro, and inhibition of thrombus formation in vivo in the coronary artery of the dog, and the carotid artery of the rabbit. Evidence from these and other studies is consistent with the hypothesis that dietary potassium intake and serum potassium concentration are inversely related to development of many forms of cardiovascular disease.

5. Main Hypothesis:

   Dietary potassium and serum potassium are inversely associated with prevalence and incidence of stroke, hypertension, coronary heart disease, congestive heart failure.

6. Data (variables, time window, source, inclusions/exclusions): Associations between baseline serum electrolytes and dietary electrolytes and ECG and clinical evidence of CAD, CHD, and MI, incidence of hypertension, prevalence of cardiac hypertrophy (echo) and incidence of stroke will be examined.