

Effects Of Low Energy Availability And Hypokalemia (Potassium Deficiency) On Hypertensive Division 1 Athletes

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Division 1 Athletes are 7x More Likely to Suffer From Low Energy Availability Induced Hypertension Rather Than Hypokalemia

INTRODUCTION:

- Potassium (K⁺) functions as a regulator for Sodium (Na⁺), drawing salt outside the cell.
- Hypokalemia, low K⁺ levels can disrupt homeostasis causing high blood pressure (HBP)
- Low energy availability (LEA) along with altered diets with hypokalemic properties can prompt HBP.

HYPOTHESIS:

Hypokalemia and LEA will increase blood pressure in DI athletes.

PARTICIPANTS:

Male:Female	14:9
Body mass (kg)	79.4 +/- 19.6
Height (cm)	197.5 +/-19.6
Sports	VB=6, TR=11, FB=2, MBB=11

Results/Discussion:

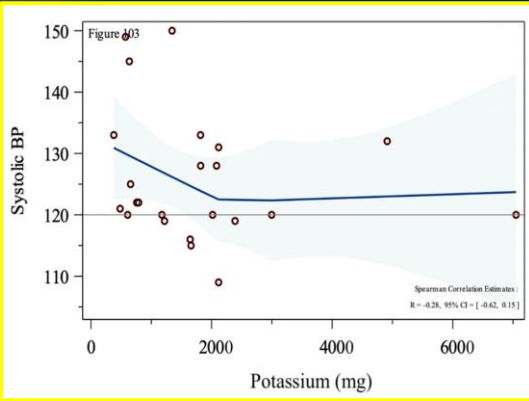
Results indicate a weak relationship between K⁺ and HBP despite a 21.8% deficiency and moderate relationship was found between HBP and LEA (r=0.56) with a -530kcal deficiency of those with hypertension.

Athletes who have LEA are 7.2x more likely to experience HBP and therefore should consume adequate calories (energy) that include foods rich in micronutrients/potassium such as bananas, lentils, and spinach.

METHODOLOGY:

- 3day food recall reviewed by a dietitian
- Spearman correlation coefficients and standardized mean difference with a 95% CI using two binary variables: P1 = LEA (y/n) and P2 = HBP (y/n)
- Independent T tests and Odds Ratios to evaluate relationship between hypokalemia, LEA and HBP in division 1 athletes

RESULTS:



Spearman correlation is depicted of serum K⁺ concentrations in relation to systolic pressure. Individual values, trendline and standard deviation (shaded blue) are shown.

