

High Fat Relative to Low Fat Ground Beef Consumption Lowers Blood Pressure and Does Not Negatively Alter Arterial Stiffness

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ABSTRACT

Beef consumption has been stigmatized as an unhealthy dietary choice. However, randomized control trials to support this claim are lacking. **PURPOSE:** To examine the effect of low-fat (5%) and high-fat (25%) ground beef consumption on blood pressure (BP) and carotid-femoral pulse wave velocity (PWV). **METHODS:** Twenty-three male subjects (age 40 ± 11 yrs, height 177.4 ± 6.7 cm, weight 97.3 ± 25.0 kg, lean mass 64.5 ± 9.5 kg, fat mass 30.6 ± 19.1 kg) volunteered to participate in this cross-over design study. Each participant completed two, 5-week ground beef interventions in a randomized order with a 4-week washout period in-between. All participants visited the lab four times after an overnight fast. Each visit to the lab consisted of supine BP, dual energy x-ray absorptiometry (DXA) scan to assess body composition, and PWV analysis. The PWV recording was assessed on the right carotid and femoral arteries. The distance used for the PWV calculation was 80% of the actual distance between carotid and femoral sites. All PWV measures were completed according to previously published procedures (Van Bortel, 2011). BP and PWV results were analyzed separately via 2x2 repeated measures ANOVA. **RESULTS:** Our results indicate there was a significant decrease in systolic BP ($p=0.01$) following the high-fat ground beef intervention compared to the low-fat. The BP values for low-fat beef and high-fat beef are 120/74 and 116/73 mmHg, respectively. Further, there were no significant differences between the PWV measures. **CONCLUSION:** Based on our results, high fat ground beef favorably alters systolic BP and does not negatively affect PWV measures.