Anthocyanin-rich Potato Improves Cardiovascular Risk Factors in Healthy Human Adults

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Abstract

Arterial stiffness is an emerging risk factor for cardiovascular disease (CVD), and dietary polyphenols, may play an important role in mediating vascular tone. The present single-blind randomised cross-over placebo controlled trial investigated the effect of consumption of an anthocyanin-rich potato, Purple Majesty (PM), in 14 healthy male and female adults. Participants consumed 200g PM containing 114 mg anthocyanins, or placebo (Osprey) with negligible anthocyanin content for 14 days, separated by a 1-week washout period. Non-invasive assessment of vascular tone (arterial stiffness) by pulse wave velocity (PWV) was determined in addition to systolic (SBP) and diastolic blood pressure (DBP), high density lipoproteins (HDL), low-density lipoproteins (LDL), triglycerides, glucose, insulin resistance (HOMA-IR) and c-reactive protein (CRP). Arterial stiffness was significantly reduced ($p=0.001$) following PM consumption. PM contained higher levels of total phenolics, total anthocyanins and antioxidant capacity compared with placebo, and daily consumption of PM over 14 days was well tolerated by participants. There were no significant changes with any other clinical parameter measured, and no changes were observed following placebo. The findings from this acute trial indicate improved vascular tone following daily consumption of PM and inclusion in the human diet could provide a valuable source of anthocyanins.