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The effect of red wine polyphenols on cardiovascular disease risk in postmenopausal women

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Background - Moderate consumption of red wine has been shown to reduce cardiovascular disease (CVD) risk , although presently, the mechanisms are unknown. Furthermore, it is unclear whether the beneficial effects of red wine are due to the alcohol or polyphenolic components. In this study we have investigated the effects of dealcoholised red wine and full compliment red wine on several cardiovascular risk factors in mildly dyslipidemic postmenopausal women.
Objectives - To elucidate whether the acute and chronic consumption of red wine polyphenols improve risk factors associated with CVD in dyslipidemic postmenopausal women.
Design - *Acute study:* Seventeen dyslipidaemic postmenopausal women each consumed a mixed meal accompanied by either water, dealcoholised red wine (DRW) or alcoholic red wine (RW) on three separate visits, in a random order, 2 weeks apart. One fasting and six hourly post-meal blood samples were taken and analysed for plasma lipids, lipoproteins, insulin and glucose at each time point. *Chronic study:* Forty five dyslipidaemic postmenopausal women were randomised into either a water-, DRW- or RW group for 6 weeks following a 4 week washout. Fasting measures of various CVD risk factors were taken at 0, 3 and 6 weeks.
Outcomes - Acute DRW consumption did not affect postprandial lipaemia. Acute consumption of RW increased postprandial TAG and insulin levels, and TG:ApoB48 ratio, compared to water. Chronic consumption of RW reduced fasting LDL-cholesterol and improved HDL-cholesterol and the HDL:LDL ratio. Vascular compliance improved with DRW consumption
Conclusions - Collectively, consumption of a single dose of DRW and RW did not produce any cardiovascular benefits in dyslipidaemic postmenopausal women. However, moderate long-term consumption of red wine and its polyphenolic constituents may reduce CVD risk by improving fasting lipid levels and endothelial function. The ethanol and polyphenolic components in red wine may act synergistically to produce these cardiovascular benefits.

Acute effects of tea on fasting and post meal blood pressure

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Background – Results of population and intervention studies suggest that drinking tea might protect against cardiovascular disease (CVD). However, tea contains caffeine, which can transiently increase blood pressure (BP) in people who have avoided caffeine for >12h. We have previously shown that a single dose of tea (equivalent to 4 standard cups containing 180mg of caffeine) transiently increased BP more than caffeine alone (180mg dose) in people who had fasted and avoided caffeine for >12h. The importance of this finding to risk of CVD is uncertain since short-term regular ingestion of tea does not alter BP, and results of population studies suggest that long-term regular ingestion of tea may lower BP.
Objective – To investigate the acute effects of tea consumption with and without food on BP.
Design – BP was measured in 20 participants with coronary artery disease before and 3.5h after drinking 3 cups of black tea or hot water with and without a meal. There were a total of 4 treatments (water alone, tea alone, meal with water and meal with tea) administered in random order. One cup of tea or water was provided at time=0, 1.5 and 3h. The meal was provided at time=0 and consumed over 0.5h.
Outcomes – In comparison to water alone, tea alone significantly increased mean (95%CI) systolic BP by 9.4 (1.3, 17.5) mmHg (P=0.01). However, there was negation of the acute pressor effect of tea when the tea was consumed after a meal (2.2 (-5.9, 10.2) mm Hg; NS).
Conclusions – A capacity for food to negate the pressor activity of tea in the fasting state may help to explain a lack of any longer-term effects to raise BP. The apparent inconsistency between the results from acute studies and studies of regular ingestion may be due to differential effects of tea, in the fasting and fed states, on BP. That is, people generally drink tea with and between meals rather than in a fasting state.