Concurrent Session 11

The acute effects of a high fibre meal on postprandial blood lipids and satiety

A Khossousi, S Pal, CW Binns, SS Dhaliwal

School of Public Health, Curtin University, WA; ATN Centre for Metabolic Fitness

**Background** - Epidemiologic and clinical studies demonstrated a negative association between consumption of dietary fibre and prevalence of cardiovascular disease. The consumption of dietary fibre in Australians is generally lower than recommended levels, especially in overweight and obese people.

**Objectives** - This study examined the effects of the consumption of dietary fibre on serum lipids, blood glucose, hunger, and satiety postprandially in overweight and obese men.

**Design** - Ten overweight and obese men consumed a mixed meal accompanied by either high fibre or low fibre supplement on 2 separate visits, in a random order, 1 week apart. Two breakfast meals with similar composition were consumed by 10 overweight/obese men (BMI 30.9 ± 0.88 kg/m² SEM). The meals contained either 3 g (low) or 15 g (high) of fibre (LFM and HFM, respectively). Blood samples were collected on an hourly interval for 10 hours throughout the day (One fasting and 7 postmeal blood samples) and analysed for plasma lipids, apolipoproteins, insulin, and glucose. Analysis was carried out using paired t-test and ANOVA.

**Outcomes** - Incremental changes in serum triglyceride levels during the first four hours of postprandial period were significantly lower after the consumption of high fibre meal than after the low fibre meal \((P = 0.037)\). Both meals produced a similar increase in insulin levels. There were no significant changes in total cholesterol, LDL-cholesterol and HDL-cholesterol postprandially. Incremental changes in Apolipoprotein B48 levels after consumption of HFM were significantly lower than LFM during a 3 hours period \((P = 0.045)\). There was no significant difference in the measurements of hunger and satiety perceptions between the two meals.

**Conclusions** - Collectively, a significant decrease in triglyceride and chylomicrons levels after the consumption of a high fibre meal suggests that the daily consumption of additional fibre, in the form of psyllium seed husk, may reduce the risk of developing cardiovascular disease in overweight/obese individuals.

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Does moderate red wine consumption protect DNA and lipid systems from oxidative damage: *in vivo* measurements in young and old humans?

MA Micallef, P Lewandowski

School of Biomedical Sciences, Victoria University, VIC 3023

**Background** - Red wine is a rich source of antioxidants, which may protect the body from oxidative stress. Oxidative stress has been shown to increase with age and is a major determinant of age-related disease. To date little is known about the potential of red wine to reduce the degree of oxidative stress in humans.

**Objective** - To determine the *in vivo* effects of moderate red wine consumption on DNA, lipid peroxidation, blood lipid, glucose profiles and whether these effects are dependent on age.

**Design** - Twenty young (18-30yrs) and 20 older (≥50yrs) volunteers were recruited. Each of the groups comprised of 10 treatment and 10 control subjects. Treatment subjects consumed 400 mL of red wine each day for two weeks and control subjects abstained from alcohol for two weeks. Blood samples were collected before and after the study periods and were used for analysis of glutathione (GSH) a marker of DNA damage and malondialdehyde (MDA) a marker of lipid peroxidation. Blood glucose and lipid profiles were also analysed.

**Outcomes** - Results from this study show no significant changes in serum glucose, plasma cholesterol, triglycerides, HDL and LDL concentrations in all control and treatment groups. However, significant reductions in MDA were found for both young (pre 5.5µM, post 3.1µM, \(P =0.007)\) and old (pre 3.4 µM, post 1.1 µM, \(P <0.001)\) treatment groups, as well as significant reductions in GSH in young (pre 0.7µM, post 0.2µM, \(P = 0.026)\) and old (pre 2.4µM, post 1.0µM, \(P <0.001)\) treatment groups.

**Conclusions** - This study suggests that moderate consumption of red wine induces a significant decrease in lipid and DNA oxidation, but has no affect on blood glucose and lipid profiles in young and old individuals. It may be implied from this data that red wine provides oxidative protection of lipid systems and DNA in circulation.