

Concurrent Session 4: Cardiovascular Disease

Does sesame supplementation affect tocopherol metabolism and cardiovascular disease risk factors in overweight volunteers?

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Background – Pre-clinical studies suggest that sesame and its lignans affect micronutrient metabolism, and induce beneficial changes in risk factors related to cardiovascular disease. However, very few controlled intervention trials have investigated these potential bioactivities of sesame in humans.

Objective – We aimed to investigate the effects of sesame supplementation in humans on micronutrient metabolism, blood lipids, blood pressure, systemic inflammatory and oxidative stress biomarkers.

Design – Overweight men and women (n=33) completed a randomized cross-over intervention trial. Participants consumed 25 g/d of sesame (~50 mg/d sesame lignan) and an iso-caloric placebo, matched for macronutrient and tocopherol composition for 5 wk each. Each intervention period was preceded by a 4 wk washout period.

Outcomes – Results are presented as the effect of sesame supplementation relative to placebo. γ -Tocopherol increased 17% (P=0.012), and urinary excretion of its metabolite, γ -CEHC, decreased 31% (P<0.001). Serum α -Tocopherol and excretion of its urinary metabolite remained unchanged. Urinary excretion of the mammalian lignans enterolactone and enterodiol, increased approximately 8-fold (P<0.001). Blood lipids, and blood pressure assessed by ambulatory blood pressure monitoring, were not altered. In addition, markers of systemic inflammation (CRP, IL-6, TNF- α) and lipid peroxidation (F2-isoprostanes) were not affected.

Conclusion – Twenty five g/d sesame supplementation caused no beneficial changes to markers of cardiovascular disease risk in overweight men and women. However, it did significantly increase serum γ -tocopherol and urinary mammalian lignans.

Childhood dairy intake and mortality due to coronary heart disease and stroke in adulthood: 65-y follow-up of the Boyd Orr cohort

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Background – Atherosclerosis and development of cardiovascular disease risk factors start in childhood. Consumption of dairy products in childhood has the potential to influence cardiovascular disease risk in adulthood through early risk factor development or long-term programming effects.

Objective – To investigate associations between the consumption of dairy products in childhood and mortality of cardiovascular disease and mortality of all causes in adulthood, in a 65-year follow-up study of children in Britain.

Design – In 1937-9, 4999 children living in England and Scotland participated in a study of family food consumption, assessed from seven-day household food inventories. The National Health Service Central Register was used to ascertain cause of death between 1948 and 2005 in the 4383 traced cohort members. Per capita household intake estimates for dairy products were used as proxy for individual intake. Fully adjusted multivariable hazard ratios (HR) were derived from Cox regression analysis.

Outcomes – There was no evidence that high intake of dairy products was associated with reduced coronary heart disease (CHD) or stroke mortality, although participants from families with the highest levels of total dairy intake were at somewhat reduced risk of CHD mortality (HR for highest vs. lowest dairy group: 0.66; 95% CI: 0.43, 1.03; $P_{\text{trend}}=0.32$) and stroke mortality (HR for highest vs. lowest dairy group: 0.60; 95% CI: 0.29, 1.27; $P_{\text{trend}}=0.15$). Milk intake showed similar associations, while intake of other dairy food groups showed no associations. By the end of follow-up in 2005, 1468 (34%) of the participants had died. All-cause mortality was lower in participants in the highest vs. lowest group of dairy intake (HR: 0.75; 95% CI: 0.61, 0.93; $P_{\text{trend}}=0.02$).

Conclusion – A family diet in childhood rich in dairy products is associated with reduced all-cause mortality. There was little evidence for an association between childhood dairy intake and death due to CHD or stroke in adulthood.