

Cardiovascular Disease

Effect of Muscadine Grape Seed Supplementation on Vascular Function in Subjects with or at Risk for Cardiovascular Disease: A Randomized Crossover Trial

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Link to full text: <http://www.jacn.org/cgi/content/full/29/5/469>

Significance: Muscadine grape seed supplementation resulted in a significant increase in resting brachial diameter.

The effect of muscadine grape seed (MGS) supplementation on endothelial function and cardiovascular risk factors was examined in a randomized, double-blind, placebo-controlled crossover trial in 50 subjects with increased cardiovascular risk. Subjects received MGS supplementation (1300 mg/day) and placebo for 4 weeks each, with a 4-week washout. Results showed no evidence of improved flow mediated dilation (% change) with MGS (MGS: pre 5.2%±0.3%, post 4.6%±0.3%, $p = 0.06$; placebo: pre 5.3%±0.4%, post 5.2%±0.4%, $p=0.82$; p for MGS vs. placebo=0.25). However, there was a significant increase in baseline diameter (mm) with MGS supplementation (MGS: pre 4.05±0.09, post 4.23±0.10, $p=0.002$; placebo: pre 4.12±0.11, post 4.12±0.10, $p=0.93$; p for MGS vs. placebo=0.026).

Rice Intake Is Associated with Reduced Risk of Mortality from Cardiovascular Disease in Japanese Men but Not Women

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Link to full text: <http://jn.nutrition.org/content/141/4/595.full>

Significance: The consumption of steamed rice was associated with reduced risk of mortality from cardiovascular disease in Japanese men but not women.

In a prospective study of 83,752 Japanese men and women aged 40–79 y, rice intake was determined by self-administered FFQ. Median follow-up was 14.1 y from 1988–1990 to the end of 2003, and hazard ratio (HR) and 95% CI of mortality were calculated according to quintiles of energy-adjusted rice intake. A total of 3514 cardiovascular deaths were documented. There was a gender difference on the effect of rice intake on the risk of cardiovascular disease (CVD). Overall, rice intake was inversely associated with CHD, heart failure, and total CVD in men but not in women. Rice intake was not associated with risk of stroke in either gender. The multivariable HR (95% CI) for the extreme quintiles of rice intake in men were 0.70 [(0.49–0.99); P -trend=0.02] for CHD, 0.70 [(0.46–1.05); P -trend=0.05] for heart failure, and 0.82 [(0.70–0.97); P -trend=0.006] for total CVD. For women, rice

was not associated with reduced risk of mortality from CVD after adjusting for lifestyle and dietary variables.

Type 2 Diabetes

Daily Consumption of Vitamin D– or Vitamin D + Calcium–Fortified Yogurt Drink Improved Glycemic Control in Patients with Type 2 Diabetes: A Randomized Clinical Trial

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Significance: Daily intake of a vitamin D–fortified yogurt drink, either with or without added calcium, improved glycemic status in type 2 diabetic patients.

The effects of daily intake of vitamin D- or vitamin D₃ + calcium–fortified yogurt drink on glycemic status were compared in 90 subjects with type 2 diabetes. Subjects were randomly allocated to 3 groups to consume plain yogurt drink (PY; containing no vitamin D and 150 mg Ca/250 mL), vitamin D–fortified yogurt drink (DY; containing 500 IU vitamin D₃ and 150 mg Ca/250 mL), or vitamin D + calcium–fortified yogurt drink (DCY; containing 500 IU vitamin D₃ and 250 mg Ca/250 mL) twice/day for 12 wk. In both the DY and DCY groups, mean serum 25(OH)D₃ improved (+32.8±28.4 and +28.8±16.1 nmol/L, respectively; P<0.001 for both), but fasting serum glucose (FSG) [–12.9±33.7 mg/dL (P=0.015) and –9.6±46.9 mg/dL (P=0.035)], glycated hemoglobin [–0.4±1.2% (P<0.001) and –0.4±1.9% (P<0.001)], homeostasis model assessment of insulin resistance (HOMA-IR) [–0.6±1.4 (P=0.001) and –0.6±3.2 (P<0.001)], waist circumference (–3.6±2.7 and –2.9±3.3; P<0.001 for both), and BMI [–0.9±0.6 (P<0.001) and –0.4±0.7 (P=0.005)] decreased significantly more than in the PY group. An inverse correlation was observed between changes in 25(OH)D₃ and FSG (r= –0.208, P=0.049), percent fat mass (r= –0.219, P=0.038), and HOMA-IR (r= –0.219, P=0.005).

Low-Carbohydrate Diet Scores and Risk of Type 2 Diabetes in Men

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Link to full text: <http://www.ajcn.org/content/93/4/844.full>

Significance: Low-carbohydrate diets should obtain protein and fat from foods other than red and processed meat.

This prospective cohort study compared the associations of 3 low-carbohydrate diet scores (high total protein and fat, high animal protein and fat, and high vegetable protein and fat) with incident type 2 diabetes (T2D). Participants from the Health Professionals Follow-Up Study who were free of T2D, cardiovascular disease, or cancer at baseline (n=40,475) for up to 20 y were studied. Results showed that 2689 cases of T2D were documented during follow-up. After adjustments for covariates, the score for high animal protein and fat was associated with an increased risk of T2D [hazard ratio (HR): 1.37; 95% CI=1.20, 1.58; P for trend <0.01]. Adjustment for red and

processed meat attenuated this association (HR: 1.11; 95% CI=0.95, 1.30; P for trend=0.20). A high score for vegetable protein and fat was not significantly associated with the risk of T2D overall but was inversely associated with T2D in men aged <65 y (HR: 0.78; 95% CI=0.66, 0.92; P for trend=0.01, P for interaction=0.01). A score representing a low-carbohydrate diet high in animal protein and fat was positively associated with the risk of T2D in men.

An Oral Lipid Challenge and Acute Intake of Caffeinated Coffee Additively Decrease Glucose Tolerance in Healthy Men

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Significance: Oral consumption of lipids and caffeinated coffee can independently and additively decrease glucose tolerance.

This study determined whether an oral lipid challenge and caffeinated coffee would disrupt glucose homeostasis and characterized their respective incretin responses. Ten young, healthy males participated in 5 trials in a randomized, cross-over design. At time 0 h, they underwent an oral fat tolerance test (OFTT: 1 g lipid/kg body weight) or consumed water, followed 5 h later by caffeinated (5 mg/kg) coffee, decaffeinated coffee, or water. At 6 h, volunteers underwent an oral glucose tolerance test (OGTT). Consumption of the OFTT increased glucose concentrations ($P<0.05$) after a subsequent OGTT. At 7 h, caffeinated coffee produced the highest glucose concentrations ($P<0.05$). Glucagon-like peptide-1 active (GLP-1a) and glucose-dependent insulinotropic polypeptide (GIP) were both increased for up to 6 h in all OFTT trials ($P<0.05$). Compared to all other treatments, caffeinated and decaffeinated coffee produced higher GLP-1a response at 6.25 h ($P<0.05$), whereas only caffeinated coffee increased GIP secretion ($P<0.05$).

Caffeine

See above article

Caffeinated Coffee Does Not Acutely Affect Energy Intake, Appetite, or Inflammation but Prevents Serum Cortisol Concentrations from Falling in Healthy Men

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Link to full text: <http://jn.nutrition.org/content/141/4/703.full>

Significance: The usually consumed amount of caffeinated coffee does not have short-term effects on appetite, energy intake, glucose metabolism, and inflammatory markers, but it increases circulating cortisol concentrations in healthy men.

This study investigated the acute effects of caffeinated and decaffeinated coffee consumption on appetite feelings, energy intake, and appetite-, inflammation-, stress-, and glucose metabolism-related markers. Sixteen healthy men received in a random order on 3 separate occasions a standard breakfast snack with 200 mL of either caffeinated coffee (3 mg caffeine/kg body weight), decaffeinated coffee, or water (control). Before intervention (–15 min) and at standard time points following breakfast consumption, participants recorded their appetite feelings and blood samples were collected for measurements of circulating glucose, insulin, cortisol, and appetite- and inflammation-related markers. The appetite-related ratings, the appetite plasma hormonal responses as well as the plasma glucose, serum insulin, and plasma and serum inflammatory marker responses did not show an overall intervention effect or a time x intervention interaction. However, a significant intervention effect ($P = 0.04$) and a time x intervention interaction (P -interaction = 0.02) were found for serum cortisol; cortisol concentrations were significantly higher following the caffeinated coffee intervention, compared to control.

Flavonoids

Selected Dietary Flavonoids Are Associated with Markers of Inflammation and Endothelial Dysfunction in U.S. Women

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Significance: Higher intakes of selected flavonoid subclasses were associated with modestly lower concentrations of inflammatory biomarkers.

The relationship between flavonoid intake and biomarkers of inflammation and endothelial dysfunction was assessed in a cross-sectional study of participants from the Nurses' Health Study cohort. Blood samples were collected in 1989–1990 and plasma C-reactive protein (CRP), IL-6, IL-18, soluble tumor necrosis factor receptor-2 (sTNF-R2), soluble intercellular adhesion molecule-1, soluble vascular adhesion molecule-1 (sVCAM-1), and E-selectin were measured in 1194–1598 women. The multivariate-adjusted geometric mean of plasma IL-8 were lower for women in the highest intake quintile of flavones, flavanones, and total flavonoids compared with those in the lowest quintiles by 9% (Q1: 264 ng/L, Q5: 241 ng/L; P -trend = 0.019), 11% (Q1: 273 ng/L, Q5: 244 ng/L; P -trend = 0.011), and 8% (Q1: 276 ng/L, Q5: 55 ng/L; P -trend = 0.034), respectively. The multivariate-adjusted geometric mean for women in the highest intake quintile of flavonol compared with those in the lowest quintile was 4% lower for sVCAM-1 (Q1: 578 μ g/L, Q5: 557 μ g/L; P -trend = 0.012). Among flavonoid-rich foods, higher intake of grapefruit was significantly associated with lower concentrations of CRP and sTNF-R2.

Food Allergy

Oral Food Challenges in Children with a Diagnosis of Food Allergy

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Link to full text: [http://www.jpeds.com/article/S0022-3476\(10\)00787-0/fulltext](http://www.jpeds.com/article/S0022-3476(10)00787-0/fulltext)

Significance: Oral food challenges may be indicated to confirm food allergy status.

This retrospective chart review of 125 children aged 1-19 years assessed the outcome of oral food challenges (OFC) in patients placed on elimination diets based primarily on positive serum immunoglobulin E (IgE) immunoassay results. Subjects were evaluated for IgE-mediated food allergy and underwent an OFC. Clinical history, prick skin test results, and serum allergen-specific IgE test results were obtained. The data were summarized for food avoidance and OFC results. Depending on the reason for avoidance, 84%-93% of the foods being avoided were returned to the diet after an OFC, indicating that the vast majority of foods that had been restricted could be tolerated at discharge. In the absence of anaphylaxis, the primary reliance on serum food-specific IgE testing to determine the need for a food elimination diet is not sufficient, especially in children with atopic dermatitis.