

ABSTRACTS**7-KETO****7-OXO-DHEA AND RAYNAUD'S PHENOMENON.**

Patients with Raynaud's phenomenon have abnormal digital vasoconstriction in response to cold. The pathogenesis remains unknown but may involve a local neurovascular defect leading to vasoconstriction. Diagnosis of primary Raynaud's phenomenon is based on typical symptomatology coupled with normal physical examination, normal laboratory studies and lack of observable pathology by nail fold capillaroscopy. Secondary Raynaud's phenomenon is known to occur associated with several connective tissue diseases, vascular injury due to repeated vibrational trauma, and other causes which produce demonstrable vascular and microcirculatory damage. Treatment of Raynaud's symptoms is conservative and aimed at prevention of attacks. Patients are advised to remain warm and, if possible, to live in warm climates. We suggest that an ergogenic (thermogenic) steroid, 7-oxo-DHEA (3-acetoxyandrost-5-ene-7,17-dione), which is available without prescription as the trademarked 7-keto DHEA, may be very helpful in prevention of primary Raynaud's attacks by increasing the basal metabolic rate and inhibiting vasospasm.

Med Hypotheses. 2003 Mar;60(3):391-7

THE EFFECT OF 7-OXO-DHEA ACETATE ON MEMORY IN YOUNG AND OLD C57BL/6 MICE.

7-Oxo-dehydroepiandrosterone, which can be formed from dehydroepiandrosterone (DHEA) by several mammalian tissues, is more effective than its parent steroid as an inducer of thermogenic enzymes when administered to rats. Using the Morris water maze procedure, we tested DHEA and its 7-oxo-derivative for their ability to reverse the memory abolition induced by scopolamine in young C57BL/6 mice, and for their effect on memory in old mice. A single dose of 7-oxo-DHEA-acetate at 24 mg/kg b.w. completely reversed the impairment caused by 1 mg of scopolamine per kg b.w. ($P < 0.001$). DHEA (20 mg/kg) was also effective ($P < 0.01$). In old mice given the same single doses followed by feeding 0.05% of the respective steroid in the diet, memory of the water maze training was retained through a four week test period in mice receiving 7-oxo-DHEA-acetate ($P < 0.05$) but not in the control or DHEA-treated groups. When old mice were not tested until five weeks after being trained 7-oxo-DHEA exerted a slight, but statistically insignificant, improvement in memory retention. The possible effect of 7-oxo-DHEA in human memory problems deserves investigation.

Steroids. 2000 Mar;65(3):124-9

SAFETY AND PHARMACOKINETIC STUDY WITH ESCALATING DOSES OF 3-ACETYL-7-OXO-DEHYDROEPIANDROSTERONE IN HEALTHY MALE VOLUNTEERS.

OBJECTIVES: To evaluate the safety and pharmacokinetics of 3-acetyl-7-oxo-DHEA (3beta-acetoxyandrost-5-ene-7,17-dione) given orally. **DESIGN:** A randomized, double blind, placebo-controlled, escalating dose study. **SETTING:** The Chicago Center for Clinical Research. **PARTICIPANTS:** Twenty-two healthy men. **STUDY METHOD:** The participants received placebo ($n = 6$) or 3-acetyl-7-oxo-DHEA ($n = 16$) at 50 mg/d for 7 days followed by a 7-day washout; 100 mg/d for 7 days followed by a 7-day washout; and 200 mg/d for 28 days. **OUTCOME MEASURES:** Safety parameters, evaluated at each dose level, included measurement of total testosterone, free testosterone, dihydrotestosterone, estradiol, cortisol, thyroxin and insulin levels. Analyses for 7-oxo-DHEA-3beta-sulfate (DHEA-S), the only detectable metabolic product of the administered steroid, were conducted on plasma drawn from all subjects at 0.25, 0.5, 1, 2, 4, 6 and 12 hours after the final 100 mg dose of 3beta-acetyl-7-oxo-DHEA. **RESULTS:** There were no differences in the clinical laboratory values or in reported minor adverse experiences, between treatment and placebo groups. In general, blood hormone concentrations were unaffected by the treatment with 3beta-acetyl-7-oxo-DHEA and remained within the normal range. No changes in vital signs, blood chemistry or urinalysis occurred during treatment with 3beta-acetyl-7-oxo-DHEA compared to placebo. The administered steroid was not detected in the blood but was rapidly converted to 7-oxo-DHEA-S, the concentrations of which were proportional to dose. This steroid sulfate did not accumulate; plasma concentrations 12 hours after the 3beta-acetyl-7-oxo-DHEA dose at 7 and 28 days on the 200 mg/d dose were 15.8 and 16.3 microg/L respectively. The mean time to peak plasma level of 7-oxo-DHEA-S was 2.2 hours; the mean half life was 2.17 hours. The apparent clearance averaged 172 L/h, and the apparent mean volume of distribution was 540 L. **CONCLUSION:** These results indicate that 3beta-acetyl-7-oxo-DHEA is safe and well tolerated in normal healthy men at doses up to 200 mg/d for 4 weeks.

7-HYDROXYDEHYDROEPIANDROSTERONE—A NATURAL ANTIGLUCOCORTICOID AND A CANDIDATE FOR STEROID REPLACEMENT THERAPY?

7-Hydroxylated metabolites of dehydroepiandrosterone (DHEA) are believed to be responsible for at least some immunomodulatory and antiglucocorticoid effects of DHEA and hence are considered candidates for hormone replacement therapy. Our experiments in vitro brought the evidence that 3beta, 7beta-dihydroxy-5-androsten-3-one (7beta-OH-DHEA), but not DHEA and its 7alpha-hydroxyisomer, could counteract the immunosuppressive effect of dexamethasone on the formation of plaques in culture of murine spleen lymphocytes. In another experiment, DHEA and after a 3-weeks pause 3beta-hydroxy-5-androstene-7,17-dione (7-oxo-DHEA) were applied transdermally to 6 male volunteers on 5 consecutive days. Blood levels of DHEA, its 7-hydroxylated metabolites, and in the first case also dehydroepiandrosterone sulphate (DHEAS), were measured before, during and one day after the end of treatment. Application of DHEA increased significantly not only DHEA and DHEAS, but also its both 7-hydroxyisomers. Application of 7-oxo-DHEA also led to a significant increase of both 7-hydroxyisomers of DHEA, with 7beta-OH-DHEA being the preferred metabolite the concentration of which was increased more than three times.

Physiol Res. 2000;49 Suppl 1:S107-12

EFFECTS OF TRANSDERMAL APPLICATION OF 7-OXO-DHEA ON THE LEVELS OF STEROID HORMONES, GONADOTROPINS AND LIPIDS IN HEALTHY MEN.

The aim of this study was to investigate the effect of 7-oxo-DHEA (dehydroepiandrosterone) on the serum levels of steroid sexual hormones, gonadotropins, lipids and lipoproteins in men. 7-oxo-DHEA was applied onto the skin as a gel to 10 volunteers aged 27 to 72 years for 5 consecutive days. The single dose contained 25 mg 7-oxo-DHEA. Serum concentrations of testosterone, estradiol, cortisol, androstenedione, luteinizing hormone (LH), follicle-stimulating hormone (FSH), sex hormone binding globulin (SHBG), total cholesterol, HDL- and LDL-cholesterol, triglycerides, apolipoprotein A-I and B and lipoprotein(a) were measured before the beginning and shortly after the end of the steroid application. After the treatment, we noted the following significant changes: a decline of testosterone and estradiol levels, increase of LH, HDL-cholesterol and apolipoprotein A-I levels. The decrease of total cholesterol levels was of the borderline significance. A slight but significant increase was found in apolipoprotein B and lipoprotein(a). The most expressive was the fall of the atherogenic index. We suggest that the gel containing 7-oxo-DHEA might be a suitable drug for improving the composition of the steroid and lipid parameters in elderly men.

Physiol Res. 2001;50(1):9-18

ABSTRACTS

Fiber

DIETARY INTAKE AND CORONARY HEART DISEASE: A VARIETY OF NUTRIENTS AND PHYTOCHEMICALS ARE IMPORTANT.

Until quite recently, the dietary focus on prevention of coronary heart disease (CHD) has been almost exclusively centered on reducing intake of cholesterol, total fat, and saturated fat. The food industry responded vigorously with low-fat products, some of which are helpful, particularly low-fat dairy products, but others that are less so, due to increases in refined carbohydrate content. Recent research shows that a variety of foods contribute to protection against CHD, including certain types of fatty acids, and a variety of components in fruit and vegetables, whole grains, and nuts. In particular, there is now an emphasis on reducing not only saturated fat, but also trans fat, whereas mono and omega-3 fatty acids have been shown to be protective. Many new studies have shown a link between intake of fruit and vegetables and whole grains and protection against CHD. This has been ascribed to their fiber, vitamin, mineral, and phytochemical content. In particular, there is accumulating evidence of protective effects for folate, vitamin B(6), vitamin B(12), vitamin E, vitamin C, flavonoids, and phytoestrogens. New recommendations to prevent heart disease require a greater focus on total dietary pattern with a return to the use of a variety of minimally processed foods.

Curr Treat Options Cardiovasc Med. 2004 Aug;6(4):291-302

DIETARY FIBER AND RISK OF CORONARY HEART DISEASE: A POOLED ANALYSIS OF COHORT STUDIES.

BACKGROUND: Few epidemiologic studies of dietary fiber intake and risk of coronary heart disease have compared fiber types (cereal, fruit, and vegetable) or included sex-specific results. The purpose of this study was to conduct a pooled analysis of dietary fiber and its subtypes and risk of coronary heart disease. **METHODS:** We analyzed the original data from 10 prospective cohort studies from the United States and Europe to estimate the association between dietary fiber intake and the risk of coronary heart disease. **RESULTS:** Over 6 to 10 years of follow-up, 5249 incident total coronary cases and 2011 coronary deaths occurred among 91058 men and 245186 women. After adjustment for demographics, body mass index, and lifestyle factors, each 10-g/d increment of energy-adjusted and measurement error-corrected total dietary fiber was associated with a 14% (relative risk [RR], 0.86; 95% confidence interval [CI], 0.78-0.96) decrease in risk of all coronary events and a 27% (RR, 0.73; 95% CI, 0.61-0.87) decrease in risk of coronary death. For cereal, fruit, and vegetable fiber intake (not error corrected), RRs corresponding to 10-g/d increments were 0.90 (95% CI, 0.77-1.07), 0.84 (95% CI, 0.70-0.99), and 1.00 (95% CI, 0.88-1.13), respectively, for all coronary events and 0.75 (95% CI, 0.63-0.91), 0.70 (95% CI, 0.55-0.89), and 1.00 (95% CI, 0.82-1.23), respectively, for deaths. Results were similar for men and women. **CONCLUSION:** Consumption of dietary fiber from cereals and fruits is inversely associated with risk of coronary heart disease.

Arch Intern Med. 2004 Feb 23;164(4):370-6

DIETARY FIBER STABILIZES BLOOD GLUCOSE AND INSULIN LEVELS AND REDUCES PHYSICAL ACTIVITY IN SOWS (SUS SCROFA).

The aim of this study was to test whether a diet with a high level of fermentable dietary fiber can stabilize interprandial blood glucose and insulin levels, prevent declines below basal levels, and reduce physical activity in limited-fed breeding sows. Stable levels of glucose and insulin may prevent interprandial feelings of hunger and, consequently, increased activity. Catheterized sows (n = 10) were fed twice daily (0700 and 1900 h) 900 g of a diet with either a low (L-sows) or a high level of fermentable dietary fiber (H-sows; sugarbeet pulp). Blood samples, taken between feeding times, were analyzed for glucose and insulin levels (basal and area under the curve) and stability of levels (variance and sum of absolute differences between levels in consecutive samples). The main focus was on samples taken after the postprandial peak. Behavior was videotaped for analysis of postures and posture changes. Basal glucose and insulin levels did not differ between treatments. H-sows had more stable levels than L-sows. Interprandial levels of H-sows were higher than or equal to basal levels. L-sows showed a decline in glucose below basal levels at 1400 h (P < 0.05). Before 1400 h, no difference in the frequency of posture changes was observed between treatments. After 1400 h, the frequency of posture changes increased more in L-sows than in H-sows. We concluded that sugarbeet pulp as a source of fermentable dietary fiber stabilizes glucose and insulin levels and reduces physical activity in limited-fed sows several hours after feeding. This may indicate a prolonged feeling of satiety.

J Nutr. 2004 Jun;134(6):1481-6

EXPERIENCES WITH THREE DIFFERENT FIBER SUPPLEMENTS IN WEIGHT REDUCTION.

BACKGROUND: Fiber supplements added to a caloric diet have additional effects on weight reduction in overweight subjects. The aim of this study was to compare the effect of various commercial fiber supplements (glucomannan, guar gum and alginate) on weight reduction in healthy overweight subjects. **Material/Methods:** One hundred and seventy six men and women were included to receive either active fiber substance or placebo in randomized placebo-controlled studies. The fiber supplements consisted of the viscous fibers glucomannan (Chrombalance®), glucomannan and guar gum (Appe-Trim®) and glucomannan, guar gum and alginat (Glucosahl). **Results:** All fiber supplements plus a balanced 1200 kcal diet induced significantly weight reduction more than placebo and diet alone, during a five week observation period. However, there were no significant differences between the different fibers in their ability to induce weight reduction, which was approximately 0.8 kg/week (3.8+/-0.9, 4.4+/-2.0, 4.1+/-0.6 in the Chrombalance, Appe-Trim(R) and Glucosahl group, respectively). **Conclusions:** Glucomannan induced body weight reduction in healthy overweight subjects, whereas the addition of guar gum and alginate did not seem to cause additional loss of weight.

Med Sci Monit. 2004 Dec 22;11(1):PI5-8

HIGH INTAKE OF SATURATED FAT AND EARLY OCCURRENCE OF SPECIFIC BIOMARKERS MAY EXPLAIN THE PREVALENCE OF CHRONIC DISEASE IN NORTHERN MEXICO.

To investigate whether the high prevalence of coronary heart disease (CHD) and type II diabetes prevalent in Northern Mexico could be related to the presence at a young age of biomarkers for chronic disease, 25 boys and 29 girls (8-12 y old) from a low socioeconomic group were recruited. Plasma lipids, LDL phenotype, apolipoproteins (apos), glucose, and insulin were evaluated. Analysis of 3-d dietary records indicated the typical intake of this region to be high in total fat (37-43% energy) and saturated fat (11-13% energy). Boys and girls had an average of 6623 +/- 2892 and 6112 +/- 2793 steps/d, respectively, as measured by a pedometer, suggesting a low level of activity. Plasma total and LDL cholesterol (LDL-C) were within the 50th percentile. In contrast, the study population was characterized by having high triglycerides (TG) (95th percentile, 1.25 +/- 0.37 mmol/L in boys and 1.19 +/- 0.38 mmol/L in girls). HDL cholesterol (HDL-C) concentrations were low (25th percentile), 1.22 +/- 0.20 mmol/L in girls and 1.29 +/- 0.20 mmol/L in boys. There was also a high prevalence of the small dense LDL phenotype B (69%), which is associated with increased risk for CHD. These results suggest that the population of children studied may have 2 different components of risk, one being the high-fat diet, which could be associated with the elevated levels of plasma LDL-C present in the adult population. A second component, related to the insulin resistance syndrome, may be principally genetic and associated with the high TG, low HDL, and LDL phenotype B observed in these Mexican children.

J Nutr. 2005 Jan;135(1):70-3

PLANT FOODS, FIBER, AND RECTAL CANCER.

BACKGROUND: Associations between colon and rectal cancer and intakes of vegetables, other plant foods, and fiber have stimulated much debate. **OBJECTIVE:** We examined the association between rectal cancer and plant food and fiber intakes. **DESIGN:** Data from 952 incident cases of rectal cancer were compared with data from 1205 population-based controls living in Utah or enrolled in the Kaiser Permanente Medical Care Program in northern California **RESULTS:** Rectal cancer was inversely associated with intakes of vegetables (odds ratio: 0.72; 95% CI: 0.54, 0.98), fruit (0.73; 0.53, 0.99), and whole-grain products (0.69; 0.51, 0.94), whereas a high intake of refined-grain products was directly associated with an increased risk of rectal cancer (1.42; 1.04, 1.92). Similarly, relative to low fiber intakes, high intakes of dietary fiber reduced the risk of rectal cancer (0.54; 0.37, 0.78). The reduced risk of rectal cancer associated with vegetable (0.48; 0.29, 0.80), fruit (0.63; 0.38, 1.06), and fiber (0.40; 0.22, 0.71) intakes was strongest for persons who received the diagnosis after age 65 y. A threshold effect at approximately 5 servings of vegetables/d was needed to see a reduced risk of rectal cancer. **CONCLUSIONS:** The results suggest that plant foods may be important in the etiology of rectal cancer in both men and women. Age at diagnosis appears to play an important role in the association.

Am J Clin Nutr. 2004 Feb;79(2):274-81

DIETARY FIBRE: MORE THAN A MATTER OF DIETETICS. II. PREVENTATIVE AND THERAPEUTIC USES.

A nutrition rich in fibre has a preventive effect against constipation, colon diverticulosis, carcinoma of the large bowel and stomach, type 2-diabetes, metabolic syndrome and cardiovascular disease. In case of constipation, diverticulosis and diabetes this effect solely depends on dietary fibre. Regarding carcinomas and cardiovascular diseases, so far unknown factors integrated in or associated with fibre-rich food may also contribute to the preventive effect. Therapy with dietary fibre is indicated for constipation, colon diverticulosis, diarrhea, diabetes, and hypercholesterinemia. The individual dietary fibres differ substance-specifically. Food-integrated dietary fibre such as whole-grain bread, vegetables and fruit have their place in prevention. Dietary fibre preparations such as wheat bran, flax seed or sugar-beet fibre are useful in the treatment of constipation, colon diverticulosis and adiposity. Oat bran is preferentially used in hypercholesterinemia. Purified dietary fibres such as cellulose, guar, psyllium,

and beta-glucan have an anti-diabetic, all viscous fibres an anti-lipaemic effect. The therapeutic dosages of dietary fibre preparations are 20-40 g/day and of purified fibres substances 10-20 g/day respectively.

Wien Klin Wochenschr. 2004 Aug 31;116(15-16):511-22

ABSTRACTS

Hypertension

EFFECT OF ANTIHYPERTENSIVE AGENTS ON CARDIOVASCULAR EVENTS IN PATIENTS WITH CORONARY DISEASE AND NORMAL BLOOD PRESSURE: THE CAMELOT STUDY: A RANDOMIZED CONTROLLED TRIAL.

CONTEXT: The effect of antihypertensive drugs on cardiovascular events in patients with coronary artery disease (CAD) and normal blood pressure remains uncertain. **OBJECTIVE:** To compare the effects of amlodipine or enalapril vs placebo on cardiovascular events in patients with CAD. **DESIGN, SETTING, AND PARTICIPANTS:** Double-blind, randomized, multicenter, 24-month trial (enrollment April 1999-April 2002) comparing amlodipine or enalapril with placebo in 1991 patients with angiographically documented CAD (>20% stenosis by coronary angiography) and diastolic blood pressure <100 mm Hg. A substudy of 274 patients measured atherosclerosis progression by intravascular ultrasound (IVUS). **INTERVENTIONS:** Patients were randomized to receive amlodipine, 10 mg; enalapril, 20 mg; or placebo. IVUS was performed at baseline and study completion. **MAIN OUTCOME MEASURES:** The primary efficacy parameter was incidence of cardiovascular events for amlodipine vs placebo. Other outcomes included comparisons of amlodipine vs enalapril and enalapril vs placebo. Events included cardiovascular death, nonfatal myocardial infarction, resuscitated cardiac arrest, coronary revascularization, hospitalization for angina pectoris, hospitalization for congestive heart failure, fatal or nonfatal stroke or transient ischemic attack, and new diagnosis of peripheral vascular disease. The IVUS end point was change in percent atheroma volume. **RESULTS:** Baseline blood pressure averaged 129/78 mm Hg for all patients; it increased by 0.7/0.6 mm Hg in the placebo group and decreased by 4.8/2.5 mm Hg and 4.9/2.4 mm Hg in the amlodipine and enalapril groups, respectively ($P < .001$ for both vs placebo). Cardiovascular events occurred in 151 (23.1%) placebo-treated patients, in 110 (16.6%) amlodipine-treated patients (hazard ratio [HR], 0.69; 95% CI, 0.54-0.88 [$P = .003$]), and in 136 (20.2%) enalapril-treated patients (HR, 0.85; 95% CI, 0.67-1.07 [$P = .16$]). Primary end point comparison for enalapril vs amlodipine was not significant (HR, 0.81; 95% CI, 0.63-1.04 [$P = .10$]). The IVUS substudy showed a trend toward less progression of atherosclerosis in the amlodipine group vs placebo ($P = .12$), with significantly less progression in the subgroup with systolic blood pressures greater than the mean ($P = .02$). Compared with baseline, IVUS showed progression in the placebo group ($P < .001$), a trend toward progression in the enalapril group ($P = .08$), and no progression in the amlodipine group ($P = .31$). For the amlodipine group, correlation between blood pressure reduction and progression was $r = 0.19$, $P = .07$. **CONCLUSIONS:** Administration of amlodipine to patients with CAD and normal blood pressure resulted in reduced adverse cardiovascular events. Directionally similar, but smaller and nonsignificant, treatment effects were observed with enalapril. For amlodipine, IVUS showed evidence of slowing of atherosclerosis progression.

JAMA. 2004 Nov 10;292(18):2217-25

PREVALENCE OF THE METABOLIC SYNDROME AMONG US ADULTS: FINDINGS FROM THE THIRD NATIONAL HEALTH AND NUTRITION EXAMINATION SURVEY.

CONTEXT: The Third Report

of the National Cholesterol Education Program Expert Panel on Detection, Evaluation, and Treatment of High Blood Cholesterol in Adults (ATP III) highlights the importance of treating patients with the metabolic syndrome to prevent cardiovascular disease. Limited information is available about the prevalence of the metabolic syndrome in the United States, however. **OBJECTIVE:** To estimate the prevalence of the metabolic syndrome in the United States as defined by the ATP III report. **DESIGN, SETTING, AND PARTICIPANTS:** Analysis of data on 8814 men and women aged 20 years or older from the Third National Health and Nutrition Examination Survey (1988-1994), a cross-sectional health survey of a nationally representative sample of the noninstitutionalized civilian US population. **MAIN OUTCOME MEASURES:** Prevalence of the metabolic syndrome as defined by ATP III (≥ 3 of the following abnormalities): waist circumference greater than 102 cm in men and 88 cm in women; serum triglycerides level of at least 150 mg/dL (1.69 mmol/L); high-density lipoprotein cholesterol level of less than 40 mg/dL (1.04 mmol/L) in men and 50 mg/dL (1.29 mmol/L) in women; blood pressure of at least 130/85 mm Hg; or serum glucose level of at least 110 mg/dL (6.1 mmol/L). **RESULTS:** The unadjusted and age-adjusted prevalences of the metabolic syndrome were 21.8% and 23.7%, respectively. The prevalence increased from 6.7% among participants aged 20 through 29 years to 43.5% and 42.0% for participants aged 60 through 69 years and aged at least 70 years, respectively. Mexican Americans had the highest age-adjusted prevalence of the metabolic syndrome (31.9%). The age-adjusted prevalence was similar for men (24.0%) and women (23.4%). However, among African Americans, women had about a 57% higher prevalence than men did and among Mexican Americans, women had about a 26% higher prevalence than men did. Using 2000 census data, about 47 million US residents have the metabolic syndrome. **CONCLUSIONS:** These results from a representative sample of US adults show that the metabolic syndrome is highly prevalent. The large numbers of US residents with the metabolic syndrome may have important implications for the health care sector.

THE EFFECTS OF LOW-CARBOHYDRATE VERSUS CONVENTIONAL WEIGHT LOSS DIETS IN SEVERELY OBESE ADULTS: ONE-YEAR FOLLOW-UP OF A RANDOMIZED TRIAL.

BACKGROUND: A previous paper reported the 6-month comparison of weight loss and metabolic changes in obese adults randomly assigned to either a low-carbohydrate diet or a conventional weight loss diet. **OBJECTIVE:** To review the 1-year outcomes between these diets. **DESIGN:** Randomized trial. **SETTING:** Philadelphia Veterans Affairs Medical Center. **PARTICIPANTS:** 132 obese adults with a body mass index of 35 kg/m² or greater; 83% had diabetes or the metabolic syndrome. **INTERVENTION:** Participants received counseling to either restrict carbohydrate intake to <30 g per day (low-carbohydrate diet) or to restrict caloric intake by 500 calories per day with <30% of calories from fat (conventional diet). **MEASUREMENTS:** Changes in weight, lipid levels, glycemic control, and insulin sensitivity. **RESULTS:** By 1 year, mean (+/-SD) weight change for persons on the low-carbohydrate diet was -5.1 +/- 8.7 kg compared with -3.1 +/- 8.4 kg for persons on the conventional diet. Differences between groups were not significant (-1.9 kg [95% CI, -4.9 to 1.0 kg]; P = 0.20). For persons on the low-carbohydrate diet, triglyceride levels decreased more (P = 0.044) and high-density lipoprotein cholesterol levels decreased less (P = 0.025). As seen in the small group of persons with diabetes (n = 54) and after adjustment for covariates, hemoglobin A1c levels improved more for persons on the low-carbohydrate diet. These more favorable metabolic responses to a low-carbohydrate diet remained significant after adjustment for weight loss differences. Changes in other lipids or insulin sensitivity did not differ between groups. **LIMITATIONS:** These findings are limited by a high dropout rate (34%) and by suboptimal dietary adherence of the enrolled persons. **CONCLUSION:** Participants on a low-carbohydrate diet had more favorable overall outcomes at 1 year than did those on a conventional diet. Weight loss was similar between groups, but effects on atherogenic dyslipidemia and glycemic control were still more favorable with a low-carbohydrate diet after adjustment for differences in weight loss.

Ann Intern Med. 2004 May 18;140(10):778-85

BLOCKING CARBOHYDRATE ABSORPTION AND WEIGHT LOSS: A CLINICAL TRIAL USING PHASE 2 BRAND PROPRIETARY FRACTIONATED WHITE BEAN EXTRACT.

Background: Phase 2' starch neutralizer brand bean extract product ("Phase 2") is a water-extract of a common white bean (*Phaseolus vulgaris*) that has been shown in vitro to inhibit the digestive enzyme alpha-amylase. Inhibiting this enzyme may prevent the digestion of complex carbohydrates, thus decreasing the number of carbohydrate calories absorbed and potentially promoting weight loss. **Methods:** Fifty obese adults were screened to participate in a randomized, double-blind, placebo-controlled study evaluating the effects of treatment with Phase 2 versus placebo on weight loss. Participants were randomized to receive either 1500 mg Phase 2 or an identical placebo twice daily with meals. The active study period was eight weeks. Thirty-nine subjects completed the initial screening process and 27 subjects completed the study. **Results:** The results after eight weeks demonstrated the Phase 2 group lost an average of 3.79 lbs (average of 0.47 lb per week) compared with the placebo group, which lost an average of 1.65 lbs (average of 0.21 lb per week), representing a difference of 129 percent (p=0.35). Triglyceride levels in the Phase 2 group were reduced an average of 26.3 mg/dL, more than three times greater a reduction than observed in the placebo group (8.2 mg/dL) (p=0.07). No adverse events during the study were attributed to the study medication. **Conclusion:** Clinical trends were identified for weight loss and a decrease in triglycerides, although statistical significance was not reached. Phase 2 shows potential promise as an adjunct therapy in the treatment of obesity and hypertriglyceridemia and further studies with larger numbers of subjects are warranted to conclusively demonstrate effectiveness.

Altern Med Rev. 2004 Mar;9(1):63-9

EFFECT OF DHEA ON ABDOMINAL FAT AND INSULIN ACTION IN ELDERLY WOMEN AND MEN: A RANDOMIZED CONTROLLED TRIAL.

CONTEXT: Dehydroepiandrosterone (DHEA) administration has been shown to reduce accumulation of abdominal visceral fat and protect against insulin resistance in laboratory animals, but it is not known whether DHEA decreases abdominal obesity in humans. DHEA is widely available as a dietary supplement without a prescription. **OBJECTIVE:** To determine whether DHEA replacement therapy decreases abdominal fat and improves insulin action in elderly persons. **DESIGN AND SETTING:** Randomized, double-blind, placebo-controlled trial conducted in a US university-based research center from June 2001 to February 2004. **PARTICIPANTS:** Fifty-six elderly persons (28 women and 28 men aged 71 [range, 65-78] years) with age-related decrease in DHEA level. **INTERVENTION:** Participants were randomly assigned to receive 50 mg/d of DHEA or matching placebo for 6 months. **MAIN OUTCOME MEASURES:** The primary outcome measures were 6-month change in visceral and subcutaneous abdominal fat measured by magnetic resonance imaging and glucose and insulin responses to an oral glucose tolerance test (OGTT). **RESULTS:** Of the 56 men and women enrolled, 52 underwent follow-up evaluations. Compliance with the intervention was 97% in the DHEA group and 95% in the placebo group. Based on intention-to-treat analyses, DHEA therapy compared with placebo induced significant decreases in visceral fat area (-13 cm² vs +3 cm², respectively; P = .001) and subcutaneous fat (-13 cm² vs +2 cm², P = .003). The insulin area under the curve (AUC) during the OGTT was significantly reduced after 6 months of DHEA therapy compared with placebo (-1119 muU/mL per 2 hours vs +818 muU/mL per 2 hours, P

= .007). Despite the lower insulin levels, the glucose AUC was unchanged, resulting in a significant increase in an insulin sensitivity index in response to DHEA compared with placebo (+1.4 vs -0.7, P = .005). CONCLUSION: DHEA replacement could play a role in prevention and treatment of the metabolic syndrome associated with abdominal obesity.

JAMA. 2004 Nov 10;292(18):2243-8

THE NATURAL TREATMENT OF HYPERTENSION.

The goal of this review is to evaluate the efficacy of commonly available dietary supplements in the treatment of hypertension, using the average blood pressure reduction achieved with the implementation of lifestyle modifications as a standard. For this reason, the authors focus on the antihypertensive potential of these agents rather than pharmacology, pharmacokinetics, adverse effects, or supplement-drug interactions. For the purpose of this review, dietary supplements are defined as exhibiting some evidence of benefit if a systolic blood pressure reduction of 9.0 mm Hg or greater and/or a diastolic blood pressure reduction of 5.0 mm Hg or greater has been observed in previously published, peer-reviewed trials. These defining limits are based on the average blood pressure reduction associated with the implementation of certain lifestyle modifications. Agents with some evidence of benefit include coenzyme Q10, fish oil, garlic, vitamin C, and L-arginine.

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