

## **CURRENT TOPICS IN NUTRACEUTICAL RESEARCH**

**Volume 7, Number 1**

**February 2009**

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1-10 CLINICAL STUDIES ON CHROMIUM SUPPLEMENTATION IN  
DIABETES MELLITUS

Michael Hummel and Oliver Schnell

**ABSTRACT:** *Tissue chromium levels of subjects with diabetes are lower than those of normal control subjects, and a correlation exists between low circulating levels of chromium and the incidence of type-2 diabetes. Chromium is an essential mineral that appears to have a beneficial role in the regulation of insulin action, metabolic syndrome, and cardiovascular disease. There is growing evidence that chromium may facilitate insulin signalling and chromium supplementation therefore may improve systemic insulin sensitivity. Controversy still exists as to the need for chromium supplementation. However, supplementation with chromium has been shown to reduce insulin resistance and to help reduce the risk of cardiovascular disease and type-2 diabetes. Since chromium supplementation is a safe treatment, further research is necessary to resolve the confounding data.*

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11-26 ROLES OF CURCUMIN IN PREVENTING PATHOGENESIS OF  
ALZHEIMER'S DISEASE

Wasana Pratchayasakul, Makhawadee Pongruangporn, Nipon Chattipakorn  
and Siriporn Chattipakorn

**ABSTRACT:** *Curcumin is a yellow-orange powder derived from the rhizome of Curcuma longa Linn. In traditional medicine, curcumin has been used to treat several diseases. Much evidence has shown curcumin's anti-ulcer, anti-cancer, anti-hepatotoxic, anti-viral, accelerated wound healing, cardioprotective, hypoglycemic and anti-inflammatory properties. Recently, several in vitro and in vivo studies have shown that curcumin has various properties which help prevent the pathogenesis of Alzheimer's disease (AD). These effects include anti-amyloid, anti-inflammation, antioxidant, anti-apoptotic and cholesterol lowering properties. These findings suggest the possible benefits of curcumin in AD therapy. In this review, the pathogenesis of, as well as current therapeutic strategies for, AD are presented, and evidence of the role of curcumin in preventing the pathogenetic cascades which underlie AD are discussed.*

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27-36 CONJUGATED LINOLEIC ACID (CLA) AND BONE HEALTH: A REVIEW  
Brian D. Roy and AnaMaria Antolic

**ABSTRACT:** *Bone is a complex tissue influenced by many factors, including, but not limited to; nutrition, mechanical loading and hormones. Nutritional interventions*

*have gained more interest as the incidence of fractures has grown, and is predicted to grow even more with the ageing population. Conjugated linoleic acid (CLA) is a family of fatty acids that have received considerable attention due to the many biological effects of the different geometric and positional isomers of this compound. Considerable research exists in cell culture and animal based models in regards to the influence of CLA on bone metabolism. Generally, most cell culture and animal models suggest a beneficial influence of CLA on bone health and metabolism. However, a gap exists in the literature with regards to the influence and efficacy of CLA on bone health in humans. This review summarizes the influence of CLA on cell culture models, animal models and human models of bone health and metabolism. Interestingly, the greatest influence of CLA in animal models appears to be in young growing animals, yet there have been no investigations into the influence of CLA on bone in young humans. Future studies should investigate the possible role in maximizing bone mass accrual during childhood and adolescence in humans.*

#### **CURRENT TOPICS IN NUTRACEUTICAL RESEARCH VOLUME 7 NUMBER 1**

**Current Topics in Nutraceutical Research 7 (1): 37-40**

##### **37-40 FLAXSEED IN THE TREATMENT OF LUPUS NEPHRITIS: A REVIEW OF THE ANIMAL AND HUMAN LITERATURE**

**Arsh K. Jain, Valerie Bloomfield and William F. Clark**

**ABSTRACT:** *Flaxseed has been used in the treatment of many medical conditions due to its anti-inflammatory effects. Systemic lupus erythematosus (SLE) is a chronic autoimmune condition that is, at times, punctuated by involvement of the kidneys. Flaxseed is a promising new treatment for this chronic disease. Various animal studies were undertaken utilizing the MRL/lpr mouse model. These mice develop a lymphoproliferative syndrome similar to SLE. In various studies, a synthetically derived lignan and a flaxseed rich diet were shown to improve clinically relevant outcomes of proteinuria and creatinine clearance in the mouse model. More recently, it was demonstrated that a purified form of flaxseed lignan was also effective in treating these mice. The first human study had the aim of determining what doses of flaxseed were tolerable among patients with SLE. The optimal dose of 30g per day was determined. Subsequently, a two-year randomized crossover trial assessed the effects of this dose on patients with lupus nephritis. 23 patients started the study; however, only nine adequately completed the study. The dropout and non-compliance was attributed to the significant side effect of increased laxation. The purified form of flaxseed, noted above, has not been studied in humans. Future studies should be focused on determining an appropriate dosing regimen in humans and determining if this treatment has a possible clinical application.*

#### **CURRENT TOPICS IN NUTRACEUTICAL RESEARCH VOLUME 7 NUMBER 1**

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##### **41-44 ORAL TREATMENT WITH ALPHA-TOCOPHEROL REDUCES SYSTOLIC BLOOD PRESSURE, OXIDATIVE STRESS AND MODULATES LIPID PROFILE OF STROKE PRONE SPONTANEOUSLY**

## **HYPERTENSIVE RATS**

**Marcela Rodrigues Moreira Guimarães, Leonardo Borges Murad, Rafael Braune de Castro and Lucia Marques Vianna**

**ABSTRACT:** *The stroke-prone spontaneously hypertensive rat (SHRSP) is an animal model for endothelial dysfunction, oxidative stress, hypertension and stroke. Alpha-tocopherol, a powerful lipid-soluble antioxidant, was supplemented in these animal models through of the experimentation of twelve rats SHRSP, divided in treated and control groups (n=6, each). The measured parameters were: body weight, diuresis, intake of food and water, systolic blood pressure, total cholesterol, LDL-cholesterol, HDL-cholesterol, triglycerides, blood glucose levels and malondialdehyde (MDA). Alpha-tocopherol supplementation reduced significantly (p<0.05) total cholesterol, LDL-cholesterol, systolic blood pressure and malondialdehyde levels. HDL-cholesterol was increased in treated group and triglycerides and blood glucose levels did not present alterations. Thus, alpha-tocopherol can be considered a potential antihypertensive, antioxidant and hypocholesterolemic agent in animal models of hypertension and stroke.*

## **CURRENT TOPICS IN NUTRACEUTICAL RESEARCH VOLUME 7 NUMBER 1**

**Current Topics in Nutraceutical Research 7 (1): 45-50**

### **45-50 POLYUNSATURATED FATTY ACIDS AND RHEUMATOID ARTHRITIS**

**Christiane Schwarzenfeld, Pia M. Haindl, Bernhard Rintelen and Burkhard F. Leeb**

**ABSTRACT:** *The n-3 polyunsaturated fatty (PUFA) acids and among them the n-3 PUFAs from fish oil – eicosapentaenoic acid and docosahexaenoic acid - own potent immunomodulatory potential. This can be beneficially utilized in cardiovascular disease or depression as well as in rheumatoid arthritis. A commonly accepted opinion about the minimum dosage to gain a therapeutic effect has not been formed yet. In order to achieve an amelioration of symptoms in RA the concluding recommendation is to consume dietary supplements containing three to six gram n-3 fatty acids daily for > 12 weeks. Following these suggestions patients taking dietary supplements of fish oil show improvements in clinical parameters including the number of tender joints, the duration of morning stiffness as well as the patient's evaluation of global arthritis activity. Finally, the intake of n-3 PUFAs can only be recommended as an add-on therapy and must not replace the standard therapeutic regimes. A large research agenda remains to be worked on in order to be able to determine the role of therapeutic effects of n-3 PUFAs in RA.*