

## Health News from 3Care Therapeutics

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### **Carotenoids, lutein and zeaxanthin benefit eye health in several important ways**

Carotenoids, a group of pigments found mainly in vegetables and colored fruits, are deposited selectively in different tissues. [Lutein](#) and zeaxanthin, found in kale and spinach, are deposited in the retina while lycopene, found richly in tomatoes, becomes concentrated in the prostate gland.

Scientists have long suspected and recently confirmed that carotenoids can effects the pigment content of the macula in the eye leading to improvements in human vision.

#### **Visual performance enhanced**

In 1933, researchers first suggested that carotenoids could improve visual performance by absorbing light scattered both within and outside of the eye. This resulted, they suggested, from increasing visual range by absorbing blue light scattered in the atmosphere and by improving spatial vision through enhancing contrast and reducing chromatic blur.

The latest study concluded that: “It seems clear that MP (macular pigment) does influence visual performance through various optical mechanisms. The most robust effects appear to be related to its actions as an optical filter.”

Macular pigment is thought to improve glare performance through absorption of forward scattered short-wave (blue) light. There is now additional data to suggest that carotenoid derived pigment increases visual range by absorbing short-wave scattered light in the atmosphere.

#### **Retina and lens**

Lutein and zeaxanthin could also improve vision through physiological means. There’s much evidence to suggest that the pigments protect the retina and lens and prevent age-related eye diseases such as macular degeneration and cataracts. Much of this benefit is thought to relate to the ability of carotenoids to act as antioxidant factors.

But the ability of lutein and zeaxanthin to filter light depends on individual differences in the dietary intake of these carotenoids, said the researchers. One study (Curran-Celentano et al 2001) specifically linked low average levels of macular protein with low average intakes of lutein and zeaxanthin of about 1.1 mg/d - or the equivalent of several tablespoons of spinach.

Researchers endorse a high intake of carotenoids to protect and improve the function of eye, prostate, skin, breast, and other critical tissues.

Source: *Journal of Food Science*

Title: *The Influence of Dietary Lutein and Zeaxanthin on Visual Performance*

Authors: J. Stringham, E. Bovier, J. Wong and B. Hammond.

### **Plant stanol ester (phytosterols) reduce cardiovascular diseases (CVD) risk especially for consumers not following a Mediterranean-style diet**

The study, which was published in the journal, *Nutrition, Metabolism & Cardiovascular Diseases*, shows that a diet including plant stanol-ester enriched foods and a Mediterranean diet rich in fruits and

vegetables, vegetable oil, legumes, whole grains, fish, and low-fat dairy products are equally effective in reducing the estimated risk of CVD.

The results of this study, which was conducted at the Aristotelian University in Thessaloniki, further strengthen the role of the Mediterranean diet but the researchers claim that adherence to this type of diet is decreasing even in countries like Greece, Italy, Spain and Portugal, and as a result, claim the researchers, another viable option for CVD reduction might be plant stanol ester-based foods..

### **Study details**

The research team studied 150 participants with mildly elevated cholesterol levels in a four month intervention. Participants were randomized and subjected to a Mediterranean-style diet, a diet containing plant stanol esters (2 g/day) or a placebo spread.

Vascular risk factors were assessed every month for 4 months and were calculated by three different risk models including PROCAM, Framingham, and Reynolds.

The results showed that the Mediterranean-style diet gradually reduced the levels of several risk factors of CVD, including total and LDL cholesterol, triglycerides, and blood pressure. "These moderate but significant changes resulted in a significant 24 to 32 per cent reduction in the estimated CVD risk," found the researchers.

Comparatively, the plant stanol ester-containing diet induced a fast and substantial reduction in total and LDL cholesterol resulting in a 26 to 30 per cent reduction in the estimated CVD risk already after one month, reported the researchers. These effects were sustained for the whole four month duration of the study.

Source: *Nutrition, Metabolism & Cardiovascular Diseases*

Published online ahead of print: doi:10.1016/j.numecd.2009.08.014

Title: *Effect of plant stanol ester-containing spread, placebo spread, or Mediterranean diet on estimated cardiovascular risk and lipid, inflammatory and haemostatic factors*

Authors: Athyros VG et al.

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