

June 26, 2007

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Omega-3 fatty acids help prevent retinopathy

A letter published online on June 24, 2007 in the journal *Nature Medicine* reported the finding of researchers at Children's Hospital Boston, Brigham and Women's Hospital, Massachusetts General Hospital, the University of Goteborg in Sweden, and the National Institutes of Health, that omega-3 polyunsaturated fatty acids have a protective effect in mice against the development and progression of deterioration of the retina of the eye, known as retinopathy. Retinopathy in mice shares characteristics with retinopathy of prematurity (ROP) in human infants, as well as with diabetic retinopathy and age-related macular degeneration (AMD) in adults.

Lois Smith, MD, PhD, and Kip Connor, PhD, of Children's Hospital Boston's Department of Ophthalmology, and associates gave mice diets high in the omega-3 fatty acids EPA and DHA, or in the omega-6 fatty acid arachidonic acid, and examined the animals' retinas. They found that greater dietary omega-3 fatty acid content reduced the area of vessel loss which leads to the regrowth of abnormal vessels that characterizes retinopathy. "It is remarkable that with only a two percent change in dietary omega-3 intake, we observed an approximate 40-50 percent decrease in retinopathy severity," Dr Connor stated.

The omega-3s create bioactive mediators which protect against abnormal blood vessel growth by suppressing tumor necrosis factor alpha, an inflammatory protein found in microglia associated with retinal blood vessels. "If omega-3 fatty acids, or these anti-inflammatory mediators, are as effective in humans and they are in mice, simple supplementation could be a cost-effective intervention benefiting millions of people," Dr Smith observed. "The cost of blindness is enormous."

"The purpose of our study was to discover and describe the scientific basis for any possible protective role of omega-3 fatty acids against retinopathy," Dr Smith said. "By identifying the fatty acids, lipids and growth factors involved in both the disease and protective processes, we hope to translate this work to influence the outcome in patients. Our study results suggest that increasing omega-3 fatty acid intake in premature infants may significantly decrease the occurrence of ROP. This changing of lipids by dietary means may also translate to AMD and diabetic retinopathy. If clinical trials find that supplementing with omega-3 fatty acids is as effective in protecting humans against retinal disease as demonstrated by the findings of this study, this cost effective intervention could benefit millions of people."

Health Concern

Retinopathy

Retinopathy damages the retina by destroying the capillaries (minuscule blood vessels connecting arteries and veins) that provide blood to the retina, the light-sensitive nerve tissue that sends visual images to the brain. With the onset of retinopathy, these vessels weaken or bulge with microaneurysms that may hemorrhage, leaking blood or fluid into surrounding tissue. When new

blood vessels grow on the retina (and into the vitreous), they can cause blurred vision and even temporary blindness. The real danger lies in the scar tissue that ultimately forms, detaching the retina from the back of the eye and often causing permanent loss of vision.

- Long-term antioxidant protection of the eyes can be provided by taking 3 tablets 3 times a day, of Life Extension Mix and 1 capsule a day of the Life Extension Booster formula. These two supplements provide the alpha and gamma forms of vitamin E, lutein, minerals for the formation of superoxide dismutase (SOD), such as zinc, manganese, and copper along with potent B complex vitamins. Some people may also want to take additional vitamin B6 (up to an additional 250 mg).
- Carnosine is an antiglycating agent that helps protect against the damaging effects of glycation. As an oral supplement, two 500-mg capsules daily are recommended. As an eyedrop, carnosine may help prevent protein cross-linking in the retina. One to two drops daily of carnosine eyedrops are recommended. Those with any kind of eye problem may want to apply 1-2 drops several times a day.
- Zeaxanthin and lutein may help filter harmful UVB light and quench free radicals that harm the retina. Suggested dose from diet or supplements is 5 mg a day of zeaxanthin and 15-20 mg a day of lutein.
- Silibinin may help slow the extent of diabetic retinopathy; 250-500 mg a day is suggested.
- Green tea extract is a powerful antioxidant that has shown promise in the treatment of degenerative eye disease; 600-700 mg of a 95% polyphenol extract is suggested.

Taking 2000 mg a day of acetyl-L-carnitine should be considered by those who have retinopathy, particularly if on a vegetarian diet.

<http://www.lef.org/protocols/prtcl-097.shtml>

Featured Products

Super Omega-3 EPA/DHA with Sesame Lignans & Olive Fruit Extract

Only Life Extension's Super Omega-3 EPA/DHA with Sesame Lignans & Olive Fruit Extract contains the "healthy trio" of concentrated nutrients from fish oil, sesame seed oil and extra virgin olive oil. Super Omega-3 EPA/DHA with Sesame Lignans & Olive Fruit Extract contains twice as much EPA and DHA as conventional fish oil capsules.



Super Omega-3 EPA/DHA with Sesame Lignans & Olive Fruit Extract is certified to contain no detectable levels of mercury, arsenic, lead, cadmium, and other toxic metals according to the International Fish Oil Standards. This product meets or exceeds IFOS standards for PCBs, dioxins, and other contaminants.

<http://www.lef.org/newshop/items/item00982.html>

Super Carnosine Capsules

Aging causes irreversible damage to the body's proteins. The underlying mechanism behind this damage is glycation. A simple definition of glycation is the cross-linking of proteins and sugars to form non-functioning structures in the body. The process of glycation can be superficially seen as unsightly wrinkled skin. Glycation is also an underlying cause of age-related catastrophes including the neurologic, vascular, and eye problems. Carnosine is a unique dipeptide that interferes with the glycation process.



<http://www.lef.org/newshop/items/item00787.html>

Life Extension Vacations

Inaugural Life Extension Cruise—Climb aboard!

Cruise the Western Caribbean and learn insider secrets to a significantly extended life span and vibrant health!

Join us for the inaugural Life Extension "Fountain of Life" Cruise on October 27, 2007 for a week of fun-filled activities and the

opportunity to rub elbows with fellow Life Extensionists aboard Norwegian Cruise Line's luxurious Norwegian Sun.

Cruise the Caribbean for 7 days with stops at exotic island destinations Roatan, Belize City, Costa Maya, Great Stirrup Cay—Roundtrip from Miami:

ALL STARTING AT

\$619* (inside stateroom), \$719* (ocean view stateroom), \$979* (balcony stateroom)

- Welcome aboard cocktail reception
- Presentations highlighting the latest in integrative therapies and anti-aging research
- Product previews on new cutting-edge anti-aging products
- One-on-one advisor appointments for personal life extension consultations
- And so much more to help you attain optimal health

<http://www.lef.org/event.html#lev>

If you have questions or comments concerning this issue or past issues of *Life Extension Update*, send them to ddye@lifeextension.com or call 954 202 7716.

For longer life,



Dayna Dye
Editor, Life Extension Update
ddye@lifeextension.com
954 766 8433 extension 7716
www.lef.org

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