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Omega-3 Fats May Significantly Reduce Damage from Stroke

Brain Function Enhanced in Adults and Children with Omega-3 Supplementation

STOCKHOLM – New evidence shows that the [omega-3 polyunsaturated fatty acids](http://www.fatsoflife.com/fats-and-health/omega-3s/) (PUFAs) found in seafood and marine oils, [DHA](http://en.wikipedia.org/wiki/Docosahexaenoic_acid) and [EPA](http://en.wikipedia.org/wiki/Eicosapentaenoic_acid), can significantly reduce damage from stroke in a mouse model when given immediately afterwards. Moreover, DHA and another PUFA demonstrate a positive effect on neurocognitive function in children. These findings and more were presented 29-30 June at the 11th Congress of the [International Society for the Study of Fatty Acids and Lipids](http://www.issfal.org) (ISSFAL) in Stockholm.

About 15 million people worldwide have a stroke each year and risk increases with age. Ischemic stroke, caused by a blockage of a blood vessel that supplies blood to the brain, accounts for about 87 percent of all cases. Investigators at Goethe University of Frankfurt, Germany, explored ischemic stroke in mice and the impact of an EPA and DHA emulsion administered 90 minutes afterwards, by examining the degree of damage, cellular function and neuroinflammation.

Treatment with the omega-3 emulsion significantly decreased the stroke area by 21 percent and lowered the severity of stroke by 50 percent. It also significantly improved brain cell function and reduced markers of inflammation.

“This pilot study demonstrated that DHA and EPA might aid in early medical intervention in ischemic stroke,” says Gunter Eckert, Ph.D., associate professor of pharmacology and toxicology at Goethe. “Further investigation is in order and holds promise for human trials.”

DHA’s involvement in recovery from stroke was also explored by Nicolas Bazan, M.D., Ph.D., professor and director, Neuroscience Center of Excellence, Louisiana State University Health Sciences Center, New Orleans, USA. DHA encourages the production of special substances that allow for cell survival under excessive stress, neurodegeneration or ischemic stroke.

“These substances are increased by DHA after ischemic stroke in animals, followed by remarkable neurological recovery,” notes Bazan.

The benefits of DHA in brain health have also been demonstrated in humans. Kathleen Gustafson, Ph.D., research assistant professor, University of Kansas Medical Center, Kansas City, USA, and colleagues investigated the effect of DHA and arachidonic acid (ARA), an omega-6 PUFA, on response inhibition in a follow-up study of 54 term infants randomized to receive formula with or without PUFAs from birth to 12 months. At roughly 5.5 years, children participated in a go/no-go task requiring rule learning and inhibitory control. Supplemented children responded more effectively and less impulsively.

“Data from this trial have consistently demonstrated benefits of PUFA supplementation in visual, cardiac and cognitive function out to 6 years of age,” says Gustafson. “This suggests that supplementation with DHA and ARA has a programming effect in the brain during a critical period of development, which is long-lasting.”

For more information, go to [www.issfal.org](http://www.issfal.org) and see ISSFAL on [Facebook](https://www.facebook.com/pages/International-Society-for-the-Study-of-Fatty-Acids-and-Lipids/461696330643293?ref=hl) and [Twitter](https://twitter.com/ISSFAL2014) (@ISSFAL2014).

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