PHILADELPHIA UNIVERSITY

News

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Dr. Jeffrey Ashley, environmental chemist at Philadelphia University, releases study on PCB contaminants in popular fish oil supplements

The research was published August in the journal Food Additives & Contaminants

PHILADELPHIA, Aug. 31, 2010 – A new study by Philadelphia University researcher and Academy of Natural Sciences research associate Jeffrey Ashley, Ph.D., has found levels of PCB contamination in all tested samples of fish oil capsules, which many people take for their heart-healthy omega-3 fatty acids.

The study was published in the August issue of the journal *Food Additives and Contaminants*.

Ashley, the lead author, David Velinsky, Ph.D., of the Academy of Natural Sciences, and their colleagues tested 10 brands of over-the-counter fish oil capsules and found polychlorinated biphenyl (PCBs) and polybrominated biphenyl ethers (PBDEs) in all the samples, although the levels of contamination varied.

PCBs, a class of industrial chemicals, were banned from use in the U.S. in the mid-1970s. PBDEs, however, are widely used as flame retardants in such consumer goods as electronics and textiles.

Ashley suggests that consumers concerned with the levels of contaminants in fish oil supplements may decrease their exposure either by choosing oils produced from small fish species such as anchovies and sardines, which tend to accumulate lower levels of the contaminants, or talking to their physicians about a prescription form of fish oil, which, unlike over-the-counter brands, is regulated by the U.S. Food and Drug Administration.

"While the levels of these two classes of contaminants are low, in parts per billion, they may represent a health concern, as most people take fish oil supplements daily," Ashley said.

But Ashley also noted that even daily exposure to these contaminants may be lower than what people would get from consuming the amount of fish needed to maintain the daily intake of polyunsaturated fatty acids recommended by the American Heart Association (AHA).

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The AHA web site recommends eating fish – particularly fatty fish such as salmon, mackerel and tuna – at least two times a week. Those with coronary heart disease or high triglycerides should consider fish capsules in consultation with a physician, the AHA says.

Omega-3 fatty acids benefit the hearts of healthy people and decrease the risk of arrhythmias that can lead to sudden death. Omega-3 fatty acids also decrease triglyceride levels, slow the growth rate of atherosclerotic plaque and can lower blood pressure, according to the AHA.

In addition, a new study published in the July issue of *Cancer Epidemiology, Biomarkers and Prevention* found that fish oil may protect against breast cancer. The women surveyed who reported taking fish oil at the start of the study were roughly half as likely to develop ductal carcinoma of the breast, the most common form of breast cancer, the study found.

There is little doubt that the popular fish oil capsules – with few, if any, side effects – are big business. *The Nutrition Business Journal* reported that dietary supplements containing omega-3s increased in sales to $489 million in 2006, up from $35 million in 1995, Ashley noted.

In addition to its heart-healthy benefits, fish oil also has been linked to enhanced brain development in children, and thus now is commonly added to baby foods and sold as fish oil "gummies" for children.

Concerned about the possible contaminant exposure that toddlers and young children may face from products fortified with omega-3 fatty acids derived from fish oils, Ashley, Velinsky, and their colleagues currently are conducting a pilot study to assess PCB levels in these products aimed at young children.

Ashley, an environmental chemist and associate professor, presented his research at the European Conference of the Society for Environmental Toxicology and Chemistry in Seville, Spain, in May 2010. He is a research associate of the Academy of Natural Sciences where he collaborates with biogeochemist Velinsky, who is vice president of the Academy's Patrick Center for Environmental Research.

Philadelphia University, founded in 1884, is a private university with 3,500 students enrolled in more than 60 undergraduate and graduate programs. As part of its core mission, the University focuses on professionally oriented programs that prepare students for successful careers, with a strong foundation in the liberal arts and an orientation toward interdisciplinary collaboration. Philadelphia University includes Schools of Architecture, Business Administration, Design and Engineering, Liberal Arts, and Science and Health.

The Academy of Natural Sciences, founded in 1812, is the oldest natural science research institution and museum in the Americas and a world leader in biodiversity and environmental research. The mission of the Academy is the encouragement and cultivation of the sciences.

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