

Unique omega-3 source effective at reducing exercise-induced asthma symptoms, study finds

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An Indiana University study has found that a unique omega-3 supplement derived from the New Zealand green-lipped mussel significantly improved lung function and reduced airway inflammation in asthmatics who experience exercise-induced bronchoconstriction, also called exercise-induced asthma.

Timothy Mickleborough, professor in the IU School of Public Health-Bloomington, said his findings are similar to his studies involving [fish oil](#) but required a much smaller dosage of the supplement. His new study, appearing online in the journal *Respiratory Medicine*, found a 59 percent improvement in lung function after an airway challenge, and a reduction in airway inflammation, [asthma symptoms](#) and use of emergency medication.

"Not only does it reduce symptoms, which will make you feel better, but it potentially could improve athletic performance," Mickleborough said. "Any time you can reduce medication is good."

In exercise-induced asthma, [vigorous exercise](#) triggers an acute narrowing of the airway afterward, making breathing difficult. Other symptoms include coughing, tightening of the chest and excessive fatigue. About 90 percent of people with asthma have this condition, which also is found in an estimated 10 percent or more of [elite athletes](#) and as much as 10 percent of the general population without asthma.

Mickleborough's study used Lyprinol/Omega XL, which contains PCSO-524, a patented extract of stabilized lipids from the New Zealand green-lipped mussel, combined with olive oil and vitamin E. PCSO-524 includes the five main lipid classes: sterol esters, sterols, polar lipids, triglycerides and [free fatty acids](#), including eicosapentaenoic acid (EPA) and docosahexaenoic acid (DHA).

Previous studies involving PCSO-524 have found it to be effective in treating osteoarthritis, [rheumatoid arthritis](#) and [inflammatory bowel disease](#). Mickleborough's study is the first to show that it is effective in reducing the airway inflammation experienced by asthmatic [study participants](#) diagnosed with exercise-induced asthma.

Mickleborough is chairing a symposium, "Health and Performance Benefits of Omega-3 Fatty Acids: Something Fishy Going On?" at 9 a.m. Saturday at the American College of Sports Medicine annual meeting in Indianapolis. Results from his PCSO-524 study will be discussed during a poster session at 8-9:30 a.m. on Thursday.

About the study:

The study involved 12 men and eight women ages 20 to 24 and was conducted in the Human Performance and Exercise Biochemistry Laboratory in the Department of Kinesiology at IU. All study participants had physician-diagnosed asthma and documented exercise-induced asthma. The study was conducted as a randomized, double-blind, placebo-controlled crossover trial. Study participants, none of whom took daily maintenance medication but all of whom used rescue inhalers, followed their regular diet for three weeks. Then, half took a placebo for three weeks while the rest took the supplement. They then followed their normal diet for two weeks. After that, they took the alternative supplement for three weeks. The placebo and PCSO-524 looked identical. A eucapnic voluntary hyperventilation challenge, which

is a scientifically preferred substitute for an exercise challenge, was conducted at the beginning of the study and after each treatment period. Various measures of lung function and inflammation were collected before and after the eucapnic voluntary hyperventilation challenge, and study participants were asked to keep track of emergency inhaler use, symptoms and peak flow measurements.

Mickleborough plans to conduct further studies that look at the impact of PCSO-524 on delayed onset muscle soreness and delayed onset muscle damage. He also will examine whether the supplement can improve lung function and relieve [airway inflammation](#) in elite athletes who do not have asthma.

Provided by Indiana University

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