

Wood, LG, Hazlewood, LC, Foster, PS, and Hansbro, PM. ***Lyprinol* reduces inflammation and improves lung function in a mouse model of allergic airways disease.** Clin Exp Allergy 16-4-2010;

**Summary Background** Asthma is an inflammatory airway disease that is characterized by an influx of eosinophils to the lungs, mucus hypersecretion and T helper type 2 cytokine production. Recent dietary changes, including a decreased omega-3 polyunsaturated fatty acid (PUFA) intake, may have contributed to increased asthma rates and dietary supplementation with marine oil could have clinical benefits. **Objective** To assess the effects of dietary supplementation with omega-3 PUFAs on allergic inflammation and lung function using a mouse model of ovalbumin (OVA)-induced allergic airway disease (AAD). **Methods** BALB/c mice received a daily supplement of either fish oil (rich in omega-3 PUFA) or lyprinol (a complex mixture of various marine lipids plus vitamin E and olive oil) before and during AAD. The effects of supplementation on AAD were assessed. **Results** Lyprinol but not fish oil treatment reduced eosinophil influx into the bronchoalveolar lavage fluid, the lung tissue surrounding the airways and the blood, decreased mucus hypersecretion in the lung and reduced airway hyperresponsiveness (AHR). The effects of lyprinol were not associated with changes in serum IgG1 or IgG2a, or the release of IL-4, IL-5, IL-13 and IFN-gamma. **Conclusions** Lyprinol suppresses the development of allergic inflammation and AHR in AAD. The therapeutic potential of dietary supplementation with lyprinol for asthma warrants further investigation.

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