

Plasma and skin concentrations of polyunsaturated fatty acids before and after supplementation with n-3 fatty acids in dogs with atopic dermatitis.

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OBJECTIVE: To determine essential fatty acid concentrations in plasma and tissue before and after supplementation with n-3 fatty acids in dogs with atopic dermatitis. **ANIMALS:** 30 dogs with atopic dermatitis. **PROCEDURE:** Dogs received supplemental flaxseed oil (200 mg/kg/d), eicosapentaenoic acid (EPA; 50 mg/kg/d)-docosahexaenoic acid (DHA; 35 mg/kg/d), or mineral oil as a placebo in a double-blind, placebo-controlled, randomized trial. Clinical scores and plasma and cutaneous concentrations of linoleic acid, arachidonic acid, alpha-linolenic acid (alpha-LLA), EPA, DHA, prostaglandin E2, and leukotriene B4 were determined. **RESULTS:** Total plasma concentrations of alpha-LLA and EPA increased and those of arachidonic acid decreased significantly with administration of EPA-DHA, and concentrations of alpha-LLA increased with flaxseed oil supplementation; nevertheless, there was no significant change in the concentrations of these fatty acids or eicosanoids in the skin. There was no correlation between clinical scores and plasma or cutaneous concentrations for any of the measured fatty acids or eicosanoids. **CONCLUSION AND CLINICAL RELEVANCE:** Results indicated that at the dose used, neither the concentrations of fatty acids in skin or plasma nor a decrease in the production of inflammatory eicosanoids was a major factor involved in the mechanism of action in dogs with atopy that responded to fatty acid supplementation.

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- [Clinical Trial](#)
- [Randomized Controlled Trial](#)
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