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Reviews

Omega-3 Fatty Acids in Inflammation and **Autoimmune Diseases**

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the proinflammatory leukotriene LTB₄ produced by omega-6 fatty acids. There have been a number of clinical trials assessing the benefits of dietary supplementation with fish oils in several inflammatory and autoimmune diseases in humans, including rheumatoid arthritis, Crohn's disease, ulcerative colitis, psoriasis, lupus erythematosus, multiple sclerosis and migraine headaches. Many of the placebo-controlled trials of fish oil in chronic inflammatory diseases reveal significant benefit, including decreased disease activity and a lowered use of anti-inflammatory drugs.

inflammation	cardiovascular disease and major depression autoimmune diseases	IL-1	IL-6	TNF	
background die	omega-6/omega-3 ratio				

Key teaching points:

cytokines.

- In Western diets, omega-6 fatty acids are the predominant polyunsaturated fats. The omega-6 and omega-3 fatty acids are metabolically distinct and have opposing physiologic functions.
- Eicosapentaenoic acid (EPA) is released to compete with arachidonic acid (AA) for emotactic enzymat X derivativ Anima press cell mediate onse of In exp proinflar i/omega-3 **PUFA** of proin The in utes to an increase Patien natory bowel disease docosah evels of

Key teaching points:

- In Western diets, omega-6 fatty acids are the predominant polyunsaturated fats. The omega-6 and omega-3 fatty acids are metabolically distinct and have opposing physiologic functions.
- Eicosapentaenoic acid (EPA) is released to compete with arachidonic acid (AA) for enzymatic metabolism inducing the production of less inflammatory and chemotactic derivatives.
- Animal and human studies support the hypothesis that omega-3 PUFA suppress cell mediated immune responses.
- In experimental animals and humans, serum PUFA levels predict the response of proinflammatory cytokines to psychologic stress. Imbalance in the omega-6/omega-3 PUFA ratio in major depression may be related to the increased production of proinflammatory cytokines and eicosanoids in that illness.

• The increased omega-6/omega-3 ratio in Western diets most likely contributes to an increased incidence of cardiovascular disease and inflammatory disorders.



Chemical Composition, Nutritional Value, and Safety of Cooked Female Chaceon Maritae from Namibe (Angola)

Source: MDPI AG

Diet and rheumatoid arthritis

Source: Wiley

Acute appearance of fatty acids in human plasma--a comparative study between polar-lipid rich oil from the microalgae Nannochloropsis oculata and krill oil in healthy young males.

Source: Springer Nature

The Role of Fatty Acids in Gene Expression: Health Implications

Source: S. Karger AG

Effect of temperature and nitrogen concentration on biomass composition of

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Source: Sociedade Brasileira de Ciência e Tecnologia de Alimentos Contributions of neutrophils to resolution of mucosal inflammation

Source: Springer Science and Business Media LLC

Oxidative processes in muscle systems and fresh meat...

Source: Wiley

Whey protein concentrate improves antioxidant capacity, faecal microbiota and fatty acid profile of growing piglets

Source: Cambridge University Press (CUP)

Lowering effects of fish oil supplementation on proinflammatory markers in hype X Sourc RHEU **FATT** Sourc Study mune respo Source Sourc Dieta Sourc Dieta sue Dama Sourc n-3 P lisease

incidence, progression, response to therapy and cancer-associated cachexia.

Source: Cambridge University Press (CUP) Diet and arthritis Source: Elsevier BV Plants as a dietary source of PUFAs... Source: Wiley N-3 Omega fatty acids: a review of current knowledge. Source: Wiley Dietary Conjugated Linoleic Acid-c9t11 Prevents Collagen-Induced Arthritis, Whereas Conjugated Linoleic Acid-t10c12 Increases Arthritic Severity. Source: Wiley The impact of non-surgical periodontal treatment on serum levels of long chainpolyunsaturated fatty acids: a pilot randomized clinical trial Source: Wiley Physical Exertion as a Trigger of Acute Myocardial Infarction Source: Massachusetts Medical Society Hemp (Marijuana) reverted Copper-induced toxic effects on the essential fatty acid profile of Labeo rohita and Cirrhinus mrigala Source: Springer Science and Business Media LLC Influence of a ketogenic diet, fish-oil, and calorie restriction on plasma metabolites and lipids in C57BL/6J mice Source: Springer Nature Effect of combination of dietary fish protein and fish oil on lipid metabolism in rats. Sourc X A PUF Sourc Decre Expre Sourc A Pre Source ients Sourc The E Source Effect Sourc Dieta trans Source: Wiley

Dietary α -linolenic acid from flaxseed oil improved folliculogenesis and IVF performance in dairy cows, similar to eicosapentaenoic and docosahexaenoic acids from fish oil.

Source: Bioscientifica

Limited dynamic range of immune response gene expression observed in healthy blood donors using RT-PCR

Source: Springer Science and Business Media LLC

Systems analysis of sex differences reveals an immunosuppressive role for testosterone in the response to influenza vaccination

Source: HAL CCSD

Flaxseed and Cardiovascular Risk

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Mononuclear Leukocytes: The OmegAD Study

Source: Public Library of Science (PLoS)

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Source: Springer Science and Business Media LLC

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Source: S. Karger AG

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Source: MDPI AG

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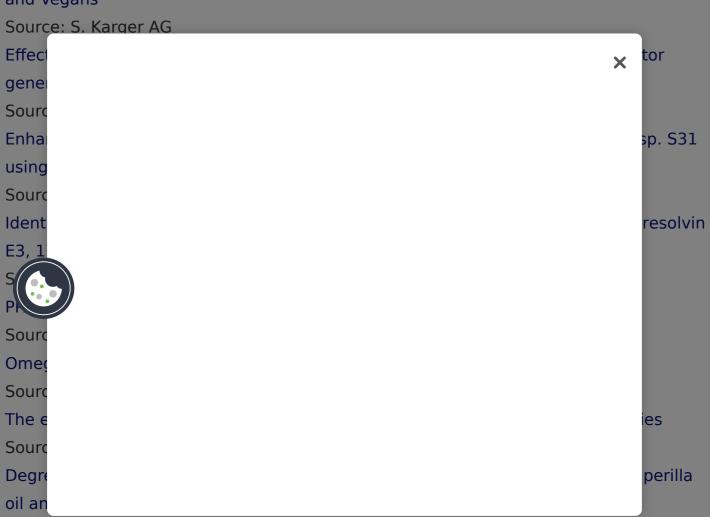
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