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Fatty acids from fish: the anti-inflammatory potential of long-chain omega-3 fatty acids.

Wall R, Ross RP, Fitzgerald GF, Stanton C.

Source

Alimentary Pharmabiotic Centre (APC), County Cork, Ireland.

Abstract

Omega-6 (n-6) and omega-3 (n-3) polyunsaturated fatty acids (PUFA) are precursors of potent lipid mediators, termed eicosanoids, which play an important role in the regulation of inflammation. Eicosanoids derived from n-6 PUFAs (e.g., arachidonic acid) have proinflammatory and immunoactive functions, whereas eicosanoids derived from n-3 PUFAs [e.g., eicosapentaenoic acid (EPA) and docosahexaenoic acid (DHA)] have anti-inflammatory properties, traditionally attributed to their ability to inhibit the formation of n-6 PUFA-derived eicosanoids. While the typical Western diet has a much greater ratio of n-6 PUFAs compared with n-3 PUFAs, research has shown that by increasing the ratio of n-3 to n-6 fatty acids in the diet, and consequently favoring the production of EPA in the body, or by increasing the dietary intake of EPA and DHA through consumption of fatty fish or fish-oil supplements, reductions may be achieved in the incidence of many chronic diseases that involve inflammatory processes; most notably, these include cardiovascular diseases, inflammatory bowel disease (IBD), cancer, and rheumatoid arthritis, but psychiatric and neurodegenerative illnesses are other examples.