

How fish oils reduce inflammation

08/03/2005 - **Further support for the action of omega-3 fatty acids on inflammatory conditions comes from new research on lipids in humans that are triggered by aspirin, as well as fish oil.**

Omega-3 fatty acids are known to benefit patients with cardiovascular disease and arthritis, although the mechanism for these actions is not yet fully understood.

Discovery of mechanisms help support the use of nutritional ingredients for prevention of disease and could add to evidence of omega-3's benefit to joint health.

Foods containing omega-3s are allowed to make a qualified health claim in the US for their action on heart health. A similar claim is expected in coming weeks from the UK's voluntary health claims body. However joint health claims have less support.

Makoto Arita from the Brigham and Women's Hospital and Harvard Medical School and US-based colleagues have recently identified a new class of aspirin-triggered bioactive lipids in humans, called resolvins, that could partly explain fish oils' anti-inflammatory effects on joints and blood flow.

Resolvins are made from the omega-3 fatty acids by cellular enzymes and can reduce inflammation in mice. The main bioactive component of this class of lipids, identified in mice, has been named resolvin E1.

The researchers have now identified this lipid in plasma taken from volunteers given omega-3 fatty acids and aspirin.

Writing in the 7 March issue of *The Journal of Experimental Medicine* (vol 201, no 5, 713-722), the authors said that human resolvin E1 inhibits both the migration of inflammatory cells to sites of inflammation and the turning on of other inflammatory cells.

This study also reveals a potential pitfall of COX-2 inhibitors, drugs designed to block inflammation but recently been shown to have negative side effects on the cardiovascular system.

COX-2 is involved in making resolvin E1 and the authors suggest that inhibition of vascular COX-2 by these drugs might block the synthesis of resolvin E1, which would eliminate an important anti-inflammatory pathway.