Body Manufactures Potent Anti-inflammatory Using DHA in Fish Oils

New research from Queen Mary, University of London and Harvard Medical School has revealed precisely why taking fish oils can help with conditions like rheumatoid arthritis. In a paper published Oct 28 2009 in the journal *Nature*, the researchers describe:

• How the body converts DHA from fish oil into another chemical, *Resolvin D2*,

• And how this chemical reduces the inflammation that leads to a variety of diseases.

The researchers, who were funded by the Arthritis Research Campaign, the Wellcome Trust, and the National Institutes of Health, looked at a particular ingredient of fish oils called DHA (docosahexaenoic acid, an omega-3 fatty acid). Fish oils are a rich source of DHA. They were able to show how the body converts DHA into *Resolvin D2*, and discover its exact chemical structure.

Mauro Perretti, PhD, Professor of Immunopharmacology at Queen Mary, University of London, led the UK team. He said, "*We have known for some time that fish oils can help with conditions like arthritis which are linked to inflammation. What we've shown here is how the body processes a particular ingredient of fish oils into Resolvin D2. We've also looked in detail at this chemical, determining at least some of the ways it relieves inflammation. It seems to be a very powerful chemical and a small amount can have a large effect.*"

"*This research is important because it explains at least one way in which fish oils can help in different types of arthritis… but also as a possible treatment for a variety of other diseases associated with inflammation.*"

DHA, through Resolvin D2, Acts to Prevent Inflammation

Arthritis, and many other diseases, are caused by inflammation. This means that the body's natural defenses against infections are mistakenly directed at healthy tissue. For example, previous research has shown that a crucial step in this process occurs when white blood cells, called leukocytes, stick to the inner lining of the blood vessels, called the endothelium, eventually leading to hardening of the arteries.

Researchers studied these blood cells and how they interact with the endothelium in the lab. When they added *Resolvin D2* they found that the endothelial cells produced small amounts of nitric oxide, which acts as a chemical signal discouraging the white blood cells from sticking to the endothelial cells, and preventing inflammation.

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1. **Article:** "Resolvin D2 is a potent regulator of leukocytes and controls microbial sepsis," Matthew Spite, Mauro Perretti, et al., *Nature*, Oct 29, 2009

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