

Why fish oils help and how they could help even more

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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 in *Nature* today, researchers describe how the body converts an ingredient found in fish oils into another chemical called Resolvin D2 and how this chemical reduces the inflammation that leads to a variety of diseases.

The research also suggests that Resolvin D2 could be the basis for a new treatment for diseases including sepsis, stroke and [arthritis](#). Unlike other [anti-inflammatory drugs](#), this chemical does not seem to suppress the immune system.

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. They were able to show how the body converts DHA into Resolvin D2 and discover its exact chemical structure.

Mauro Perretti, 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. We can also work on this chemical and see if it can be used not only to treat or even prevent arthritis, but also as a possible treatment for a variety of other diseases associated with inflammation."

Arthritis, and many other diseases, are caused by inflammation. This means that the body's natural defences against infections are mistakenly directed at healthy tissue.

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.

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](#).

More information: Resolvin D2 is a potent regulator of leukocytes and controls microbial sepsis, Spite et al, *Nature*, [DOI: 10.1038/nature08541](https://doi.org/10.1038/nature08541)

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