ironjustice@aol.com - 25 Feb 2009 03:33 GMT

Relative efficacies of omega-3 polyunsaturated fatty acids in reducing
expression of key proteins in a model system for studying osteoarthritis.
Zainal Z, Longman AJ, Hurst S, Duggan K, Caterson B, Hughes CE, Harwood JL
Osteoarthritis Cartilage 2009 Jan 13.

OBJECTIVE:
To assess the relative efficacy of three different omega-3 (n-3) polyunsaturated
fatty acids (PUFAs) in suppressing the mRNA levels for important proteins
involved in the etiology of osteoarthritis (OA).
METHODS:
A model cell culture system (bovine chondrocytes) was used. Inflammatory factors and enzymes involved in OA were induced by exposure
of the chondrocyte cultures to interleukin-1alpha (IL-1alpha). The effect of pre-incubating cultures with various amounts of exogenous fatty acids
on subsequent levels of mRNAs was assessed by reverse transcription-polymerase
chain reactions (RT-PCR).
RESULTS:
Exposure of cultures to IL-1alpha induced expression of the cartilage proteinases A Disintegrin And Metalloproteinase with ThromboSpondin motifs
(ADAMTS)-4 and ADAMTS-5, cyclooxygenase (COX)-2, the matrix metalloproteinase
(MMP)-3 and the inflammatory cytokines IL-1alpha, interleukin-1beta (IL-1beta) and
tumour necrosis factor-alpha (TNF-alpha).
n-3 PUFAs were able to reduce the levels of mRNA for ADAMTS-4, ADAMTS-5,
MMP-3, MMP-13, COX-2 (but not COX-1), IL-1alpha, IL-1beta and TNF-alpha.
Eicosapentaenoic acid (EPA) was the most effective, followed by docosahexaenoic
(DHA) and then alpha-linolenic (ALA) acid.
The n-6 PUFA, arachidonic acid (AA) had no effect.
CONCLUSION:
These results show that omega-3 (n-3) PUFAs cause a reduction in the mRNA levels
for various proteins known to be important in the pathology of OA. They provide a molecular explanation, at least in part, for beneficial effects of dietary
omega-3 PUFAs for the amelioration of symptoms of the disease. The relative efficacy of EPA suggests that this omega-3 PUFA may be especially
useful for dietary supplementation in patients with OA.

Osteoarthritis and cartilage / OARS, Osteoarthritis Research Society [Osteoarthritis Cartilage]

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Tom

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http://tinyurl.com/2r2nkh

Man Is A Herbivore!
http://tinyurl.com/4rq595

DEAD PEOPLE WALKING
http://tinyurl.com/zk9fk

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fish@man.com - 25 Feb 2009 17:34 GMT

"Eicosapentaenoic acid (EPA) was the most effective, followed by docosahexaenoic (DHA) and then alpha-linolenic (ALA) acid. The n-6 PUFA, arachidonic acid (AA) had no effect."

Looks like fish oil is the thing for this.

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ironjustice - 25 Feb 2009 22:50 GMT

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Reply to this Message

fish@man.com - 26 Feb 2009 00:06 GMT

Look's like you missed this the first time. What do you think?

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docosahexaenoic (DHA) and then alpha-linolenic (ALA) acid. The n-6 PUFA,
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Looks like fish oil is the thing for this.

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Jofirey - 26 Feb 2009 00:12 GMT

> Look's like you missed this the first time. What do you think?
>
[quoted text clipped - 4 lines]
>
> Looks like fish oil is the thing for this.

Sorry, but based on family history, fish oil alone isn't going to do
the trick.

My family (the side with all the autoimmune problems) is from
Newfoundland. They practically lived on home canned salmon and other
fish. I have the pictures to prove it didn't protect my great
grandmother. It shows her hand in her wedding pictures and her hands
again when she was about eighty.

Jo

Reply to this Message

Taka - 26 Feb 2009 01:13 GMT

> <f...@man.com> wrote in message
>
[quoted text clipped - 19 lines]
>
> Jo

Of course Omega-3s won't protect you from arthritis! This is all about a play with the short term politically correct markers of inflammation. Go ahead with the fish oil and you loose all the remaining cartilage in your joints ... Omega-3s kill cartilage regeneration in addition to damaging the chondrocytes by lipid peroxidation. What you need for healthy cartilage is the Mead acid which you get only when consuming saturated fat and no PUFAs.

Taka

Reply to this Message

ironjustice - 26 Feb 2009 02:12 GMT

On Feb 24, 7:33 pm, "ironjust...@aol.com" <ironjust...@aol.com> wrote:
Eicosapentaenoic acid <<

"Consumption of flax oil increased Eicosapentaenoic acid EPA"

Eicosapentaenoic acid is more effective than docosahexaenoic acid in inhibiting proinflammatory mediator production and transcription from LPS-induced human asthmatic alveolar macrophage cells
Clinical Nutrition, Volume 28, Issue 1, February 2009, Pages 71-77
Timothy D. Mickleborough, Sandra L. Tecklenburg, Gregory S. Montgomery, Martin R. Lindley

Summary
Background & aims
The purpose of the study was to determine which of the active constituents of fish oil, eicosapentaenoic acid (EPA) or docosahexaenoic acid (DHA), is most effective in suppressing proinflammatory mediator generation and cytokine expression from LPS-stimulated human asthmatic alveolar macrophages (AMφ).
Methods
The AMφ were obtained from twenty-one asthmatic adults using fiberoptic bronchoscopy. Cells were pretreated with DMEM, pure EPA, an
EPA-rich media (45% EPA/10% DHA), pure DHA, a DHA-rich media (10% EPA/
50% DHA) or Lipovenos(R) (n-6 PUFA), and then exposed to Dulbecco's Modified Eagle's Medium (DMEM) (-) or LPS (+). Supernatants were analyzed for leukotriene (LT)B4, prostaglandin (PG)D2, tumor necrosis factor (TNF)-α and interleukin (IL)-1β production. Detection of TNF-α and IL-1β mRNA expression levels was quantified by reverse transcriptase polymerase chain reaction.

Results
120 μM pure EPA and EPA-rich media significantly ($p < 0.05$) suppressed
TNF-α and IL-1β mRNA expression and the production of LTB4, PGD2 and TNF-α and IL-1β in LPS-stimulated primary AMφ cells obtained from asthmatic patients to a much greater extent than 120 μM pure DHA and DHA-rich media respectively.

Conclusions
This study has shown for the first time that EPA is a more potent inhibitor than DHA of inflammatory responses in human asthmatic AMφ cells.

Flaxseed oil and fish-oil capsule consumption alters human red blood cell n-3 fatty acid composition: a multiple-dosing trial comparing 2 sources of n-3 fatty acid.

Am J Clin Nutr. 2008 Sep;88(3):801-9.
Barceló-Coblijn G, Murphy EJ, Othman R, Moghadasian MH, Kashour T, Friel JK.
Department of Pharmacology, University of North Dakota, Grand Forks, ND, USA.

BACKGROUND:
An increase in plasma n-3 fatty acid content, particularly eicosapentaenoic acid (20:5n-3; EPA) and docosahexaenoic acid (22:6n-3; DHA), is observed after consumption of fish oil-enriched supplements.
Because alpha-linolenic acid (18:3n-3; ALA) is the direct precursor of EPA and DHA, ALA-enriched supplements such as flax may have a similar effect, although this hypothesis has been challenged because of reported low conversion of ALA into DHA. OBJECTIVE:
To address this question, we designed a clinical trial in which flax oil, fish-oil, and sunflower oil (placebo group) capsules were given to firefighters (n = 62), a group traditionally exposed to cardiovascular disease risk factors.
DESIGN:
Firefighters were randomly divided into 6 experimental groups receiving 1.2, 2.4, or 3.6 g flax oil/d; 0.6 or 1.2 g fish oil/d; or 1 g sunflower oil/d for 12 wk.
Blood was drawn every 2 wk, and the total phospholipid fatty acid composition of red blood cells was determined.
RESULTS:
As expected, fish oil produced a rapid increase in erythrocyte DHA and total n-3 fatty acids.
The consumption of either 2.4 or 3.6 g flax oil/d (in capsules) was sufficient to significantly increase erythrocyte total phospholipid ALA, EPA, and docosapentaenoic acid (22:5n-3) fatty acid content.
There were no differences among groups in plasma inflammatory markers or lipid profile.
CONCLUSIONS:
The consumption of ALA-enriched supplements for 12 wk was sufficient to elevate erythrocyte EPA and docosapentaenoic acid content, which shows the effectiveness of ALA conversion and accretion into erythrocytes.
The amounts of ALA required to obtain these effects are amounts that are easily achieved in the general population by dietary modification.

PMID: 18779299

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