

Newsletter

November 2010

Managing Arthritis and Joint Inflammation, Naturally, A Research Review

James Meschino, DC, MSc , ND
Adeeva.com

Clinical studies demonstrate that many forms of arthritis and joint inflammatory conditions can be managed effectively through specific dietary and supplementation practices, in conjunction with other natural treatments including chiropractic, massage, exercise, etc. Unfortunately, many people rely exclusively on anti-inflammatory drugs as their only approach to managing these problems, even though these drugs (non steroidal anti-inflammatory drugs, known as NSAIDS) produce intestinal tract ulcers (with potential internal bleeding) in 10-30% of long term users and erosions of the stomach lining and intestinal tract in 30-50% of users (1). In the U.S. , side effects from these drugs are associated with 10,000 - 20,000 deaths per year (2). Even the new COX-2 inhibitor drugs may only reduce intestinal tract damage by 50% (3). NSAIDS also encourages erosion of joint cartilage, which accelerates the arthritic process (4). They also cause liver and kidney damage with long-term use (4). Thus, every effort should be made to use these drugs sparingly to minimize risk of adverse side effects. This is where nutrition and supplementation can be of great value.

Anti-inflammatory Essential Fats and Vitamins

To a large degree, inflammation arises occurs when the body makes a hormone-like substance known as prostaglandin series-two (PG-2). Whereas, the synthesis of prostaglandin series-one and -three (PG-1, PG-3) exert anti-inflammatory effects, which greatly help to control the symptoms of arthritis naturally. In the body, prostaglandin hormones are produced from the different polyunsaturated fats we eat. Unfortunately, polyunsaturated fats from high-fat meat and dairy products promote the production of PG-2, (chicken, turkey and fish are better choices), whereas the Omega-3 fats from fish and the use of flaxseed oil provide the building blocks for anti-inflammatory PG-3. The fats from evening primrose, borage and black currant oils give rise to anti-inflammatory PG-1.

As well, that over-ingestion of corn oil, sunflower seed oil and safflower oil encourages the synthesis of PG-2, promoting inflammation and pain. Thus, these vegetable oils should be replaced with olive oil, canola oil, and, on occasion, peanut oil for use in salad dressings and food preparation. Many holistic practitioners further supplement their patients with a combination of flaxseed, fish and borage seed oil, to help increase the production of anti-inflammatory prostaglandins. However, in order to convert essential fats into anti-inflammatory PG-1 and PG-3 hormones, certain vitamins and minerals are required to facilitate their synthesis. These include Vitamin B6, Vitamin E, Vitamin C, niacin, zinc, selenium and magnesium (5, 6, 7). Thus, arthritic patients should ingest these nutrients as part of a high potency multiple vitamin and mineral product (enriched with extra antioxidant support and a B-50 complex), in conjunction with consuming the types of fats that are used to make anti-inflammatory prostaglandins-1 and 3. In summary, arthritic patients should choose chicken, turkey and fish instead of high fat meat products, avoid high fat dairy products, use only olive oil, canola oil and peanut oil in food preparation, take 2-3 capsules of a supplement containing flaxseed, fish and borage seed oil each day, as well as a high potency multi-vitamin and mineral. This strategy helps the body optimize its production of anti-inflammatory hormones (PG-1 and PG-3) and block the synthesis of inflammation-promoting PG-2.

Effective Anti-Inflammatory Herbs

In addition to the above dietary and supplementation considerations, research reveals that certain herbal agents provide effective anti-inflammatory relief for arthritic patients and in individuals recovering from other muscle, tendon, and joint inflammatory conditions. These compounds work by blocking the synthesis of PG-2 and other inflammatory chemicals. Unlike conventional anti-inflammatory drugs, the

following natural compounds have not been shown to damage the intestinal tract, the liver, or the kidneys and do not accelerate joint cartilage damage:

Curcumin - is the active inflammatory agent found in the spice turmeric. It is a very powerful anti-inflammatory agent and has been shown to be as effective as the drug phenylbutazone in reducing pain swelling and stiffness in rheumatoid arthritis patients (a 95% std extract of curcumin derived from turmeric is recommended) (8,9,10,11).

Boswellia - In clinical studies, the gum resin of the boswellia tree (yielding 70% boswellic acids) has been shown to improve symptoms in patients with osteoarthritis, and rheumatoid arthritis. Like Curcumin, its active ingredients block the production of inflammatory prostaglandin hormones and other inflammatory chemicals (12,13).

White Willow Bark Extract - provides anti-inflammatory phenolic glycosides, which have been shown to be effective in the treatment of arthritis, back pain, and other joint conditions (std. to 15% salicin content is recommended). It also provides a natural pain relieving effect (14,15,16).

Ginger Root Extract - contains oleo-resins that have shown to be effective in the management of various arthritic and muscle inflammation problems (std to 5% gingerol content is recommended) (17,18).

Bromelain - contains anti-inflammatory enzymes that have proven ability to suppress the inflammation and pain of many forms of arthritis, sports injuries, and joint conditions (19,20,21).

Quercetin - a bioflavonoid compound that blocks the release of histamine and other anti-inflammatory agents at supplemented doses (minimum 100 mg per day) (22,23,24).

Repairing Cartilage with Glucosamine and MSM

In addition to controlling the swelling and pain of arthritis the management should also include providing the building blocks for repair of joint cartilage. As we age (at around age 40) it appears that the body loses the ability to manufacture optimal levels of glucosamine. Glucosamine is the raw material from which the body makes important components (proteoglycans) of its cartilage. As such, a decrease in glucosamine synthesis

often results in cartilage erosion and the development of osteoarthritis. Since the early 1980's, more than 300 scientific investigations and over 20 double-blind clinical trials have proven that glucosamine sulphate supplementation can provide the body with the raw material to help repair and regenerate its cartilage, consistently improving osteoarthritic symptoms and halting further cartilage destruction in a high percentage of cases. Now widely accepted as a treatment for arthritis, glucosamine sulfate supplementation is proven to be extremely safe and effective. The usual dose is 1500 mg per day. Medical journals such as The Lancet and The Journal of the American Medical Association have published research papers highlighting the proven benefits of glucosamine for arthritic patients. Individuals allergic to sulfates and sulfite compounds can safely take glucosamine, as the sulfate in glucosamine sulfate refers only to the mineral sulfur, which no one is allergic to (sulfur is found in every cell in the body) (27,28,29,30).

The recent confirmation that sulfur plays a key role in maintaining the structural integrity of our cartilage has also prompted the popular use of MSM (Methylsulfonylmethane). MSM is a sulfur-rich compound, which has been shown in clinical and experimental studies to greatly improve arthritic and other joint inflammatory conditions. Experimental evidence indicates that it may provide significant anti-inflammatory effects as well (31,32). As such, the use of glucosamine sulfate and MSM is a highly effective combination in the treatment of arthritis and other joint cartilage-related problems.

Your Anti-Arthritic Lifestyle Plan:

- Avoid high fat animal products (red meat, pork, dairy products), with the exception of fish
- Avoid other unhealthy fats such as fried foods, creamy salad dressings, pastries, and foods with hydrogenated fats, as much as possible

- Use small amounts of olive oil, canola oil and on occasion, peanut oil for food preparation in place of other oils
- Take a high potency multiple vitamin each day that is enriched with boosted levels of antioxidants, and a B-50 complex (e.g. Adeeva Multiple Vitamin or similar product)
- Take 2-3 capsules each day of essential oils supplement that contains 400 mg each of flaxseed, fish and borage seed oil (e.g. Adeeva Nature's Essential Oils or similar product)
- In cases of inflammation, take a supplement containing the anti-inflammatory herbs (curcumin, boswellia, white willow extract and ginger), which are standardized grades yielding the optimal amount of anti-inflammatory medicinal agents, as outlined above (e.g. Adeeva Nature's Relief or similar product)
- In cases of osteoarthritis, or if you are over 40 years of age, supporting joint cartilage production with a product containing glucosamine sulphate, MSM, quercetin and bromelain enzymes, is highly useful (e.g. Adeeva Glucosamine Joint Formula or similar product)
- See a trained biomechanical expert (e.g. chiropractor) who can treat the involved joints and muscles and outline an exercise program to help stabilize the joint structures and improve joint function

References

1. Hayllyar J et al. Gastro protection and nonsteroidal anti-inflammatory drugs. *Drug Safety*, 7, 86,86-105, 1992.
2. Ament P W et al. Prophylaxis and treatment of NSAID-induced gastropathy. *Am Fam Phys* 1997. 1997;4:1323-6.
3. Silverstein F E et al. Gastrointestinal toxicity with celecoxib vs nonsteroidal anti-inflammatory drugs for osteoarthritis and rheumatoid arthritis. *JAMA*, 284 (10): 1247-1255, 2000.
4. Simon L S. Osteoarthritis: A Review *Clinical Cornerstone*. 2 (2):26-34, 1999.
5. Pizzorno, J. *Total Wellness*. Prima Publishing, 1996: 169-184
6. Scherak, O., et al. High dosage vitamin E therapy in patients with activated arthrosis. *Z-Rheumatol*, 1990; Vol.46 (6): 369-373
7. Heinle, k., et al. Selenium concentration in erythrocytes of patients with rheumatoid arthritis. *Clinical and laboratory chemistry infection markers during administration of selenium*. *Med-Klin*, 1997; 92 (suppl), 3: 29-31
8. Deadhar 50 et al. Preliminary studies on anti rheumatic activity of curcumin. *Ind J Med Res* 1980; 71:632-34.
9. Satoskar R R et al. Evaluation of anti-inflammatory property of curcumin in patients with post-operative inflammation. *Int J Clin Pharmacol Ther Toxicol* 1986; 24:651-54.
10. Murray M T. *The Healing Power of Herbs*. Prima Publishing, Rocklin CA ; 1995: 327-35.
11. Arora R B et al. Anti-inflammatory studies on curcuma longa (turmeric). *Ind J Med, Res* 1971; 50: 1289-95.

12. Schweizer S et al. Workup-dependent formation of 5-lipoxygenase inhibitory boswellic acids analogues. *J Nat Prod* 2000, Aug; 63 (8): 1058-1061.
13. Etzel R. Special extract of boswellia serrata (H15) in the treatment of rheumatoid arthritis. *Phytomed* 1996; 3: 91-94.
14. Bradley P R et al. *British Herbal Compendium, Vol 1, Bournemouth, Dorset , UK : British Herbal Med Assoc., 1992, 224-26.*
15. Mills S Y et al. Effects of a proprietary herbal medicine on the relief of chronic arthritic pain: A double-blind study. *Br J Rheum* 1996; 35: 874-78.
16. Chrubasik S et al. Treatment of low back pain exacerbations with willow bark extract: a randomized double – blind study. *Am J Med* 2000 July; 109 (1):9-14.
17. Srivastava K C et al. Ginger in rheumatism and musculoskeletal disorders. *Medical Hypotheses* 1992; 39:342-8.
18. Bliddal H et al. A randomized placebo – controlled, cross-over study of ginger extracts and ibuprofen in osteoarthritis. *Osteoarthritis Cartilage*. 2000, Jan; 8 (1): 9-12.
19. Klein G et al. Short-term treatment of painful osteoarthritis of the knee with oral enzymes. *Clin Drug Invest* 19 (1): 15-23, 2000.
20. Cohen A et al. Bromelain therapy in rheumatoid arthritis. *Pennsyl Med J*, 67: 627-30, June 1964.
21. Seligman B. Bromelain: An anti-inflammatory agent. *Angiology*, 13: 508-510, 1962.
22. Ferrandiz J L et al. Anti-inflammatory activity and inhibition of arachidonic acid metabolism by flavonoids. *Agents Action*; 32: 283-287, 1991.
23. Tarayre J P et al. Advantages of a combination of proteolytic enzymes, flavonoids and ascorbic acid in comparison with nonsteroidal anti-inflammatory agents. *Arzneim Forsch*, 27:1144-1149, 1977.
24. Yoshimoto T et al. Flavonoids and potent inhibitors of arachidonate 5 – lipoxygenase. *Biochem Biophys Res Comm.*, 116: 612-18, 1983.
25. Weiss R F. *Herbal Medicine*. Beaconsfield : Beaconsfield Press, 1988; p.362
26. Grahame R et al. Devil’s Claw: Pharmacological and clinical studies. *Ann Rheum Dis*, 1 981; 40: 632.
27. Gottlieb M.S. Conservative management of spinal osteoarthritis with glucosamine sulfate and chiropractic treatments. *J. Manipulative Physiol Ther*. 1997 July – Aug; 20 (6): 400-414. (JMPT)
28. McAlindon, T.E., et al. Glucosamine and chondroitin for treatment of osteoarthritis: a systematic quality assessment and meta-analysis. *JAMA*, 2000; 283,11: 1469-1475
29. Reginster, J.Y., et al. Long-term effects of glucosamine sulphate on osteoarthritis progression: a randomized, placebo controlled clinical trial. *Lancet*, 2000; 357, 9252: 251-256
30. Murray, M. Glucosamine Sulfate: Nature’s arthritis cure. *The Chiropractic Journal* – March, 1998
31. Richmond , V.L. Incorporation of methylsulfonylmethane sulfur into guinea pig serum proteins. *Life Sci*, 1986; 39: 263-268

32. Sullivan, M.W., et al. The cystine content of the finger nails in arthritis. *J Bone Joint Surgery*, 1935; 16: 185-188
33. Lawrence, R.M. Methylsulfonylmethane (MSM): A double-blind study of its use in degenerative arthritis. *Int J Anti-Aging Medicine*, 1998; 1, 1: 50