



Natural Anti-inflammatories: Alternatives to Long-term NSAID Use

Published research, some of which dates back to 1995, shows that long-term use of NSAIDs can:

- increase osteoarthritis *Huskisson ECJ Rheumatol 1995; Reijman M Arthritis Rheum 2005; Mastbergen SC Arthritis Res Ther 2006; Scott DL Rheumatology 2000; Alvarez-Soria MA Rheumatology (Oxford) 2008*
- interfere with tendon and tissue healing *Cohen DB Am J Sports Med 2006; Ferry ST American Orthopaedic Society for Sports Medicine 2007; 33 additional studies & articles 1980-2000*
- interfere with fracture and surgical fusion healing *Glassman SD Spine 1998; Dahners LE J Am Acad Orthop Surg, 2004 Goodman SB Am Acad Orthop Surg Bulletin 2004 & 2005*
- increase fracture risk *Van Staa TP Bone 2000*

These adverse side effects are in addition to the more well-known side effects of kidney and liver damage caused by NSAID use in general and increased risk of heart attack and stroke caused by COX 2 inhibitors, which include Celebrex. (The FDA removed from use Vioxx and Bextra.) Hospitalizations due to GI complications cost the healthcare system an estimated \$2 billion a year. *Singh J, Rheumatol 1999* Among the available reports, estimates of deaths attributable to NSAIDs have widely varied from 3,200 to higher than 16,500 per year in the US. *Cryer B AGE 2005; Tarone BE Am J Ther 2004*

Natural anti-inflammatories have been used by humans for eons. Many are foods. Research from around the world shows we are gaining more data on the effectiveness, the anti-inflammatory value and other health benefits of certain plants. Anti-inflammatory and medicinal properties are found in:

Bromelain. From the pineapple plant, bromelain refers to a group of sulfur-containing enzymes that digest protein. Bromelain was introduced as a therapeutic agent in 1957, and since that time more than 200 scientific papers on its therapeutic applications have appeared in medical literature. As an anti-inflammatory, bromelain is one of the most popular natural agents in use. Because of its ability to impact many aspects of inflammation, it is used predominantly in cases of injury, sprains, strains, arthritis and other inflammatory conditions. It is active later in the tissue damage-inflammation-tissue healing chemical reaction chain and causes breakdown of the excessive fibrotic tissue after tissue healing has occurred. NSAID drugs are active earlier in this chemical reaction, which is why they can interfere with tissue healing. Information is taken from 39 studies and references from in the book. Fresh pineapple (not canned, as heat destroys the enzyme activity) is the best dietary source for bromelain, or it can be obtained in a supplement form which comes from the stem of the plant. The typical supplement dosage of bromelain is 250 to 500 milligrams three times per day between meals. Very large doses of bromelain have been given with no side effects. It is virtually nontoxic. *THE HEALING POWER OF HERBS Michael T. Murray, ND, 1995 39 studies; Aho H Arch Int Pharmacodyn Ther. 1981; Taussig SJ J Ethnopharmacology 1988; Walker AF Phytomedicine. 2002; Kamenicek V Acta Chir Orthop Traumatol Cech. 2001; Brien S Evid Based Complement Alternat Med. 2004*

Capsicum. From cayenne pepper, capsicum is found in topical preparations. Commercial ointments containing capsaicin are available over the counter. These preparations may offer significant benefit in a number of conditions, including pain disorders such as post-amputation pain, post-mastectomy pain, post-herpetic neuralgia, diabetic neuropathy, cluster headaches, osteoarthritis and rheumatoid arthritis. Sombra is an effective capsicum ointment. Cayenne pepper exerts numerous beneficial effects on the cardiovascular system and gastrointestinal function. In addition to possessing excellent antioxidant compounds, studies have shown that cayenne pepper reduces the likelihood of developing atherosclerosis by reducing cholesterol and triglyceride levels. Although people with active peptic ulcers may be bothered by “spicy” foods containing cayenne pepper, spicy foods do not cause ulcers in normal individuals. Capsaicin, though hot to the taste, actually lowers body temperature by stimulating the cooling center of the hypothalamus in the brain. It has recently become available in concentrated capsule forms in health food stores. *THE HEALING POWER OF HERBS, Michael T. Murray, ND, 1995 27 studies; Caterina MJ Nature. 1997; Capsaicin and capsaizepine may be promising drug candidates for ameliorating inflammatory diseases and cancer. Kim Chu-Sook Cellular signalling 2003; Young-Joon Surh Journal of the National Cancer Institute, 2002*

Ginger. Historically known for its use as an anti-inflammatory agent, ginger also helps lower cholesterol and has demonstrated analgesic effects in experimental studies. Ginger demonstrates significant anti-ulcer effects and is noted for its apparent ability to warm the body. Recommended dosage is 2 to 4 grams of dry powdered ginger per day. The equivalent of fresh ginger root is 20 grams, two-thirds of an ounce, or roughly a half inch slice. Sliced ginger root in a thermos of hot water makes a nice tea. *THE HEALING POWER OF HERBS, Michael T. Murray, ND, 1995 43 studies; Grzanna R J Med Food, 2005*

Curcumin. Found in turmeric (*Curcuma longa*), curcumin is a perennial herb of the ginger family and the major ingredient of curry. Curcumin is as effective as cortisone or phenylbutazone in models of acute inflammation, but only half as effective in chronic models. However, curcumin displays virtually no toxicity. *Curcuma longa* has been used in Ayurvedic medicine, both locally and internally, in the treatment of sprains and inflammation. This use is being substantiated not only by experimental studies, but also by clinical investigations. The safety and excellent tolerability of curcumin compared to standard drug treatment are major advantages. Turmeric should be consumed liberally in the diet. Curcumin supplement recommended dosage is 400-600 milligrams three times day. **Because absorption in the GI tract may be limited, curcumin is often formulated with bromelain.** This is available in a supplement or by eating curry dishes. However, 8,000-60,000 milligrams of turmeric three times a day would be required to get a similar amount of curcumin. Curcumin displays virtually no toxicity, and reactions have not been reported at standard dosages. *THE HEALING POWER OF HERBS, Michael T. Murray, ND, 1995 44 studies;* Curcumin has been shown to be effective in treating people with osteoarthritis. *Kuptniratsaikul V J Altern Complement Med. 2009; Constanze C Arthritis Research & Therapy 2009; Henrotin Y Osteoarthritis Cartilage. 2010* Curcumin has potential therapeutic effects against neurodegenerative, cardiovascular, pulmonary, metabolic, autoimmune and neoplastic (cancer) diseases. *Aggarwal BB The University of Texas M. D. Anderson Cancer Center, Houston, Int J Biochem Cell Biol.2010*

When possible, is it best to include the above in your food choices. When more concentrated levels are required to achieve desired results, combinations and concentrated forms can be found over-the-counter in health food stores.

Boswellia (frankincense) and gugulipid (myrrh). Shrubby trees native to Arabia and India, boswellia and gugulipid have a long history of medicinal use. These medicinal plants exhibit significant anti-inflammatory action in experimental models and in clinical trials. Standard gugulipid dosage is 25-50 milligrams of guggulsterone three times day is common. It is usually found as a standardized extract of the gum guggul. Used in the standard refined form of extract, it is virtually nontoxic. Boswellia and curcumin (turmeric) combinations have been studied with promising good results to treat arthritis. Some of these combinations include ginger and/or other plants, including *Withania somnifera* (Ayurvedic), which has been researched in India. *Kimmatkar N Phytomedicine. 2003; Chopra A Journal of Clinical Rheumatology 2004; Farid A Alternative & Complementary Therapies 2002.* Guggul has been shown to have anti-inflammatory effects that were more marked than those of hydrocortisone and would be useful as an inhibitor of joint destruction in patients with rheumatoid arthritis. *Ikuko Kimura, Bioorganic & Medicinal Chemistry Letters 2001; Young-Rae Lee, Life Sciences 2008*

Corydalis yanhusuo. This is a tuber used primarily in Chinese herbal medicine. Its anti-inflammatory properties are substantiated by experimental studies and clinical investigations. One study shows that after taking a single oral dose, people have less pain bothersomeness scores in a cold-pressor induced pain test. It is available in Relief Formula at Dave's Health & Nutrition in Salt Lake City, daveshealth.com. *Kubo M, Biol Pharm Bull. 1994; Yun KJ Int Immunopharmacol. 2009; J Clin Pharmacol. 2004*

Homeopathic remedies. Widely used in Europe, homeopathy is based on the principle of similars (or "like cures like"), developed by Hahnemann (1755-1843). Our current allopathic system is based on antis, i.e., anti-inflammatories, rather than similars. The principle of dilutions, or law of minimum dose, in which the substance has left its imprint or "essence," stimulates the body to heal itself. This theory is called the memory of water and is also used as a basis to understand the mechanisms of this system. Our current immunization system is based on a homeopathic model, meaning giving a diluted substance of what can cause a disease can spur the body's systems to fight and/or heal the disease. There are challenges in studying homeopathy and controversies regarding the field, largely because a number of its key concepts are not consistent with the current understanding of science.

Traumeel. This homeopathic combination remedy is for bruises, sports injuries (sprains and strains), inflammation and muscular pain. Traumeel ointment outperformed a placebo for treatment of acute ankle sprains, resulting in less pain and faster return to athletic training). Internal Traumeel can improve symptoms in inflammatory rheumatic diseases. An in vivo experiment showed reduction in the development of local edema. *Bohmer D, Biological Therapy 1992; Zell J, Biological Therapy 1989; Milhoc, Biological Therapy 1986; Conforti A, International J. Of Integrated Medicine 1997*

Zeel. This homeopathic combination remedy for arthritis is available in oral forms and ointment. (Injectable solutions are available in Europe and by special order to MDs and DOs.) Most of the published studies have been done on the injectable form on people with osteoarthritis. One study showed that human cartilage incubated in a Petri dish in Zeel solution grew three times as deep as the control group, showing promising support for the oral use of Zeel. *Lesiak A, Medycyna Biologiczna 2001; Web L, Biological Therapy 1990; Gottwal R, Medicina Biológica 2000;*

These products can be found in over-the-counter strengths in health food stores. Modern research is showing how these natural substances work biologically and effectively and supports that they do not have the harsh side-effects found with pharmaceutical use. Research is continuing.