

## **Natural Alternatives to Pain Killers and Anti-Inflammatories**

The primary reason why people seek the advice of health professionals is that they have some sort of pain. Pain is an emotional response that is perceived after certain pain receptors called nociceptors, are stimulated and transmit impulses up to the brain. These pain receptors can be stimulated by either mechanical or chemical means. For instance, if someone were to punch you in the arm, that would constitute a mechanical stimulus. On the other hand, certain chemicals that are produced by the body as a result of tissue damage can also stimulate these pain receptors.

These chemicals are:

1. Lactic Acid
2. Potassium Ions
3. Prostaglandin E-2
4. Leukotriene B-4
5. Glycosaminoglycans
6. Histamine
7. 5-HTP
8. Bradykinin

Of these chemical irritants, Prostaglandin E-2 (PGE-2) and Leukotriene B-4 (LTB-4) are part of a special group of hormone like substances called Eicosanoids. These Eicosanoids are primarily responsible for controlling a large part of the inflammatory response, where PGE-2 and LTB-4 are pro-inflammatory and PGE-1, PGE-3 and LTB-5 are anti-inflammatory. A balance must be maintained between the pro and anti-inflammatory eicosanoids to ensure that a proper and necessary inflammatory response takes place. Problems arise when PGE-2 and LTB-4 predominate over the other anti-inflammatory eicosanoids, causing a prolonged and chronic inflammatory response and the resultant pain that accompanies it. Aspirin and Ibuprofen work by inhibiting a certain enzyme named Cyclo-oxygenase (COX) that is responsible for the production of Prostaglandins. The problem is that NSAIDs and Ibuprofen is that they inhibit the production of all prostaglandins, even the anti-inflammatory ones. This ultimately leads to undesirable effects such as gastric ulcerations, perforations or obstructions in one-third to one-half of the patients taking them. It is estimated that 16,500 people die each year from NSAID related gastrointestinal bleeding. These frightening statistics lead science on a quest for an analgesic/anti-inflammatory drug that could provide the therapeutic relief of NSAIDs by inhibiting PGE-2, without interfering with the anti-inflammatory properties of PGE-1 and PGE-3. It did not take long for science to discover a new form of synthetic prostaglandin inhibitor termed COX-2 that works on inhibiting the PGE-2 pathway specifically. Trade names such as Celebrex and Vioxx hit the market in 1998-1999 and a new age of NSAID therapy was formed. The problem with this new solution is that these pharmaceuticals cost about 10 times more than traditional NSAID therapy, and the potential for adverse side effects is still in question. What we must do is try to manipulate the balance of eicosanoids naturally through dietary regulation and specific herbal and nutritional supplementation. To accomplish this, it is first necessary to understand where eicosanoids come from and how they can be regulated in the diet.

Eicosanoids originate from essential fatty acids that are found in our foods. We are what we eat, and the chemicals that dictate all of our body's processes come from our food. Pro-inflammatory chemicals like PGE-2 and LTB-4 come specifically from animal products such as red meat, pork, dairy products, shellfish, and other forms of saturated fats. Anti-inflammatory chemicals like PGE-1 come from Omega-6 oils such as corn, safflower, sunflower, borage, and evening primrose. PGE-3 and LTB-5 are found in Omega-3 oils such as canola, flaxseed and fish oils. Of these oils, fish oil seems to have the highest concentration of potential anti-inflammatory agents. *(However, the Omega-3 oils are very unstable and are oxidized in the presence of extreme heat, so cooking these oils can actually cause more harm than good. It is recommended to take a vitamin E supplement, which is the most powerful oil based antioxidant to counteract the negative effects of oxidized Omega-3.)* Therefore, if your aim is to reduce pain and inflammation through dietary methods, you should stay away from animal products high in saturated fat and concentrate your diet more on fish, fruits, vegetables, and unsaturated oils.

Along with dietary regulation, specific herbs and nutritional supplements have been proven to very effective in the reduction of pain producing chemicals in the body. Ginger and Turmeric are two popular herbs that have long been used as an Ayurvedic folk medicine for relief from both acute and chronic inflammatory conditions. Numerous studies suggest that these herbs block COX-2 activity inhibiting PGE-2 production as well as inhibit the production of LTB-4 and Histamine. Cayenne Pepper contains a compound called capsaicin, which has also been shown to inhibit COX-2 activity. Capsaicin has also been documented to possess powerful antioxidant compounds, reduce platelet aggregation, and improve blood circulation and thus may play a secondary role in reducing inflammation. Boswellia is another herb that can help fight off chronic inflammation and pain. This herb focuses on inhibiting leukotriene production as well as working with our antibodies to attack foreign cells and bacteria. Boswellia was found to be effective in reducing the inflammation associated with rheumatoid arthritis in 50-60% of patients without the side effects or toxicity found with NSAID use. Finally, bioflavanoids and phenolics found in citrus fruit, garlic and grapes are plant based chemicals that hold great promise as COX-2 inhibitors as well as inhibitors of leukotrienes and histamine.

The only problem with using dietary modification and supplementation to regulate inflammatory processes in the body is that the relief it brings is not as fast as taking a synthetic pain reliever or anti-inflammatory. But the long-term prognosis is much better with no side effects and safe, effective relief from pain and inflammation.

Dr. Bernie Sengstock is a licensed Chiropractor in the State of New York with 300 hours of post-doctorate training in the field of rehabilitation. Clinical Nutrition is a large part of his practice located at Universal Health & Rehabilitation, 152 Islip Ave., Suite 23, Islip, New York, 11751. Please join our free workshop, Natural Alternatives to Pain Killers and Anti-Inflammatories, on September 13, 2000 @ 7:30 pm. Call (631) 277-6767 to reserve your seat.