

## **BOSWELLIA**

Boswellia has been used for centuries in Ayurvedic medicine, a herbal remedy that contains anti-inflammatory, anti-arthritis, and analgesic effects. It is the gum resin of Indian frankincense and is known as *Gaja-baksha* in Sanskrit and *Sallaki Guggul* in Ayurveda.

Today, *Boswellia serrata's* impact on everything from arthritis, stroke, heart disease, diabetes, Alzheimer's disease, to cancer has gotten the attention of the Western scientific community. In fact, we now know that it has a positive effect on at least six of the ten leading causes of morbidity (mentioned above), because the pathology of each of these diseases includes chronic, low-level inflammation – the very thing that Boswellia excels in reducing. Some studies suggest that it is also effective in the treatment of Chron's disease and ulcerative colitis. Other studies note its effectiveness for rheumatoid arthritis, osteoarthritis, pancreatic cancer, and bursitis.

Taken from the bark of the Boswellia tree in India (and also used in African cultures for healing), Boswellia is an herbal supplement that I have recommended for years to a great number of my patients as part of their individualized supplement therapy regimen. Even older patients report reduced symptoms from arthritic pain. While Boswellia sometimes (but rarely) has mild side effects like indigestion, heartburn, or skin rash, almost all of my patients tolerate it extremely well. Boswellia has a number of beneficial acids and terpenes, which have been documented in studies to be powerful inhibitors of pro-inflammatory signaling molecules. Its role in reducing inflammation, from my point of view, combined with the results for my own patients, is well established and efficacious, particularly for my cancer and diabetes patients.

### **What It Does**

As an anti-inflammatory, Boswellia works to calm inflammation. Inflammation, a natural body defense, works on speed, and chronic conditions like cancer, arthritis, or diabetes, become problematic when inflammation becomes chronic.

Boswellia can also be an effective painkiller and may event prevent cartilage loss.

Scientists, for instance, have identified a particular compound that reduces pain greatly, called AKBA (3-O-acetyl-11-keto-beta-boswellic acid). Boswellia does not have the damaging side effects that longterm use of NSAIDS prompts.

### **Other Uses**

Studies have also linked Boswellia's effectiveness in the treatment of ulcerative colitis, Crohn's disease, and collagenous colitis. All of these diseases rely on inflammation in the bowel lining due to excessive production of inflammatory markers called leukotrienes. Boswellia mediates these agents.

More evidence of Boswellia's healing properties – that also work at the genetic level, by the way – apply to cancer. Boswellia, particularly its acids called AKBA, are very effective in cancer treatment. Studies show that they shut down the major inflammatory complex NF-kappaB in tumor cells. This translates to early cell death and the regression of existing tumors. Breast cancer, cancer of the central nervous system, and pancreatic cancer are just three cancers where Boswellia can be an effective healing agent.

Likewise, Boswellia is effective in the treatment of cardiovascular inflammation. One study noted that Boswellia extract lowered total cholesterol in rodents by up to 48 percent. It has also been shown to reduce the size of atherosclerotic plaques by up to 50 percent.

Stroke and traumatic brain injury can also benefit from Boswellia, since inflammation increases after the event. In an animal model, Boswellic acids inhibited gene expression of inflammatory mediators. Other studies show a positive effect in degenerative changes in the hippocampus (a major memory processing center); thus, Boswellia can be a positive agent in the treatment of Alzheimer's.

### **Recommended Dosage**

The list for Boswellia's healing powers goes on – known for centuries where the tree grows, primarily in India, as well as the Middle East and Africa. And, as with the use of all supplements, it should be monitored by your healthcare professional. You should definitely check with your doctor before using any herbal supplements.

The recommended dosage is 300-400 mg three times per day for a product that contains 60 percent Boswellic acids (also recommended).

### **Possible Side Effects**

The primary reported side effects can include:

- Nausea
- Acid reflux
- Skin rashes
- Diarrhea

There have also been reported cases of increased menstrual flow since Boswellia stimulates blood flow in the uterus and pelvis. I do not recommend it for pregnant patients.

### **References:**

Causes of death, [www.cdc.gov/nchs/fastats/deaths.htm](http://www.cdc.gov/nchs/fastats/deaths.htm).

Arthritis Foundation, Indian Frankincense, [www.arthritis.org](http://www.arthritis.org)

Bianco, Julia, Boswellia new studies show effective pain Relief, *Life Extension* magazine.

Moncivaiz, Aaron, Boswellia (Indian Frnkincense), *Healthline*, Oct. 23, 2013.

Abdel-Tawab, M, et al., Boswellia serrata: an overall assessment of in vitro, preclinical, pharmacokinetic and clinical data. *Clin Pharmacokinet.* 2011 Jun; 50 (6):349-69.

Gerbeth, K., et al. In vitro metabolism, permeation, and brain availability of six major boswellic acids from Boswellia serra gum resins. *Fitoterapia.*2013. Jan; 84:99-106.

Banno, N., et al. Anti-inflammatory activities of the triterpene acids from the resin of Boswellia carteri. *J Ethnopharmacol.* 2006 Sep 19; 107(2):249-253.

Urban MK. COX-2 specific inhibitors offer improved advantages over traditional NSAIDS. *Orthopedics.* 2000 Jul; 23 (7 Suppl): S761-4.

Sengupta K., et al. A double blind, randomized, placebo controlled study of the efficacy and safety of 5-Loxin for treatment of osteoarthritis of the knee. *Arthritis Res Ther.* 2008; 10 (4): R85.

Madisch, A., et al. Boswellia serrata extract for the treatment of collagenous colitis. A double-blind, randomized, placebo-controlled, multicenter trial. *Int J Colorectal Dis.* 2007 Dec; 22 (12): 1445-51.

Takada, Y., et al. Acetyl-11-keto-beta-boswellic acid potentiates apoptosis, inhibits invasion and abolishes osteoclastogenesis by suppressing NF-kappa B and NF-kappa B-regulated gene expression. *J Immunol.* 2006 MAR 1: 176(5):3127-40.