

# Knee pains, back strains, and ankle sprains

By

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Over the past few months in our practice we have been using a product with truly remarkable results in helping athletes to recover dramatically from injuries as well as decrease stubborn chronic inflammation. No, not Motrin. Not Tylenol. Not prescription grade NSAIDS. It is actually a former “secret formula” of Charles Poliquin’s in which he would help his professional athletes recover more rapidly from injury. Now, available to the general public, the formula is known as Joint Task Force.

Back in the winter (2010) I tweaked my low back doing some strongman work the day after a stubborn fat sprint protocol workout (*definitely won’t do that again*). *The sore back going into the workout should have been a sign, but the fine line between stubbornness and stupidity was not very clear that day*. So over the next few months, each time I thought I was feeling better or ready to push, I would attempt to “relive my glory days”, and find myself set back yet again. Not a big fan of NSAIDS, I found myself occasionally taking an 800mg dosage as well as walking around with the portable STIM unit glued to my lower back.

While attending the Semi-Private hypertrophy boot camp (highly, highly recommend you do this) at Coach Poliquin’s Strength Institute in Rhode Island last spring, I failed to listen to my better half and use common sense during a lower body workout. Choosing to prove my testosterone levels were still in check, I did some heavy eccentric squats for the first time in 6 months. By the time I got to set 4, I realized this probably wasn’t the best idea, so yes, I stopped.

That night I was in some serious pain, and the next morning was about the same. When one of the practitioners at the internship measured my ASIS (anterior SI joint), my right was about an inch to an inch a half higher than the left. After a 10 minute soft tissue treatment by expert Holistic Kinesiologist Al Mursalin, I was feeling much better, and my right and left SI joints were completely even. The remarkable thing is Al treated my quad, calf, and piriformis!!!! ( *If you are looking for an expert in functional health, nutrition, supplement recommendations, all things strength and conditioning, and*

*especially pain management, I highly recommend contacting AL as he is truly one of the best I have met in my travels throughout the US, Europe, and Canada. His website is [www.movesfitness.ca](http://www.movesfitness.ca). One look at his education and experience says it all.)*

So, back on track with the pelvis now lined up, I was still dealing with some inflammation from the structural imbalance. After speaking with Coach Poliquin, I was on my way home with a container of Joint Task Force in hand. Since there are only 9 packets in the container, as it is an extremely fast acting product, I was instructed to take 1-2 packets between meals over the next 2-3 days. Miraculously, by Saturday, 2 days later, I was nearly 100%, with nearly zero pain. But don't take my experience alone as a reason to get this product, as I am going to share with you some of the real world experiences at APECS.

The popularity of this product at APECS in the summer of 2010, with a member of our strength coaching team accidentally spraining her ankle during a workout. After elevating and icing the ankle for about 20 minutes, she had to be assisted to her car and instructed to take the rest of the day off. On her way out the door I gave her a container of Joint Task Force that I had left over from my back injury. Recommending she take 1-2 packets between meals for the next 24 hours, she walked in the next afternoon as if nothing had happened. I asked her how she felt and she went and grabbed a jump rope and proceeded to do about 30 skips. Are you kidding me?? The craziest part is she then showed me the black and blue discoloration on her ankle, but said there was no pain.

So we then decided to teach many of the athletes in the APECS community about the product and our experiences. One of the athletes, whom had just come out of knee surgery, wanted to give it a try as the prescription anti-inflams weren't cutting it. She was tired of limping around in pain. Two weeks out of surgery she limped into APECS on a Thursday, wearing one of those bionic knee braces. Choosing to try the Joint Task Force and lay off the Tylenol and prescription Motrin for the next 2 days, she walked back into APECS bright and early Saturday morning with a big smile on her face and ....the knee brace held firmly in her right hand! What college student in their right mind walks into a gym at 9:00am on a Saturday morning? Well, one is now walking with little to no pain. Amazingly, the swelling was still there and the incision still pretty fresh, but she was able to walk around with little to no pain.

Next, the sprained ankles. It seems athletes and sprained ankles are synonymous. Over a period of 3 weeks we recommended 4 different athletes with chronic or acute ankle issues to try the Joint Task force. 2 of the athletes had chronic ankle problems, while 2 others had acute injuries. The 2 with chronic ankle issues were able to sprint or game-play for the first time in months with minimal to no ankle pain

afterward. Even more impressive was the acute ankle injuries. One of the female college soccer athletes was pretty much immobile and in PT for an ankle sprain when I bumped into her dad. He told me about the ankle and concern for being prepared for the upcoming soccer season. I sent him home with a container of Joint Task Force. That was on Saturday morning. Having a family emergency on the following Tuesday, I had to cancel my appointment with her. I called her dad on Wednesday to ask how the ankle was, and he informed me that she was playing in her first soccer game in almost a month. He also told me she ended up going for 2 running/sprint workouts, the previous 2 days, as her ankle was feeling that much better. The other acute ankle athlete had nearly identical results.

So what is Joint Task Force, and how/why does it work? Joint task force is a collection of premium grade proteolytic enzymes, herbal extracts, and essential minerals, each targeting soft tissue inflammation and/or minor joint pain and discomfort. The ingredients are:

- 200mg Vitamin C (as ascorbic acid)
- 50mg Calcium Lactate
- 100mg Magnesium Citrate
- 400mg Boswellia Gum Extract
- 300mg Turmeric Rhizome Extract
- 200mg Ginger Rhizome Extract
- 50mg Cayenne Pepper Fruit
- 200mg Lemon Bioflavonoid Complex
- 100mg Quercetin
- 12,000 USP units Chymotrypsin
- 12,000 USP units Trypsin
- 200mg Raw Pancreas Concentrate

- 267mg Bromelain
- 40mg Passion Flower 5:5:1 Extract
- 20mg Valerian Root Extract

***Also....***

#### InflaCare Plus

Other ingredients: Microcrystalline cellulose, cellulose, stearic acid, calcium silicate, silica, croscarmellose sodium, sodium starch glycolate, magnesium stearate, and coating (deionized water, microcrystalline cellulose, polyethylene glycol, and carrageenan).

#### Enzyme Complex

Ingredients: Microcrystalline cellulose, bromelain, pancreatin, stearic acid, trypsin-chymotrypsin (milk), croscarmellose sodium, silica, and enteric coating. Contains milk.

#### MyoNutrients

Other Ingredients: Microcrystalline cellulose, cellulose, croscarmellose sodium, stearic acid, silica, magnesium stearate, and coating (deionized water, microcrystalline cellulose, polyethylene glycol, and carrageenan).

Those with a good understanding of functional medicine and supplements will know that this list of ingredients leads to a heavy hitter with regards to fighting inflammation. Let's go over some of the ingredients:

### **Proteolytic Enzymes**

Proteolytic enzymes, otherwise known as proteases, are basically enzymes that break down proteins, attacking the peptide bonds that hold amino acids together. Some examples of these include bromelain (from pineapple), papain (from papaya), trypsin and chymotrypsin (also from pineapple), and the silk worm enzyme, otherwise known as Serratia Peptidase.

In 2004, Miller et al put together an excellent study on the effect proteolytic enzymes had on acute inflammation caused by running (go figure). In this double-blind, placebo controlled study the subjects

were given a seven enzyme mixture 4 times per day between 24 and 96 hours after their downhill running bout, or a placebo. The enzyme group “demonstrated superior recovery of contractile function and diminished effect of DOMS” compared with the group receiving the placebo. The researchers concluded that “protease supplementation may also facilitate muscle healing and allow for faster restoration of contractile function after intense exercise”.

A second study, this one done in 2007, set out to test the effectiveness of proteolytic enzymes on eccentric loading induced muscle soreness. Beck et al chose to utilize the gold standard double-blind, placebo controlled method of scientific research. The researchers found a much more rapid recovery from the workout as well as a decreased loss of strength immediately after the workout. So not only do proteolytic enzymes aid in fighting inflammation, but they may also prevent short term post workout strength losses.

In yet a third double blind, placebo controlled study, Donath et al set out in 1997 to test the effects of 400 to 800mg bromelain and trypsin given 4 times per day would have on the absorption of large protein molecules and plasma enzyme levels. The researchers found that the proteolytic enzymes effectively absorbed large protein molecules, theorizing this to be part of the effectiveness of these enzymes in fighting inflammation and bruising.

So, now that we have seen how and why they work, the main argument against proteolytic enzymes is that they cannot be taken orally because the stomach will break them down disallowing the bioavailability of such large molecules. Well, in 1996, Kolac et al tested this and found that proteolytic enzymes could in fact be absorbed when taken orally as reflected by their detection in blood plasma. Through their findings, the researchers suggested that these molecules crossed the intestinal barrier through a “self-enhanced paracellular diffusion” mechanism, allowing for their absorption, thus becoming more bioavailable to the patient.

1. Beck T, Housh T, Johnson G, Schmidt R, Housh D, Coburn J, Malek M, Mielke M. **Effects of a protease supplement on eccentric exercise induced markers of delayed onset muscle soreness and muscle damage.** *Journal of Strength and Conditioning Research.* 21(3); Pp 661-667. 2007.
2. Donath F, Mai I, Maurer A, Brockmoller J, Kuhn C, Friedrich G, Roots I. **Dose-related bioavailability of bromelain and trypsin after repeated oral administration.** *Am S Clin Pharmacol and Therap.* 61; Pp 157. 1997.

3. **Kolac C, Streichhan P, Lehr C. Oral bioavailability of proteolytic enzymes.** *European Journal of Pharmaceutics and Biopharmaceutics.* 42 (4); Pp 222-232. 1996.
4. Maurer H. **Bromelain: Biochemistry, pharmacology and medical use.** *Cell Mol Life Sci.* 58(3); Pp 1234=1245. 2001.
5. Miller P, Bailey S, Barnes M, Derr S, Hall E. **The effects of protease supplementation on skeletal muscle function and DOMS following downhill running.** *J Sports Sci.* 22\*4); Pp 365-372. 2004.

## **Boswellia Gum Extract**

Boswellia is an ancient Ayurvedic medicinal, used in the treatment of various conditions including asthma, depression, gastrointestinal disorders, and chronic inflammation. Particularly known for its effects on inflammation, Boswellia has attracted the attention of researchers to find out if these anti-inflammatory properties truly live up to their reputation as well as to learn what chemical properties “mediate” this response.

Boswellic acids may be the key ingredient. There are 3 types of boswellic acids, beta, keto-beta, and acetyl-keto boswellic acids. Talk about anti-inflammatory, these have actually been linked to the apoptosis of cancer cells. In 2006, a research paper entitled ***Boswellic Acids in Chronic Inflammatory Diseases*** provided an excellent scientific review of the effects and actions of boswellic acids on chronic inflammation. Through mechanisms including the inhibition of the 5-lipoxygenase enzyme as well as possible interleukin/TNF alpha (cytokines) signaling, ***these acids have been suggested to not only decrease the pain and inflammation associated with arthritis, asthma and other autoimmune diseases, but in proper dosages, they have also been shown to be much safer than their over the counter NSAID counterparts.***

In a double-blind, placebo controlled study back in 1998, Gupta et al set out to determine the effects boswellia gum had on 40 bronchial asthma patients. After six weeks, the researchers found significant improvements in 70% of the patients receiving the Boswellia gum treatment. These patients showed a decrease or complete disappearance of symptoms and number of asthma attacks, leading the researchers to conclude that Boswellia gum extract may be a potent weapon in the battle against asthma (and inflammation).

In a more recent study, Gayathri et al (2007) set out to determine if and how boswellia gum extract exhibits its anti-inflammatory properties. The researchers found a down regulation of pro-

inflammatory cytokines, signaling proteins used in communication between cells, leading to a decreased inflammatory response. In other words, the Boswellia gum extract led to a decrease in inflammation.

1. Ammon H. **Boswellic acids in chronic inflammatory disease.** *Planta Med.* 72(12); Pp 1100-1116. 2006.
2. Gayathri B, Manjula N, Vinaykumar K, Lakshmi B, Balakrishnan A. **Pure compound from Boswellia serrata extract exhibits anti-inflammatory property in human PBMCs and mouse macrophages through inhibition of TNFalpha, IL-1beta, NO and MAP kinases.** *Int Immunopharmacol.* 7(4); Pp 473-482. 2007.
3. Gupta I, Gupta V, Parihar A, Gupta S, Ludtke R, Safavhi H, Ammon H. **Effects of Boswellia Serrata gum resin in patients with bronchial asthma: results of a double-blind, placebo-controlled, 6 week clinical study.** *Eur J Med Res.* 3(11); Pp 511-514. 1998.

## **Turmeric Rhizome Extract**

Yes, the spice found in your cupboard. Who knew that this popular spice had such potent anti-inflammatory abilities? Particularly a compound known as curcumin, the primary ingredient in many Ayurvedic medicinal applications. Acting as a potent anti-oxidant, curcumin has been shown to be effective in the treatment of various illnesses including multiple forms of cancer, arthritis, Alzheimer's, and even bacterial infections such as Staph. An abundance of scientific research has shown curcumin to be effective in the treatment of chronic inflammation and the diseases associated with this inflammation.

For instance, a 2009 review by Jurenka on both clinical and preclinical research of the anti-inflammatory properties of curcumin provided valuable insight into the actions as well as effects of this "Indian Solid Gold". The researcher described the three types of curcuminoids (diferuloylmethane, demethoxycurcumin, and bisdemethoxycurcumin) and their effects as antioxidants as well as antimicrobials. From cancer to inflammation, Jurenka found the benefits of Curcumin to be far reaching, and suggested a need for more clinical testing of this valuable substance. A separate review by Aggarwal and Harikumar (2009) echoed very similar findings.

The researchers also discussed previous findings on the benefits of Curcumin on a multitude of physical disorders including cardiovascular, pulmonary, degenerative, and autoimmune diseases. They explain Curcumin's prominent role in the control and regulation of inflammation through transcription factors that are associated with inflammation (kinases, enzymes, and cytokines).

In their 2007 review on the benefits of Curcumin, Aggarwal et al once again explained the background and benefits of this "spice of life". The research team discusses studies in which Curcumin was used successfully in the treatment of not only inflammation, but its potential benefits against diabetes, degenerative disorders, and cancers. They concluded that Curcumin would be beneficial in a multi-faceted approach to the treatment of various physical disorders and ailments.

Curcumin's role in cancer treatment has attracted quite a bit of attention in the research community. A 2009 study by Ravindran et al explained how curcumin has the potential to actually induce cell apoptosis in cancer treatment. Through its regulation of various signaling pathways, including cell proliferation, tumor suppression, protein kinase action, and mitochondrial activity, the authors explain how Curcumin is actually able to modulate the growth of tumor cells. A 2002 study by Anto et al echoed similar findings.

1. Aggarwal B, Harikumar K. **Potential therapeutic effects of curcumin, the anti-inflammatory agent, against neurodegenerative, cardiovascular, pulmonary, metabolic, autoimmune and neoplastic diseases.** *Int J Biochem Cell Biol.* 41(1); Pp 40-59. 2009.
2. Aggarwal B, Sundaram C, Malani N, Ichikawa H. **Curcumin: the Indian solid gold.** *Adv Exp Med Biol.* 595; Pp 1-75. 2007.
3. Anto R, Mukhopadhyay A, Denning K, Aggarwal B. **Curcumin (diferuloylmethane) induces apoptosis through activation of caspase-8, BID cleavage and cytochrome c release: its suppression by ectopic expression of Bcl-2 and Bcl-xl.** *Carcinogenesis.* 23(1); Pp 143-150. 2002.
4. Jurenka J. **Anti-inflammatory properties of curcumin, a major constituent of Curcuma longa: a review of preclinical and clinical research.** *Altern Med Rev.* 14(2); Pp 141-153. 2009.
5. Ravindran J, Prasad S, Aggarwal B. **Curcumin and cancer cells: how many ways can curry kill tumor cells selectively?** *AAPS J.* 11(3); Pp 495-510. 2009.

## Ginger Rhizome Extract

Of the same plant family as turmeric, ginger has been used in the treatment of various illnesses including gastrointestinal issues, nausea, and fatigue. It has also shown potential in the treatment of elevated cholesterol and other risk factors for heart disease as well as diabetes. Of particular importance to this article is its ability to treat inflammation, as shown in studies on arthritis.

A 2001 study by Altman and Marcussen studied the effects ginger on knee pain in patients with osteoarthritis. 261 patients suffering from osteoarthritis were selected for this double blind, placebo-controlled study. Groups received either placebo or ginger extract. After 6 weeks, the group receiving ginger had a significantly significant greater reduction in knee pain than did the placebo group.

On a similar note, a recent 2010 study by Therkluson found anti-inflammatory benefits on the treatment of osteoarthritis with the use of ginger compresses. The researcher concluded that medical practitioners could use these compresses as adjunct treatment to alleviate the symptoms of arthritis.

In a third study by Shimoda et al (2010), the researchers studied the anti-inflammatory benefits and mechanisms of ginger. Through the ginger constituents gingerdiols, Shogaol, and proanthocyanidins, ginger has been shown to inhibit macrophage (white blood cells released as an immune response) activation, thus leading to an anti-inflammatory response.

1. Altman R, Marcussen K. **Effects of a ginger extract on knee pain in patients with osteoarthritis.** *Arthritis Rheum.* 44(11) Pp 2531-2538. 2001.
2. Shimoda H, Shan S, Tanaka J, Seki A, Seo J, Kasalima N, Tamura S, Ke Y, Murakami N. **Anti-inflammatory properties of red ginger (*Zingiber officinale* var. *Rubra*) extract and suppression of nitric oxide production by its constituents.** *J Med Food.* 13(1); Pp 156-162. 2010.
3. Therkluson T. **Ginger compress therapy for adults with osteoarthritis.** *J Adv Nurs.* 2010.

## Cayenne Pepper Fruit

Capsaicum. You have probably heard of it. It is the chemical found in chili peppers that elicits that burning sensation. Not only used for its fear factor dare qualities or joke shop candy entertainment,

this chemical found in peppers has been used in the treatment of such physical ailments including aches, pains, blood sugar regulation, psoriasis, diabetes, cancer, rheumatoid arthritis and fibromyalgia. For instance, did you know that Capsaicin is a key ingredient in an experimental drug used to treat osteoarthritis pain? The drug, Adlea is currently in clinical trials.

A study out of the 2004 Archives of Internal Medicine, revealed capsaicin as a novel treatment in the pain associated with knee osteoarthritis. As a matter of fact, over 40% of the patients interviewed preferred capsaicin as their treatment option, especially when cost was a major factor. Besides cost, other studies have studied the effectiveness of capsaicinoids as potential anti-inflammatory agents. In 2002, Sancho et al set out to study the immunosuppressive activities of these compounds. They found that the capsaicinoids “targeted specific pathways involved in inflammation” through a multitude of actions.

1. Fraenkel L, Bogardus S, Concato J, Wittink D. **Treatment options in knee osteoarthritis: the patient’s perspective.** *Arch Intern Med.* 164(12); Pp 1299-1304. 2004.
2. Sancho R, Lucena C, Macho A, Calzado M, Mlanco-Moline M, Minassi A, Appendino G, Munoz E. **Immunosuppressive activity of capsaicinoids: capsiate derived from sweet peppers inhibits NF-kappaB activation and is a potent anti-inflammatory compound in vivo.** *Eur J Immunol.* 32(6); Pp 1753-1763. 2002.

## Passionflower Extract

Passionflower has long been known as an herb used for its calming effects, particularly anxiety and nervousness. Containing a multitude of flavonoids including quercetin, luteolin, and apigenin, passionflower extract has shown promise as a sleep agent as well as a free radical scavenger. As a matter of fact, a 2008 study by Masteikova et al showed passionflower to have a very potent anti-radical effect. With this radical scavenging ability, a decrease in inflammation can be a desirable side effect.

1. Fragoso L, Esparza J, Burchiel S, Ruiz D, Torres E. **Risks and benefits of commonly used herbal medicines in Mexico.** *Toxicol Appl Pharmacol.* 227(1); Pp 125-135. 2008.
2. Masteikova R, Bernatoniene J, Bernatoniene R, Valziene S. **Antiradical activities of the extract of passiflora incarnate.** *Acta Pol Pharm.* 65(5); Pp 577-583. 2008.

Hopefully all of this scientific research has convinced you of the potential benefits of Joint Task Force as an anti-inflammatory agent. After all, if you are someone whom “needs” their 2 advils before you workout, or cannot go a day without your Motrin, why not try something that actually has potential in fixing the problem. Besides, the negative effects of increased liver cell activity and gut/stomach issues commonly associated with too much over the counter NSAIDs should be enough reason to give something provided by nature a try.

Enjoy, work, and.....Succeed!