Controlling Inflammation & Osteoarthritis

By Stephanie Colo Manning

Inflammation is a powerful component of osteoarthritis. By understanding more, we can see many opportunities for better control of both.

The Inflammatory Cascade

Inflammation is our friend; it allows immune system tools to easily travel to areas of injury, infection, etc., while immobilizing and creating pain for protection. In a sprained ankle, for example, stiffness, swelling, and warmth come from dilated blood vessels and increased blood flow carrying tools for healing, while liquids flush out the area. However, "When it becomes chronic or systemic, the inflammatory process itself becomes a disease," says Dr. Wendy Kohatsu in *Integrative Medicine*.

The initial triggers of osteoarthritis (OA) may come from "wear-and-tear" on the joints, injury, infection, obesity, poor nutrition, muscle weakness, or genetic predisposition. Importantly, these initial triggers then launch a self-amplifying inflammatory cascade of events, activating potent chemicals, enzymes, genes, and local cells for neutralizing threats and healing.

Normally, an inflammatory cascade should do its job and then subside. However, it can spin out of control when the immune system cannot finish its job, perhaps because it cannot escape continuous triggers or because it is weakened. This perpetuates feedback loops that leave us stuck in a chronic inflammatory state.

Osteoarthritis Develops

In OA, the majority of damage doesn't come from the initial triggers. The real damage comes from the ongoing inflammatory dust storm of chemicals and enzymes that follows, deteriorating our joint tissue faster than the aging body can repair it.

Cartilage surfaces, density, elasticity, shock absorption, and nourishment deteriorate. Cartilage sometimes calcifies or exposes bone. As bone repairs itself, its stiffer replacement tissue develops microfractures and calluses, forming bone spurs. Cysts grow to equalize pressure.

This inflammatory dust storm also affects ligaments, tendons, muscles, synovium, nerves, and bursa. Joint pain may stem from any of these areas. We may also experience stiffness, instability, mobility loss, swelling, and deformation. OA mainly affects the hips, knees, hands, neck, and lower back.

Eighty percent of people over age 50 show significant OA in x-rays, and sixty percent experience symptoms, according to the *Textbook of Natural Medicine*. Women suffer earlier and more severely.

Common OA Treatments

Medications may or may not mute the symptoms. Unfortunately, they often accelerate OA and can lead to further pain, joint destruction, weakness, toxicity, constipation, and increased risk for surgery and addiction.

Ibuprofen and other NSAIDs unfortunately promote ulcers and gastrointestinal bleeding, may damage stomach and intestinal walls, and can lead to kidney and other problems. In the U.S., 7600 deaths and 76,000 hospitalizations are attributed to NSAIDs annually.

Reducing General Inflammation Naturally

The keys to addressing chronic inflammation are to correct its top five triggers while breaking the feedback loops perpetuating it:

- **Correcting poor nutrition.** The Standard American Diet breeds inflammation and fuels these feedback loops, with its processed food, gluten, dairy, corn, soy, sugars, excessive meat, refined carbs, and wrong fats. Conversely, an anti-inflammatory Mediterranean-type diet reduces inflammatory triggers and breaks feedback loops by supporting the gut, liver and immune systems, promoting healthy weight, and supplying nutrient-density for repairs. An anti-inflammatory diet also improves the ratio of omega-6 to omega-3 fats (the ideal ratio is 2:1, but the Standard American Diet is closer to 10:1 or even 25:1). Excessive omega-6's (in packaged foods, bakery items, common cooking/frying oils) feed the pathway that generates potent inflammatory chemicals. Beneficial omega-3's (fish, fish oil, walnuts, flaxseeds) actually suppress these inflammatory chemicals.

- **Correcting food sensitivities.** Food sensitivities also trigger inflammation and perpetuate feedback loops. Sometimes even healthy foods can be problematic. Testing or structured elimination diets can reveal food sensitivities. Diet, lifestyle, and supplements can help.

- **Correcting GI infections.** GI infections trigger and perpetuate inflammation. These can be identified via testing and resolved naturally.

- **Correcting chronic stress.** HPA axis dysfunction triggers and perpetuates inflammation, as discussed in *Stress and the Mind-Body-Spirit* (*Reflections*, Winter 2018). *Three Stress Coping Techniques* (*Reflections*, Fall 2018) offers effective ways to manage stress. Sleep is vital as well.

- **Correcting obesity.** Insulin resistance and chemicals released by fat cells trigger and perpetuate inflammation. A 10% weight loss in obese/overweight people with OA can lead to a 28% improvement in function. See *A Calorie Isn't a Calorie* (*Reflections*, Spring 2017).

- **Targeted supplements.** General inflammation and feedback loops can be further reduced with fish oil, resveratrol and turmeric combined, ginger, antioxidants, and/or supplements supporting the immune system, liver, gut, GI infections, HPA-axis, and/or weight loss.

Supporting OA Symptoms Naturally

Many natural approaches to supporting OA have been researched for safety and effectiveness and shown to be as/more effective than NSAIDs and pain medications. Work with your healthcare provider and do your own research, as some of these options may not be right for you:

- **Reducing OA inflammation**. Fish oil, cetylated fatty acids, glucosamine and chondroitin, Avocado/Soybean Unsaponifiables (ASUs), s-adenosylmethionine (SAMe), boswellia, and/or niacinamide can improve range of motion and/or suppress inflammatory chemicals.

- **Rebuilding cartilage.** With enough synovial fluid and cartilage remaining in the joint, regeneration is fueled by collagen, glucosamine, chondroitin, and hyaluronic acid (in broths and supplements), vitamin C, ASUs, and SAMe with vitamin B12 and folate. Gentle physical movement provides the compression/decompression needed for stimulating joint repair. Dr. Carolyn Dolan explains, "Utilizing a joint's full range of motion

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regularly is vital for the distribution of joint-building nutrients and lubricants so the body can use them. Movement also prevents empty spaces from filling with inflammatory cells, aids drainage, minimizes swelling, and flushes out debris." Avoid exercising acutely inflamed/swollen joints.

- **Reducing pain.** Glucosamine, chondroitin, vitamin D, probiotics, ASUs, SAMe, Lyprinol, devil's claw, rosehip powder, Swedish massage, and acupuncture can relieve pain. Moist heat can relax muscles and raise pain thresholds. Cold packs after exercise can relieve muscle aching.

- **Slowing progression.** Omega-3s, ASUs, glucosamine, chondroitin, vitamin C combined with vitamin E, vitamin D, selenium, and/or green tea extracts may slow OA progression by decreasing inflammatory chemicals/enzymes, preventing free radical damage, and correcting nutrient deficiencies. Vitamins A, B6, K, zinc, copper, and boron are also important.

- **Reducing medication side effects.** Upon NSAID damage, the GI lining can be supported with aloe, deglycyrrhizinated licorice, marshmallow root, slippery elm, mastic gum, mullein, okra, and/or comfrey. Probiotics, L-glutamine, digestive enzymes, and gut healing protocols can support leaky gut.

- **Improving joint function/alignment.** Basic measures include proper shoes, posture and gait, and avoiding carrying excessive weight. Gentle exercise, stretching, and weight-lifting strengthens muscles to stabilize joints.

- **Psychology of pain.** Stress and unresolved emotions can activate subconscious protection mechanisms that produce pain. Therapeutic writing, meditations, coping methods, and fostering self-love and self-kindness can help.

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