

[IMAGE]

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Inflammation and Motion

By Mark A. King, DC

One of the important benefits of the chiropractic adjustment is the introduction of motion into a region where a progressive immobility has developed secondary to acute or repetitive injury. Inflammation is a natural consequence following injury. The inflammatory response, which is the body's initial attempt at healing, can become the culprit in perpetuating future pain and disability if left unchecked, as this leads to random scar tissue formation and fibrosis.

I was recently asked a question at one of my seminar classes: "Why would we want to adjust an area that was inflamed and painful, as this might be the body's way of protecting itself?" Based on that question I realized that an understanding of the purpose, process, and results of the inflammatory response, which can then guide us as to our rationale for treatment, is essential.

It has been proposed that in the course of man's evolution the major enemy has been infection. As there were not any available effective treatments for infection, the body's response was inflammation. The body would try to wall off the infection by laying down fibrotic tissue around the area. This would prevent the infection from spreading throughout the body; often it worked very well. This process is fine for infectious processes, however it creates additional problems with soft tissue injuries.

Although there are some similarities with respect to inflammation, secondary to soft tissue injuries, it is when the inflammation is left unchecked or treated improperly that chronic problems will develop. In the acute stage, inflammation is mediated by several chemical substances with the goal being to control initial damage and remove local irritants in preparation for tissue repair. During this period, temporary immobilization, random scar formation, and continued nociceptive input become counter productive to sustained healing. In the absence of motion, soft tissues will heal with an inferior grade of tissue. The harmful effects we have come to see with treatments consisting of prolonged immobilization can be at least partially avoided. Movement helps to allow the cells to line up along the normal directions of stress as the tissue heals. Because connective tissue heals by proliferation of neighboring fibroblasts, scar tissue is the normal result. This tissue is usually less elastic, weaker, and more prone toward exacerbations with use or

stress resulting in future chronic pain and disability. Immobilization prevents the formation of strong scar tissue in the important direction by avoiding the strains leading to proper orientation of the fibrous tissue.

Poor healing leads to altered biomechanics that result in aberrant neural reflexes, sclerotomal, or myofascial pain syndromes forming the vicious cycle that we are well aware of and see in our offices. Additionally, areas adjacent to the restricted segment may become hypermobile due to a compensatory reaction which can result in additional degenerative changes of the disc and facets. Scar tissues in muscle can result in a phenomena of super sensitivity, a result of the excess proliferation of nerve fibers around the region of the scar.

By adjusting the proper joints, both spinal and appendicular, at the appropriate time, several beneficial results occur. Adhesions and scar tissue formation will be minimized, and if it does form it will be along the normal lines of stress. Nociceptive input will be reduced and the mechanoreceptors stimulated. A relaxation of hypertonic muscles will occur due to both the elimination of nociceptive signals and the reflexogenic effect exerted on gamma motor neurons. Excessive sympathetic tone will be minimized leading to improved muscular circulation and a beneficial effect on myofascial syndromes. Also nociceptive input is reduced so the continual afferent bombardment of the spinal cord is reduced, lessening the central excitatory state. Continued afferent nociceptive activity has been shown to cause a lowered threshold for pain expression and activation of adjacent segmental levels. It also plays a role in the spinal cord adaptive mechanism that could be a factor in chronic pain syndromes.

There are those of you who have had the unfortunate experience of an inadequate independent medical examination (IME), where the physician consultant states that the injured tissues are healed. This may be true in the medical sense of the word, however, this tissue is often maladapted from a functional standpoint. Obviously the IME consultants sometimes do not understand this.

Assuming there are no life threatening situations or unstable conditions, the best time for a patient to be in the chiropractor's office is immediately after the initial injury. We can treat the patient with conservative care, help reduce dependence on medications and make it more likely that the tissues will heal with good functional repair. You may not be able to adjust the patient the first day they are injured because of muscle guarding and the patient's fear, however you can begin to reduce the inflammation with something as simple as ice packs.

The information discussed in this article is based on the teachings of doctors Daniel Murphy, Arthur Croft, Ronald Fudala, David Seaman, Barry Wycke, James Cyriax, Nikolai Bogduk, and past and present MPI instructors. In the Motion Palpation Institute classes we discuss several of the possible cause of joint dysfunction, including the inflammatory response. An example we often use is the long distance runner who has a mild, chronic inflammation of the foot that is left uncorrected and leads to fibrotic repair and subsequent joint dysfunction in the foot, knee, hips, and spine.

More is written each year about the role of inflammation, fibrosis, and the benefits of chiropractic adjustments for these problems. We will continue to try to incorporate the new information into our lecture series. We will also continue to teach hands on analysis and adjustment procedures.

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Editor's Note: Dr. King will be conducting his next Extremities 1 (E1) seminar October 22-23 in Bloomington, Minnesota. Please call 1-800-359-2289 to register.

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