

## Elbow Tendinosis -- Friction Massage

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Tennis elbow is more likely a tendinosis than a tendinitis. A lateral tennis elbow should be called epidondylosis. If we wanted to be even more correct, since the epicondyle is not inflamed, the word epicondyle should be omitted. Nirschl<sup>1</sup> refers to epidondylitis as "lateral or medial tennis elbow tendinosis."

In my last article in Dynamic Chiropractic, November 6, 1992, it was stated that research had shown that in order for a tendinitis to occur, it was necessary that blood vessels be disrupted as in a tear of a tendon or ligament. It was stated that in the so-called tendinitis of many shoulder and elbow conditions there were rarely any polymorphonuclear cells or lymphocytes found. The inflammatory process usually described with the typical tendinitis has been based on the model of the inflammatory process that occurs with an open wound.

But when the injury to a shoulder, elbow, patellar or achilles tendon is due to a non-traumatic, chronic overuse causation, the typical inflammatory process that occurs in an open wound does not occur. Instead, a non-inflammatory intratendinous collagen degeneration occurs at the bone-tendon or muscle-tendon location. What occurs is an edematous, friable tissue called "angiofibroblastic tendinosis."<sup>1</sup> Nirschl states that in advanced lesions, chronic inflammatory cells may appear in the supporting fibroadipose, connective, and even skeletal muscle tissues and tendon which represent new or organizing granulation tissue and fibrous scar tissue.<sup>2</sup> In other words, different from the usually described inflammatory lesion, fibrosis or scar tissue may occur only in the very advanced stage and not be the principle pathology of the overuse chronic degenerative tendon lesion.

The main theory as to why friction massage works in tendons has been based on its effect on scar tissue. While this may still be a rationale for friction massage, it is apparent that the other theories as to why friction on tendons and muscles works may be more pertinent. Cyriax's concept of friction was based on traumatic hyperemia which results in the reduction of edema in chronically irritated tissue and the freeing of adhesions both present and potential.<sup>3</sup> Clearly friction is in some way affecting angiofibroblastic tissue in a way not related to breaking down adhesions. This may explain why some patients get well even though friction may have been applied in a circular direction than exactly across the fibers.

Although clinically, while I have found that frictioning at a right angle to the fibers is definitely more potent, frictioning a chronic bursa does not have to be done at any particular angle. Obviously, there is still much more to know as to why friction is so effective on chronic soft tissue lesions. One possibility may be related to similarities as to why therapeutic exercise is beneficial for sports-induced inflammation and injury. Exercise (friction) produces a load which causes collagen fibers to transmit physical signals "inducing changes in cellular metabolism and synthesis of proteoglycans and matrix."<sup>4</sup>

Dr. Nirchl<sup>1</sup> who has operated on over 750 cases of elbow tendinosis has located the primary and

secondary pathologic areas involved on both the medial and lateral elbow. These locations are of extreme value as to where friction will be most effective.

For lateral tendinosis, the primary area is the extensor carpi radialis brevis. He states that the "pathologic tissue often encompasses the entire origin of the extensor brevis to the level of the radial head. In approximately 35 percent of cases, pathologic change will be noticed in the anterior underside of the extensor aponeurosis." The most common area to friction is at the brevis origin at the anterior ridge of the epicondyle which is just distal to the epicondyle. The secondary area is the extensor digitorum communis as it comes off the common extensor tendon from the lateral epicondyle.

For medial tendinosis, the primary areas are the pronator teres, flexor carpi radialis, and palmaris longus close to the attachment of the medial epicondyle. Note that the pronator teres is the most proximal of the tendons going from medial to lateral from the epicondyle in almost a right angle. If this area is the most tender, it is important to friction across the fibers which would be in a direction up towards the humerus or axillary area. The secondary area is the flexor carpi ulnaris which would require a more medial than vertical friction angle.

### *References*

1. Nirschl R: Elbow tendinosis/tennis elbow. Clin in Sports Med, 11:851-870, 1992.
2. Nirschl R: Patterns of failed healing in tendon injury. In Leadbetter WB, Buckwalter JA, Gordon SL (eds): Sports Induced Inflammation. Park Ridge, IL, AAOS, 1990.
3. Cyriax J: Textbook of Orthopedic Medicine, Vol II. London, Bailliere Tindall, 8:1984.
4. American Academy of Orthopedic Surgeons. Athletic Training and Sports Medicine, Ill, AAOS, 113:1991.

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Editor's Note:

Dr. Hammer will conduct his next soft tissue seminar on March 13-14, 1993, in Raleigh, North Carolina. You may call 1-800-359-2289.

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DECEMBER 1992