NON-SURGICAL TENDON, LIGAMENT AND JOINT RECONSTRUCTION

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In acute injuries, the ligaments and tendons become torn. Ligaments function to limit the range of motion that bones can move between each other, and function to stabilize joints and hold the joint together. Tendons function to attach a muscle to bone in order to provide motion. Discs and cartilage serve to absorb shock and keep the bones from rubbing against one another. If the ligaments become torn or over-stretched the joint becomes unstable and resultant friction causes the discs or cartilage to become worn down causing a loss of height. The disc and cartilage may also become worn away by repeated motion. This loss of height causes further ligament laxity and thus more instability. The friction of the joint is a stress. Bones respond to stress by making more bone. This results in bone spurring which is the body's attempt to splint or stabilize the unstable joint. Degenerative disease is merely the body's attempt to stabilize joints as the tendons and ligaments have not been able to heal because of lack of blood supply. If a patient has considerable degenerative arthritis, the loss of disc or cartilage height causes a laxity of the supporting ligaments. This causes joint instability. Reconstruction has been shown to be effective in these conditions, causing the lax ligaments to become strengthened, thus stabilizing the joint and allowing for increased function and endurance.

Reconstruction therapy (also known as sclerotherapy and proliferative) is given by a slender needle similar to the hairline needles of the acupuncturist, into the fibro-osseous junction. This is the area where the tendon or ligament attaches to the bone. The substance used is sodium morrhuate which comes from cod liver fish oil and a local anesthetic. Repeated studies at the University of Iowa have shown that areas injected have increased in size by 35% to 40%, thus causing permanent strengthening.

Therapy Benefits

Each treatment session results in more and more tissue being laid down in the needed areas. As a result, the joints continue to become stronger. The patient notes more endurance, they can do more activities, as well as activities they couldn't do before. The main side effect of the treatment is less pain as a result of the joint being stabilized. Also, snapping, clicking, and popping sounds go away or decrease. The patients can usually feel the joint becoming stronger with each treatment they receive.

In Dr. George S. Hackett's monograph *Ligament and Tendon Relation Treated by Prolotherapy*, illustrations #5 and #6 show normal rabbit tendons which have been injected three times each. The tendon on the right has been given a proliferative solution. The left tendons have been given placebo injections. Hackett found that the tendons injected with the proliferative solutions were 35% to 40% larger in diameter and weight compared to the control injected left tendon. In his monograph and article in the *Journal of the American Medical Association*, Hackett states that 1600 patients with severe sacroiliac sprain were treated with reconstructive injections. They were examined by independent physicians 2 to 12

years after treatment was completed and 82% remained free of pain or recurrences.

Double-blind Study Demonstrates Reconstruction Success

In a study at the Sansum Medical Clinic of Santa Barbara, California led by Robert Klein, M.D., a rheumatologist, and Thomas Dorman, M.D., an internist, they conducted the most difficult task of a double-blind study in the most difficult cases of continuous low back pain patients who suffered for ten years or longer. They divided 81 patients who had surgery, medications, manipulations adjustments, exercise, physical therapy and other treatments which failed to provide adequate relief for 10 or more years.

One group was given manipulation and a reconstructive solution of dextrose, glycerine and phenol. The other group was given sham manipulations and normal saline injections. Great care was taken to insure that neither the patient nor the physicians knew which solution was injected. Both groups were given a total of six treatments. It was found that 88% of the group injected with the reconstructive solution had moderate to marked improvement. They reported their findings in the prestigious British medical journal, *The Lancet* on July 18, 1987.

40% More Strength and Endurance Proven Possible

Harold Walmer, D.O. of Elizabethtown, Pennsylvania has performed reconstructive therapy since 1952. He became interested in the marked increase of the white areas of the X-rayed tendons of Dr. Hackett. He spearheaded the research which further explored the question of increased strength caused by reconstruction therapy. At the University of Iowa Department of Orthopedic Research, medial rabbit knee ligaments were injected with sodium morrhuate 5% three times. Sodium morrhuate is an FDA approved substance purified from distilled cod liver fish oil. The control ligaments were injected three times with normal saline solution. The ligaments were then mechanically pulled from the bone and the force required was recorded. It was found that mechanical strength of the morrhuate injected ligaments was some 25% to 40% over the normal ligament. Dr. Walmer states that this is consistent with the clinical results he and other skilled reconstruction therapists have noted for many years. Dr. Walmer feels that it is this 35% to 40% increased structure as well as mechanical strength over normal, that makes the therapy so exciting and dramatic in the results frequently obtained. He postulates that the above observations may explain the fact that numerous patients with severe conditions of long-term advanced degeneration of bones, discs, cartilage, joints, tendons, ligaments, failed surgery, compression fractures, polio, muscular dystrophy and other advanced musculoskeletal problems have been seen to have dramatically improved strength and endurance, allowing them to literally throw away wheelchairs, walkers, crutches, braces and other aids. Dr. Walmer is pursuing grant money for another university study to measure before and after strength of severely degenerated joints. He feels that people in wheelchairs and other severely weakened joint conditions may leave the patient with only 20% of the normal strength. Since reconstruction therapy has been shown to increase size and strength by 35 to 40% over normal, he speculates that increases of over 100% may be possible. Dr. Walmer feels that grant research funds would be well-spent in these times of increased medical and surgical costs, for more studies on this life-restoring biological therapy. The therapy is estimated to be 3 to ten times more

cost effective than joint surgery, joint replacement or spinal surgery. Studies need to be done so that costs and rewards of the treatment can be evaluated. James Carlson, D.O., Knoxville, Tennessee, orthopedic medicine and sports medicine specialist and past president of the American Association of Orthopaedic Medicine, states that any pain or discomfort associated with receiving multiple injections is made up for ten-fold in benefits received from the therapy.

Kent Pomeroy, M.D. of Scottsdale, Arizona, a rehabilitation specialist and president of the American Association of Orthopaedic Medicine, says dramatic results should be noted by the patient within the first week after the injections, provided no severe swelling is present. If swelling occurs after the treatment, the patient needs to wait until the swelling subsides before they can note improved strength and endurance. If marked improvement is not obtained after the first few treatments, then further laboratory examination is recommended to find why the patient cannot reconstruct tissue.

How New Tissue is Made

Biology has very few laws but one is the Arndt-Schultz Law. It states that small stimuli are stimulating; Large stimuli tend to inhibit. For example, a little electrical current stimulates circulation and healing. A large electrical stimulation causes decreased circulation and cell death. Mild irritating reconstructive solutions cause dilation of blood vessels and a migration of fibroblasts (healing cells) to the injured areas.

The fibroblasts then lay down collagen which is structural protein to repair the area. The University of Iowa and Dr. Hackett's research substantiate this re-growth.

The Results of Reconstructive Therapy are Permanent

Rodney Chase, D.O. of Bethlehem, Pennsylvania, a joint reconstruction therapist for over 30 years, has stated that because new tissue is created, the results must be considered permanent. He further advises that patients with loss of disc, cartilage, bone anatomy from surgery, fractures or degenerative disease, and those with severe scoliosis receive periodic treatments after they reach their maximum level of improvement. Dr. Chase explains that with loss of structures, structural height or deformities, these patients have been helped significantly but need periodic treatment to maintain their optimal level of strength and function.

Contraindications and Side Effects

John Sessions, D.O., a reconstruction therapist and biological practitioner from Kirbyville, Texas, finds that the main side effect is less pain. This sometimes makes people think that they are cured and they overuse the treated body part. Dr. Sessions reminds them that reconstruction therapy is a natural process like growing grass from seed. "You don't play baseball on new grass. You let it grow up to its maximum growth, then you can play ball on it."

William Kubitschek, D.O. of San Marcos, California states that a contraindication to the therapy is getting the therapy from a physician who has not specifically trained in reconstructive therapy. Further, Dr. Kubitschek, in speaking as Director of the

Board and founding Director of the American Association of Orthopaedic Medicine, states that "reconstructive therapists should know how to use various solutions in all the anatomical areas of the body if they are D.O.'s or M.D.'s. Dentists and podiatrists who use the therapy have been specifically trained in reconstruction therapy. Those not specifically trained in performing reconstruction therapy are simply not qualified to comment on its indications and use of this specialized therapy." The main side-effect of the therapy is less pain. The main effects are reconstruction and increased strength. It is not uncommon for joints to swell after injection. This may last a few days to a week or longer. The treating reconstructive therapists should be contacted for any problems and follow-up. Refer to chapter 5 and other pages of *Pain, Pain Go Away* for further discussion.