

Muscle Strains Revisited

As more of the population becomes dissatisfied with medical treatment for ligament sprains and muscle strains, it is of paramount importance to revisit and solidify your expertise in these areas. It is not necessary to be a sports injury guru to understand the fundamentals of these injuries. The overwhelming majority of my patients that experience muscle strains are not sports enthusiasts or practitioners. They are the average person who may or may not be physically active, and who may or may not be actively taking charge of their own health through proper exercise and nutrition.

Whether muscle injuries are the result of sports activities or doing household chores, no group is more equipped to handle these types of injuries than chiropractors. Why? Because we not only deal with the soft tissue problems that accompany muscle strains, as do physical therapists, but we go one very important step further. We address potential joint misalignments, especially in the spine, which result from the initial trauma, or from the residual compensations due to muscle imbalance.

Let's take a moment to review some of the basics as they relate to the muscle strain environment. We should be aware that muscle injuries may occur at different parts of the muscle structure.

1. Muscles may tear within the muscle belly.
2. Muscles may tear at the musculotendinous junction.
3. The muscle may tear away from its origin.
4. The muscle may tear away from its insertion.

Muscle strains/tears are graded according to the degree of muscle fibers involved.

Grade I: overstretching of a few muscle fibers with less than 10 percent actual fibers tearing. No palpable defect in the muscle.

Grade II: a partial tear of the muscle fibers usually between 10 and 50 percent of the fibers. A definite palpable defect in the muscle belly.

Grade III: an extensive tear or complete rupture of the muscle fibers. From 50 to 100 percent destruction. Very large palpable depression in the muscle. The muscle may be torn away completely. There is no possibility of normal contraction.

Predisposing Factors to Muscle Strains

- a muscle that has been previously injured and has neither properly nor completely rehabilitated;
- using a muscle that has been previously injured and healed with contracted scar tissue, thus not permitting normal muscle excursion; a sudden force can reinjure the scar tissue and recreate the symptoms of a muscle strain;
- unusual tightness within a muscle group that does not permit normal excursion in the muscle-tendon unit;

- improper or incomplete stretching and warming up prior to exercise or competition;
- overexertion;
- overexposure to cold temperatures for extended periods of time.

Treatment

Phase 1 immobilizes the muscle strain and uses RICE for 24-72 hours.

Phase 2 assures maximum, normal lengthening and contracting of the muscle. Grade I or mild Grade II strains may take as little as a few days. Grade III strains could require from 10 days up to many weeks for complete recovery. Start with limited ROM exercises. For severe strains, ROM exercises may be started in water (i.e., aquatherapy for strengthening and rehab).

Phase 3 begins after normal excursion returns. Progressive resistance exercises are started. At times, it is ideal to begin with machine type exercises rather than free weights and cables.

Phase 4 brings return to the types of activities used in the particular sport or activity in which these muscles were disrupted. Do this phase slowly.

Phase 5 is reconditioning for the particular sport or activity. In the conditioning phase, it is important, as always, to include plenty of stretching and strengthening exercises.

Heat and Cold

In general, patients should use whichever of the two gives them the most relief. Cold application leads to vasoconstriction and is recommended in acute injury. Heat is often more beneficial in muscular pain and may help in muscle relaxation. The contrast between cold and heat therapy is a technique that sometimes gives more relief than either modality used alone.

Moist heat seems to have a better effect than dry heat. Local application of heat is contraindicated in patients with decreased sensation or circulatory impairment. It is also contraindicated over areas of malignancy and not advisable in acute injury. Usual application is about 20 minutes, not more than 30 minutes.

Cold (ice in most cases) should not be used for more than 15-20 minutes per session with an hour break between sessions. In acute injuries such as sprains, ice packs can be applied for the first 24-72 hours. In muscular pain such as in the neck or back, contrast therapy often feels good. The use of cryotherapy (cold) is contraindicated over areas of decreased sensation or vascular compromise. It is also not advisable for patients with vasculitis or open wounds.

I would like to point out that some of this information is paraphrased from books that have been written over 15 years ago. It is just like an old saying: "The more things change, the more things stay the same."

References

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3. Michael J. Leone, BA, BS, MBA, DC. Strength coach, fitness trainer and nutrition consultant.

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