

EARL'S PEARLS

Old saws and new lights on soft-tissue injuries

BY EARL SHOWERMAN, M.D.

Soft tissue injuries can include contusions, or deep bruises, muscular strains and joint ligament sprains. Tendonitis is another common soft tissue injury, most often caused by repeated micro trauma. All these types of injuries can be quite painful if not incapacitating. The good news is they all usually respond remarkably well to the standard modalities of treatment, which have been used for millennia, dating back to the time of Hippocrates. The modern acronym for this ancient clinical wisdom is **RICE**: Rest, Ice, Compression and Elevation. Appropriate management using these principles far outweigh the benefit of taking pain medications, which has never been shown to speed healing.

R—Resting the injured area until the pain and swelling are better is perhaps the most important component of treatment, and often the most neglected. While most minor soft tissue injuries will be much better after three days of limited activity, more serious sprains or strains may take weeks or months to heal and regain the full integrity of the affected joint or muscle. For instance, hobbling around on a seriously sprained ankle is a very bad idea precisely because it increases pain, swelling, and tissue damage, while preventing the connective tissue the opportunity to heal. Because connective tissue heals very slowly, a badly sprained ankle may take up to a year to rehabilitate fully.

I—Ice packs applied every few hours for two to three days is highly effective in reducing pain, swelling, and further bleeding into injured tissues. Pain relief from cold applications is probably due to a “counter-irritant” effect because at first the pain increases with the cold pack, then it becomes slightly numb. The best way to apply cold treatments is with a plastic bag of crushed ice or a frozen pack. Chemical cold packs are a waste of money because they keep their cool for just a few minutes. Cover your skin with a dry towel, apply the ice pack and wrap the pack in place with an elastic bandage to create a little compression, and repeat for 30 minutes every two to three hours. Ice packs should be avoided, however, if you have chronic circulation problems.

C—Compression helps reduce swelling and restrict motion. An appropriately sized elastic bandage wrapped snugly around the injured area counters the progression of swelling and thus reduces pain and hastens early recovery. However, elastic wraps do not stabilize severe joint injuries or provide mechanical protection. For this, a brace or rigid splint is much more effective.

E—Elevation is another means of reducing pain and swelling. Keeping the injured part at or above the level of the heart is the optimal position, since this promotes venous and lymphatic drainage away from the injured site.

Using these techniques for just two to three days can significantly change the progression and duration of soft tissue injuries, although significant joint sprains are often worse after the first few hours as the swelling develops. Medicine to reduce pain and inflammation such as acetaminophen or ibuprofen can be very useful, especially at night

when pain symptoms keep you awake. Plaster or fiberglass splints may be needed for several weeks after a serious sprain or strain. These devices are designed to protect the joint from further injury until it has healed enough to be stable under stress. Rehabilitation exercises generally speed the recovery of joint stability through range of motion and muscle strengthening exercises.

Immediate medical attention is recommended, however, if there is any deformity of the area, or if you are unable to move the joint or bear weight immediately after the injury. Surgery may even be needed if there is evidence of severe disruption of a joint. Immediate medical attention also is needed if the area becomes numb, cold, blue, or more painful, or if there are signs of infection such as increased redness, swelling, and heat.

Until recently, I have thought these well-worn physical techniques with appropriate rehabilitation were about it when it came to treating soft tissue problems. Then I was introduced to the benefits of low-level laser light therapy (LLLT) and found it to be remarkably effective in a very short time for several different kinds of shoulder joint problems.

That LLLT is potentially effective in a wide variety of both medical and dental problems has been suggested by recent case studies and review articles reported in peer-reviewed professional journals from around the world. Although many of the early studies suffered

from poor design and inadequate controls, LLLT appears to be safe and effective in treating arthritic and injured joints, spine problems, carpal tunnel syndrome, various dental problems, including gingivitis, herpes infections and TMJ, and as an adjunct to wound healing.

The theory behind LLLT is that the pulsed laser light energy is “biostimulative,” that there are cellular photoreceptors that absorb the light energy, which increases the levels of ATP, the cellular fuel that aids repair of damaged tissue by fibroblast cells. The beneficial effects reported include enhanced synthesis of endorphins and reduced pain, as well as reduced inflammation and swelling. An article in the *Journal of Rheumatology* on the management of neck disorders in 2007 found a course of LLLT to be as effective as or better than all other conservative management strategies.

While LLLT has yet to be broadly embraced by medical practitioners in the U.S., in 2002 it was approved by the FDA for pain management and has gained a following in certain areas of medicine, including sports medicine. Articles in this year's October issues of *National Geographic Adventure* and *Life Extension* magazines promoted the benefits of LLLT for a variety of problems.

All this I would come to understand personally after embarking on a round of LLLT therapy last year for chronic rotator cuff tendonitis of my right shoulder that had been a problem for about three years. Following just two to three treatments of 30 to 40 minutes each, my shoulder felt better than it had for some time. After completing the five-week ten-treatment course, my shoulder had recovered

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close to 95% of its function and was virtually pain free. Later in the year, I injured my left shoulder, landing on it when I fell off my mountain bike. After a week of fairly severe pain, only partially relieved by using a sling, ice packs and daily ibuprofen, I returned to the clinic for more LLLT, and after just six treatments over three weeks had close to 100% recovery. Finally, I also had excellent results with a short course of LLLT when I injured my knee backpacking this summer.

Since this is a new technology not widely embraced by traditional practitioners and institutions, insurance coverage is uncommon. Still, for the cost of a diagnostic x-ray, I have received remarkable results from another form of energy; one that I believe will find its way into physician practices in the future. If it's good enough for Paul Pierce, who injured his knee during basketball playoffs, underwent LLLT, and went on to become the NBA Finals MVP, then it's good enough for me.

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