



## Sports Recovery & Performance Enhancement

by Boris Prilutsky

# Orthopedic Massage

Over the last three decades, the general public has significantly increased its engagement in physical activities such as running, weightlifting, vigorous stretching and boot-camping. During the same three decades, more people in the age group of 35 to 50 have undergone joint replacement and reconstructive surgeries, and have also experienced disproportional-to-age osteoarthritis developments, muscular disorders, and partial or total tears of ligaments and tendons.

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**M**any people often work out vigorously and, therefore, are predisposed to negative side effects of that vigorous exercise. If the general public would routinely receive rehabilitative sports massage, more people would sustain their health and suffer less pain and dysfunction.

## The effects of exercise

Vigorous exercise overstrains the skeletal-muscular apparatus, causing an accumulation of tension in muscles; muscle hypertonicity; and, sometimes, muscle pathologies. Hypertonicity in muscles, especially in the lower extremities, adds to an increase of peripheral vascular resistance, which is the main obstruction to cardio work, thus not only making the cardiovascular system overwork during exercise, but also preventing it from resting.

Blood vessels within hypertonic muscles constrict as well, and provide less blood supply to muscles, fascia, tendons and ligaments, making them weaker, less elastic and preconditioned to tears.

An increased peripheral vascular resistance increases cardio work. In this case, in order to support heavy cardio work, an increase in production of stress hormones is necessary. In addition, hypertonic muscles cause pain, soreness and fatigue, thus becoming the precondition for severe sports-related injuries.

Most sports-related injuries are sprain-and-strain type injuries. Thus, tension in muscles is a classic precondition for injury. An active person whose muscle tone is not normalized will sooner or later sustain such an injury. In addition, this condition can fuel the development of osteoarthritis.

Understandably, unless measures are taken to rehabilitate an athlete from the side effects of vigorous exercise, troubles are waiting to happen. Lack of proper rehabilitation may contribute to failure in achieving physiological potential, and also be conducive to sustaining substantial sports-related injuries.

Sprain-and-strain type injuries always lead to inflammation, which can in turn blossom into inflammatory conditions such as myositis, tendinitis or bursitis. In these cases, the demand of blood supply allowing recuperation from these injuries can be much higher than its availability. Since this negative chain reaction starts from an accumulation of tension within skeletal muscles, therapy has to start on the level of muscles as well.

## Objectives of sports massage

The difference between orthopedic massage methodology and other methodologies lies in its protocols. An appropriately applied protocol of sports massage almost immediately allows the therapist to achieve therapeutic objectives.

The objectives of post-exercise sports massage are to:

1. Reduce tension in muscles and connective tissue
2. Reduce peripheral vascular resistance
3. Accelerate drainage of venous blood as well as lymphatic fluid
4. Balance the activities of the sympathetic and parasympathetic divisions of the nervous system to the best possible extent

The level of innervation is always a starting point to orthopedic massage. Usually, a nerve serves several muscles. If there is tightness in muscles or fascia on the way to a target muscle, then the conductive ability of such a nerve would be limited and its function suppressed. The resulting pain cannot be alleviated by stimulating only the target region.

A massage therapist must investigate which tissues have hypertonicity, because this could be the reason

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why muscles continue to function poorly and produce pain—especially because pain could be caused not only by the target muscle, but by the group of neighboring or surrounding muscles or by muscles innervated by the same nerve.

Therefore, if a therapist wants to eliminate existing or impending problems and affect the target muscle in a positive way, the region adjacent to or covering the target muscle must be dealt with first. Each consecutive layer of muscle and fascia on the way to the target muscle has to be adequately addressed.

As a therapist traverses her way to the target muscle, it is also critically important to discover all the existing and sleeping trigger points and eradicate them. Trigger points indicate an acute lack of blood supply, or *ischemia*, in some points of the region. While blood supply to these points remains insufficient, the target region will continue to experience problems. Although finding

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and eradicating trigger points is a tedious and slow process, demanding much patience from a therapist, it is a necessary part of the work.

Often, the clinical picture can be obscured, as the same conditions could be caused by a number of analogous groups of muscles. Some of the muscles may only be in a more acute state. If a client makes a complaint about pain in a certain muscle, it is possible the pain is caused not only by the muscle itself but by surrounding muscles as well.

A great example here is the gluteal group of muscles. *Tensor fasciae latae* muscle syndrome, for example, is always fueled by dysfunction of other gluteal muscles.

In order to isolate the effects produced by the target muscle, a therapist should first eradicate adverse effects made by surrounding and neighboring muscles.

Thus, at the core of orthopedic massage methodology lies an effort to eradicate all potential extraneous negative influences that could produce detrimental side effects in the target region. One of these factors is tension within the fascia. The release of tension within the fascia is necessary to achieve and sustain results.

No muscles should be left in the hypertonic state, or else the entire region could re-accumulate tension. Therefore, to guarantee the best access to the target muscle, a client should be positioned so that the target muscle is exposed, whether that means positioning her in supine, prone or side-lying positions.

### The importance of protocol

The reason why a therapist must employ standard protocol lies in the necessity of addressing all possible problems on the way to the target muscle. The standard protocol is specifically designed to address potential problems as well. Therefore, it has to be applied every time a therapist deals with a specific disorder.

If some parts of a protocol are skipped, tensions within the muscles can quickly re-accumulate and pain and dysfunction may be re-established. All steps of the protocol should be applied repeatedly, because some tension in muscle and fascia, as well as trigger points, could have been missed during the previous sessions.

Orthopedic massage includes lymph drainage to reduce the size of lymphedema; circulatory massage to accelerate venous blood drainage; connective tissue and fascia release; and mobilization massage, trigger-point therapy,

periosteal massage and muscular mobilization. All these techniques stimulate normalization of blood supply, balancing its demand and availability, reducing pain and restoring function.

### Deep doesn't mean hard

Reflexive therapy is the major strength of massage therapy. By squeezing and stretching the skin, connective and muscular tissues, a therapist deforms the mechanoreceptors, which in turn releases electrical impulses, which travel through neurological pathways, stimulating motor and vasomotor centers. Responding to this stimulation, the body reacts by positive changes such as relaxation in muscles, reduction of stress hormone production, vasodilation and stabilizing of blood pressure.

I believe that in order to guarantee the most beneficial physiological effect on a client's body, massage should be implemented as deeply as possible. Deeper massage ensures greater stimulation of nerve centers, which in turn creates beneficial, reflexive therapeutic effects, and positive changes in organ-and-system functions.

However, deep tissue massage should not be equated with *harder* pressure. Pressure should be substantial but shouldn't cause the client pain, or activate her muscular protective spasm.

### Help athletes reach potential

When an athlete develops tension in muscles, those muscles do not perform sufficiently. A very strong athlete could still perform relatively well, even when his muscles are in the state of elevated resting tone; however, he would perform below his potential.

Although we cannot convince the general public to work out less vigorously, we must educate it on the importance of rehabilitation from the not-always-positive results of vigorous exercise.

Boris Prilutsky has taught and practiced medical and sports massage for more than 40 years. He has worked with Olympic athletes and has trained thousands of therapists. He graduated from medical college in Israel, with a major in chiropractic medicine. Prilutsky founded Medical Massage-Edu ([medicalmassage-edu.com](http://medicalmassage-edu.com)), which offers continuing education, and sees clients in his California office. 