Soreness to Pain: Where to Draw the Line

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People often praise athletes for their unusual ability to tolerate a higher level and duration of pain than other subgroups in a population. We regularly hear of the basketball player who competes through a sprained ankle or the baseball pitcher who gives it his all __ disregarding the excruciating pain from his torn rotator cuff. We also hear about the resistance trainee who, unable to tell the difference between pain and soreness, lifts weights through what will turn into a chronic injury that will nag him for the remainder of his life.

Resistance trainees are one of the most injury-plagued groups in society. Improper form, high impact forces, plyometrics and ballistic lifting, strength imbalances, and a multitude of other factors contribute to this fact. Fortunately though, many individuals who exercise in a high-intensity (HIT) fashion use slow rep cadences and proper form... or at least they should.

Even so, these practices do not guarantee H.I.T. trainees a 'get out of injury-land free' card. Many will still avoid small discomforts and lift through them only to find that their back, wrist, or shoulder seems to act-up more and more frequently. Soon this discomfort turns to increasing pain, affecting the functional ability of the individual - sometimes severely.

As the common saying goes, "Prevention is the best medicine". This prevention depends on the ability of a trainee to be able to tell the difference between what constitutes tissue damaging pain as opposed to soreness from training.

Before I continue, a brief explanation on the physiology of pain.

Pain receptors are basically nerve fibers that don't have any distinct characteristics on their endings. They can be stimulated through three classes of stimuli: mechanical, chemical, and thermal. High impact forces on bone may elicit pain receptors mechanically. A hot flame on your skin will stimulate nerve fibers through thermal stimuli. And chemicals, like histamine, may stimulate the pain receptors chemically. Interestingly, histamine is thought to be responsible, or at least contribute, to the soreness associated with delayed-onset-muscular-soreness (DOMS) that occurs 24-48 hours after exercise.

There are basically 2 different types of nerve fibers that transmit pain to the spinal cord: A delta fibers - which transmit the sharp, localized pain that usually first occurs, and C fibers - which transmit the dull, poorly localized feeling that usually follows a sharp sting. It is through the action of C fibers that sensations of soreness are felt.

Thus, soreness is generally characterized by a feeling of dull, unlocalized pain that increases as a muscle/muscle group approaches the extremes of its range-of-motion (ROM). Tissue damaging pain is usually, but not always, characterized by a sharp prickling sensation followed by a dull throbbing sensation. Serious problems may arise when the sensations associated with DOMS and tissue damaging pain become confused because although the sensations associated with soreness do eventually disappear (for most but not all trainees after three or four days), an injury may be masked by the severe discomfort associated with DOMS.

If you feel as though you may have an injury, check for the signals that your body sends you. Move through the whole ROM of a given muscle or body part and see if the pain registers as a sharp prickly feeling or a dull sore feeling. Dull sensations do not mean that injury has not occurred, just that the extent or severity is probably not very great.

An injury masked by DOMS will usually reveal itself most easily by simply waiting until the DOMS subsides and then reassessing the ROM of one's muscles. If the pain persists, and it is still thought to be from soreness, a hot shower, sauna, or whirlpool may be appropriate. The hot water temporarily relives the discomfort associated with DOMS by increasing blood flow, thereby accelerating the removal of the chemicals and waste products associated with exercise. Painful sensations can then be felt for under the hot water . As a general rule, you should make sure that you haven't taken any medication to relieve soreness. Almost all pain-relieving drugs, including nonsteroidal anti-inflammatory drugs (NSAIDs), such as Ibuprofen, will alleviate the pain from both soreness and the underlying injury. Thus it would be unwise to check for the injury while the drug is active in your body.

If the pain occurs during the ROM of an exercise, and you're not sure whether it's your body's response to injury or the acute soreness at the end of a set, substitute the exercise with another one that trains the same muscle. Then check to see what effect that has. Often times, exercises will not be right for some people that have certain body proportions (two common examples being squats for people with very long legs or dips for individuals with skinny wrists).

Also, try to perform the exercise very slowly, to pinpoint the area of the pain. Soreness will not really be present in a specific ROM, but injuries will usually show through this way.

Remember, if any tissue damaging pain is felt __ even if you're uncertain __ play it safe and visit your physician. Understand that there's really nothing heroic in working through pain because it all does, eventually, add up and could ruin or end your exercise or athletic career. Just ask the superstar athletes.