Damien Howell
Physical Therapy

Should you stretch it out - Pain too loose too stiff?

Generally there are one of two scenarios related to musculoskeletal pain and injury. Either there is not enough movement or there is too much movement. If a muscle is in spasm, if a joint is stuck, or if a muscle tendon unit has adaptively shortened in length are all examples of not having enough movement. If a muscle tendon unit has been strained, or if a joint ligament has been strained (torn) or a "pulled muscle" are examples of having too much movement.

Clients frequently report that one of the first actions they took to manage an injury was "I tried to stretch it out". The concept of managing an injury by "stretching it out" is wide spread. The following are examples of comments of believing it is appropriate to "stretch it out". I was playing tennis and "I pulled my calf, I felt something pop". I tried to stretch it out, but it didn't relieve the pain. "I have a strained hamstring, and I have been stretching the heck out of it, but it is not getting any better". "I have plantar fasciitis, and I have been doing calf stretching 3 times a day, but the pain continues"

A common misconception is all musculoskeletal injuries should be 'stretched out". If you feel/hear something pop and the calf hurts it most likely means something is torn. The logic of stretching a tissue that has recently been torn or strained escapes me. If joint motion is limited because the joint is swollen stretching it out will not eliminate the swelling. If a painful joint has a loose body in a joint space (piece of cartilage) resulting in limited joint motion stretching it out will not eliminate the blockage. Trying to stretch out a joint that has a blockage (loose cartilage, or bone spur) is analogous to trying to shut a door when a pencil is wedged between the door jam and the door, either the pencil will get crunched and/or the door will be damaged.

There are times when stretching it out is a very appropriate treatment, such as, a classic muscle cramp, when a joint is stuck or frozen (adhered), or when a muscle tendon unit has adaptively shortened.

In order to determine if stretching it out is appropriate it needs to be determined if there is too much movement or not enough movement. If

there is not enough movement what is limiting the movement, will it respond to stretching it out.

Distinguishing whether there is too much movement requires knowledge of what is considered a normal amount of joint range of motion. Generally there is consensus among healthcare professionals as to what is the normal amount of joint range of motion or joint flexibility for a particular age, sex, and fitness level. If the injury and pain is on one side of the body the assumption is often made that the range of motion on the non-injured side of the body is the normal amount of joint range of motion.

For example, when laying down it is expected that raising the leg straight up keeping the knee straight the leg will move to a vertical position (right angle relative to the ground), this is considered a normal amount of motion and infers the hamstring muscle is normal length. If the hamstring muscle has been strained this movement may be painful. If the active straight leg raise goes beyond vertical it infers too much movement (relatively long hamstring) this may or not be painful. If the active straight leg raise can not achieve a vertical it infers a relatively short hamstring muscle and this may or may not be painful.

The human body is basically a closed system. If there is limited movement in one region of the body it is likely an adjacent region of the body there is compensatory excessive movement. It has been hypothesized that with plantar fasciitis (pain on the bottom of the heel) there is limited movement of the ankle (short calf muscle), and compensatory strain and excessive movement (excessive pronation) occurring in the foot and arch. A standard treatment for this scenario is to use shoe therapy, orthotic therapy, arch strapping to immobilize the hyper-mobile foot, while doing calf stretching exercises. There is evidence both supporting and refuting this hypothesis. Studies have reported reduced ankle range of motion (short calf muscle) in the limb affected by heel pain compared with the unaffected limb and compared to healthy control subjects. In contrast studies reported ankle range of motion was the same in individuals with plantar fasciitis compared to control subjects. Therefore if you have heel pain (plantar fasciitis) do not assume it should be treated with stretching exercise. An individual evaluation needs to determine if the calf muscle is short not allowing enough movement of the ankle, and to determine if the plantar fascia tissue is short not allowing enough movement or too long allowing too much movement.

In my experience most recreational athletes have a difficult time accepting the recommendation that the most appropriate treatment is to

rest and protect the injury, they prefer to keep moving and “stretch it out”. My belief is “stretch it out” is not always the correct thing to do.

Bottom line:

- If you experience a musculoskeletal injury do not automatically assume the best treatment is to “stretch it out”.
- If you experience a musculoskeletal injury determine am I experiencing pain because
    - something is short, stiff, stuck
    - something is loose, long, and lax
    - something is both short, stiff, stuck and loose, long, and lax?
- If the problem is related to short, stiff, or stuck *stretch it out*.
- If the problem is related to loose, long and lax, *support it protected, rest it do NOT stretch it out*.
- If you are not sure whether to stretch it out or immobilize it error towards do no harm, *do not stretch it out*.