3 Reasons Not to STRETCH

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How many times have you hoisted your leg up, bent your face towards your knee until you feel an intense pulling — and thought it was good?

""Stretching" often describes an act of moving beyond the current limiting situation. Steve Jobs "stretched" technology and imaginations. But when it comes to stretching biological tissue, pushing the limits is never a good idea. Biological limits are set as a safeguard against tissue injury.

There are times when our brain purposely limits the length of a muscle for our own protection while an injury heals. Sometimes muscles get shortened because we use them excessively or they try to help out other overwhelmed muscles. But whatever the cause, if a muscle is held tight and shortened, bad things start to happen.

Tight, contracted muscles shut down blood flow, waste elimination and nutrition delivery. Thickening of tissues develops when they stay stagnant or move in limited ranges further worsening the condition. So, if stretching isn't good, how do we get our tissues to stay supple and functional?

01 RELEASING VS STRETCHING

Muscles are contractile tissues. They shorten in contraction and lengthening in release via specific neural instructions. Sometimes those instructions are conscious, and sometimes they are unconscious. If muscles are locked at a habitually contracted length, stretching is, at the least ineffective, and at the worst, damaging. How many years have people stretched muscles diligently with no results?

Attempting to stretch a muscle beyond the brain's current set point can cause micro- and macro-tears in the fibers. Unlike muscles, ligaments and tendons are non-contractile tissues. They are a set length — like string. They can lengthen to their end point, but if you push them farther, you get tears and strains (ACL tear, Achilles Tendon rupture, and rolled ankle sprains).

If your brain senses a muscle is too short, it sends a release-message so that tendons and ligaments are not sacrificed in a movement. But if habitual contractions become unconscious (like guarding from an injury), your brain doesn't sense the muscle is too tight, and no amount of stretching will lengthen it. Instead, the stretch force will be transmitted to non-contractile ligaments and tendons which will be compromised.

To get our brains to send a release message, we must move very slowly through a non-symptomatic range and stop at what is called the "first barrier." This is the first moment when you feel a quality of change in the movement. When you sense this change, you pause. You meet the tissue with the same amount of force it is meeting you. Sometimes we call this "donkey/donkey". Imagine two donkeys leaning on one another so neither falls. Your brain will register that it is holding! Whether from physical or emotional injury, your brain put on the muscle lengthening brakes and then the holding became habitual and went below the radar of consciousness. Now your careful, clever tracking has put a spot light on what you didn't know you were doing. Sometimes you achieve a lot of release — sometimes a little, but either way, you have broken the code that locks the muscle's available range. Also, moving with this specialized awareness will distribute the workload of elongation so no one soft tissue gets too much traction load.

Imagine placing a stick of butter on the kitchen counter to soften. You come back some time later to check its progress by slicing a pat off with a butter knife. You might find the outer surface of the butter is soft, but as the knife gets closer to the hardened core, you encounter more resistance.

You can sense a change in quality of the ease with which the knife can cut through the butter. You can learn to sense this same quality change in your movements also!

You can develop this kind of awareness and mindfulness through exploratory lessons in CFR. By paying close attention, on purpose, in the moment, without judgement (called Mindfulness) and following novel instructions for movement sequences, you can expand your brain maps to sense subtle changes in the quality of your movements.

> *Until you know what you do, you have no choice to do otherwise."*
> *Moshe Feldenkrais, PhD.*

Once shortened muscles are identified through Mindful movement, your nervous system recognizes it can release the holding and allow for normal muscle lengthening. With repeated and directed attention — slow mindful movement — your muscles can learn to release without stretching. Releasing unconscious holding patterns in this way is a skill you can learn with CFR.

02 WHERE IT'S TIGHT AIN'T IT!

Most of us have a layer of holding on top of normal resting tone. Often the place that seems to be holding is only a secondary tautness due to holding in another muscle group. Sometimes to release our shoulder, we have to release our neck. Or to release our low back, we have to release our ribs. If we are yanking on a shoulder, when the real issue is unconscious holding in the neck, the tension force of a stretch spills over to surrounding soft tissue and bone that aren't designed to take up the slack. The misuse of default tissue begins the cycle of chronic pain that can refer out to larger and larger areas.

03 HIDDEN CONNECTIONS

Tight muscles can affect the integrity of connective tissue called fascia. Fascia surrounds all your muscles and acts as a sort of saran wrap. If you cook, you may have seen fascia on a raw chicken breast. It's prime directive is to grow. It usually grows along the lines of force. So if you bend and straighten your hips normally during the day with walking, the fascia will stay supple enough to facilitate all the excursion (movement) of the joint. But if you are like the cadaver in my Anatomy Lab who was an amputee, and you sit all day in a wheel chair, the fascia grows thick and stiff, layering and layering sheaths one on top of another much like running a sewing machine back and forth over the same seam.

Proper loading through a desired range, which we call Functional Elongation, supports this tissue staying its silvery, slender self. Mechanical loading (putting easy force through the tissue) actually changes the biochemistry in the cell to increase suppleness. (See "Facial Binding" video link under the "Recent Science" on the nexuspt.net Home page.)

Fascia can bind to nerves causing them to tether and stretch improperly. Nerves are like vacuum cleaner cords. They uncoil and recoil to facilitate the lengthening and shortening of joints. Nerves are the exact length they need to be. Like delicate threads, they unwind when your arm lengthens and fold up when it bends. Sometimes when a joint has been passive for a long time (not used because of pain or injury), spider-thread-like fascial tissue can attach to the nerve constraining it. With CFR Functional Movement explorations you can release the tethering and free the nerve to return to its slithering movement. Understand more of ourselves and our patterns and release what no longer serves us instead of stretching/tugging on tender tissue for years without results. Of course we do need flexibility and mobility. But the source of these is Command Center level, not at the local muscle level. Often after lessons, people feel "lighter" or more "grounded" because the excessive unconscious holding has been released. People who couldn't touch their toes, tickle their pinkies. Yogis who couldn't do a hand stand talk about their amazement with their feet in the air!

Our brains release our muscles. We can learn to communicate with our genius nervous system.

Here is the latest research proves stretching is harmful.

- Reviewing articles published over a 44-year period to determine the effect stretching has on athletes' strength, power and explosive muscle performance while they're engaged in their sport, confirmed that static stretching before exercise has a negative impact on athletic performance regardless of the subject's age, gender or fitness level.

  April 2014. Scandinavian Journal of Medicine and Science in Sports.

- Static stretching performed before weight-lifting made athletes feel weaker . . . . Researchers suggest that static stretching before physical activity may alter or impair the neurological function in active musculature."

  April 2014. Journal of Strength and Conditioning Research.

- . . . studies recommend static stretching be avoided before physical activity. Most research points out that stretching is not helpful and may be harmful . . . and supports the epidemiologic evidence that stretching before exercise does not even reduce the risk of injury.

  April 2009. O'keefe, et al. BMC Musculoskeletal Disorders.

- The old presumption that holding a stretch for 20 to 30 seconds primes muscles for a workout is dead wrong. It actually weakens them. In a recent study conducted at the U of Nevada, Las Vegas, athletes generated less force from their leg muscles after static stretching than they did after not stretching at all. Other studies have found that this stretching decreases muscle strength by as much as 30 percent. Also, stretching one leg's muscles can reduce strength in the other leg as well, probably because the central nervous system rebels against the movements. "There is a neuromuscular inhIbitory response to static stretching", Dr. McHugh, Director of Research, Nicholas Institute of Sports Medicine and Athletic Trauma at Lenox Hill Hospital in New York City. The straining muscle becomes less responsive and stays weakened for up to 30 minutes after stretching. There are two elements involved in stretching a muscle" Dr. McHugh says. "One is the muscle itself. The other is the mind, which sends various messages to the muscles and tendons telling them how to respond to your stretching when the

discomfort of the stretching becomes too much. What changes as you stretch a muscle is primarily the message, not the physical structure of the muscle. You'll start to develop a tolerance for the discomfort of the stretch,"Dr. McHugh says. "Your brain will allow you to hold the stretch longer. But the muscles and tendons themselves will not have changed much. You will feel less tight. But even this sensation of elasticity is short-lived, . . . the effect passes in less than an hour. A well-designed warm-up starts by increasing body heat and blood flow. Warm muscles and dilated blood vessels pull oxygen from the bloodstream more efficiently and use stored muscle fuel more effectively. They also withstand loads better.

Nov 2009. D. Knudson Professor Kinesiology U of CA. New York Times

- For a better warm-up, increase blood flow to your muscles with a few minutes of light aerobic activity such as brisk walking, Lynn Millar, Ph.D., Andrews University Professor of Physical Therapy. Repeated extreme stretches may affect your ligaments and promote hypermobility, potentially resulting in injury. . . . Also, don't bounce, as it tells your muscle to contract versus relax.

2009. Lynn Millar, PhD., Andrews University, Professor of Physical Therapy." Body & Soul.

- A systematic review into the efficacy of static stretching as part of a warm-up for the prevention of exercise-related injury reviewed all relevant randomized clinical trials from 1990 to 2007 and concluded that static stretching was ineffective in reducing the incidence of exercise-related injury.

2008. Small K. Research in Sports Medicine

- Stretching doesn't do anything to get your muscles ready to exercise. In fact, it may cause slight muscle weakness . . . and it's possible to tear muscle fibers.

Mike Bracko, Sports Physiologist. American College of Sports Medicine.