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## Against Stretching -- In Favor of Stretching | Power Stretching

by [Lawrence Gold](#),

Hanna Somatic Education®  
Dr. Ida P. Rolf method of Structural Integration

[Scientific and "in the field" corroboration](#)  
sorry, stretching enthusiasts - and here's something much better

See also:

- ["Completing Recovery from an Injury"](#)
- ["Pain Relief through Movement Education"](#)
- [Wikipedia entry on Muscle Memory](#)



Active Isolated Stretching is the "gold standard" of therapy and athletics -- adamantly revered by those who have trained with or grown up with it. But there's another level that goes beyond stretching muscles to changing muscle/movement memory -- a "platinum standard".

Integrative (vs. isolated) "power-stretching" works opposite to the way active isolated stretching works to change muscle/movement memory, which controls muscle tension and length, with you hardly realizing how much longer and looser your muscles are getting -- until you test your flexibility.

KEYWORDS:

- stretching
- postural reflex
- habitual muscular tension
- tight muscles
- active isolated stretching
- tension set-point

This write-up explains the new development beyond standard stretching and beyond active, isolated stretching: power stretching (the Omni-Yawn).

- collagen
- somatic exercises
- somatic education
- somatics

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Power Stretching is completely different from "stretching harder" or "holding the stretch" or "breathing into the stretch". It involves brain-level changes of muscular control (muscle/movement memory) through a kind of movement maneuver similar to yawning. The "power" of "power stretching" is the power of contracting/tightening muscles before lengthening them. The result is nearly effortless lengthening beyond past limits, cumulative and lasting improvements of suppleness.

If you have reached the limits of stretching or are experiencing "rebound" pain and muscular tension after stretching, Power Stretching can take you past those limits -- comfortably, progressively, and lastingly.

**In brief, it's this:**

**First, you *deliberately tighten already tight muscles* in movements that the tight muscles ordinarily cause.**

**Then, *gently and very slowly*, you move in the opposite direction, the direction you would ordinarily think to stretch only to the bare edge of a stretch.**

**The combination of pre-contraction followed by movement into length (to the bare edge of stretch) produces a substantial increase of your range of motion and feels nothing like the usual stretch.**

**That's it. Everything below is *why* ordinary stretching has the limits it does and *why* Power Stretching works. There's (CLICK) [instructional video](#), below, that teaches you how to use Power Stretching (The Omni-Yawn) to free and lengthen your calf muscles so they no longer cramp.**

**This technique works with all situations in which you might want to stretch, including hamstring pulls, groin pain, and back pain. It's the opposite of active, isolated stretching; it's active, integrated contraction followed by controlled-speed (slow) lengthening to the bare edge of your limit (which recedes with repetition).**

**Give up active, isolated stretching. Do Power Stretching, instead.**

Learn what happens in muscles and in the brain during stretching and why stretching seems necessary. By "why stretching seems necessary," I don't mean, "why stretching is good for you," but "why muscles shorten to begin with".

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**You may read the technical explanation, below, or just [get started](#) with Power Stretching.**

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**M**uscles have elasticity; they're stretchy. Everybody knows that.

Muscles' elasticity comes from a fibrous protein, collagen, which has elasticity. However, muscles contain more than elastic collagen; they also contain contractile cells -- muscle cells.

When muscle cells contract, their muscle contracts. Their contraction gives muscles their strength; their contraction makes their muscle shorter (and thicker); and their habitual contraction makes muscles habitually short and seem to need stretching.

The primary limit on muscle length is muscle tone; the higher the muscle tone, the shorter the muscle. Shrinkage of the collagen is a secondary limit on muscular elasticity.

So, the price of high muscle tone is shorter, tighter muscles.

People interested in physical conditioning are faced with a peculiar quandary: They want both highly toned muscles (for looks) and long, free muscles (to prevent injury). They want two mutually-exclusive things.

Still, people stretch because that's what they've learned. It's what they were taught by people they trusted.

However, you *can* have healthily toned muscles capable of lengthening freely.

## Muscles, Stretching, and the Brain

**T**here exists a more effective and more comfortable way to free muscles.

Our nervous system controls our muscular system; our nervous system is the seat of [muscle memory](#), not the muscles, themselves. Muscles have no control of their own and no memory -- only a shape, a location, and an action.

Obviously, then, people have tight muscles because their nervous system is triggering them to contract -- generally by habitual conditioning, on "autopilot".

Understanding what we've touched on, above, we realize that the only aspect of muscle length you can affect by stretching is the secondary limit on muscular elasticity: collagen's elasticity. Moreover, collagen fibers (which constitute the fascia) are embedded in a mucilagenous substance that, in cases of injury, thickens and binds the fascia so that it becomes like bandaging and resists lengthening by ordinary stretching. So, two limitations exist on the effectiveness of stretching: habituated muscle tone and binding effects of fascia.

Stretching can't affect muscle tone in any lasting way because muscle tone is set by muscle/movement memory (postural reflexes) controlled by the brain. Stretch now and the habitual tone of the muscle comes back soon, determined by habitual patterns of posture and movement controlled by the brain. (The same is true of massage.)

Control of the muscular system by the nervous system develops by means of learning -- sensory-motor learning -- either via deliberate action involving repetition or by the intense sensations of pain triggered by injury. The exception, of course, is momentary muscular tension triggered by the stretch reflex.

That being the case, how can stretching produce a lasting change of muscle-tension? The changes that result

To be musclebound is to have muscles constantly triggered -- by signals from the nervous system, which controls all of the muscles of the body -- to shorten. The nervous system learns to keep muscles short from injuries, repetitive use, and stress.

from stretching are therefore generally temporary -- unpredictable and unstable -- evident in the frequency of sports injuries involving hamstrings and repetitive motion.

As a result, people return to the level of tension (and shortening) they experience habitually.

Most chronic muscular tension comes from postural reflexes altered by injury, emotional stress, or repetitive use patterns.

You can't stretch away postural reflexes; you can only retrain them -- a different process than active, isolated stretching.

**Athletes and dancers attempt to stretch their hamstrings to avoid injury.**

"attempt" is the correct word because stretching produces only limited and temporary (or, at best, very slowly cumulative) effects, which is one reason why so many athletes (and dancers) suffer pulled [hamstrings and knee problems](#).

Clearly, whatever benefits stretching confers, it has some significant limitations. More than that, stretching has drawbacks.

As anyone who has had someone stretch their hamstrings for them knows, forcible stretching is usually a painful ordeal. In addition, stretching the hamstrings disrupts their natural coordination with other muscles (e.g., psoas, quadriceps, and hip joint flexors), which is why legs feel shaky after stretching the hamstrings. The same is true of stretching any other muscle. More than that, because postural reflexes maintain our "normal" body-sense (through the stretch -- or "myotatic" - reflex) forceful stretching triggers return to our habitual tension even more strongly (muscle/movement memory); stretching triggers rebound tension that makes repeated stretching necessary. If we stretch by pitting one muscle group against another (as common done), the tension of both muscle groups may increase -- a condition known as co-contraction -- and cause muscle and joint pain.

Then, people may fear they are damaged and destined for surgery.

For [chronic back pain](#), people are common told to do back stretches. We know, from the prevalence and frequency of [back pain](#), that stretching is not very effective. From this evidence, alone, it seems, perhaps to our dismay, that the Stretching 'Emperor' -- Active Isolated Stretching, the king of methods for freeing muscular restrictions -- has no clothes.

In the case of injuries, the reason stretching generally doesn't work is that muscles that shorten due to injury are kept short by a postural reflex triggered by pain and injury: the trauma reflex. The trauma reflex, which everyone has experienced as the shrinking inward and tightening up they experience whenever they have gotten injured, is a long-term reflex evolved to facilitate healing by reducing movement. The brain controls trauma reflex, and brain function can't be modified by stretching muscles; it can be triggered, but not modified. For that reason, once people have been injured, they may suffer the effects of those injuries in their movements even decades later -- long after tissue injury has healed.

With no efficient, reliable method for ending residual trauma reflex (until fairly recently) people have had to live with it.

To lay the groundwork to understand a new way of getting muscles to lengthen without stretching, I'll explain why ordinary stretching works to the degree that it does -- which is to say, to some degree.

## Why Stretching Works to the Degree That It Does

To understand how stretching works, we must first start by recognizing that muscles that need to be stretched are usually actively contracting. The person is musclebound.

People control their muscular tension "by feel." People stretch by assuming various positions, placing a "stretch-demand" on muscles. That "stretch demand" creates a sensation that allows the person to feel the muscles enough to "relax into the stretch." It isn't a mechanical stretch; it's a voluntary release of tension -- possible up

to a point.

Sometimes, people actively force a stretch by tightening opposing muscles. For example, they assist stretching the [hamstrings](#) by tightening the quadriceps (front thigh) muscles. This "active assist" technique triggers a momentary brain-level response that momentarily relaxes the hamstrings. This brain-level response has a name: "reciprocal inhibition". It's only a momentary response, but because people get more stretch out of the hamstrings, they mistakenly believe that they've gotten a lasting change out of the assisted stretch. Experience shows otherwise.

It's this same response, reciprocal inhibition, that's behind the idea that abdominal strengthening makes a stronger back. The actuality is that, in tightening the abdominal muscles, the brain momentarily *relaxes* musclebound, sore back muscles, allowing the spinal curve to relax. The straightening of the spine produces a sense of "more support" and the relaxation of the spinal muscles allows them to rest and lose their burn. But tightening abdominal muscles to cause the back muscles to relax works only as long as the abdominals are held tight. The prevalence of [back pain](#) shows, once again, that the practice of tightening muscles to stretch out others is impractical.

Muscles work in coordination with other muscles, all of the muscles being controlled and coordinated by the brain. "Active isolated stretching" works directly counter to how muscles work, which is in coordination. That's why, when you actively isolate and stretch a muscle, it soon returns to its habitual tonus and length. You return to your familiar "feel."

If you've worked with a stretching and strengthening regimen or exercise program and haven't gotten lasting benefit, now you know why.

Happily, a more effective way to manage muscular tension than by stretching has been developed by movement educators and trainers, and that's what we talk about, next.

## Power Stretching: "The "Omni-Yawn"

Ordinarily, if you try to relax tight muscles by an act of will, you'll find that you can't, very well. Even with special breathing, prolonged holding of a stretch, visualization, progressive relaxation or other techniques, you reach a limit. That's your "set-point" -- or "resting tension set-point."

When you reach your set-point, you may assume that your muscles are completely relaxed and decide to stretch them. However, after any stretch, the muscle/movement memory that keeps you contracted causes you to tighten, again. Hard stretching or "bouncing" stretching (always warned against as "incorrect stretching") is even worse; it stimulates the stretch reflex to tighten the muscles even tighter, in seconds. That's why hamstrings (and other muscles) tighten up again so soon after stretching (in minutes or hours) or massage (hours or days) and why athletes get muscle injuries despite stretching.

Your "set point" is your problem and your way of stretching isn't doing the job. Better results come by changing your "set-point" -- your limit of muscle length -- by changing muscle/movement memory.

An easy, elegant way exists to change muscle/movement memory and create a new set-point-- one where your resting muscle tone is near zero (complete relaxation -- the definition of "rest"). Seen everywhere in the wilds of nature, it's called "pandiculation" -- or "the omni-yawn".

In the animal kingdom, we see an action pattern that animals at rest

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do before they move into activity. This action pattern, similar in ways to yawning, commonly accompanies yawning. This action pattern refreshes the body-image and prepares the animal for action. The "[omni-yawn](#)," is the familiar yawning morning stretch of humans, the bowing and arching stretch of cats and dogs, the wing-back/leg-back movement of birds. It's more than "a mouth yawn"; it's a whole-body ("omni") yawn.

It's an action pattern that, deliberately done, can free you of the limit of your "set point", capable of replacing conventional stretching.

The Whole-body Yawn involves coordinated action patterns. A coordinated action pattern involves all the muscles involved in a specific movement -- the way the brain stores muscle/movement memory. A "whole-body yawn" sends a strong sensory signal to your brain, a signal that wakes up (or refreshes) your brain. A whole-body yawn improves your control of muscles and movement; performance in slow-motion gives your brain more time to sense more, which helps form new muscle/movement memory, which replaces your old muscle/movement memory -- the one you're trying to stretch away.

(Nerve impulses travel an average of thirty meters per second. If you are two meters tall, you get roughly between five and eight "body images" of your leg movements per second -- and about six times as many for arm and shoulder actions. Fast movements give fewer "snapshots" of the body-image than slow movements.)

**Test the somatic exercises (pandiculations) at right to feel what I mean.**

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## Cumulative Improvements of Flexibility

Significant results come relatively quickly from sessions of clinical somatic education or from doing somatic exercises, and when they do, the changes are second nature and require no further efforts to stretch (although refreshment of muscular control by means of somatic exercises is helpful).

To do somatic exercises produces cumulative improvements in muscular control and decreases likelihood of injury. With the looseness that develops, you are likely to develop a preference for somatic exercises over stretching.

Some final observations about the properties of collagen: Collagen behaves something like cloth: it enwraps the contractile cells that give muscle its strength and gives direction to muscles' pull. These collagen fibers have been observed to shorten during sleep (tissue healing/regeneration). Ordinarily, this "microshortening" leads to shrinkage and restriction of muscles and movement, but it gets normalized through somatic exercises or other forms of physical activity. If you don't have some significant movement activity during your days, somatic exercises can help you keep your flexibility. You'll feel better and age better.

A similar shortening occurs after significant injury, as collagen fibers invade neighboring tissue to "bandage" the area (scar tissue). This kind of bandaging prevents free movement of just the type attempted in forcible stretching and in stretch-like myofascial release techniques. In that case, precise manual manipulation (e.g., Rolting, Hellerwork, etc.) to free the adhesions is much more to the point and less likely to induce protective postural reactions than forcible stretching or myofascial release or massage techniques that involve stretching actions.

## SUMMARY

Because conventional stretching techniques have limitations, and because injuries don't respond well to stretching, the muscle/movement memory techniques of somatic education (e.g., The Whole-body Yawn or somatic exercises that involve The Whole-body Yawn) work in situations where stretching might be done to prevent or treat injury (physical therapy "spray and stretch", "strengthening and stretching" techniques and trigger point therapy). Somatic education frees muscles still contracted after injury has healed, improves performance, and decreases the likelihood of future injury.

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