



## [Get Off the Foam Roller](#)

Mike T Nelson, MS, CSCS



Foam rollers are common these days and can be found in every sports catalogue in various types, styles and colors. Many top coaches and trainers recommend their use by athletes of all types. Some people are even said to SLEEP with them (1) (you know who you are Mr. Kevin Larabee of The Fitcast fame).

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## **Background and the reasons why people foam roll**

The standard argument for self-myofascial release (SMR) on a foam roller is possible thanks to the principle known as autogenic inhibition. Unless you have been living under a rock, you have probably heard of the Golgi Tendon Organ (GTO) at some point. The GTO is a special mechanoreceptor in this case found at the muscle-tendon junction. Its job in life is to detect changes in tension in the muscle and to work as a safety mechanism by releasing muscle tension when the force becomes too great to potentially cause injury.

The fancy name for this reflexive relaxation is autogenic inhibition. When you apply force to the muscle via a foam roller you add muscle tension, and thus causing the GTO to relax the muscle.

Sounds awesome doesn't it? Just 10 minutes a day and I should be all set right?

This simpleton argument has been questioned within the past few years. Plus this argument also leaves out the whole rest of the nervous system! As I've said before, physiology is messy and seldom that simple.

A full discussion of the GTO is beyond this article (I hear a sigh of relief), but Fallon, JB et al. (2) stated recently, "The responses of the various muscle receptors to vibration are more complicated than a naive categorization into stretch (muscle spindle primary ending), length (muscle spindle secondary endings), and tension (Golgi tendon organs) receptors". Cui, J. et al. (3) recently have shown in healthy humans mechanoreceptor(s) stimulation may even evoke significant increases in blood pressure. It is all connected via the nervous system.

## Here are two arguments for why I don't think people should foam roll

### 1) Tissue properties

What are you trying to achieve? What is your goal? Most then cry "I want, better tissue properties" --ok, fair answer, but what does better tissue properties get you? Most are after better muscle function and some to get out of pain and better tissue properties is a step in that direction.

The nervous system is the key (notice a theme yet?) Now before you get all crazy on trigger points and how they effect muscular force (which is a good point), how did the trigger point get there? I've done a fair amount of cadaver work and so far I have yet to see one trigger point. Actually non-fixed (fresh) tissue does not hold tension on its own. I have yet to see a slab of muscle get tense! Yes, certain structures are stiffer than others, but I have yet to see any muscle or tendons that resemble piano wires that I see in most people's necks. The nervous system is controlling the level of tension.

Plus the thought of adding high amounts of external tension to your body in order to relieve tension seems odd to me. So I should add the thing I am trying to reduce? I know physiology is messy, but food for thought.

### 2) Foam rolling can be painful.

Pain will actually inhibit your gains. Now I know some will get up in my grill about how they are making gains in the gym and they are in pain and I agree that this can happen, but my argument is that it is not OPTIMAL.

First, what is pain?

The International Association for the Study of Pain defines pain “as an unpleasant sensory and emotional experience associated with actual or potential tissue damage or described in terms of such damage.” (4)



The take away here is that pain is associated with actual or potential damage. Pain is produced when the brain perceives that danger to body tissues exists and that action is required as a survival response. Imagine early cave man days and Captain Caveman sticks his hand in the fire. What happens next? He yells some unintelligible explicative and promptly removes his hand from the fire!

**Pain is an ACTION SIGNAL**—move your darn hand out of the fire!

Remember that pain does not live in the ankle that you sprained or Captain Caveman’s hand, but it is an interpretation of the brain. The signal from Captain Caveman’s hand is sent up to his prehistoric brain where his brain then interprets the degree of pain.

It was rumored that civil war soldiers that lost entire limbs were initially NOT in pain since they were so grateful to be alive that the thought of even losing a limb was nothing compared to be pushing up daisies.

It is true that if the damage sustained is severe enough, the pain and resultant shock can become the highest threat and require a survival response (5).

The brain and the nervous system control ALL muscle movements. When pain occurs it inhibits the nervous system as a protective mechanism.

**Remember that the body only cares about survival and does not give a hairy rat's butt about performance.**

If I injure my elbow, my nervous system will start to shut down the muscles around that joint as a protective mechanism to try to prevent further damage (ala arthrokinetic reflex).

So the windy road back to our friend the foam roller...

If you are on the ole foam roller before a training session and it is painful, you are turning on the "neurologic brakes" and thus decreasing your performance.

### **Confession time**

I used to have athletes foam roll over there ITB/TFL (lateral quad) and if they yelled in pain I would promptly declare "You there-- you have some ITB/ TFLs that are so tight you can bounce quarter off them" and would promptly have them do multiple foam roller sessions each day. Most times in a few weeks the pain would become less and I would then declare "Good thing I fixed that issue," but did I? Why were they still foam rolling (albeit in less pain). Wait, I thought this was the solution? Why did I not see a huge change in their movement? Are they doomed to the foam roller the rest of their life?

What do you think is causing those "tight" muscles you are foam rolling?

Hmmmmm. I have an idea!

The joints (along with the nervous system) are causing those "tight" muscles, and this is one of the main tenets of the Z Health system. If the joints are sending noxious stimuli to the brain (which may or may NOT be painful,

remember that interpretation of the signal in the brain), the brain will try to protect the joints by decreasing strength done by the muscles around it (and other muscles also). If you have tight hamstrings, foam rolling your hamstrings will probably not solve the issue LONG TERM. Working on the foot/ankle and some times elbow circles may help hamstring issues, but that is another topic.

### **Anyone want to buy a foam roller?**

The current trend in some areas seems to be going to more and more aggressive pain inducing masochistic massage. If I had no scruples, I would file IP on a foam roller with spikes on it! Seriously, I think that could have been my retreat to Fiji idea. If someone reads this and does do it, please drop me an invite to your private dessert island.

Foam roller work must also follow the SAID (Specific Adaptation to Imposed Demand) principal meaning that your body will ALWAYS adapt to EXACTLY what you do. So we know that doing foam roller work will make you better at doing foam roller work. Last I checked, there was not a foam roller competition, but maybe they have one now. I doubt there is much positive transfer from foam rolling to many other activities, but I will leave that for you to test out.

### **Does this mean that all soft tissue work is bad?**

Of course not! Massage has a neat feature where the hands working on you are attached to someone else's brain that can interpret what the heck is going on and adjust accordingly. Last time I checked, foam rollers were pretty dumb (another free IP idea is a "smart foam" roller that increases density in response to force). Even some ART practitioners are experimenting with lighter pressure with good results. I do think there still is

a tendency to only treat the site of pain (although this is changing) and many times the relief is short lived.

### **So what do I do? Help!**

I am a realist and know that very few are going to have a foam roller burning party based off of one article from me, but one can dream right. Wait, check that, Al Gore just called and said that the burning of foam rollers is bad for green house gases so please recycle them instead. No green credits for you, bad dog. Instead, you could use it in place of board presses at your local gym.



To quote Jim Wendler: *"You don't have to smuggle the foam into a commercial gym like you would the boards. You can simply state that it is a rehab tool. And when you say "tool" you can smile and make sure the Jabroni at the front desk knows that you are actually talking about him."* (6)

### **What to do?**

- 1) At minimum, don't do any foam roller work before a training session and maybe only some light work afterwards
- 2) Make sure it is NOT painful, especially if you are doing it before a lifting session. Remember pain decreases performance.

3) Try replacing some foam roller work with some precise joint mobility like the [Z Health Neuro Warm Up](#) or some dynamic drills.

4) Find a trainer/therapist that uses non painful hands on work combined with active mobility work. A Z Health Level 4 (hey, [that is me](#)—shameless I know) is a great place to start.

Any comments, let me have 'em

Rock on

Mike N

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