Massage Therapy for Shin Splints

Perfect Spot No. 3, in the tibialis anterior muscle of the shin

Paul Ingraham • Oct 27, 2012 • 10m read

Trigger points (TrPs), or muscle "knots," are a common cause of stubborn & strange aches & pains, and yet they are under-diagnosed. The 14 Perfect Spots (jump to list below) are trigger points that are common & yet fairly easy to self-treat with massage — the most satisfying & useful places to apply pressure to muscle. For tough cases, see the advanced trigger point therapy guide.

Pain Location	Problems	Related Muscles
in the shin, top of the foot, and the big toe	shin splints	tibialis anterior

"Big Red Books" Reference: Volume 2, Chapter 19

see chart of all spots below

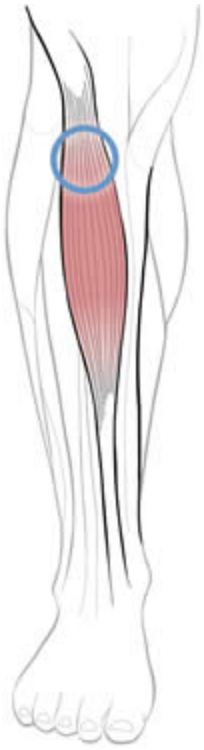
If you have shin splints — which is a painful, potentially serious condition — you may prefer to visit this detailed tutorial: **Shin Splints Treatment, The Complete Guide**. *This* article just summarizes the basics of self-massage for your shin musculature. (Note that *rapidly developing severe shin pain* can be a medical emergency. If this is your situation, you are in the wrong place: don't read this article, go to a hospital emergency room. *I am not kidding*.)

Perfect Spot No. 3 is in your shins — seemingly an unlikely place for muscle knots! But there is meat there, and if you've ever had shin splints then you know just how vulnerable that meat can be. Even if you've never suffered so painfully, your shins probably still suffer in silence — latent trigger points in the upper third of the shin that

don't cause symptoms, but are plenty sensitive if you press on them. They inevitably form here because you walk on two legs, and usually on hard surfaces.

Relieving tension in Spot No. 3 may also be helpful for plantar fasciitis, because the shin musculature is surprisingly important for arch support. Along with the tibialis posterior muscle … and less so the arch muscles than you might think. [1]

We usually think of the shin as a bony place, but in fact there is a good-sized muscle on the lateral face of the shin: the tibialis anterior muscle. The tibialis muscle works almost alone: it is the only muscle that strongly lifts the foot. Functionally, its major job is not to shorten, but to lengthen in a controlled way: to gently lower the forefoot after the heel strikes the ground. This requires an eccentric contraction — the muscle contracts while lengthening, as your biceps does when you lower a barbell.



The tibialis anterior muscle of the shin

Perfect Spot No. 3 is in the upper third of the muscle.

Without the tibialis anterior's powerful and well-coordinated eccentric contractions, your foot would slap ungracefully onto the ground with every step. On hard surfaces like concrete, the strain of preventing foot slapping is considerable. For runners, that may be how shin splints begins, and is one of the main reasons to avoid running on pavement and concrete. Eccentric contractions are known to cause additional muscle soreness after exercise, which is why the shin muscle tends to get really sore after running hard — and why the muscle tends to develop large, chronic trigger points.

Another situation where the tibialis anterior has to work especially hard and tends to get really sore is coming down a mountain: because of the downward slope, the foot must be lowered *further* with each step, which means more eccentric contraction.

Without the tibialis anterior, your foot would slap ungracefully onto the ground with every step.

If you feel the inside surface of your shin, you will find hard bone, covered only by skin. On the outside surface of the shin, however, there is a thick pad of muscle starting about five centimetres below the knee: that's the tibialis anterior.
The Perfect Spot here is actually a whole patch of common trigger points in the top third of the muscle (see attached diagram). They are not hard to find, and they are usually very potent.

Pressure on any of tibialis anterior's key trigger points will likely cause an almost paralyzing "good pain" that radiates down the shin into the top of the foot and toes. You will probably be surprised by the amount of sensation flooding down the leg: the tibialis anterior is a Perfect Spot because it almost always produces so much more sensation than

anyone expects. It's one of those spots that makes my clients say things like, "Wow, did you know that was there?" Amaze your friends!

The tibialis anterior is a really tough muscle. Unless you actually have shin splints (see below), these spots will usually tolerate plenty of pressure. To treat someone else, you may find that your thumbs alone are not quite strong enough; using an elbow or the blade of your forearm will make things much easier. Start gently but work steadily up to a satisfying pressure, and hold it until the intensity of the sensation gradually fades.

You can also use some massage oil or lotion to slide the blade of your forearm or the heel of your hand up the length of the tibialis anterior. This is quite a satisfying variation, combining the pleasure of good old-fashioned Swedish massage with the unique sensation of a trigger point at the top of the stroke.

To treat yourself, lean your shin into something hard, like the edge of a park bench or a tennis ball: whatever's handy. I had an old hot-water radiator once that was perfect!

What about shin splints?

If you have shin splints, or you are helping someone with shin splints, you should handle this Perfect Spot cautiously. It can be helpful, but you must also be careful not to make the condition worse.

There are different kinds of shin splints, such as tibial stress fractures and medial tibial stress syndrome, neither of which can be helped much by massaging the tibialis anterior.

But another common kind of shin splints, anterior compartment syndrome, may respond well to the right kind of massage. This condition is caused by swelling of the compartment (think "sausage wrapping") that the tibialis anterior muscles lives in. If this problem develops quickly, it can be dangerous — it can actually destroy the muscle, and lead to potentially life-threatening infection. If you have severe, rapidly developing shin pain, please go to the emergency room!

Slower cases are not dangerous: they just cause chronic pain. And trigger point therapy may calm the tibialis anterior muscle down enough to help relieve the problem. The trick is to give the tibialis anterior some help *without* increasing the pressure in the muscle compartment any more than it already is. Traditional Swedish massage strokes are completely out of the question in this situation: strongly stroking up or down the length of the muscle with broad pressure will just increase the pressure, like rolling up a toothpaste tube without undoing the cap. The trick is to just use point pressure on the Perfect Spot itself: locate it and apply only moderate focused pressure to the trigger point, and this may help the muscle without irritating the whole muscle.

This is just the briefest of introductions to shin pain. For (much) more information, see Shin Splints Treatment, The Complete Guide

What about plantar fasciitis?

Plantar fasciitis is a painful and often exasperatingly persistent condition of the arch of the foot. Although there are better ways of treating it, self-massage of the shin muscles may be helpful as well.

The foot's arch is a little biomechanical marvel. It is held up by a fascinating combination of elastic and muscular support and "clever" skeletal arrangement, and it can take a lickin' and keep on tickin'. But it does have limits, and when the muscles and connective tissues in the arch suffer excessive strain, they can really begin to burn. Once they start, it's hard to stop, because your feet get *used* a lot.

The tendon of the tibialis anterior muscle passes underneath the foot, creating a kind of "stirrup" for the arch, helping to hold it up. To the extent that the tibialis anterior muscle fatigues and fails to support the arch, treating it may be very helpful for plantar fasciitis. A happier, more functional tibialis anterior means a happier, more functional arch!

For more information, see Complete Guide to Plantar Fasciitis

What about Morton's neuroma?

A Morton's neuroma is a sensitive growth on a nerve between the bones of the foot which gets painfully pinched, especially when wearing shoes that constrict the forefoot.

Morton's neuromas occur in the referral zones for some of the lower leg musculature, most notably the tibialis anterior muscle. Tibialis anterior trigger points are potentially relevant to Morton's neuroma therapy in two ways:

- they may sensitize the neuroma, making it feel worse than it would otherwise
- the presence of the neuroma in the tibialis anterior referral zone may aggravate tibialis anterior trigger points

So there is the potential for a vicious cycle ... but also the potential to relieve it and desensitize the neuroma by relieving the trigger point.

The Tiger Tail Rolling Muscle Massager: a particularly ideal massage tool for this spot

The Tiger Tail Rolling Muscle Massager (made by Polar Fusion, in Washington state) is terrific for self-massage of the arms and legs, but I've used it mostly for my shins.

It is really just a specialized rolling pin, made for squishing muscle instead of dough. There is no question that I thought of (and tried) using an actual rolling pin on my own shins long, long before I heard of the Tiger Tail. But a rolling pin tends to be too hard, too broad, and too fragile (the handles tend not to be sturdy enough, unless you've got a really good quality rolling pin) for most massage purposes. The Tiger Tail solves these issues: it's got a foam cover on a narrow cylinder, and it's extremely sturdy.

This product is a perfect case study in how the right tool can make all the difference: I can self-massage my own legs with this tool effortlessly compared to trying to do the job with hands or any other tool. It's easy to apply and control plenty of pressure.

About Paul Ingraham


Headshot of Paul Ingraham

I am a science writer in Vancouver, Canada. I was a Registered Massage Therapist for a decade and the assistant editor of ScienceBasedMedicine.org for several years. I've had many injuries as a runner and ultimate player, and I've been a chronic pain patient myself since 2015. Full bio. See you on Facebook or Twitter, or subscribe:

Related Reading

- **Shin Splints Treatment, The Complete Guide** — An extremely detailed guide to all types of shin splints for both patients and professionals, including thorough reviews of every possible treatment option, and all about the nature of the beast
- For more information about how hard-surface running affects your shins, see **Is Running on Pavement Risky?** — Hard-surface running might be a risk factor for running injuries like patellofemoral pain, IT band syndrome, shin splints, and plantar fasciitis.
- Is there anything you can do about that nasty soreness that crops in your shins after a downhill hike or a your first run in a while? Probably not. For the reasons why, see **A Deep Dive into Delayed-Onset Muscle Soreness** — The biology & treatment of "muscle fever," the deep muscle soreness that surges 24-48 hours after an unfamiliar workout intensity.

Appendix A: Is trigger point therapy too good to be true?

Trigger point therapy isn't too good to be true: it's just ordinary good. It can probably relieve some pain cheaply and safely in many cases. Good bang for buck, and little risk. In the world of pain treatments, that's a good mix.

But pain is difficult and complex, no treatment is perfect, and there is legitimate controversy about the science of trigger points. Their nature remains somewhat puzzling, and the classic image of a tightly "contracted patch" of muscle tissue may well be wrong. What we do know is that people hurt, and it can often be helped.

The Perfect Spots are based on a decade of my own clinical experience as a massage therapist, and years of extensive science journalism on the topic. Want to know more? This is the tip of the iceberg. I've written a whole book about it …

Appendix B: Quick Reference Guide to the Perfect Spots

This index is also available on its own page.

1 For headache, neck pain

Under the back of the skull must be the single most pleasing and popular target for massage in the human body. No other patch of muscle gets such rave reviews. It has everything: deeply relaxing and satisfying sensations, and a dramatic therapeutic relevance to one of the most common of all human pains, the common tension headache. And no wonder: without these muscles, your head would fall off. They feel just as important as they are. (Click/tap heading to read more.)

for pain: almost anywhere in the head, face and neck, but especially the side of the head, behind the ear, the temples and forehead

muscle(s): suboccipital muscles (recti capitis posteriores major and minor, obliqui inferior and superior)

2 For low back pain

This Perfect Spot lives in the "thoracolumbar corner," a nook between your lowest rib and your spine — right where the stability of the rib cage and thoracic vertebrae gives way to the relative instability of the lumbar spine. It consists of trigger points in the upper-central corner of the quadratus (square) lumborum muscle and in the thick column of muscle that braces the spine, the erector spinae. (Click/tap heading to read more.)

for pain: anywhere in the low back, tailbone, lower buttock, abdomen, groin, side of the hip

muscle(s): quadratus lumborum, erector spinae

3 For shin splints

Perfect Spot No. 3 is in your shins — seemingly an unlikely place for muscle knots! But there is meat there, and if you've ever had shin splints then you know just how vulnerable that meat can be. Even if you've never suffered so painfully, your shins probably still suffer in silence — latent trigger points in the upper third of the shin that don't cause symptoms, but are plenty sensitive if you press on them. (Click/tap heading to read more.)

for pain: in the shin, top of the foot, and the big toe

muscle(s): tibialis anterior

4 For thoracic outlet syndrome, throat pain and tightness, chest pain

Deep within the Anatomical Bermuda Triangle, a triangular region on the side of the neck, is the cantankerous scalene muscle group. Massage therapists have vanished while working in this mysterious area, never to be seen again. The region and its muscles are complex and peculiar, and many lesser-trained massage therapists have low confidence working with them. (Click/tap heading to read more.)

for pain: in the upper back (especially inner edge of the shoulder blade), neck, side of the face, upper chest, shoulder, arm, hand

muscle(s): scalenes (anterior, middle, posterior)

5 For carpal tunnel syndrome, tennis elbow

Just beyond your elbow, all the muscles on the back of your forearm converge into a single thick tendon, the common extensor tendon. At the point where the muscles converge, in the muscles that extend the wrist and fingers, lies one of the more inevitable trigger points in the body: Perfect Spot No. 5. It is constantly provoked both by computer usage today, and more often by the use of a pen in simpler times — and by the occasional tennis match, then and now, or maybe crocheting. (Click/tap heading to read more.)

for pain: in the elbow, arm, wrist, and hand

muscle(s): extensor muscles of the forearm, mobile wad (brachioradialis, extensor carpi radialis longus and brevis), extensor digitorum, extensor carpi ulnaris

6 For gluteal and hip pain, sciatica, bursitis, low back pain

When you have back pain, buttock pain, hip pain, or leg pain, much or even all of your trouble may well be caused by trigger points in the obscure gluteus medius and minimus muscles, a pair of pizza-slice shaped muscles a little forward of your hip pocket. Other muscles in the region are usually involved as well, such as the gluteus maximus, piriformis, and the lumbar paraspinal muscles. However, the gluteus medius and minimus are a bit special: their contribution to pain in this area is particularly significant, and yet people who have buttock and leg pain rarely suspect that much of it is coming from muscle knots so high and far out on the side of the hip. (Click/tap heading to read more.)

for pain: in the low back, hip, buttocks (especially immediately under the buttocks), side of the thigh, hamstrings

muscle(s): gluteus medius and minimus

7 For jaw pain, bruxism, headache

Your masseter muscle is your primary chewing muscle — not the only one, but the main one — and it covers the sides of the jaw just behind the cheeks. It's also the main muscle that clenches your jaw and grinds your teeth, unfortunately, and it's one of the most common locations for trigger points in the human body. It is probably an accomplice in most cases of bruxism (that's Latin for "grinding your teeth") and temporomandibular joint syndrome (jaw joint pain), plus other unexplained painful problems in the area. (Click/tap heading to read more.)

for pain: in the side of the face, jaw, teeth (rarely)

muscle(s): masseter

8 For runner's knee

A lot of quadriceps aching, stiffness and fatigue emanates from an epicentre of "knotted" muscle in the lower third of the thigh, in the *vastus lateralis*, a huge muscle — one of your biggest — that dominates the lateral part of the leg. Stretching it is effectively impossible, but massage is an option: although often shockingly sensitive, Perfect Spot No. 8 can also be quite *satisfying*. It also often complicates or contributes to other problems in the area, especially runner's knee (iliotibial band syndrome). (Click/tap heading to read more.)

for pain: in the lower half of the thigh, knee

muscle(s): quadriceps (vastus lateralis, vastus intermedius, vastus medialis, rectus femoris)

9 For chest pain & tightness

The "pecs" are popular: of 700+ muscles, the *pectoralis major* is one of just a dozen or so that most people can name and point to. It also harbours one of the most commonly-encountered and significant trigger points in the human body, and can produce pain much like a heart attack in both quality and intensity. (Click/tap heading to read more.)

for pain: anywhere in the chest, upper arm

muscle(s): pectoralis major

10 For plantar fasciitis

The tenth of the Perfect Spots is one of the most popular of the lot, and right under your feet — literally. It lies in the center of the arch muscles of the foot. This is one of the Perfect Spots that everyone knows about. No massage is complete without a foot massage! (Click/tap heading to read more.)

for pain: in the bottom of the foot **muscle(s):** arch muscles

11 For upper back pain

This "spot" is too large to really be called a "spot" — it's more of an area. The thick columns of muscle beside the spine are often littered with muscle knots from top to bottom. Nevertheless, there is one section of the group where massage is particularly appreciated: from the thick muscle at the base of the neck, down through the region between the shoulder blades, tapering off around their lower tips. There is no doubt that this part of a back massage feels even better than the rest — even the low back, despite its own quite perfect spots, cannot compete. (Click/tap heading to read more.)

for pain: anywhere in the upper back, mainly between the shoulder blades **muscle(s):** erector spinae muscle group

12 For low back and gluteal pain, sciatica

At the top of the buttocks lies a Perfect Spot for massage: a sneaky but trouble-making brute of a trigger point that commonly forms in the roots of the gluteus maximus muscle. It's *below* the lowest part of the low back, but it often *feels* like low back pain. This is the kind of spot that the Perfect Spots series is all about: not only does it tend to produce a profound, sweet ache when massaged, but the extent of the pain that spreads out around it is almost always a *surprise*. It feels like a key to much more than expected. (Click/tap heading to read more.)

for pain: in the lower back, buttocks, hip, hamstrings **muscle(s):** gluteus maximus

13 For low back pain, sciatica

Some of the Perfect Spots are perfect because they are "surprising" — it's delightful to find a place to massage that feels highly relevant your pain in an unexpected location. Others are perfect because they are *exactly* where you expect them to be — and what a relief it is to be able to treat them. Perfect Spot No. 13 is perhaps the ultimate, the quintessential example of a trigger point that is usually "right where I thought the problem was": in the "pit" of the low back, at the bottom of the thick columns of back muscle beside the spine. (Click/tap heading to read more.)

for pain: in the low back, buttocks, hamstrings **muscle(s):** erector spinae muscle group at L5

14 For shoulder pain

I avoided adding Spot 14 to this series for many years, because it's a bit tricky to find. But precision is not required: although there is one specific spot that's especially good, nearly anywhere under the ridge of bone on the shoulder blade is worthwhile, and often a surprising

key to pain and stiffness everywhere else in the shoulder, *especially* all the way around on the other side, facing forward. (Click/tap heading to read more.)

for pain: any part of the shoulder, and upper arm

muscle(s): infraspinatus, teres minor

Notes

1. The tibialis anterior and posterior both have long tendons that support the arch like stirrups (a really neat little bit of anatomy, actually). Thordarson *et al.* found (as summarized by summarized by Bolgla): "The posterior tibialis provides the most significant dynamic arch support during the stance phase of gait. The posterior tibialis eccentrically lengthens to control pronation and reduce the tension applied to the plantar fascia during weight acceptance." And we also know from Basmajian that the arch muscles only "kick in" to under quite heavy loads: about 180 kilograms! We probably hit that number with the impact of jogging, say, but it's still surprisingly high.

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