

Ep. #382 - Peroneals, Ankle Sprains and Powerful Feet



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With your host:

Susi Hatelly

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Introduction (00:00.00)

You are listening to From Pain To Possibility with Susi Hatelly. You'll hear Susi's best ideas on how to reduce or even eradicate your pain, and learn how to listen to your body when it whispers so you don't have to hear it scream. And now here's your host, Susi Hatelly.

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Welcome, and welcome back! I'm so glad that you're here because today we are in part two of the three-part miniseries on the foot. In the last episode, I focused in on the inner edge of the foot—primarily the big toe—and explored its role in the walking stride (when the big toe kind of gets all funky and gunky) and how that can impact up into the upper calf and also into the glutes, and the play between hip function and big toe.

So, the big toe being sort of the king, we could say, of the inner edge, today we're going to be looking at its balancing partner: the outer edge of the foot and the lower leg. We're shifting our movement detective magnifying glass to the group of muscles on the outside of the shin: the peroneals, which are also known as the fibularis muscles.

So, if the big toe—in a way, you can think of it as your forward launch pad—the peroneals are the lateral reins that keep the system steady. They help manage side-to-side control, stabilize the ankle, and create the kind of platform (steady platform) that the foot needs before it can really move into a push-off really clearly and cleanly.

In this episode, I want to explore four ideas:

Firstly, the anatomy and biomechanics of the peroneals.

Why they matter so much in chronic ankle sprains.

How the outside of the shin connects to the outside of the hip.

And what we can do to play with restoring function so that the ankle becomes adaptable, and not just less tight.

When people think about ankle stability, they often think about ligaments, braces, or balance drills. But the peroneals deserve a lot more attention than they usually get. These muscles run along the outside of the lower leg and act like the body's lateral anchoring system. And their job is not just about the foot; they have a deeper role which makes constant small adjustments to help keep us upright when our weight shifts. When the ground is uneven, or when the body needs to transfer load from side to side, we want our peroneals to be able to respond well, to facilitate those things happening really, really smoothly. And before you drive through your big toe, your body really does need to trust the outside edge enough to accept and really move the load; and the peroneals help to facilitate that trust.

So, let's dig into the anatomy of the peroneal muscles. The peroneal muscles, as I mentioned, are also known as the fibularis muscles, and they are a group of three muscles located on the outer side of your lower leg, and they consist of the peroneus longus, peroneus brevis, and peroneus tertius.

How they are structured is: the peroneus longus is the longest and most superficial muscle of the group. Its superior attachment starts at the head and the upper two-thirds of the shin bone, also known as the fibula, and its tendon travels down the outside of the calf, hooks tightly around the sharp bony bump on the outer ankle called the lateral malleolus, and then it takes a unique detour—diving underneath the sole of the foot. It runs diagonally across that foot, attaching to the inside edge at the base of the first metatarsal (the bulb of the big toe) and the medial cuneiform bone.

Now let's get into the peroneus brevis. It starts at the lower two-thirds of the outer shin bone, also known as the fibula, and its tendon runs down right next to the longus and loops around that same ankle bone, the lateral malleolus. However, instead of going under the foot and over towards the big toe, it stays on the outside, anchoring directly onto the bony prominence at the base of your pinky toe, also known as the fifth metatarsal.

So then we get to the peroneus tertius. And this is the smallest of the three, and is often grouped together with the front compartment muscles of the leg. Now, it starts on the lower third of the front of the shin bone, also known as the fibula, like the other two. But unlike the other two, its tendon travels down the front of the ankle rather than behind the outer ankle bone, and it attaches to the top surface of the base of the pinky toe, also known as the fifth metatarsal.

So, with that introduction to the peroneal muscles as a group, where we can go next is into the support system of the foot—or one of the support systems of the foot—that's also known as the stabilizing stirrup. And there are some people out there that will talk about how it really is quite an elegant support system.

So, if we dig into it, that stirrup is formed by the peroneus longus and also the tibialis anterior, and they are approaching the foot from opposite directions. So, where the tendon of the peroneus longus is running down the lateral side of the leg, loops around that malleolus, traveling diagonally beneath the sole of the foot towards that big toe; from the front and inside, the tibialis anterior runs down the shin toward the medial side of the foot. Both tendons insert in the same structural region: the base of the metatarsal and the medial cuneiform.

That shared attachment is what makes the stirrup possible, because one tendon is pulling from the outside and underneath, while the other approaches from the front and inside. And together, they create a sling-like loop under the midfoot. So, ideally, when you're stepping down, they pull against each other; and that mutual pull helps to hold the center of the foot together, steady the midfoot, and support the transverse arch, and prevent the medial arch from collapsing under load.

This is not just an anatomy detail; it's a mechanical strategy. The peroneus longus helps pull that first metatarsal downward into the floor, which gives the medial side of the foot more stability. The tibialis anterior contributes tension from above and inside. So, together, they compress and really help coordinate the foot so pressure can move forward with more control.

But now let's add in the peroneus brevis. The peroneus brevis also plays a role in this, but from a more direct bracing perspective along the outer edge. Because it anchors onto the base of the fifth metatarsal, it kind of acts like a lateral guy-wire. So, when the foot starts to roll too far inward, the brevis is meant to contract to brace against the outer ankle to help prevent excessive inversion.

So, these peroneals are doing sort of two important jobs at once: one part of the system is directly, hopefully, supporting that lateral ankle, while the other part is reaching under the foot to help stabilize that entire platform.

So, we bring in the episode from last week; this is where the story connects back to the big toe. The big toe can't be an effective propulsive lever unless the first metatarsal is stable beneath it. And that stability doesn't just appear at the end of the step; it has to be happening throughout the sequence of gait. In other words, big toe push-off is not just a toe action; it's coming out of and from a foot that already has some great stability and suppleness.

So, if I really made the big toe to be the star of the show in part one, in part two, I'm integrating it into really understanding that its function as the star arises out of a real stable cast that's supporting it. The outer ankle and that underfoot stirrup can be what makes that big toe function so incredibly well.

So, now this sheds some light on why ankle sprains can be so disruptive. When an ankle is sprained, typically what's happening is we roll heavily onto the outside edge of the foot. And while this can physically damage ligaments on the outer ankle, perhaps a deeper, longer-term issue is not structural, but it's that those ligaments are packed with nerve receptors that help tell us where the joint is in space. It's letting us know or give proprioceptive guidance. They are a part of the brain's mapping of the ankle. And so, when they get injured, that map becomes less clear, the proprioception becomes less reliable. Right? It's not just that the system could be weaker; it's also less informed.

Which means the next time the foot meets uneven ground or starts to tilt, there may be a recognition of a problem, but the recognition comes a bit too late. So, while the peroneals may have gotten strong again, the timing of the way that they function and fire might be delayed. So, if they're not firing quickly enough—or responsively enough, is probably a better way of describing it—then they aren't supportive in restoring control of that foot position. That stirrup function starts to become less efficient, and then a person can roll onto the outside foot again, and then this starts to become more of a predictive habit. And it's why some people can get stuck in this chronicity of cyclical, repetitive strains. It's not a strength problem; it's a habitual, predictive problem.

So, when I'm working with somebody who has had a chronicity of ankle sprains—and usually I'm working with someone way, way, way into many decades of life on the planet, and the ankle sprains happened more so when they were younger, but the patterning still exists—so, what I'm looking at is, I'm not just looking at it from a sequence problem. I'm looking at it from a, "Hmm, I wonder what creative strategies were utilized here to provide some degree of support?" What's helping to manage side-to-side balance? What's helping to manage foot control with gait? How are they doing it? And a really amazing reality is, is people have some incredible, creative ways at finding the way through a gait pattern, of finding a way to balance. And a reason why they're showing up in my Zoom room, why they're showing up in my on-demand classes, is because they're uncomfortable, they're tight, they're in pain, and they can't figure out why.

It is one primary reason why, when I begin working with people, I start with the largest joints first. Because so often, compensatory strategies that are being utilized to support foot and ankle have some home, some hub up in the hips. If the hips can't control the pelvis well, the ankle is going to be asked to do more reactive work below. So, just as we saw with part one and the relationship between hip extension and big toe function, it's really common to see how the lateral hip and the lateral ankle can really play together, both in a supportive way but also in a compensatory way. As we help develop better pelvic stability that includes better lateral stability, then we often find a lot of shifting in the way the foot loads, the way the foot moves, and how the foot feels.

So, what do we do with all of this and how do we move this forward? Well, first of all, I think it's important that we move beyond thinking about peroneals as just tight bands on the outside of a leg that need to be rolled out. While that does provide relief, I think we're missing something just by going for the using the ball as a—as an Advil. The job is not simply to relax those muscles; the reality is, is they are holding on because they need to. We ultimately want to help retrain them so that they become more responsible, adaptable, and have better timing.

So, what I want to support someone to do is restore their function, not only for the brain's ability to sense proprioceptively the foot and the ankle, and how the foot and the ankle move through the gait cycle, or go upstairs and descend stairs, go up a mountain and down a mountain. We want to help improve the peroneals' ability to fire well, and responsive, and the foot's ability to be more coordinated through the gait pattern, allowing that stirrup between the peroneals and the tibialis anterior to really function well so that the body and brain can confidently transfer load from one side to the other.

The goal is not just looser tissue. The goal is for the foot and ankle system to sense, respond, stabilize, and propel. And that's what really makes the ankle feel truly resilient and not rigid, but really dependable.

So, to bring it all together: if part one was about the inner edge and the big toe and the relationship of that to higher-level calf tension and glutes that might not fire, this one was about the outer edge, the lateral anchors that help make the lever work so well. Peroneals do more

than prevent wobbling. They help to stabilize the ankle and support the underfoot stirrup, help to support the arches, and really prepare the foot to transfer load forward. And when ankle sprains interrupt their timing, the consequences ripple far beyond just the outer ankle. Not only does coordination get lost and less trustworthy, compensatory strategies really start to mess up and mess with the system. Yes, they are—let me say it again—the consequences ripple far beyond the outer ankle. The foot becomes less and less coordinated. And our compensatory strategies, while creative and supportive in some way, if they are also contributing to pain signals and less function, then overall we're going to have a feeling of less trust within ourselves, less capacity for producing a solid push-off.

So, if you want better gait, better balance, a better ability to run, climb stairs, go up and down hills, more confidence on your feet, we need to look at all of it together. We need to have the big toe, we need to have the lateral system that steadies, and connect that well with the hip.

So, we're going to take this to the next level with the final episode of this three-part series with the pinky toe, and how the pinky toe plays with it all. I look forward to sharing more on the next episode. Until then, if this has resonated with you and you want to dig into it more with me, this July, I am running Power Up Your Movement: Strong and Supple Feet. I would love for you to join me. You can read more over at functionalisenergy.com/feet.

Hey there, is this interesting and fascinating as we explore the relationships between the feet and the hips? Well, if you want to dig into this more, whether it's for your own self, whether it's for your clients, come and join me: Power Up Your Movement: Strong and Supple Feet. We're going to dig into those feet, explore the relations—the relationships to the hips, to the shoulders, to your breath, and more. You can read more and register over at functionalsynergy.com/feet.