

Ep. #341 - What My Son Taught Me About Gait & Propulsion



Full Episode Transcript

With your host:

Susi Hatelly

[From Pain to Possibility](#) with Susi Hatelly

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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Susi (00:23.63)

Welcome and welcome back. With this episode, we continue the conversation around gait, and specifically, how part of the fun around teaching gait and being a mom is I get to see these principles really come alive in real time. My son Lewis is eight and a half now, and earlier this summer he told me that he wanted to improve his walking.

His legs had been getting a bit more sore, and he was noticing that his walking pattern had felt off. Now, this is a pattern that I had seen really develop starting at around age five. And it correlated to the same time he developed some digestive issues. And while those digestive issues have long since settled, the walking pattern has really been maintained.

Susi (01:21.96)

It was a bit of an internal rotation through his legs, a tiny bit of a pigeon toe. His legs not quite tracking cleanly underneath him when he walked. But when he ran, everything just began to move smoothly with a lot more coordination and clarity. Now, I didn't specifically address these things back when he was five and six and seven because I just wanted to watch to see if things would shift on their own as he grew, and I didn't really wanna make it a thing per se.

He did have experiences of some knee strain and things of that sort when he was doing a lot of gymnastics, a little bit of skiing and a bit with his mountain biking, and we just addressed it specifically in those moments. But then, in August, he said to me, *you know, mom. I think I want to address my legs*. Now, he didn't use the word "address", but basically that is what he was saying.

So since August, not in a very deliberate or like regular way, but more in a bit by bit occasional way, we've been working together in small increments. Everything from massaging his belly, really tuning in between the ribs and his pelvis, and also in and around the legs, exploring some granular movement patterns at his ankles, his knees, his hips, pelvis and ribs.

And each time, there are moments of his walking improving. So it's clear that what we're doing has an impact and he would feel his legs moving more so, more fluidly for me, watching him, they're moving more in the sagittal plane - I could see his pelvis being steadier, his stride smoother, and just an overall upbeatness in his mood.

Susi (03:17.96)

Recently, we were finishing up a short 10-minute session and it was a really, really fun session where he was discovering and I was discovering how his pelvis was moving all over the place with some of the leg movement that we were doing. And it was really quite funny because I would say to him, *okay, Louis, I'm gonna actually hold your pelvis quiet so you can really tune in.* And he says to me, *mom, I get it. You don't have to do that.* So I'm like, okay. And he did. He could actually, like, really settle in, which is truly remarkable in some ways, for an eight and a half year old, but he was able to settle, and all I needed to do is bring his attention to the area and he was able to quiet it down without much extra straining elsewhere.

And it wasn't really anything fancy that I was doing, but it was just helping him sense where these parts of his body, pelvis, ribs, and leg bones were in space. What was really fascinating though is when he got off the floor and his eyes just lit up and I said, *you know what? Let's see what happens as you walk over to the stairs.*

And his gait was amazing and he just raced up the stairs with some real propulsion and momentum. To the point where my jaw was slack like, I'm like, whoa, that's crazy. His whole body moved forward with ease and when he came back down the stairs, his smile was so wide and he was so bright in his eyes and it was almost like his hair was just vibrating almost, if you can get the idea.

Susi (04:50.60)

So, what's so interesting about this is that my son is a sensitive being. Like, he tunes into the things around him. And he also responds, so in some ways - someone who's very sensitive - he's a great example of this. I see this with clients too, that those who are sensitive can also be very responsive, right?

So the beauty: on one side of the coin, there's this sensitivity on the other side, is this ability to respond. And we can tell if the stimulus is working because they are so quick to shift. So if the stimulus doesn't work, if the input doesn't work, then we'll see that there's no change. Right? And so then we get to shift it.

Susi (05:32.28)

So anyway, the key being here is that being sensitive, you can sense and respond, and this combination – awareness plus the ability to adapt – is what can really bring a system back online. Because propulsion, that springy effortless power that carries us forward, isn't about force. It's about reorganization, recalibration, and readiness, and it's what emerges when all the parts – physical and neuromuscular – really start working together again.

So if we dig into what propulsion really is, there is plenty of debate out there in the science world about what muscles actually create propulsion, and this episode is not about getting into that debate. My interest is really like, what can I see happening? What can my client feel? What can

my son feel, and how can I help improve and improve the reorganization and the retraining that needs to happen?

The good news is, I don't need to specifically know specific muscles in the work that I do. I can be very interested, so when I read some studies that highlight the glutes and the hamstrings where others point to the soleus and calf complex, and others still suggest the timing and recoil matter being more important than any single muscle group, I can take those ideas and apply them and just look, *how is my kid responding? How is my kid's body responding to the stimulus that I provide?* Because the reality is, if there's many different views on the way this works, then guess what? There likely are many different ways that it actually works. It just depends on how a person's system is responding.

Susi (07:21.09)

So while the research continues to sort out which muscles contribute most, and maybe they never will get there, the key is what I see in practice, not only with my clients', trainees, and even my son. The key is that for me and my work, it's not so much propulsion being what fires when; **it's how the body organizes itself to receive, store, and release energy. It's about coordination, timing, and nervous system readiness.** Not so much about muscle isolation in the work that I do. Now, biomechanically, propulsion emerges from a clear rhythm between breaking and release. Every step begins with an absorption. The body receiving gravity and ground reaction force, and this transitions into release where the stored energy becomes motion, and when this rhythm is balanced, movement feels fluid. And when it's off, we see all sorts of stuff, including twisting, wobbling, bracing, and collapse. But propulsion, and this is I think, really important here, is also a nervous system event. Our brain has to trust the rest of our body to let that energy move.

Susi (08:48.97)

When there's uncertainty, protection, or old compensation patterns, the system can subtly limit forward drive. Not because it's weak, but because it's being wise. It's regulating for safety. Oftentimes it's doing this in very creative ways. And this is what I so often see, whether it's in my son or with clients after surgery, in athletes' post-injury, when the nervous system recognizes that the load can be received safely, propulsion naturally returns. The movement becomes cleaner, lighter, and more expressive. So, rather than asking which muscles create propulsion, even though I am an anatomy nerd at times, what I prefer to ask is how clearly is, **how clearly is the load being received? How cleanly is the energy transferring through the system? How ready is the nervous system to allow that movement to happen?**

That's the territory where biomechanics meets awareness, and where sustainable, joyful motion truly, truly is reborn. When propulsion is missing, so many people immediately think, strength. Gotta get stronger glutes, stronger calves, stronger core.

But what I'm seeing time and time again is that it's not strength that's missing, it's coordination. The parts simply aren't communicating clearly. When the leg bone can't swing clearly and

cleanly in the pelvis, or if there's a wacky rotation bit between the ribs and the pelvis that isn't quite in clarity, or maybe the feet can't sense and respond to the ground for whatever reason, then the system has to work harder.

It finds shortcuts in a very creative way, whether it's subtly bracing in the belly, holding the breath, maybe a stiff rib cage or a locked jaw. We can also move into very known compensation patterns like trendelenberg, hiphike, lurching, vaulting. And these compensations really and truly are brilliant in the short term because they keep us moving from point A to point B, but there is a cost to them.

Susi (11:32.81)

By the time someone comes to see me, they're ready to make a shift. When I work with my clients and also with my son, I'm not asking their bodies to try harder. I am inviting them to listen. To listen to their systems. And to start by listening to their systems, we gotta quiet down. We gotta start small, and that's why I begin so often with granular movement and how the hip, pelvis, and rib cage actually relate. How the foot receives load, and how breath supports the motion.

As the nervous system begins to register this information more accurately, as the person doing the movement can proprioceptively and intercept tune into this happening, coordination returns. And we find that the body, and the mind for that matter, stop overworking, and there's a lot more integration that happens.

This is when propulsion becomes more effortless and also more powerful, because in many ways the body is no longer fighting itself. The parts are in conversation instead of competition. And here's the really cool paradox. As the physical mechanics re-coordinate, the emotional system often softens too.

There's less guarding and vigilance, right, breath changes. We might even say that a person feels safer to move, not because they've built more power, but because they've rebuilt trust. And in many ways, this is the essence of what it is that I do. Propulsion isn't about pushing forward. It's about allowing forward through connection, clarity, and coherence.

Susi (13:40.61)

When we think about re-coordination, re-coordination doesn't come from forcing movement or fixing postures or putting someone into a shape. It comes from presence, and from restoring the conversation between the brain and the body so the system can reorganize itself differently. When someone has been moving with compensation, their system has learned to protect, not propel.

The work isn't to break that pattern, but rather to update it. To show the nervous system that another option exists, one that's efficient, safe, and sustainable. In practice, that begins with clarity. I start by exploring a single joint or a single relationship, one at a time. How the femur

moves in the hip socket, how the ribs relate to the pelvis, how the foot receives load, whether at the heel, the arch, or through the ball of the foot and pinky.

Then we layer through next pieces. How load transfers, how one segment influences another, right? How something so distal compared to something more proximal, how these relate to each other. This is how coordination really begins to emerge. As the organization improves, range and power expand naturally.

There's not a need to add force because the system naturally has the space for it. That's the nervous system reorganized in itself, updating timing, sequencing, and yes, confidence.

Susi (15:23.61)

When propulsion returns, then something changes that's instantly recognizable, both physically and emotionally. The movement looks smoother, but more importantly, it feels lighter and there is an ease, a quiet confidence in how the body meets the ground and moves forward. Biomechanically, the timing naturally clicks into place.

The stance leg receives load, the pelvis translates, and the ribs and arms counter rotate. The energy transfers are cleanly moving through the system, right? There's not this extra effort. There's a fluidity, a flow. And neurologically, the system is communicating again, the brain no longer is on high alert, scanning for instability or threat. Because it's trusting the process, which frees up more power, rhythm, and breath. There's almost this poetry in motion, which is why propulsion so often coincides with emotional lift, a sense of grounded aliveness, clarity, and even joy. I see this in clients all the time, and I also saw it with my son. When that propulsion came back, **it wasn't just his stride that had changed, his mood lifted**, his whole system was more organized, more at ease in motion, and in himself. This is what makes propulsion such a beautiful teacher in many ways. It shows us real time. What happens when body and nervous system coherence and coordination really meet. When the system is ready, resourced, and allowed to move forward freely.

Susi (17:09.77)

What I love about exploring propulsion is that it reminds us movement isn't something that we do to the body. Really. It's something that *emerges* through the body when the system is ready. It's easy to think of progress as linear, stronger, faster, farther. But true propulsion, whether in gait, recovery, or life, happens when all parts of us are lined up in the same direction.

When the mechanics are clear, the nervous system trusts, and the energy can move forward without hesitation. Sometimes that shows up as a child bounding up the stairs with a grin that not only lights his face but his whole body. Other times, it's a client walking without pain for the first time in months. Or a yoga teacher realizing that less queuing and more listening brings her students to life.

In this way, propulsion is a metaphor, **a reminder that healing, growth and forward motion are not forced. They unfold when we're organized, connected, and ready.**

Susi (18:27.38)

If this is something that is really resonating with you and you are a yoga teacher or a health professional who loves yoga, then you will probably love, *I Love Gait*. It's a program we're running through November and into December. We can really dig into what makes up a powerful gait, how to help people improve post-surgery, how to help reduce and even eliminate limping and making that gait pattern so fluid and coordinated.

You can read more over at **functionalsynergy.com/gait**. Have a great time exploring and we'll see you next time. Take care.