Inducing Fluid Hands to Reveal the Functional Layers of the Wrist

An Interview with Siana Goodwin

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ABSTRACT *This interview revisits a Rolfing® Structural Integration (SI) in industry success story. Siana Goodwin shares from her years of experience working onsite at a hearing-aid manufacturing company – work that directly reduced workers' compensation costs for a large employer. There is much to learn about hands and arms, and especially carpal tunnel, from her work with this specific client population.*

Lina Hack: You have a unique experience as a Rolfer, you have done a lot of focused work with hands and arms. Specifically, you worked in an industrial setting with Starkey Laboratories, a hearing-aid manufacturing company.

Siana Goodwin: Yes. One of the first questions people always ask me is how I first got started working at Starkey. It was a great thing but I didn't initiate it. I had a client who was very devoted to Rolfing SI, believed in Rolfing [SI], and he happened to be the human resources director at Starkey. Luck is a huge part of everything.

LH: That seems to be a common narrative amongst our colleagues, we get these devoted clients and they have the doors for us to walk through.

SG: I think that is the lesson, pursue your passion about the work and something will happen. I think it's really hard to go off and sell an idea to someone, at least for me. This client brought the idea to me. Starkey was having big problems with carpal tunnel injuries; they were costing them one million dollars in a year in lost time and workers' compensation costs. So, he was saying during a session one day "I'm sure Rolfing [SI] could help people but it would be really hard to get them to sign up for ten sessions." And I said, "You know, I actually think you can work on hands and arms without doing a whole series." It was something I had been exploring with people in the massage school here. And he just started to promote it and convinced the company to take a chance on doing it.

LH: I'm so curious how they structured that contract, did they hire you as a consultant?

SG: It started off experimentally, they were going to try it for a few months and see if it made a difference. It made a big difference within a short time so they kept

going. At one point in that first couple of years they decided to stop it – and then after a short while they came back to me with "Oops, now we can't not do this." So, it kept going. I worked there from 1992 or 1993 until about 2000. Then another Rolfer took over, and then I think in 2006 they asked me to come back, and I worked there until 2015. So, I had two different stints there. The company changed a lot in the time between. It greatly expanded its focus on wellness, and there were more workers doing desk jobs than actual manufacturing. They originally hired me to work with people actually constructing the hearing aids. That's where all their carpal tunnel injuries were coming from.

LH: Did you have an office in their facility?

SG: Eventually I did. At first, they put me in a kind of closet or storeroom where I could fit a table. Over time they made a special Rolfing office. I think that happened after I left the first time. They found that somebody was there often enough that they needed a space that would just be more pleasant, more accessible.

LH: Were people permitted to come see you during their shift?

SG: Yes, that was the idea. The closet I was originally in was set in the production area, which made sense because the workers were right there. An employee could come in for fifteen minutes to a half an hour. One of the production managers said at the time, "I'd rather have them lose half an hour of work than lose weeks of work." That became the attitude as they saw the value of the work over a couple of years. The difference in productivity was clear.

LH: In your article "Rolfing in Industry: Addressing Repetitive Stress Conditions" (Goodwin 1996) it was emphasized how Starkey management could see the value in productivity and reduction in the number of workers' compensation claims.

SG: Oh absolutely, that was the other thing. Not only did their immediate costs from worker injury go down, their insurance costs went down. They contracted with an insurance company for their own insurance packages. With that kind of arrangement there's something called the modification factor – or 'mod factor' – where there's an industry average of risk, and the company's insurances costs are determined by where they stand relative to that risk: about average, above average, or below average. Starkey's risk became so much lower than the industry standard that their entire insurance costs dropped. That was a huge savings for them for a long time.

The fascial matrix goes throughout all the constructs we think of as the anatomy.

LH: And your work was focused on symptom relief for carpal tunnel pain?

SG: One of the things I discovered was a way to really make something change while only working on this specific area of the body, without doing all the supportive work elsewhere in the structure, but it became really hard on me. And it was an exhausting kind of work, much harder on my hands than the regular Ten-Series work I was doing in my private practice.

LH: Employees were at work when they came to the treatment space, I imagine it didn't feel so comfortable to dress down, take their shirts off?

SG: Yeah, they mostly did not take shirts off. I would just work through clothing.

LH: In their work, they were working at microscopes, holding tweezers, doing finely detailed work with their hands?

SG: There was a variety of jobs but in the production of the hearing aids there was no job that didn't involve fine hand motor movement – the people were working through microscopes, assembling these tiny in-the-ear hearing aids. But there were other jobs. For instance, people had to polish the aids or buff rough plastic off the casings – that was a hazard because they were gripping a tiny object in their hands and using an electric grinding wheel to smooth the plastic. The tight grip created muscular stress and the vibration was irritating to the nerves. At another work station people tested the hearing aids, and to do this the hearing devices had to be wrapped in a certain kind of putty in order to go into the machine for testing. Their hands were doing this gripping and kneading thing repeatedly, opening and closing this heavy door. That was a whole different kind of repetitive-strain injury.

LH: Would one person always be doing the same work station? Would they be doing that for their whole forty-hour work week?

SG: Yep. Or more than forty hours. They didn't change workstations much. Sometimes somebody would do two jobs and they might trade off a little bit, but for the most part, they were just stuck in one place doing one job.

LH: I have a client who works in a factory assembling remote controls. She said they all move around and that's part of their strategy to change the demand on each individual worker's hands.

SG: People have learned from experience. In the 1990s, industries didn't really know anything about the cost of repetitive work, the whole idea of the repetitive-motion injury and carpal-tunnel pain was just coming up. By the time I returned to Starkey in the 2000s, they had instituted exercise breaks, and people had to stop working and do a series of stretches. This was part of their regular breaks though, so most people didn't give a lot of attention to the stretches. But the company and the workers had more consciousness of some of the factors that were physically stressful.

LH: When you were there in the 1990s, was the company open to hearing your suggestions about that?

SG: They were really concerned about the cost of repetitive-motion injury. They were open to lots of things and were looking at things like exercise breaks and the ergonomics of the different work stations; they were definitely open to my feedback about that. That was another important factor besides the bodywork, really working with how people were using their bodies and getting support for sitting, using microscopes, stuff like that.

LH: Would there be a difference in how individuals were injured depending on their own body type?

SG: Honestly not so much. It was more the stress of what was going on. When I came back in the 2000s, there were so many more office workers that I started seeing more people who had neck and shoulder strain from working at computers, and different kinds of hand and arm ailments from working with keyboards. With those issues there's really less direct stress on hands and arms – the primary factor is immobility, sitting in one position for so long. It seems like more people are aware of that hazard now.

LH: Did both groups of individuals present with carpal-tunnel-pain symptoms?

SG: The office workers mostly had different issues. I didn't find people developed carpal-tunnel syndrome unless they had that repetitive hand movement, although they would have other kinds of hand and arm strain. The very long work hours were more of an issue in production [of hearing aids]. People were always working overtime. You could not convince people that it wasn't a good idea to work twelve hours a day. But another factor was, I think, that most of the employees I worked with were immigrants. When they saw me for Rolfing [SI], the fact that they had even a break from work was a big deal.

LH: That's an interesting cultural piece. So, I'm curious, then, about the mind map you have about hands and arms. And of course, the neck, for the shared fascial network. What is the dominant feature about how you see these structures? Do you see it as the layers? The sleeves within tubes within tubes? Or what's your construct?

SG: That's a great question. Probably all of those things. In the last decade or so I've done a lot of dissection work with Gil Hedley, so my sense of what's in there has changed radically. I think it's all of those things. I'm really aware of the interweaving nature of fascia. The *layers* are created constructs in the same way that all the anatomical details are created constructs. But both the vision of the body and the sense of everything embedded in fascia has changed the nature of my work.

You asked earlier if I worked with arms and thorax at the same time – I don't think I did that as much when I first started work at Starkey. But in my current practice, especially with hand and arm work, I work much more broadly because I have such a different experience of the continuity of all those tissues. The fascial matrix goes throughout all the constructs we think of as the anatomy. Does that make any sense?

LH: Absolutely. And when I think about hands and wrists, I find myself thinking about its very material, that it's fluid. This is a gel that we call a wrist, that it is a really dense place with cylinders; what we need is fluid flow.

SG: I think you're absolutely right. The hydration factor is a huge part of carpal-tunnel syndrome because the compression from the hand usage will lead to the fluids not flowing well in there. The piece in my 1996 article about opening up the hand and wrist structures is largely a way to get fluid flowing more freely and to get the fluid moving through the nerve structures as well as the tendon structures.

LH: What really struck me in that article was your thinking about the pressure dynamics in the carpal-tunnel compartments. In that same *Rolf Lines* issue there was a carpal-tunnel article by Helen James (1996) that talked about the anatomy of wrist pressure. It's good to keep that knowledge fresh in one's mind.

SG: Absolutely.

LH: The shape of the carpals, changing the pressure in that small zone makes all the difference. And that's what we are doing with our fascial interventions. It's interesting to think about it influencing neural and vascular pressures.

SG: Things move in there! When you move your fingers, you can see the forearm tendons moving under your skin. That was something that fascinated me as a child – that you can see the tendons moving but you can't feel it. It's like, "What the heck's going on there?" And as Helen James pointed out, the nerves are changing lengths too with movement, and they have a limitation of adaptability. There's a lot of potential friction with movement. The fluid mitigates the friction. With constant repetitive motion, there's irritation, and then there will be more fluid to help the function of the tendons. But then the tendon sheaths distend and the space [of the carpal tunnel] becomes crowded and that'll produce inflammation and increased pressure on the nerves.

The whole length of the nerve needs that fluid. That's why we can get those other pressures elsewhere in the nerve pathway. Restrictions anywhere in the nerve pathway are going to affect the feeling in the hands and the arms, changing function of the nerves. It's a funny thing we do, to decide there's a single spot that's the problem when really the whole system is under stress.

LH: That was going to be my next question. How do you decide the spot? Do you have a way of going along the length of the limb, from fingertips to neck, to the brachial plexus?

SG: Well, why bother deciding it's at a spot? It's a functional issue and the function is of the whole structure, which is why doing work like this is both satisfying and dissatisfying. It's like you definitely can produce a difference in symptomology, especially in the person's immediate experience, but you don't see the whole system changing and it's going to be a recurring problem.

It's easy in a session to concentrate on a particular area or particular symptom. I'm sure every Rolfer runs into this, that people say, "It hurts here," and you feel obliged to work where they say it hurts even though you know that there's more going on. But I think we're led to look for different spots by lack of sufficient success in treating only a problem area. Now, when I see clients who come specifically for that work, [like upper-extremity repetitive injury], I'll work spine to fingertip from the beginning.

LH: Do you work passively and actively?

SG: I've developed a preference for working slowly and pretty passively, especially as my sense of the intricacy of the body has developed. And because, like many Rolfers, I've been exposed to energetic forms of work. This has changed my Rolfing work in general. I think there's more of a listening quality to it and less of a pressure to 'do'. And also, I really like to provide that resting space for people because everybody is so cranked up

Figure 1: Tension in the anterior wrist. Photo credit: Ian Noble on Unsplash.

Figure 2: Rotation of thumb while gripping a tool. Photo credit: Quino Al on Unsplash

all the time. I like those moments when you're working effectively and your client is actually resting. That's a preference for me. But I still have people move with the work sometimes. It just depends on what I'm feeling in the tissue. If I feel that they're getting the work they need and can rest at the same time, then that's where I go.

LH: Do you like working with your client's supine? Sidelying?

SG: Generally supine. What are you thinking?

LH: Well, I debate that. Sidelying, you get so much into the shoulder girdle, but then it's more challenging to get the hand. Supine is great for the hand work and the client is resting. Sidelying, easier to get at the brachial plexus.

SG: Yeah, that's true. Here's a tip if you have a physio ball, an exercise ball, in your space. If you have people sidelying so that their hand hangs off the table and rests on the physio ball, then you've got a whole chain to work with. Because they have their hand contacting something, it's actively engaged. You can also call for movements of the hand and arm that will engage it more. Neurologically, it's actively engaged with the shoulder girdle.

LH: Nice, I like it. It sounds like you don't really have a standard start for someone presenting with hand symptoms, that you work dynamically with each individual.

SG: It depends a bit on how they express their problem. Also, what I see. But I do think probably more often than not, with a hand client, I'll start somewhere in here [indicating upper thoracic, shoulder-girdle area]. Everybody has this problem area. And everybody immediately relaxes more, once they can feel some difference in the tension in there.

LH: And clients feel like their needs are getting met.

SG: Yeah, or it's a bonus for them. They wanted their hands worked on but they actually get something else that is equally good and that's a good start.

LH: In your 1996 article, you mentioned that the hand that's having some problems has a particular look to it – a bunched look to the carpal tunnel. What is the look of a compromised hand and wrist?

SG: It's this crowded look through anterior wrist (see Figure 1), like the hand can't open flat in supination. The other thing that's a clue for me for arm work is the inability of the arm to fully supinate when the client lies down, or if you ask them to turn their arm palm up, they can't do that without turning the shoulder as well. That's usually restriction in the layers of the forearm, the tissue of the flexors, pronators, and supinators. That space between the radius and the ulna doesn't open fully. And again, that comes from a lack of variety of movement, that we use our hands in the pronated position most of the time and the tissues don't get much chance to extend. But that can come back pretty quickly with [Rolfing SI] work.

LH: You also had an interesting focus on the thumb.

SG: Well, if there is repetitive stress or injury because of a gripping movement, this part [indicates thenar eminence] is affected. The opponens pollicis moves your thumb to the other fingers of the hand. [The abductor pollicis brings the thumb away from the midline of the hand; the adductor pollicis brings it back.] And you can see how this anterior area at the base of the thumb gets narrower in opposition (see Figure 2). The thumb rotates, the anterior space closes. Does that make sense?

LH: Then when we are working, it's the job of cleaning the kitchen in the thumb compartments.

SG: I like that. Get out the oven cleaner. Yeah, usually this space [of the palm] and all these superficial retinacula here [indicating anterior wrist], opening this up.

LH: And then differentiating the tendons, the flexion, extension tendons of the fingers, is that a key component?

SG: No, not really. If I want to do something with the tendons or check their movement I'll go to here [indicates muscle of proximal forearm]. Then you can get a feel for the motion and, if you need to, get hold a of the muscle bundle. But at the wrist the issue is more about making space in the carpal tunnel, and you do that with the retinacula and tissues of the intrinsic hand muscles. If the tendons have enough space to move, that's the main issue. Does that make sense?

LH: What about spreading the retinacula or carpal ligament?

SG: I don't think of doing that in particular. One of the things that changed for me in doing a lot of dissection exploration was appreciating the intricacy of the fascia and how everything is interwoven. I'm trying to think how to express that. Muscles in the palm have attachment to the ligament as well as to bone. If you think of working at attachment sites, which is where I tend to like to work, it will all respond because it's the same stuff. You can identify ligaments as separate structures, but it is a continuity of tissue. And sometimes just trying to make it look nice, wide, and smooth is sufficient focus for getting the results that you want.

It's all about fluidity. It's about bringing fluidity back to the tissue and movement back. It's not about prying one thing off another or finding an adhesion to break or any of that. It's all about fluidity, which is something you named right away. Working in this area would be one place to have the client involved in movement. If the client moves their fingers that will

produce movement in the tendons that go through the carpal tunnel. The dynamic contraction and extension help the fluid move again. And begin taking that fluidity into a more open space.

LH: So, you don't necessarily think, "What's happening with the median nerve, what's happening in the ulnar nerve?"

SG: It's kind of a funny thing about the way we practice and the way our practice has developed with our 'need to know'. We really want a story so that we can focus what we're doing. That's where symptomatology is useful – the client describes a situation and you can say, "Oh, that's the radial nerve," or whatever. And it influences where you choose to focus your work, but you can work without it too. We don't necessarily need this level of detail; a certain level of sensitivity and other principles – looking for movement and fluidity – those are enough to work with. I feel like I bounce back and forth between really loving the anatomical specificity and also knowing that it's not necessary, and sometimes it's a rabbit hole. Sometimes it's a false lead for not paying attention to other senses you have about what's going on, or listening to the client about what's going on.

LH: It's comforting to hear you say that. When I'm working, I feel like I'm accessing a part of my cortex that is creative, which is really far away from those specific terms, and they aren't always at the forefront of my mind. They get stuck on the tip of my tongue. Yet I know that I know.

SG: Right! I think that's exactly right. When you're working, you're accessing a different kind of intelligence that isn't that linear verbal intelligence.

LH: Yeah, it's this tactile artistry. It feels like moulding the most sophisticated clay possible.

SG: And participating with it, that is true. I think of the work as participating in this continual creative aspect of the body. The body creates itself in every moment. And you're participating in that, in some ways redirecting what the next moment of creation is going to be because the body has been adapted to what's happened to it. And Rolfers add an intervention that will help it create in a different way.

Naming anatomical structures in our minds in a way is eliminative. Any time you use that anatomical specificity, you've separated it from everything around it and you've actually separated it from its activity of participation with everything around it. It is useful in a way because our brains are kind of hungry for that kind of naming of the world. But it's also not necessarily your most useful tool when you're actually working, particularly when you're working with helping the structure become something else, another aspect of itself. When you're working to try to get someone out of pain, sometimes it can be quite useful to be broad with our mind.

LH: Absolutely. I love how you're saying that. And when creating a new moment for people in their hands and their hand comfort, we of course have to talk about the neck. It is essential that we name the whole line and then some.

SG: Which is why you have that urge to get at the whole shoulder structure. You need all of that connection. And why, even in that specific work with people with the hand issues, it was so essential to get them proper support, and comfortable in sitting. It is really hard for the arm to have support in general. If they can be more comfortable sitting, then they have a supportive structure, they're not fighting that as well as trying to do this delicate handwork.

LH: That said, is there any clear deduction that you've found to see impingement being more dominant at the proximal neck structures and nerves that emerge from the neck or it is clearly distal in the forearm, wrist, and hand?

SG: Yes, sometimes you can see just that. "Of course your hands hurt, because look where your neck is." But at the same time, when symptomology shows up, there's going to be some problem in the hand as well. I think that's why it just makes so much more sense to me to start working with the whole chain and not to see a problem as a single cause. It's really a condition, it's a syndrome, so there's no way there's a single cause.

LH: After all these years of practice, how are your own hands?

SG: Since I stopped working at Starkey, they've been good. But a factor of working there was that I did start to develop pain symptoms of my own. There was the kind of demand for me to feel like I had to concentrate on working in a particular way, and also the fact that I always felt rushed. And then there would be a tension that would get in my hands. I would do as much self-care as I could. I did the same things I would do for my clients, work around the thumb joint and just try to open it up and then rest.

LH: I ask because I just celebrated fifteen years in my Rolfing career and I feel like it's just the beginning, so I like hearing about self-care for having a long working life.

SG: You can keep going. I have my fortieth Rolfing anniversary in the spring, so you've got years.

LH: Congratulations! I do love this work so far.

SG: Yes, thank you. It is great work.

LH: Thanks to you for your time today and your insight, I really appreciate hearing your point of view after all that specific experience you've had as a Rolfer in an industry that requires workers to demand so much from their hands and bodies. Lots to learn from that group of clients, thank you so much for sharing with us.

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