

# RUNNER'S WORLD

## Understanding Your Fascia

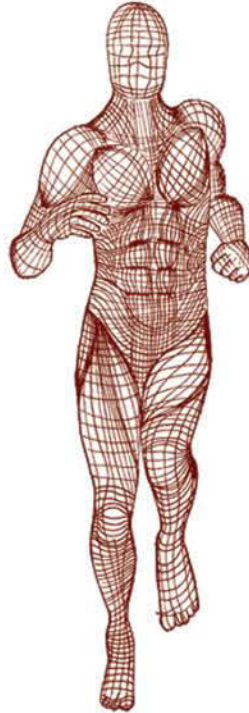
**Fascia may be the missing piece for your lingering injury**

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Published June 10, 2011

**You've got this injury you just can't shake.** You take time off. You ice and stretch and do all the right things but you're still limping home. You spend too much time trying to articulate your particular brand of hurt to those loved ones who still put up with you. You follow referrals to physical therapists and

illustration by Meg Keiffer



massage therapists and you'd go to an aromatherapist if it'd help you run again, but nothing does. You diagnose yourself on WebMD: You're a structurally flawed human being for whom recovery is impossible.

### DON'T GIVE UP YET

The answer may be right under your fingertips. About 2mm under your fingertips, to be precise. Under your skin, encasing your body and webbing its way through your insides like spider webs, is fascia. Fascia is made up primarily of densely packed collagen fibers that create a full body system of sheets, chords and bags that wrap, divide and permeate every one of your muscles, bones, nerves, blood vessels and organs. Every bit of you is encased in it. You're protected by fascia, connected by fascia and kept in taut human shape by fascia.

Why didn't anyone mention fascia earlier?

Because not many people know that much about it. Fascia's messy stuff. It's hard to study. It's so expansive and intertwined it resists the medical standard of being cut up and named for textbook illustrations. Besides that, its function is tricky, more subtle than that of the other systems. For the majority of medical history it's been assumed that bones were our frame, muscles the motor, and fascia just packaging.

In fact, the convention in med-school dissections has been to remove as much of the fascia as possible in order to see what was underneath, the important stuff. That framed illustration hanging in your doctor's office of the red-muscled, wide-eyed human body is a body with its fascia cut away; it's not what you look like inside, but it's a lot neater and easier to study and it's the way doctors have long been taught to look at you. Until recently, that is.

In 2007 the first international Fascia Research Congress, held at Harvard Medical School, brought about a new demand for attention to the fascial system. Since then fascia has been repeatedly referred to as the "Cinderella Story" of the anatomy world, speaking both to its intrigue and the geekiness of those who study it. While you may not share the medical and bodywork communities' excitement over mechanotransduction and the contractile properties of myofibroblasts, think of it this way: Fascia is a major player in every movement you make and every injury you've ever had, but until five years ago nobody paid it any attention. And now they're making up for lost time.

### FASCIA FUNDAMENTALS

What exactly does it do? It wraps around each of your individual internal parts, keeping them separate and allowing them to slide easily with your movements. It's strong, slippery and wet. It creates a sheath around each muscle; because it's stiffer, it resists over-stretching and acts like an anatomical emergency break. It connects your organs to your ribs to your muscles and all your bones

to each other. It structures your insides in a feat of engineering, balancing stressors and counter-stressors to create a mobile, flexible and resilient body unit. It generally keeps you from being a big, bone-filled blob.

"Fascia is the missing element in the movement/stability equation," says Tom Myers, author of the acclaimed book *Anatomy Trains*. Myers was among the first medical professionals to challenge the field's ignorance of fascia in the human body. He has long argued for a more holistic treatment, with a focus on the fascia as an unappreciated overseer. "While every anatomy lists around 600 separate muscles, it is more accurate to say that there is one muscle poured into six hundred pockets of the fascial webbing. The 'illusion' of separate muscles is created by the anatomist's scalpel, dividing tissues along the planes of fascia. This reductive process should not blind us to the reality of the unifying whole."

### **BUT, THAT'S THE OLD NEWS**

What rocked the medical community's world was this: Fascia isn't just plastic wrap. Fascia can contract and feel and impact the way you move. It's our richest sense organ, it possess the ability to contract independently of the muscles it surrounds and it responds to stress without your conscious command. That's a big deal. It means that fascia is impacting your movements, for better or worse. It means that this stuff massage therapists and physical therapists and orthopedists have right at their fingertips is the missing variable, the one they've been looking for.

### **WHAT DOES THIS HAVE TO DO WITH YOU?**

Grab hold of the collar of your shirt and give it a little tug. Your whole shirt responds, right? Your collar pulls into the back of your neck. The tail of your shirt inches up the small of your back. Your sleeves move up your forearms. Then it falls back into place. That's a bit like fascia. It fits like a giant, body-hugging T-shirt over your whole body, from the top of your head to the tips of your toes and crisscrossing back and forth and through and back again. You can't move just one piece of it, and you can't make a move without bringing it along.

Now, pull the collar of your shirt again, only this time, hold onto it for eight hours. That's about the time you spend leaning forward over a desk or computer or steering wheel, right? Now, pull it 2,500 times. That's about how many steps you'd take on a half-hour run. Your shirt probably isn't looking too good at this point.

Fortunately, your fascia is tougher than your shirt is, and it has infinitely more self-healing properties. In its healthy state it's smooth and supple and slides easily, allowing you to move and stretch to your full length in any direction, always returning back to its normal state. Unfortunately, it's very unlikely that your fascia maintains its optimal flexibility, shape or texture. Lack of activity will cement the once-supple fibers into place. Chronic stress causes the fibers to thicken in an attempt to protect the underlying muscle. Poor posture and lack of flexibility and repetitive movements pull the fascia into ingrained patterns. Adhesions form within the stuck and damaged fibers like snags in a sweater, and once they've formed they're hard to get rid of.

And, remember, it's everywhere. This webbing is so continuous that if your doctor's office were to add a poster of your true human anatomy, including its fascia, fascia is all you'd see. Thick and white in places like your IT band and plantar fascia, less than 1mm and nearly transparent on your eyelids. And within all that fascia you have adhesions and areas of rigidity. You likely have lots of them.

But, this isn't bad news. Every bit of the damage you've caused your fascia is reversible, and every one of the problems it's caused you were avoidable. You take care of your muscles with stretching and foam rolling and massage. You take care of your bones with diet and restraint. You never knew that you needed to take care of your fascia, but now you do. You may just shake that nagging injury after all.

### **How to Care for Your Fascia**

**MOVE IT OR LOSE IT:** Sticky adhesions form between fascial surfaces that aren't regularly moved, and over time these adhesions get strong enough to inhibit range of motion. Take a few minutes first thing in the morning to roll around in bed and really stretch out, head to toe, just like a cat after a nap.

**STAY LUBRICATED:** Just like every other tissue in your body, your fascia is made of water. It works better, moves better and feels better when it's wet. So, drink!

**STRETCH YOUR MUSCLES:** When your muscles are chronically tight the surrounding fascia tightens along with them. Over time the fascia becomes rigid, compressing the muscles and the nerves.

**STRETCH YOUR FASCIA:** Once your fascia has tightened up, it doesn't want to let go. Because the fascia can withstand up to 2,000 pounds of pressure per square inch, you're not going to force your way through, so stretch gently. Fascia also works in slower cycles than muscles do, both contracting and stretching more slowly. To stretch the fascia, hold gentle stretches for three to five minutes, relaxing into a hold.

**RELAX!** If you spend all day tense and tight at a desk, ice baths may not be the best thing for you. Fifteen to 20 minutes in a warm Epsom salt bath can coax tight fascia to loosen up, releasing your muscles from their stranglehold. Make sure to follow it up with 10 minutes of light activity to keep blood from pooling in your muscles.

**USE A FOAM ROLLER:** Like stretching, using a foam roller on your fascia is different than on your muscles. Be gentle and slow in your movements, and when you find an area of tension hold sustained pressure for three to five minutes. You may practice self-massage with the same rules.

**RESPECT YOUR BODY:** If you're attempting to run through an injury, or returning from one with a limp, beware: Your fascia will respond to your new mechanics and, eventually, even after your injury is gone, you may maintain that same movement pattern. That's a recipe for an injury cycle. It's better to take some extra time than to set yourself up for long-term trouble.

**SEE A FASCIAL SPECIALIST:** If you have a nagging injury, or just don't feel right lately, see if your area has a fascial or myofascial therapy specialist. There are different philosophies and methods, ranging from Rolfing, which is very aggressive, to fascial unwinding, which is very gentle. Some methods are similar to massage, while others concentrate on long assisted stretches. Talk to the therapist to see what you need and want. Some osteopaths, chiropractors, physical therapists and massage therapists are beginning to embrace fascial therapies, so ask around.

**SEE A MOVEMENT EDUCATION THERAPIST:** The Alexander Technique and the Feldenkrais Method are the two best known of this sort of therapy, long embraced by dancers and gymnasts. They use verbal cues, light touch and simple exercises to lessen unconscious destructive movement patterns that may be irritating your fascia.