The background of the cover is a vibrant yellow. Overlaid on this are several thick, flowing, wavy lines in shades of blue, cyan, magenta, and pink. These lines appear to be made of a liquid or fabric-like material, creating a sense of movement and depth. The lines flow from the top right towards the bottom left, with some loops and curves. The overall aesthetic is modern and energetic.

# TIGHT HIP TWISTED CORE

THE KEY TO  
UNRESOLVED  
PAIN

CHRISTINE KOTH

**TIGHT HIP**  
**TWISTED CORE**

THE KEY TO  
UNRESOLVED  
**PAIN**

CHRISTINE KOTH

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# A COLLECTION OF ACCOLADES FOR *TIGHT HIP, TWISTED CORE*

*“In her new book *Tight Hip, Twisted Core*, Christine uses compelling storytelling and her deep experience in physical therapy to shed light on the meaning of a ‘tight hip.’ She addresses an important and often dreaded twosome, what I often call the ‘snarky psoas and irritated iliacus.’*

*As a veteran PT who specializes in hip and pelvic pain and safety for the hip in yoga, I am delighted to see *Tight Hip, Twisted Core* published. This much needed book can help you begin to understand some of the major players that affect hip health, and give you an understanding of what helps versus what harms the hip. *Tight Hip, Twisted Core* is an accessible, easy to understand text that can benefit anyone who has had hip pain or anyone whose hip is the cause of pain in other places.”*

Dr. Ginger Garner, DPT, ATC/L  
Founder, Professional Yoga Therapy Institute®  
Author of *Medical Therapeutic Yoga*  
[www.gingergarner.com](http://www.gingergarner.com)

*“If you’ve been everywhere and tried everything for hip, knee, ankle, or foot pain without success, read this book. Christine Koth is a talented Physical Therapist whose expertise I deeply trust. Through our years working together with patients, I’ve come to rely on her as the Sherlock Holmes of the team. Always striving to discover the core cause of complaints, she never stops until she finds ‘the why.’ Her keen eye for observation and ability to sense subtle imbalances led her to discover a major missing element to musculoskeletal complaints—the iliacus. Expanding my appreciation*

*for the role of this muscle has shifted my approach and improved how I manage patients with musculoskeletal pain.”*

Dr. Jill Crista, Naturopathic Doctor  
Best-Selling Author of *Break The Mold:  
5 Tools to Conquer Mold and Take Back Your Health*  
[www.jillcrista.com](http://www.jillcrista.com)

*“Christine has identified an underappreciated cause for many people suffering from hip and spinal pain. As we live in a culture where we spend most of our time in a sitting position, it is completely logical that this repetitive hip tightness is at the core of many pain conditions. When the core is twisted, the spine has no chance to be in alignment.”*

Dr. Noah Kaplan, D.C.,  
Diplomate in Chiropractic Cranio-Cervical  
Junction Procedures [www.advanceuc.com](http://www.advanceuc.com)

*“Christine has vast knowledge and experience about this very complex and important part of our anatomy. In this book she skillfully describes the functioning, as well as the importance, of the hip flexor complex, with practical advice, tools, and examples of how to restore vitality to this area once and for all. I highly recommend this work for all healing practitioners, fitness trainers, yoga teachers, and individuals who are looking to understand the root cause of many physical and energetic discomforts in the body.”*

Kristen Dessange  
MS Biology, Yoga Teacher of 15 years,  
Founder of Sacred Life Circle LLC  
[www.SacredLifeCircle.com](http://www.SacredLifeCircle.com)

*“Christine Koth understands the complex dynamics of the hip and with her tools brings relief to those who suffer. I’ve witnessed this both in my own body and in my patients during the decades of working side by side with her. This book teaches how to effectively treat a tight hip and twisted core, exposing why the hip flexor complex is important, why it gets tight,*

*what happens to the entire body when it is tight, and what to do about it. It is a valuable tool for those who suffer, as well as health care providers.”*

Dr. Allison Becker, ND, LAc  
[www.doctorallisonbecker.com](http://www.doctorallisonbecker.com)

*“I am astounded by Christine’s ability to clearly articulate this mysterious concept in a way that anyone can understand it. This is a huge discovery in how the hip area works, and how one tight muscle affects the rest of the body. This book will significantly impact the way health care professionals treat the hip from now on.”*

Zach Renner, Crossfit Trainer  
Former College Athlete  
Founder of Awakened Athlete  
[www.awakenedathlete.com](http://www.awakenedathlete.com)

# FOREWORD

For those who are constantly stretching out their hips but getting no relief or don't see how their hips could possibly be connected to their pain in other places, get ready to have your mind blown.

It takes an unusually holistic physical therapist like Christine Koth to take the subject of the previously little-known iliacus muscle and make it rock-star sexy in her new book, *Tight Hip, Twisted Core*. Patients and practitioners alike will love this “hip tome” she has created covering the what, where, why, and HOW to unlock that hip and finally release your unresolved pain.

The truth is that the iliacus is not a focus in medical schooling and often just lumped together with the psoas, which is also deeply discussed. As you'll see in Koth's book, that tight iliacus creates a host of unmitigated body misalignment, unhappy patients, and frustrated practitioners.

There's a little secret that very few in the public know—your body will always fight to keep your eyes level with the horizon. That means that if your hip is rotated, your body will twist your spine to the other direction and lean your head in an effort to get your eyes or vision level with the world around you. This is why the consequence of a tight iliacus can be felt anywhere in the body, from a headache to plantar fasciitis in your feet.

Koth does an excellent job of addressing why you want to get to the *root cause* of your pain and not just treat the symptoms. In fact, doing so might numb some pain but also turn off the warning signal that is your body screaming for attention. Solve the problem, don't just mute the pain.

Read the book. You'll learn why. You'll learn how. You'll find relief. Tight hips no more!

Rock on,

Dr. Brandy Zachary, DC, ACN

Body Love Cafe

Doctor of Chiropractic, Functional Medicine Practitioner

# TABLE OF CONTENTS

<b>Introduction .....</b>	<b>1</b>
Psoas in the Limelight.....	4
Building Blocks of the Body.....	5
The Chain Reaction.....	5
Discovering the Iliacus .....	7
Hip Hook.....	13
How to Use this Book.....	14
<b>Part 1: Setting the Stage .....</b>	<b>15</b>
The Stage.....	16
Bones as the Puppets.....	18
Muscles as the Actors.....	20
The Stars .....	20
The Sidekicks .....	23
The Villains .....	24
“I’m So Tight!” .....	27
Not Really “Tight” .....	27
Knots and Triggers.....	30
Stretching Isn’t Enough .....	35
Rubbing May Make it Worse .....	36
Warm it up, Buttercup .....	37
Pressure Is the Golden Ticket.....	37
Happy Muscles Don’t Hurt.....	39
<b>Part 2: Why Is My Hip So Tight?.....</b>	<b>41</b>
Sitting Too Long .....	41
Driving Too Far .....	43
Athletics and Fitness .....	44
Running .....	44
Lunging .....	46
Bicycling.....	48

Kicking.....	48
Heavy Lifting.....	50
Imbalances in Strength and Flexibility .....	51
Hips Too Open .....	52
Yoga, Gymnastics, Dance.....	52
Bone Shapes.....	56
Loosey-Goosey.....	58
Pregnancy .....	69
Injuries and Pain.....	60
Hip Arthritis.....	61
Hip Labrum .....	61
Low Back or Tailbone Pain.....	61
Pelvic Pain.....	62
Back, Hip, Knee, Foot Surgery .....	63
Organ Issues.....	63
Emotions .....	65

**Part 3: A Tight Hip Twists the Core..... 67**

The Hip Bone's Connected to the.....	68
...Lower Back.....	69
...Pelvis .....	71
...Hip Joint .....	73
Rubbing the Wrong Way.....	74
Tight All Over .....	77
Making a Move .....	80
...Thigh Bone .....	82
You Are Not on a Roll .....	83
Getting on My Nerves.....	84
Even Steven.....	86
Long Legs.....	88
...Knee Joint .....	90
The Leaning Tower of Bones .....	91
Lost My Groove .....	92
...Foot Bones .....	92
...Diaphragm .....	94
...Upper Body.....	96

Out of Balance .....	98
Is it the Chicken or the Egg? .....	101
<b>Part 4: Soften the Hip to Solve Your Pain .....</b>	<b>103</b>
QUIZ: Do You Have a Tight Iliacus? .....	104
3 Simple Steps .....	108
Step 1: Release the Front of the Hip .....	110
Use the Hip Hook .....	111
Use a Ball.....	115
Use a Friend.....	117
Step 2: Release the Back of the Hip .....	118
Step 3: Realign the Pelvis.....	120
On the Back.....	122
In Standing .....	123
In Sitting.....	124
Keep the Iliacus Relaxed.....	125
Heat it up .....	125
Figure 4 Stretch.....	126
Crossover Stretch .....	127
Lunge Stretch .....	128
Clamshell.....	130
Core Strength.....	131
Fist Squeeze.....	133
Breathe .....	134
Align the Spine .....	135
Release Neighboring Tight Spots .....	136
Shoes .....	143
Orthotics.....	144
Limit Driving and Sitting .....	145
Sitting Tips .....	145
Driving Tips .....	149
More Strength, Less Stretch if Too Bendy.....	150
Careful with Yoga.....	151
Tightness is a Good Thing .....	155
Careful with Iliopsoas Strengthening and Pilates.....	155
Careful with Deep Lunges.....	156

Careful with Deep Squats.....	157
Move.....	158
Calm Inflammation.....	158
Frequency Specific Microcurrent.....	159
Class IV Laser .....	160
Dry Needling and Trigger Point Injections .....	161
Brace Yourself .....	161
Tape .....	162
Get Help.....	163
<b>Glossary .....</b>	<b>167</b>
<b>References.....</b>	<b>169</b>
<b>Resources .....</b>	<b>171</b>

# INTRODUCTION

“You can’t see what you don’t know is there.”

All we know is what we know. Those things we have never been taught about ourselves continue to be a mystery until one day they are brought into view. If you’ve never been taught about what’s inside your body and how it works, what’s behind the scenes, those parts inside of you might as well not even be there.

Real solutions present themselves only when you know the true cause. When you are missing a piece of the puzzle, the problem will not be solved, at least not permanently. Try putting together a table when you only have three of the four legs. It may stand for a moment but as soon as the wind blows, the table falls over. Try curing diabetes without changing the diet. A medication may lessen the symptoms but the disease will still be there. Try driving a car without aligning the wheels. It might drive for a while but eventually, it will break down.

The point is, you need to know the “why” to solve the problem. For decades, this has been my mission as a holistic physical therapist, to find and remedy the true cause. *The* reason for many different injuries and areas of pain is revealed to you upon these pages. Mysteriously, this undiscovered source of pain is hidden in plain sight and is not being treated in millions of people. This simply obvious obstacle to living a pain-free life is easy to remove but remains unrecognized by most people and healers. Together we are about to unearth this sacred nugget of truth about how your body works. Together we will find out the source of *your* pain too.

It’s time to illuminate the importance of an undiscovered muscle that is deep inside your core (abdominal and hip region). It has been hidden here from your time in the womb, quietly doing its job every moment of every day. It has grown up underappreciated and ignored. Its loud and bossy sibling undeservingly gets all the attention.

*(drum roll)* Please welcome to the stage the muscle that you didn’t know existed, that helps you walk, sit, and play. It is tight in almost everyone for many different reasons, causing pain from head to

toe, but very few people even know it exists. Meet “Silly Yak Kiss!”  
(*applause*)



Iliacus rhymes with “Silly Yak Kiss”

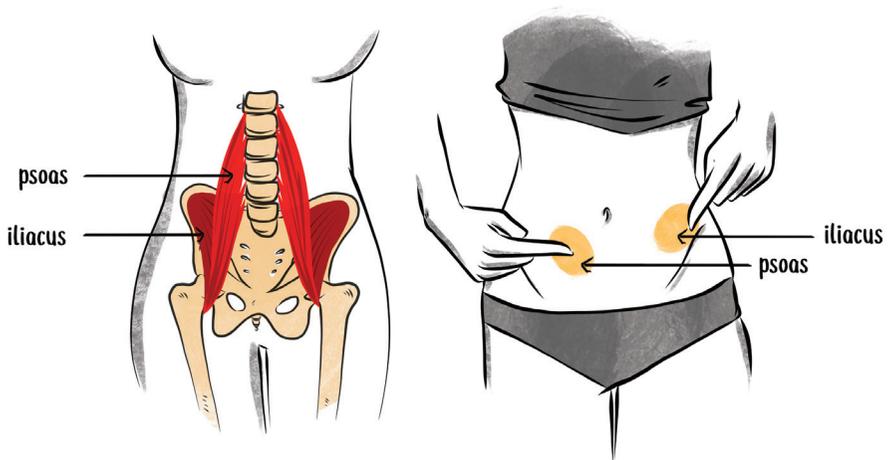
Actually, its official name is the iliacus (pronounced “illy ak us”) muscle, but to help you remember it, it rhymes with “Silly Yak Kiss.” Medical terms can be a pain (pun intended) but I really want you to know this muscle intimately so you can call it by its first name. Then you can joke at a family gathering about your iliacus. You can bring your iliacus to the attention of your doctor. You can even sing an iliacus chant as you do your Sunday chores. This muscle is so important it needs to become a household name. By reading this book you are one of the first to master this muscle. Soon you won’t be so alone. We can all use more “Silly Yak Kiss” in our lives.

In my professional opinion, the iliacus is *the* most undertreated and underappreciated muscle of the body. Most people don’t even know that the iliacus exists, let alone what it does to impact the body and how it keeps you out of pain, but that’s about to change.

## Tight Hip, Twisted Core

During my many years of working with clients, I have yet to have even one person tell me they have had their iliacus treated before coming to me. Not one! This pattern of the iliacus being ignored, when it is such a vitally important part of our body, is my motivation for this book. After countless successes releasing the iliacus and zero evidence that this muscle is being widely addressed by anyone else, I've come to this conclusion. It's time for a shift in perspective. There are so many people who are struggling and aren't getting better because they are not addressing the actual cause of their pain. The answer is right there, hidden right around the corner on the inside surface of the pelvic bone.

You may have heard of the hip flexor, a more commonly known term. Hip flexion is actually describing a type of motion. This motion moves the whole leg forward at the hip, as in walking or marching. Any muscle that helps do this motion is called a "hip flexor." There are actually many muscles that could be considered hip flexors. However, when a layperson uses the words "hip flexor" they are typically referring to the two largest hip flexors in the body, the iliacus and the psoas (pronounced "so as"). When grouped together they can also be called iliopsoas (pronounced "illy o so as"). Although commonly called the hip flexor, we will use iliopsoas throughout this book to more accurately describe these two muscles when referred to together.



Location of iliacus and psoas in the body

## Psoas in the Limelight

---

Professionals in the field of medicine and fitness give the psoas a lot more attention than the iliacus. Indeed, the psoas is very large, it takes up a lot of space, and its job is very central to keeping the upper body connected to the lower body and keeping the core of our body working properly. The core is the central part of your body where the spine, pelvis, and hips intersect and where all movements begin. The psoas muscle does get very tight from being overused with too much sitting, for example—many of the same reasons the iliacus gets tight as well. Although some healthcare professionals do address the psoas, very few put any attention on the iliacus. This misses a major cause of issues in this area of the body. Now is the time to give the iliacus its due respect and time on the stage. It is a star in the show, but for some odd reason, the psoas is always in the limelight. No longer! The iliacus is coming out of the closet as the underappreciated sibling that has been doing all the work behind the scenes and getting no attention. The iliacus is screaming for help and recognition.

Because the iliacus is the next-door neighbor, and the true companion to the psoas, some people assume because they work on their psoas that they're addressing the iliacus as well. This is false. These are two separate muscles and they are located in two nearby, but separate, locations. Working on the psoas does not, by default, fix the iliacus. Just because it shares the same attachment point with the psoas does not mean that they should be grouped as one. In fact, I've repeatedly seen people who have had temporary relief after working on their psoas muscle find long-lasting relief once their iliacus was also addressed.

Very few physical therapists, chiropractors, doctors, massage therapists, or personal trainers have been trained to see the importance of the iliacus separate from the psoas muscle and therefore, most don't address it all. When mentioning the importance of the iliacus, a colleague of mine recently asked, "Why not just treat the psoas? Isn't it the same thing?" Needless to say, it is overlooked in a lot of treatment protocols and a lot of athletic endeavors, mistakenly grouped with the psoas.

The location of the iliacus muscle is right on the inside surface of the pelvis and it's a hard muscle to reach on your own. Whereas the psoas is more accessible, the iliacus is hidden. This may be why it has been ignored for so long. The reality is that the iliacus can be found and treated quite simply with the special techniques taught in this book. Now anyone can know and treat their own iliacus muscle and experience the exquisite transformation of the body that naturally follows.

## Building Blocks of the Body

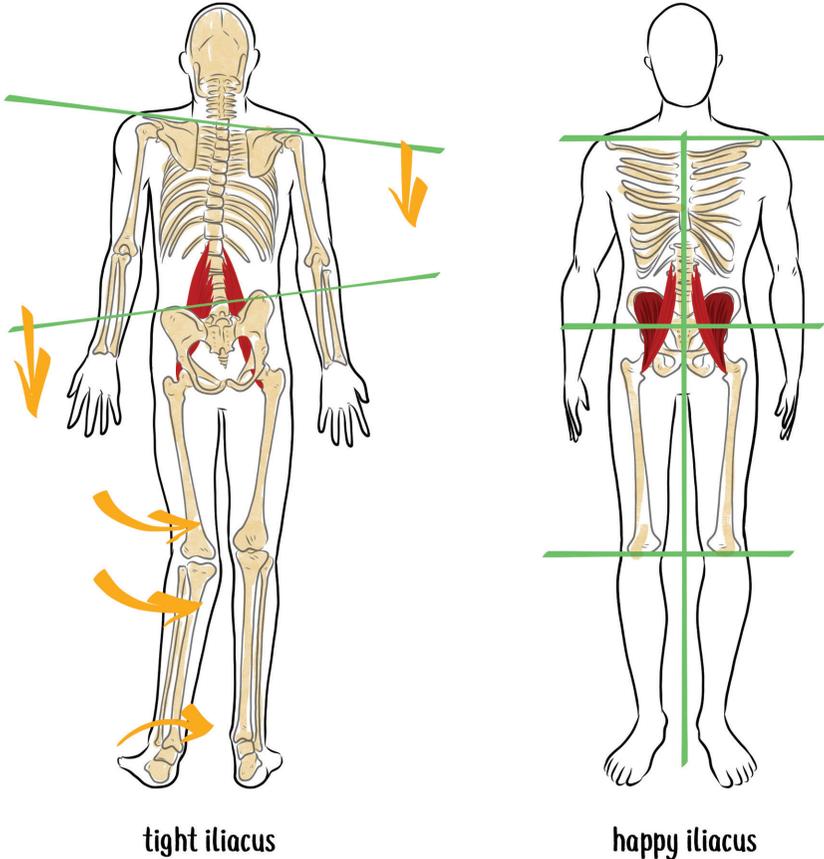
Each part of our body has a role. The bones support your body and the joints are where the bones connect. Joints allow the body to move but the bones wouldn't move at all if it weren't for the muscles. Muscles are attached to the bones by tendons so that they can contract and move those bones around, so you can do your thing. If it weren't for the ligaments and joint capsules holding the joints together, those movable connections of one bone to another would fall apart as soon as the muscle tried to move them. Then there is the fascia, which runs continuously from head to toe. Fascia holds the muscles, cells, organs, nerves, all parts of the body, in place. If you didn't have fascia, your muscles would be hanging off the bone.

When one part of the body is too tight or too loose or broken or weak, it affects the way the rest of the body works. Since each bone is connected to the next by this network of ligaments, tendons, and muscles, when part of the system is not working well, it impacts the rest of the body. We see this when a broken toe leads to back pain or when knee surgery creates a hip problem.

## The Chain Reaction

An unhealthy iliacus has profound effects on the rest of the body. Due to the location and strength of the iliacus and how it connects to both the pelvis and the thigh bone, it is involved in issues with the low back, tailbone, hip, leg, knee, foot, toe, upper body, and neck. Because

its tightness twists the core and changes the way the leg is connected to the upper body, all of these areas are affected. When the iliacus is relaxed and happy, these areas have a chance to work as they have been designed to work—with ease, aligned and strong. When the iliacus is tight, all of these areas are susceptible to pain and injury.



A tight hip twists the core, affecting the entire body

Tightness in the iliacus is caused by either overuse (sitting too long or certain athletic endeavors) or by a too flexible body (where the muscles have to hold on for dear life to keep the body from falling apart). Injuries and stress contribute as well. Once this tightness sets in, it can persist for years, pulling on the pelvis and creating a faulty

movement pattern in the leg to the toe and the spine to the head. That strain starts to wear away at the body, usually at your weakest link, and eventually leads to the one thing that no one wants and everyone wants to get rid of: pain. The iliacus is commonly the root cause of a chain of events that leads to pain; therefore, if we keep our iliacus healthy and happy, we can simply avoid so much suffering.

Become a part of this movement by intimately knowing your iliacus and how to take care of it. Get on the iliacus train to your own wellness and evolve into a better functioning you. Soon you will be an expert on how to care for this muscle, and your newfound knowledge will help to create a world where *everyone knows they have an iliacus, its importance, how to care for it, and lives pain-free.*

## Discovering the Iliacus

---

Upon emerging from the womb I've been curiously examining the world around me, looking around wide-eyed from the shoulder of my mother in amazement and asking "why" from the moment I could speak. I have fond memories as a young child of sitting in the grass and writing lists of questions for which I, at that time, could not find an answer. Everything was a mystery to me that I knew I could solve. At the sweet age of four, I would run to my aunt at any chance I could get. She would sit with me for hours, as any good kindergarten teacher would, and let me ask her my "why" questions. "Why can insects fly and humans cannot? Why do we have two nostrils for a nose? How will I ever understand it all?" It's no surprise that I was drawn to science.

It's easy now, in retrospect, to see the clear path to this iliacus discovery: from the inquisitive nature and tenacity I was born with, to the way I was somehow able to see the forest for the trees while noticing the microscopic wonder of the moss that methodically and uniquely grows on each and every branch. I still hike with my magnifying glass and I'm simultaneously drawn to the most majestic of vistas, viewing this complex and yet so simple world with amazement.

Zooming in, I studied biochemistry as an undergraduate, learning which molecule did what. Zooming out, I finished my master's in

physical therapy (MPT) degree, studying how the body works as a whole and seeing how each part of the whole impacted the rest. Fascinating. All of it. Even after decades of pondering this amazing body we live in and the wildly fascinating world we experience with it, I'm still asking "why," finding the gaps in my understanding bit by bit.

I graduated from physical therapy school at the top of my class, understanding how the body works from books, but still asking myself, "How am I going to be able to feel these structures with my hands?" I could see a muscle in the pictures in my textbook and imagine where it was under the skin during my internships as a young clinician, but I willfully hoped that someday I'd develop the skills for my hands to *feel* it too. Who knew that I'd soon be known to have "magic hands" that would be able to zero in on an issue far faster than my mind could comprehend it?

I was fortunate enough when I graduated from college to get a job because the physical therapy market was very competitive at the time. I was determined to find a job in an outpatient clinic, so I paged through the phone book and called all of the physical therapy clinics that were near my first apartment out of college. One such clinic, only fifteen minutes away, answered the phone. It was just my luck that they were just starting to consider looking for a physical therapist. It felt like it was meant to be. As soon as I got off the phone, I slipped into my shoes and quickly drove to my first (and only) interview out of college. Upon arrival, the professional sign towering over the building and shadow of exercise equipment and treatment tables seen through the window brought a hint of that "first day of the rest of my life" kind of feeling. Little did I know that this clinic was going to start me on my path to having "magic hands" and being an iliacus P.T.G. (Physical Therapy Geek), a self-proclaimed acronym we used in college for getting excited about PT things.

The hiring process unfolded with ease and I immersed myself in the unique hands-on philosophy of the clinic. These kinds of clinics were an anomaly (they still are, unfortunately). Most physical therapy clinics are more exercise-based or use machines. These are effective tools for rehabilitation but some people need human touch to heal and

## Tight Hip, Twisted Core

that can't be delivered by a machine. Melody, the owner of this glorious company that graciously hired me, was breaking the mold.

All of the PTs working at this clinic were trained in manual therapies. So many of them had been trained in techniques like myofascial release (releasing the adhesions in connective tissue with gentle pressure), craniosacral therapy (guiding the bones in the skull to move well so that spinal fluid can bathe the brain), and trigger point release (prolonged pressure to a muscle to decrease its tension). More importantly, they were encouraged to use the healing power of touch to treat their clients every day, and hours and hours of touching people gives you an understanding of the body that you cannot gain from any book. Some of the practitioners had been working there for twenty or thirty years, and luckily my fresh and bushy-tailed, newly graduated self got to learn from them.

As I oriented to this new job, I was taken under the wings of these seasoned physical therapists. Janet would show me how to cradle the head without digging my nails into the skin and how to get a good enough grip to actually stretch the neck. Jessie watched my hand placement when releasing the chest muscle and then asked me, "Did you feel that?" David would invite me in to see his clients with him, letting them experience a "two for the price of one" session while I started to put the pieces together. In between clients the therapists would compare my observations with theirs. We also got together as a group once a month to share new tools that we had learned and practice on each other. Soon I was actually feeling what's inside the body with my hands and not having to imagine it solely with my mind.

One of the very first techniques that I learned was a psoas release. This technique involves pressure on a muscle to get it to relax. If you look on your own abdomen and you draw a line from your belly button to the front of your right hip bone, somewhere in there lies your psoas muscle. It's not necessarily an easy muscle to get to. Although I was getting better at feeling muscles and bones with my hands, this one was a tough one. It's deep inside, there are a lot of other things in the abdomen, and touching someone there was a bit more intimate than I was used to.

David patiently showed me the technique, how to find the muscle, and where to look between the belly button and the hip. He let me put my hand on his abdomen and clumsily feel around and try to see if I could find it. Laying down, David lifted his leg up to contract the psoas and, lo and behold, I was actually touching the psoas. I could feel it pressing against my fingers.

I decided to take advantage of David's offer to let me continue feeling around his abdomen. I tried over and over again, finding and pressing on the psoas muscle, looking at my anatomy book opened to the side of us, continuing to visualize what's actually happening in the body as I'm feeling around. Exploring closer to the pelvic bone itself, I notice some tightness there too. It feels like there's another muscle there. Based on the page open in my book, it looked like the iliacus muscle. Hmm. Interesting. As I pressed on that muscle David sighed—"That's a good spot"—and after a few minutes of trembling novice fingers trying to maintain the pressure, the muscle softened. David got off the table with a "That was great!" I kept a mental note of that moment.

As I started treating clients I was on the prowl for the source of their pain. That inborn inquisitiveness kept me searching for *the* reason why they were having pain. For example, if a client came in with knee pain, yes, I'd treat the knee, but I wanted to look deeper. Why did they develop knee pain in the first place? I would examine the alignment of the body when sitting, standing, and walking. It became standard practice to feel around in the tissues of the body, as I had been trained. Those meandering hands have come to know a lot of bodies in my decades of practice.

Working with more and more people I started noticing that not only do many have a tight psoas but also a tight iliacus. Because I was a novice, and a little cautious about digging into somebody's abdomen, I tended to release the iliacus muscle first because it was a little more accessible—it was right near the bone, not deep in the abdomen. I didn't have to manipulate any organs to get to the iliacus—it just felt easier. It became my go-to technique when I wasn't so comfortable with my hands yet. I soon noticed that, as I was releasing the tension

in the iliacus and completely ignoring the psoas, people were getting better without any attention to the psoas at all.

The technique to release the iliacus I developed during this time and I still use it to this day. Because I was new at using my hands, I hadn't quite figured out how to use my body mechanics in a way that would keep me from hurting myself working on clients all day. As I left the office each day, wrapping my hands in ice and taping my fingers together to keep them strong, I knew this kind of abuse on my hands was not sustainable. My technique was awkward at first. I couldn't figure out the table height or how to place my body in a way that would protect me from harm. My mind was solving the problems that faced my clients while trying to determine how I could survive a full day of using my hands with clients without hurting *myself*.

When releasing the iliacus, originally, I was approaching the muscle from the same side of the body. If I were treating the right side I was standing on the right side of the person and putting my hands into the body. After many awkward attempts and inability to really apply a decent amount of pressure at a good angle, I decided to go to the left side of the body to reach across the abdomen for the right iliacus. I realized in that moment how much more effective it was to pin the muscle up against the bone and release the tension that way. It was much easier on my body and way more effective, so it was a no-brainer to make that technique my standard method for releasing the iliacus.

Discovering a tight iliacus in so many of my clients and the newly modified technique of releasing that muscle was resulting in happy and healed customers. Over time, I started to notice how this muscle was impacting so many different parts of the body. Over decades of practice I have seen so many different conditions, everything from bunions to knee arthritis to hip arthritis to back pain to tailbone joint problems. As I would evaluate a new client and assess their whole body and not just focus on the part that was hurting, inevitably, many had tight iliacus muscles. Miraculously, as I released the tension in that muscle, their pain got better.

I remember the office doorbell ringing as Kendra entered in her mesh running shorts and New Balance shoes, carrying her handbag

filled with English papers to grade and a folded-up training plan for her next marathon. She thought her life was over when she couldn't run anymore because of knee pain. The tattered brace on her knee hinted at defeat in the same way that she plopped herself onto the treatment table. She reminded me of myself as a kid, with the same list of a million questions she wanted answered. She started drilling this rookie PT with curious observations about her knee. "My kneecap is *killing* me when I run even three miles," she sighed with defeat. She went on to share all the details, including a conversation about sleep. "I have to put two pillows under my knees in order to fall asleep," she recalled. "It's not so much for my knees but I can't lie flat without the pillow under my knees or my back will hurt!" Interesting.

I had her lie on the treatment table to show me her pillow configurations. When I took the pillows out from underneath her, she was so tight in her hips that she couldn't lie flat at all. She needed those pillows under her knees to take the tension off her extremely tight iliopsoas so her back wouldn't be strained while sleeping. With standing, the side where she was having her knee pain was rotated forward at her pelvis, twisting her core. This tightness in her iliopsoas was affecting her entire leg! Her thigh bone was rotated inward and didn't line up with her kneecap, causing rubbing and much pain, all because of her tight iliopsoas.

We went right to work on her iliopsoas, focusing on the iliacus muscle as I knew best, standing on her left side to reach over her abdomen to skillfully press on that tight right iliacus muscle. She came for treatment three times a week and after a few weeks of getting that muscle to relax, teaching it how to stop being constantly contracted, the alignment of her pelvis started to equalize. With a few exercises and lifestyle shifting tips, she was free of her knee pain for good and back to running as she had done before her pain had stopped her.

Years went by and then one day this email arrived.

"How are you, Christine? I have a question for you. Will you send me a list of the things that you and David did to treat me ten years ago? I'm on my second physical therapist where I live now and I'm tired of messing around. All I know is whatever you and David did to me worked; it changed my life. I did not know that it was possible to

feel so good. I want to get back to that place of no pain. I remember you releasing the hip by pushing in my abdomen. I remember doing exercises but forget exactly which ones I did. I'm grateful for your help, not only for relieving my pain, but for showing me that there is a plan that can work for me out there. Your plan worked."

This is one of many such communications I have received from past clients. Clients continue to arrive at my office after having been to multiple other practitioners without results, all because they ignore the impact of the iliacus on their pain. As you can see, with Kendra and many others I've treated, giving proper attention to the iliacus is vital to the pain-free lifestyle we all desire.

Kendra contacted me fifteen years after her initial appointment to share her testimonial. This says it all:

"I think Christine is one of the greatest things on Earth. I have her on one of my top five positively influential people in my life. I did not know one could be without pain until I learned from Christine at age 32."

This beautiful story is just one of many that have been a catalyst for my work in figuring out how important this muscle is in the body. I'm honored to share all that I have learned with you so that you too can easily determine the cause of your pain and fix it for good.

## Hip Hook

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After moving my family and physical therapy practice from Wisconsin to California, I left many loyal clients behind without access to my magic hands to release their tight iliacus, untwist their core, and resolve their pain.

I experimented with various balls, rollers, and household items in an attempt to find a way for my clients to self-release the iliacus, but the results were subpar to my fingers. It was impossible to get to the right spot at the right angle with the right force.

In 2019, I took it upon myself to design a better solution. By replicating the exact angle, pressure, and location that my fingers had mastered in the form of a tool that people could use on their own, the Hip Hook was born. Designed specifically to release the iliacus, the

Hip Hook allows you to resolve your pain that is caused by a tight hip and twisted core without the help of a practitioner.

## How to Use this Book

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This book is designed to give you the information that is pertinent to you and your situation so that you can quickly identify what the iliacus muscle is, why it might be tight in you, what happens to your body when it is tight, and what to do about it. By reading *Tight Hip, Twisted Core* in its entirety, you'll get a deep understanding of the role of this muscle in your life and how to take good care of it. Feel free to skip around to find tidbits that speak to you directly.

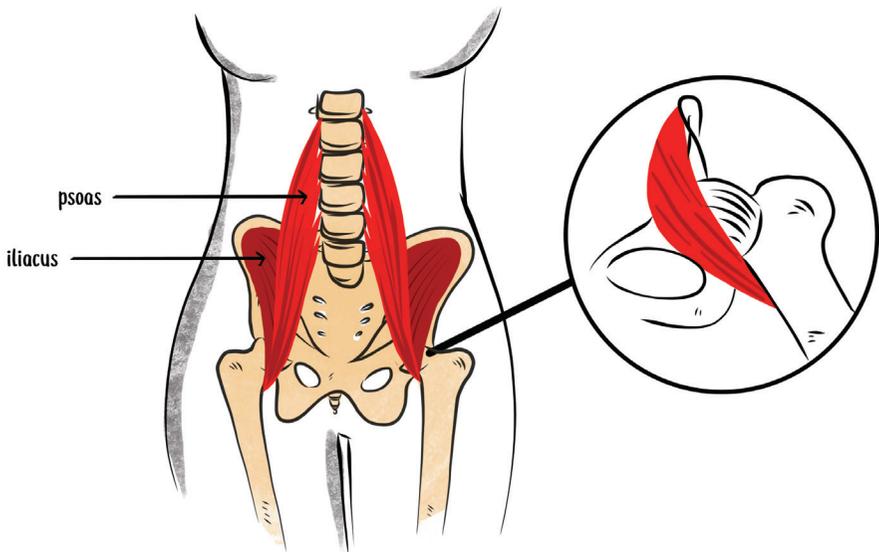
“Part 1: Setting the Stage,” gives a brief overview of the hip and pelvic area to orient the iliacus muscle in the environment in which it lives. Also in this section, “I’m So Tight!” shares specifics about what it means to be tight and how tightness even occurs. This is key information that everyone needs to know about the body, exposing many myths. “Part 2: Why Is My Hip So Tight?” lists the many ways that a tight iliacus and psoas develop, giving you an explanation for how you may have arrived at having a tight hip in the first place. “Part 3: A Tight Hip Twists the Core,” describes the effect of a tight iliacus and psoas on the rest of the body. This is where the tight hip as a cause of various pains is explained.

The next section, “Part 4: Soften the Hip to Solve Your Pain,” starts with a quiz to help you determine if you have a tight iliacus and which side is tightest. Then the fun part: you get to learn the “3 Simple Steps” to release the tension in your hip and align your pelvis. Finally, unveiled in “Keep the Iliacus Relaxed,” you will learn strategies for living your life *and* keeping the iliacus and psoas happy.

# PART 1: SETTING THE STAGE

To know the iliacus, you must understand where it lives. Its home is arguably the most important part of the body and therefore the iliacus is involved in much more than meets the eye.

Zooming in you can see how very close the iliacus and psoas muscles are to the hip joint, the pelvis, and the spine. It's not hard to imagine how important these muscles are to holding this area together. When you look really closely at where both the psoas and the iliacus attach to the thigh bone, you'll see these muscles literally lay on top of the hip joint itself. No wonder they are so closely related to the hip!



The attachment of the iliacus and psoas is extremely close to the hip joint

Whenever we have muscles that are really close to a joint they often act as stabilizers. The psoas, with its connection to the spine, works hard to keep the lower spine stable, and the iliacus, with its connection to the pelvis and hip, puts a lot of effort into stabilizing the hip joint and SI (sacroiliac) joint. The SI joint is underneath the bony dimples on the back of the body where the tailbone connects to the pelvis. The iliopsoas is really holding together the foundation of it all.

It's a big job being responsible for connecting the upper body to the lower body. An oak seed must be firmly planted in the soil for the roots to take hold and the shoots to sprout from the earth, allowing the tree to withstand wind and erosion alike. Similarly, the pelvis must be firmly stabilized for the spine to sprout and the legs to move about. If the iliacus and psoas are not working properly, the foundation of the body is not settled in the soil properly. The result: the body is weak and wobbly as it sprouts up to our tilted head and roots down to our crooked feet.

This area, often referred to as the core, is responsible for a lot of the essential functions of the body. All of our reproduction, bowel and bladder action, and digestion happens in this space, right next to the iliopsoas. The ability to sit, squat, and do almost everything starts at the core. Other areas have their vital roles too, but if things are not functioning well in the core, it's easy to imagine the train wreck that can ensue.

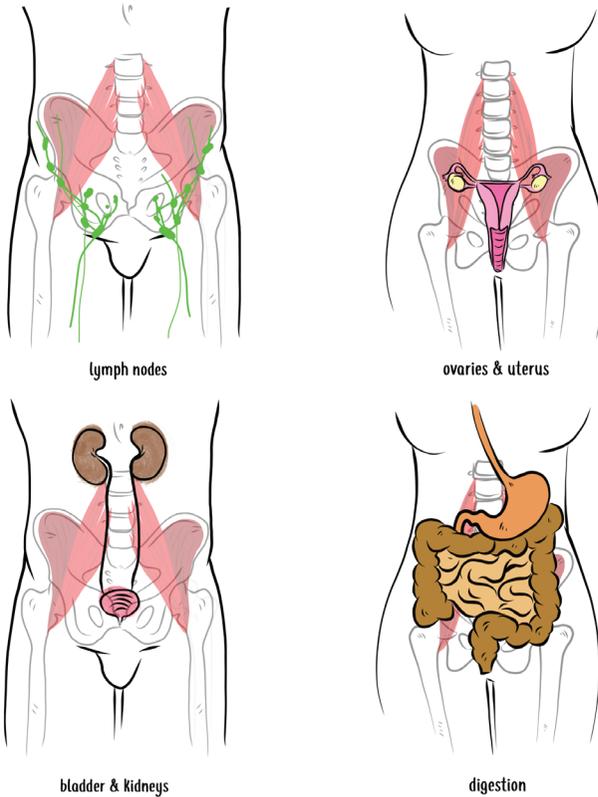
Let's take a closer look at this magical place where the iliacus lives. The iliacus and psoas are holding the story all together; they have been cast as the lead parts in this play. They act in the most dynamic of stages with huge bony puppets that they move around. Other muscles share the stage and act as the Villains and Sidekicks. Let's take a peek at how this adventurous scene plays out.

## The Stage

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The iliacus and psoas play the leading role on a stage full of commotion. Like the streets of New York City, there is a lot going on all around these muscles as they are smooshed in the crowd. Living amongst friends and foes, the iliacus and psoas play their role on a jam-packed stage, just trying to do their job of moving and stabilizing the hip, pelvis, and spine.

## Tight Hip, Twisted Core



Many of our internal organs lie adjacent to the iliacus and psoas

- First, the lymph system, strung like lights around the stage. It clears toxins, excess fluid, and waste from the space in between the cells and dumps it back into the bloodstream. It's a big part of our immune system, helping to kill foreign invaders and clean up the rubble from the fight. Right in front of the hip joint, in the groin area, there are some major lymph nodes, working hard to do the job of clean-up.
- The parts of the body responsible for reproduction and urination are a part of the stage that is the core. Issues with the kidney and bladder and with the reproductive organs can affect how this play evolves and how the iliopsoas speaks its lines. Big scenes like pregnancy or an ovarian cyst can really

impact these muscles. The ovaries, uterus, and bladder are all intimately connected to the hip joint and the pelvis.

- Digestion is rumbling away all day long on this stage. It's definitely the sound system. The small intestine and the large intestine are right next to the iliacus and psoas. Issues with these tissues can definitely affect what's happening in the muscles and vice versa. It's quite a community.
- The nerves are the electrical wiring on the stage. There are tons of nerves that travel through the pelvic area as they come out of the spine; the iliacus and the psoas have to navigate around them. They don't want to trip on a wire!
- Major arteries and veins make up the plumbing of the stage, showing how circulation is a part of the play too.

When the stage isn't functioning properly, the actors and the puppets can't play out the scene as planned. If you have digestive, urinary, reproductive, lymph, or nerve issues, the iliopsoas will be affected. And issues with the iliopsoas will affect those tissues as well. It's quite a complex set on a lively, crowded stage.

## Bones as the Puppets

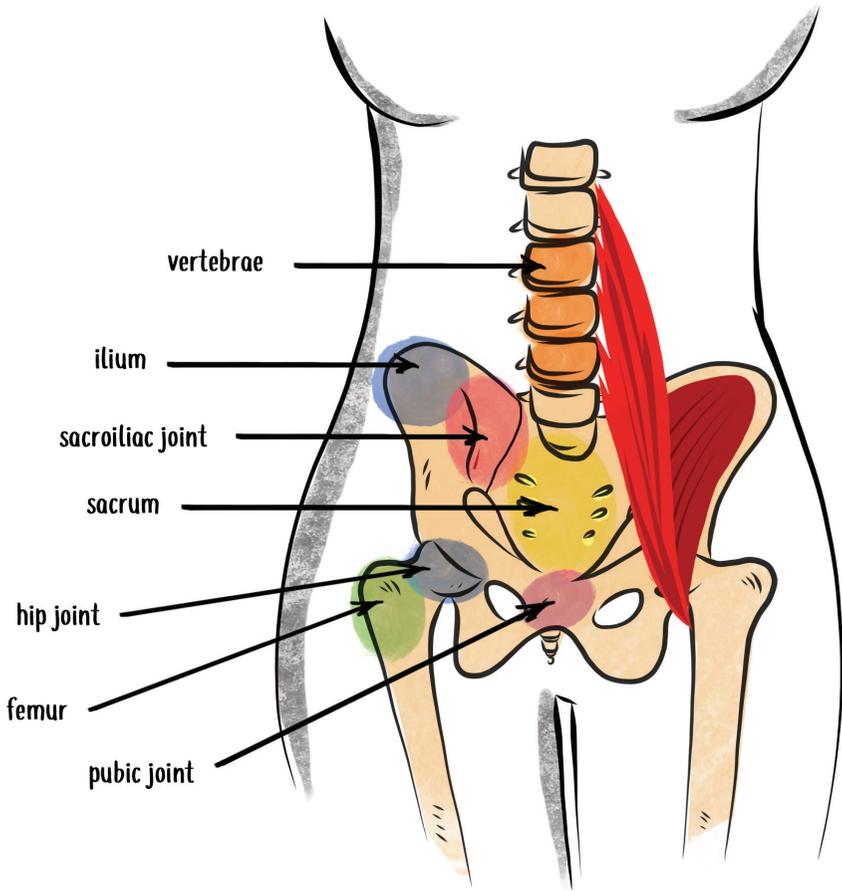
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Now that we've set the stage for what happens around the iliacus and psoas, let's explore the bony puppets. The bones are called the puppets because the muscles grab a hold of the bones, like the strings of a puppet, and move them around to get the body to move. The bones are inanimate; they will not move alone, just like a puppet. The bones need the muscles to move them.

The main puppets in this show are the thigh bone (femur), pelvis, and spine (vertebrae). The thigh bone connects to the pelvic bone to make up the hip joint. The pelvis itself is made up of three bones, two (called the ilium) that join in the front to make the pubic joint. Both

## Tight Hip, Twisted Core

of those bones connect on the back to the tailbone (sacrum) to create the SI (sacroiliac) joints.



The bones and joints around the iliopsoas muscles

The iliacus crosses over the hip joint, attaches directly to the pelvis, and affects the SI joint. The psoas crosses over both the hip joint and the pelvis all the way to the spine. Moving and holding together these puppets, the iliacus and the psoas have a big job to do—these bones are pretty important for getting around and being upright. Balancing mobility and stability of this area is hard work!

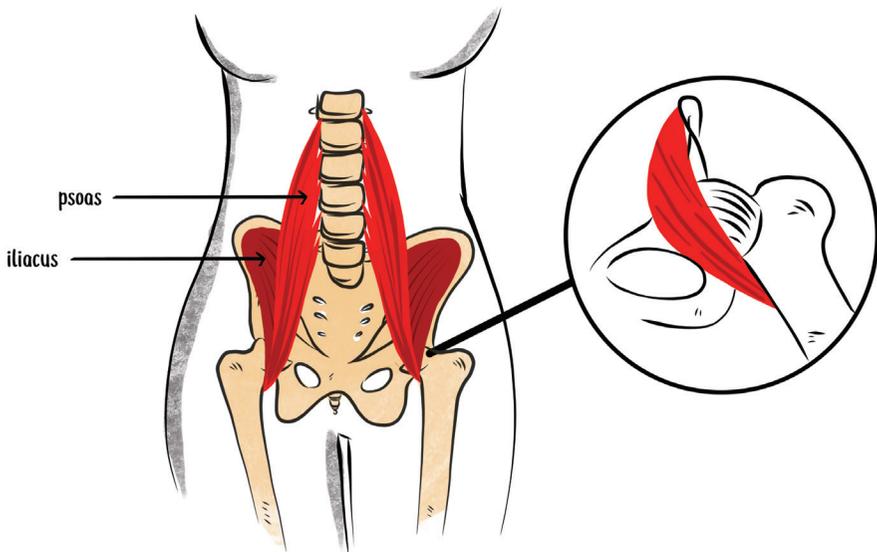
## Muscles as the Actors

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There are nineteen muscles that cross the hip joint, two being the iliacus and psoas. Each muscle crosses the joint at different angles. Some are very long, going from the pelvis to the knee, while others are just a few inches in length. All of these muscles have their own role in the play, either working with the iliopsoas or in opposition to it.

### The Stars

The stage has been set, the puppets are in place, now it's time to welcome to the stage the stars of the show: Iliacus and Psoas. Crossing from the lower back to attach to the thigh bone, they are in every scene played out on the stage, speaking their lines loud and proud.



Iliacus and psoas are intimately connected to the spine, pelvis, and hip joint

The iliacus holds on to the inside of the pelvis bone, comes down the front of the hip, and connects to the front of the thigh bone. It's *very* close to the hip joint itself. If you could peer inside the body you

## Tight Hip, Twisted Core

would see that the end of the iliacus (and the psoas) actually touch the outside edge of the hip joint, super close. The psoas starts with its connective tissue attachment to the diaphragm and then a tight grip on the entire lower spine. Finally it attaches to the same spot in front of the hip as the iliacus, on the front of the thigh bone.

The role of these two muscles is twofold. First, they help flex the hip. Remember, hip flexion is when you're moving your leg forward with your hip joint. When you lift your leg to place your foot upon a stair you're partially using your iliopsoas. When you swing your leg forward in walking, running, or kicking, you're using your iliopsoas. Imagine what happens to these muscles when they are working too hard. They get kinda cranky like anyone whose name is constantly called all day long.

The second and most important role of these two muscles is to hold the spine in a good position relative to the pelvis, and to hold the pelvis and spine in a good position relative to the hip joint. The body works best when the spine, pelvis, and hip are all lined up nicely and held together snugly. The iliacus and psoas act like the rubber bands that hold the stack of cards together, connecting the upper body to the lower body. From the spine the upper body springs; from the hips, the lower body trickles. Without healthy iliacus and psoas muscles this area wouldn't line up right and could possibly topple out of place.

As they are acting on this crowded stage inside the abdomen, deep in the body, you may be wondering how we can find the iliacus and psoas muscles in all that traffic. I think the commotion actually deters a lot of people from paying too much attention to these muscles because they seem like they are too hard to reach.

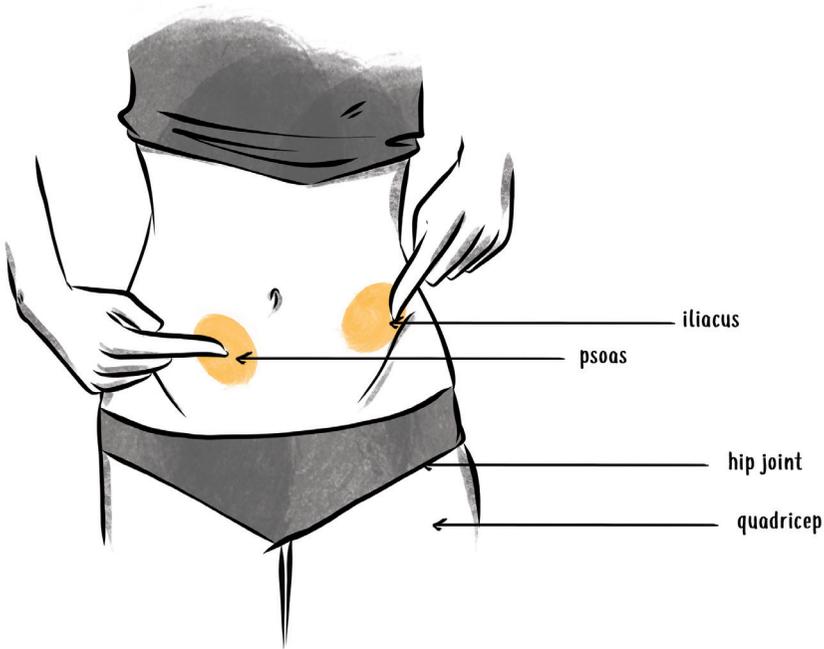
There also exists some sort of a cultural sensitivity that makes people cautious about working on the abdomen. In other cultures, this is not the case. Similarly, when you don't understand an area, it's hard to jump in and treat it, just like I felt as a new graduate. Regardless of the reason why, the truth is that these muscles are easily accessible, especially the iliacus. The iliacus and the psoas can be massaged, released, and touched to see if they are happy. (Happy muscles don't hurt.)

The iliacus performs on stage right and left and a little in the wings. On your body, it's a bit around the corner, on the inside surface of the

pelvic bone, partially hidden. But that doesn't mean you can't touch it. It just requires a little creativity.

Since the psoas performs between stage right and left and center stage, you can see why it's natural that psoas gets all the attention. Many assume the psoas is the star of the show because it's so big and loud and in the center of the stage! Little do they know that the script will fall apart without the role of the iliacus firmly in the wings.

Take a moment to explore how this plays out in your own body. If you put your hands on your hips you can feel your pelvic bones. The deep crease in the front of your hip is the location of the hip joint and the attachment of the iliacus and psoas. So if you're experiencing symptoms in the crease it could be related to iliacus, psoas, or the hip joint itself.



Find these spots on *your* body

The iliacus starts in that spot right in the inner crease of the hip and attaches on the inner surface of the pelvic bone. If you put your hands on your hips and you feel the bony point on the front of the

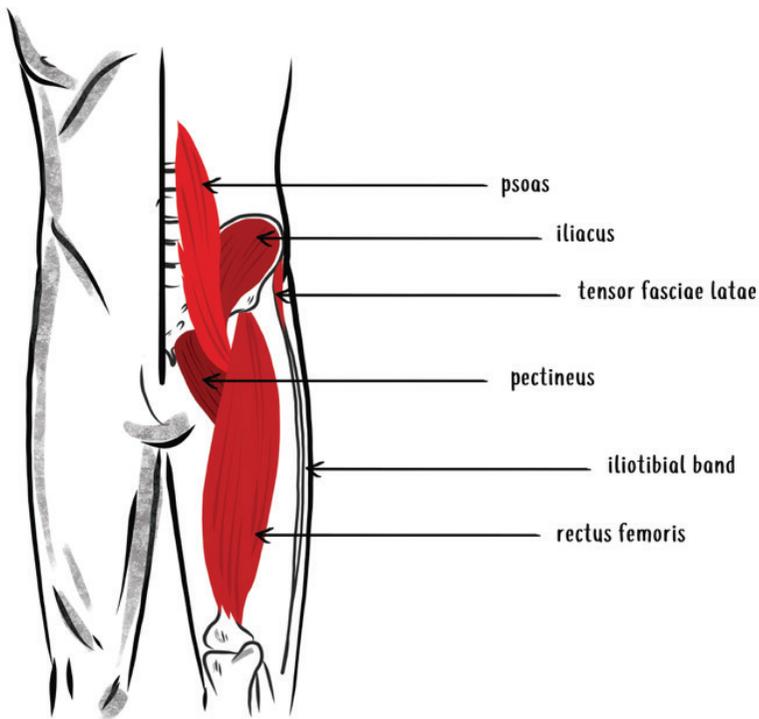
## Tight Hip, Twisted Core

pelvis and you go to the soft spot just a little bit towards your belly button, that's where the bulk of your iliacus lives. Draw a line halfway from your belly button to that bony point on the front of the pelvis to find your psoas.

The iliacus and the psoas are the well-deserved co-stars of the show. After all, they are holding the whole thing together. They both need your attention. Let's explore the muscles that act as the Sidekicks and hold supporting roles to iliopsoas.

### The Sidekicks

These Sidekick muscles, like those in the starring role, have a similar job bringing the leg forward, so they tend to commiserate with an angry iliopsoas muscle.



Other major hip flexors acting as Sidekicks to the iliopsoas  
(gluteus medius not shown)

Pectineus (peck-ti-knee-us) is in the inner thigh. Rectus femoris is part of our quadricep, the big muscle on the front of the thigh. Tensor fasciae latae (ten-sir fash-ha lot-a), one of my all-time favorite names for a muscle, attaches to the IT (iliotibial) band on the outside of your leg. Part of the gluteus medius, located on the outside of the hip, also supports the iliopsoas. All of these muscles are hip flexors and support the iliacus and psoas in their starring role.

These Sidekicks are just as important to the plot of the story because when there are issues with the iliacus or the psoas, these Sidekick muscles are also not so happy. They may be overworked, they may be sore, they may be tight and pulling on the bony puppets in their own way, so they too need attention.

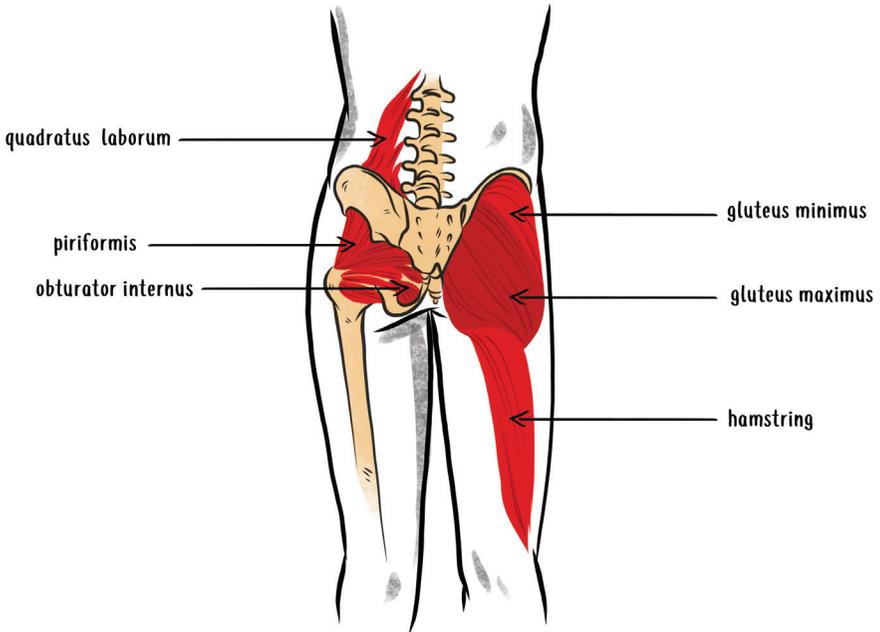
## The Villains

The stage has been set, the puppets are in place, the stars of the show and the newly introduced Sidekicks have entered stage left...just in time for the Villains to arrive. The Villains are the muscles that fight with the hip flexor muscles. These Villains are not necessarily bad, they just have the opposite job of the iliopsoas and the Sidekicks. Their role is just as important.

This tug-of-war is how the body moves so elegantly. One group of muscles pulls one way while the opposing muscles pull the opposite direction, both attempting to keep the bones in place. When the iliacus and psoas are pulling too much, the Villains activate to keep the iliopsoas from winning. Since the hip flexors are on the front of the body to pull the leg forward, the Villains are mostly in the back of the body.

The gluteus maximus and minimus (often called the glute) help pull the leg backward. Quadratus lumborum and low back muscles get cramped and tight when the iliopsoas is tight. The hamstring muscle, attaching directly to the pelvis, plays a mean game of tug-of-war with a tight iliacus. Joining the game, deeper in the pelvis, lives the piriformis muscle. The sciatic nerve runs right underneath it, so when piriformis plays tug-of-war, that nerve is affected.

## Tight Hip, Twisted Core

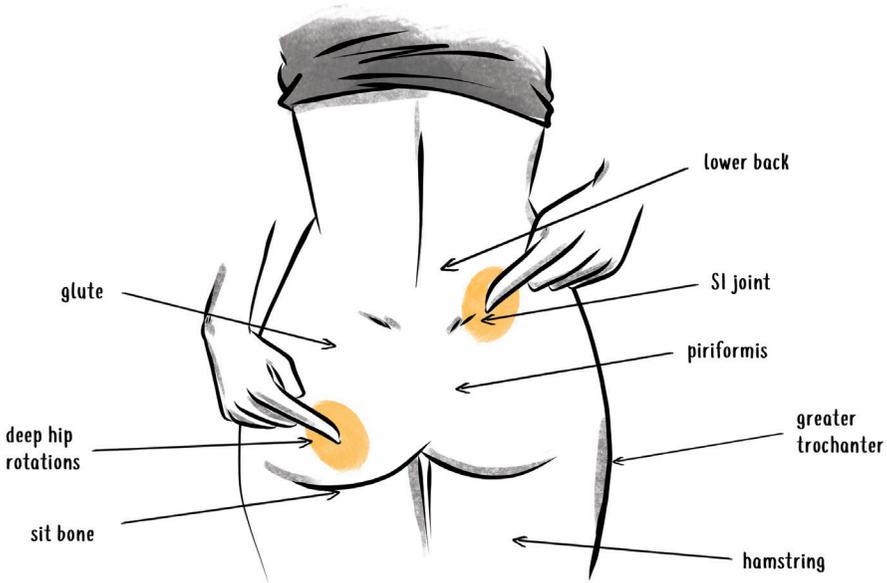


Villians of the iliopsoas on the back of the body that like to play tug-of-war

The obturator internus muscle is another undertreated and undiscovered muscle deep in the pelvis that is quite tight in a lot of people who have tight iliopsoas. This muscle is really close to the back part of the hip joint, similar to how the iliopsoas is close to the front part of the hip joint. They are definitely tugging on each other. The obturator internus and the iliacus are often tight together with issues with the hip joint and the pelvic floor. Obturator internus is part of a larger group of muscles called the deep hip rotators. Similarly, these muscles are really close to the back of the hip joint and therefore become Villains in the show.

The Villains in this show fight with the iliacus and psoas to be in the spotlight. If the Villains are overworked or tight, that might contribute to the cause of why the hip flexors are tight to begin with. Alternatively, if the hip flexors are tight, these Villain muscles are going to play tug-of-war and can get inflamed or tight as a result.

Take a moment to explore the Villains on the back of your own body. The part of the thigh bone that is on the outside of the hip (greater trochanter) is where a lot of the Villains attach, like the deep hip rotators, glute, and piriformis. This bone can hurt when those muscles are angry.



Find these spots on *your* body

Following the hip crests to the back of the pelvis, you find two bony knobs that may look like dimples. This is where the pelvic bone (ilium) and the tailbone (sacrum) connect. This is the SI (sacroiliac) joint, near where the other end of the piriformis attaches. The lower back starts in the center between those two bony points. To the side of the tailbone in the soft fleshy part is the bulk of the Villain muscles.

On the back of the thigh is the hamstring muscle. If you sit down on a chair and you put your hands under your bottom you will find two bony points, the “sit” bones, where the hamstring attaches. Moving your fingertips to the inside surface of the sit bones, you’ll find the

obturator internus, and the space in between the sit bones is the pelvic floor, full of muscles waiting to get tight.

Now consider yourself oriented to the stage, puppets, and the actors in the greatest show on earth, playing live right now in your core. Let's see how the story is scripted and how you can start to run the show.

## “I’m So Tight!”

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How many times have you thought to yourself, “My (fill in the blank) is so tight!” As a result of athletic endeavors or a long day at the office, we are bound to feel something we call “tight” at some point. This word is used prolifically in conversation and exclamation, sometimes to even explain a vague and undefined sensation. This book is about the effect of tightness of the iliacus muscle on the rest of the body; therefore, it's key that we get the definition of “tight” straight.

## Not Really “Tight”

“Tight” is commonly used for more meanings than there are shades of green. One person might explain a certain feeling as “tight” even though another person's description of that same sensation would be “sore,” “painful,” or “pulling.”

To illustrate the multiple uses of the word tight, we will use the hamstring muscle as an example. The hamstring is the muscle on the back of your leg, and you stretch it by bending over to touch your toes. Here are some inaccurate reasons it might be called “tight”:

1. It's sore. Maybe you just did a workout and you were doing a lot of kettlebell swings, and your hamstring is sore. So when you get up from standing you may grab the back of your hamstring and say, “Oh, my hamstring is so tight.” You are using “tight” to describe muscle soreness, an inaccurate definition. Use “sore.”

2. You feel a stretching sensation in the back of your leg if you go to bend over to touch your toes and stretch your hamstring. That is a normal sensation that simply lets you know that the muscle is being stretched, not necessarily that the muscle is “tight.” Say instead, “I can really feel that stretching!”
3. The back of the leg is being touched and it feels sore. This could be an exercise-induced soreness or an actual injury. “Tight” would be inaccurate. Again, use “sore.”

Continuing to use the hamstring as an example, here are more accurate ways to use the word “tight.”

4. Let’s imagine the same stretch, bending over to touch your toes, where the hands reaching mid-shin is the farthest that can be reached. If the goal for a normal length of the muscle is to allow you to touch the floor and you’re falling short, this version of “tight” is describing a lack of motion in a muscle, a muscle that can’t quite lengthen fully. This is an accurate definition.
5. The type of “tight” used most in this book is to describe a muscle that has excessive tension or that is “on” when it should be relaxed or “off.” We’ve all experienced that in the upper part of our shoulder with a muscle knot. When a muscle is holding tone, is contracted, is not relaxing, or is knotted it can accurately be called “tight.” If you are resting in bed doing nothing and you touch your hamstring and it is hard and contracted or knotted, then it is “tight.” It should be relaxed, soft, and supple, but it is not. It’s “tight.”

You can imagine that when we’re using the same term in all these scenarios it can be confusing. I’ve even had people describe pinching as being “tight.” When raising the arm up high and feeling pain on the top of the shoulder, an exclamation of “My shoulder is so tight!” is not accurate. It’s actually pinching on tendons in the shoulder! By clarifying how we use “tight,” we can better communicate what is happening in the body and better understand the rest of this book.

## Tight Hip, Twisted Core



The most accurate way to use “tight” is to describe a muscle that will not lengthen or a muscle that is holding tension with a knot

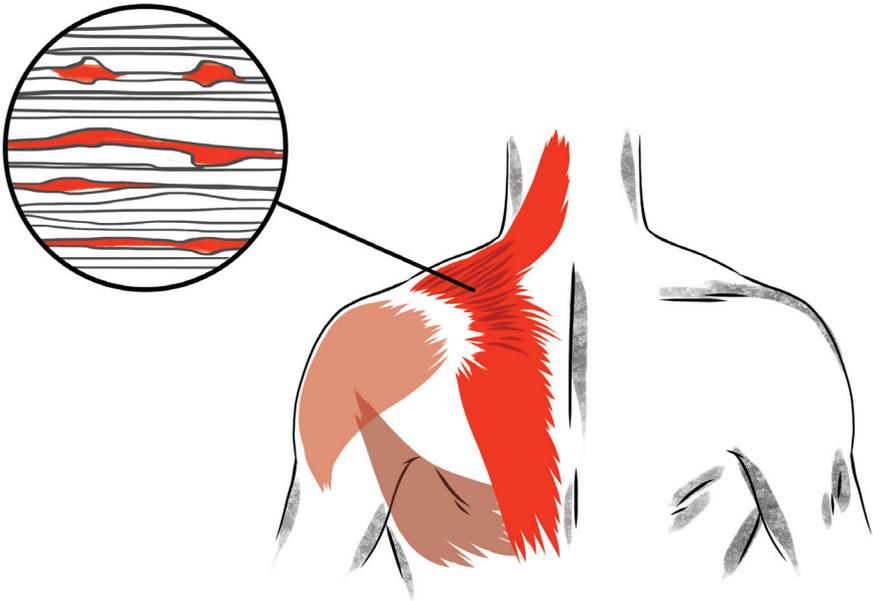
The first accurate definition of “tight” is intended to describe the length of the tissue. Let’s go back to the hamstring example. When you go down to touch your toes, and you can’t reach the floor because your hamstring will not lengthen very much, that would be a good description of a muscle being tight. If you can put your hands completely on the ground when you bend over, but you feel a sensation in the back of your hamstring that’s telling you that you’re stretching, that’s not “tight,” that’s just stretching. The muscle can lengthen the normal amount that is needed for a healthy functioning body, so that muscle is not tight. It’s just being stretched.

The second accurate use of “tight” describes a muscle that’s not lengthening very much because the muscle is partially contracted. The muscle has been turned on for some reason by the brain; it’s not relaxed. Having a muscle knot or trigger point would be an example of this. When we’re not using a muscle it should be nice and soft, supple and relaxed. You should be able to feel it as squishy. If a muscle feels hard when you’re not using it, then that muscle is tight. Muscles that are tight because of a knot do not stretch very far, do not contract very well, and cause pain when they are used or stretched. Sometimes they are even painful at rest.

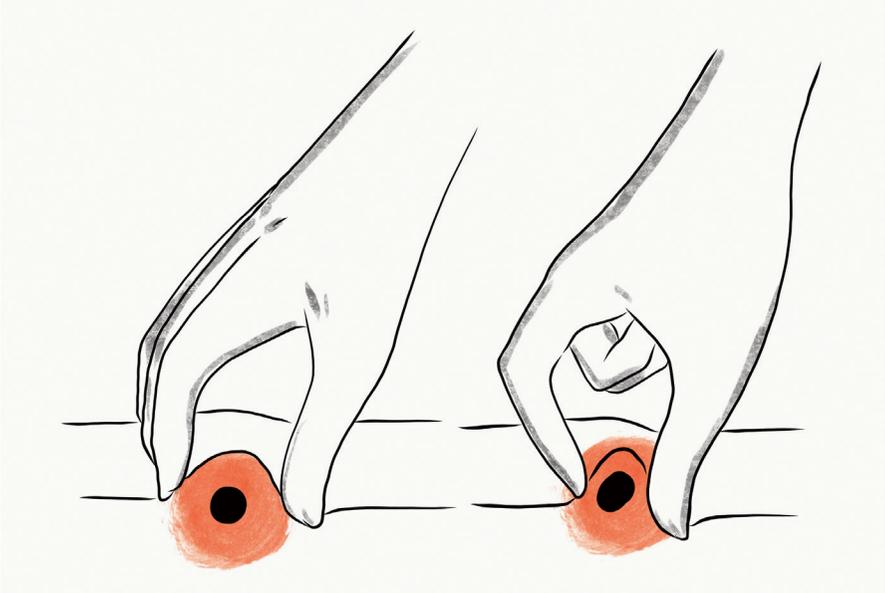
A lot of things happen with muscle knots that we will cover soon, but it's important to be clear moving forward. A “tight” muscle is a muscle that cannot lengthen, either because the muscle fiber won't stretch or the muscle is holding excess tension. Tight does not mean sore, painful, injured, pinching, or stretching.

## Knots and Triggers

A muscle knot is a spot inside the muscle itself where some of the muscle fibers are contracted. This section of the muscle stays “on” no matter what you are doing. In fact, these knots can stay contracted for decades without ever relaxing. Knots feel like dense sections in the muscle and often hurt with pressure. A skilled hand can find these knots quite easily as the texture of the tissue feels much different when knotted. Healthy muscle tissue is soft and squishy; knots are dense and hard.



## Tight Hip, Twisted Core



Muscle knots are parts of the muscle that stay contracted

Often, muscle knots will develop as a result of a muscle being used too much, contracted for a long time without relaxation, shortened too long, or in a stressful situation. Muscles are healthiest when they get a break from contracting by turning off often. Too much contracting without relaxing is not a good thing. Once a muscle is “on” for too long or is used too much, the brain decides to keep a part of that muscle contracted for good, creating the knot. It’s like the “on” button at the control center gets flipped and the controller goes to lunch. This can happen in a small or large section of the muscle, sometimes even the whole muscle, creating different-sized muscle knots.

In our modern economy of a plethora of computer jobs, muscle knots on the top of the shoulder area (upper trapezius) is common. With the arms reaching out in front of the body all day long, the upper trapezius muscle is constantly “on” to prevent the shoulders from falling forward and to keep your head from rolling off your shoulders. This is happening to me right now as I write this book! After a long

day of work, this muscle will likely stay contracted when you're done typing, even when you're walking, sleeping, or eating as the day goes on. The switch is stuck in the "on" position.

Muscle knots also develop in muscles that are in a shortened position for too long. Muscles like to be at their ideal length, not too long (they get weak) and not too short (they get tight and weak). When short, they get cramped and easily develop knots, especially when you ask them to work when they are short. Many of the activities listed in the next section cause muscle knots in the iliacus and psoas because of this reason, being asked to work hard in a shortened position.

Another reason for the development of a muscle knot is stress or emotional trauma. When the brain perceives a threat of some sort, it will contract a muscle or two to protect the area that seems threatened. Even with generalized stress, the neck and shoulders and the hips and pelvis are common areas for muscle tension. The brain wants to protect its home in the skull (neck and shoulder tension protects the head) and our vital organs in the abdomen (hip and pelvis tension protects the organs).

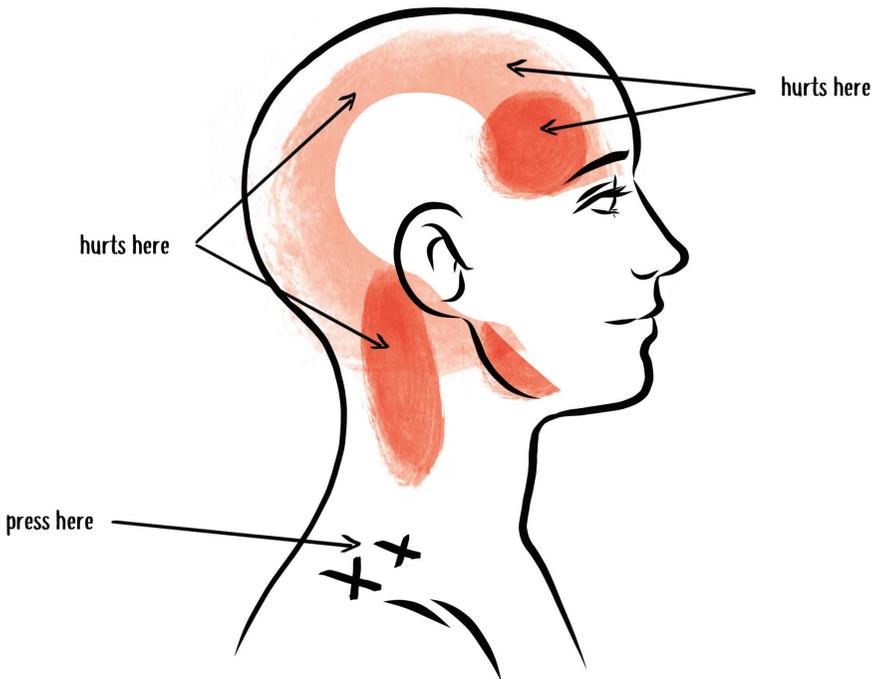
Physical trauma can cause a knot to develop as well. If you sprain your ankle, the muscles around the ankle will protect it by turning on and staying on, creating a knot in efforts to keep the ankle stable. If you have hip surgery, the muscles around the hip might turn on and stay on to protect that traumatized area, creating a knot there. Our brain creates tension wherever it feels the body would benefit from extra protection to increase the survival of the body as long as possible. You can't blame the brain for trying to keep you alive!

When a muscle knot develops, it affects the health and vitality of the muscle itself. A constantly contracted muscle squeezes all the blood vessels that go through it, making it difficult for the blood to flow. It's like stepping on a hose and expecting to easily water the garden. Good blood circulation is vital to the health of the muscle. It's the blood that brings nutrients to the muscle so it can have the energy to have strength and repair itself. This same blood takes away toxins and waste created from muscle contraction. If we don't have

## Tight Hip, Twisted Core

good circulation, bringing in new nutrients and cleaning out the gunk, then we end up with a swamp. Some of the gunk that collects in the swamp is calcium and mineral deposits that actually cause the muscle to contract even more. This strengthens the grip of the knot and helps it to stay contracted long-term.

A trigger point is a type of muscle knot with a magical power. When you press on a trigger point, whether it's with your finger or with a tool, that pressure triggers pain in a completely different location than where you are pressing. For example, if you have a knot of the trigger point type in the top of your shoulder and you press on it, it might hurt right where you are pressing, but it could also refer a trigger pain to come up to your head and could give you a headache.



Trigger points are muscle knots that trigger pain somewhere else

Trigger points are important to understand because often we have pain in certain areas in the body that are actually coming from a completely different location. In this example, there is not really something wrong with the head; the problem lies in the muscle on top of the shoulder. It's the top of the shoulder that needs to be treated, not the head.

Trigger points can refer to lots of places. Pain down the arm could result from pressing on the shoulder blade. Pain down the leg could be due to a trigger point on the outside of the hip. There are certain patterns that are consistent from person to person. Travell, Simons, & Simons did a wonderful job cataloging these patterns in *Myofascial Pain and Dysfunction: The Trigger Point Manual*, so we can identify the cause of triggered pain with ease. I've included some of the more common trigger point referral patterns of the hip in the section "Releasing Neighboring Tight Spots."

There are two types of trigger points. Latent trigger points are hidden below the surface—you don't know you have them until they are pressed upon. You feel fine, you don't notice any pain, but then someone presses on that muscle knot in your shoulder and it hurts! Suddenly you're feeling pain all the way up into your head from pressure on your shoulder. It's "latent" because it's not active. It's just below the surface, waiting to trigger pain somewhere else.

If you go to town rubbing a latent trigger point or overusing that muscle, it could quickly activate, becoming an active trigger point. This active trigger point is one which is causing a referral pain without pushing on it. Using the same example, you would have a headache without even touching the trigger point in the shoulder. If you press on that active trigger point in the shoulder, it'll make the headache even more intense.

Our muscles work a lot better when they are not bound in a knot. They can be long, strong, and pain-free when they are released from their tension. Stretching, rubbing, warming, and pressing are different techniques that are used in an attempt to relieve tight muscles. They all work in different ways and to different degrees. It's important to understand how these techniques differ when looking to loosen up that tight hip of yours.



Different ways to address an unhappy muscle: stretch, rub, press

## Stretching Isn't Enough

Stretching a muscle makes it longer by moving the body in a specific way to lengthen it. For example, if you're stretching your hamstring and you bend down to touch your toes, that motion makes the hamstring muscle get longer and stretch.

Stretching works by bringing blood flow to the muscle. This is particularly useful when you have a knot or you've been inactive and you want that circulation to come to the area to clean up the toxins and bring some nutrients to the muscles. Stretching warms up the muscles by increasing blood flow and by increasing the pliability of the muscle. Just like when you pull on dough and it goes from being hard to soft, muscles soften when stretched.

The brain gets a special message from a muscle when it is stretched too. There are many different types of nerves in the muscle itself that are sending information to the brain, information about how fast, how hard, and how long the muscle is moving. When the stretch is gentle, the brain gets the hint to release some tension in that muscle because the brain sees this motion as safe and predictable. The brain feeling safe is what allows for more mobility and flexibility in a muscle. Muscles don't actually grow muscle fibers or get longer when they become more flexible. If a muscle stretches more than it has before, it's solely due to the brain feeling comfortable and allowing the muscle to do so.

Stretching also prepares the muscle for movement and it activates the nerves that connect to the muscle to get it ready for action. It also teaches the muscle how to grow new muscle or repair broken muscle in the correct way. If you are building a ladder, you want to line up the rungs so that they are all the same distance apart and parallel to each other; you don't want to nail on the rungs haphazardly. Similarly, when a muscle is repairing, you want the new muscle tissue to line up properly. Stretching teaches the muscle how to do this. If you did injure your hamstring, for example, gently stretching it as it heals allows it to repair properly.

When it comes to muscle knots, stretching can provide some mild relief. The increased circulation and the effect on the brain do allow for the muscle to relax a bit. Often, it is not enough to release a knot completely, but it is an important and effective part of the recovery process.

## Rubbing May Make it Worse

Massaging a muscle involves rubbing, manipulating, or moving it. There are many different kinds of massage strokes that can be used, and they increase the circulation to the muscle as well. Massage also affects the brain to help relax the muscles and the body as a whole. We all know that touch is therapeutic and calming. This is why we rub the back of a child who's upset or why we flock to get a massage when stressed. Firm rubbing can also soften the experience of pain as the firm pressure blocks some of the pain signals interpreted by the brain. Massage is also helpful to break up tissue that is unhealthy or scarred so that the body can rebuild itself better. There are even massage techniques that release tension in the fascia that surrounds the muscles that can help the body function at its best.

Self-massage techniques such as foam rollers, sticks, balls, and tools that move and vibrate are prevalent. All of these techniques are moving the muscle around, increasing the circulation, preparing the tissue to heal, and calming the brain's hold on the tension of the body. If the muscle that is being massaged has a latent trigger point in it, however, the manipulation of the muscle will likely activate that

trigger point and make the symptoms worse instead of better. This is one reason why many complain of worsening pain after a massage.

These two techniques, stretching and massage, work differently than putting prolonged pressure on the muscle. I make this distinction because a lot of people go in for a massage, use a foam roller, or use some sort of massage tool, hoping to relax their muscle knots. Although stretching and massage can help with muscle knots to some degree, the most effective way to release tension in a muscle knot or a trigger point is simply direct constant pressure.

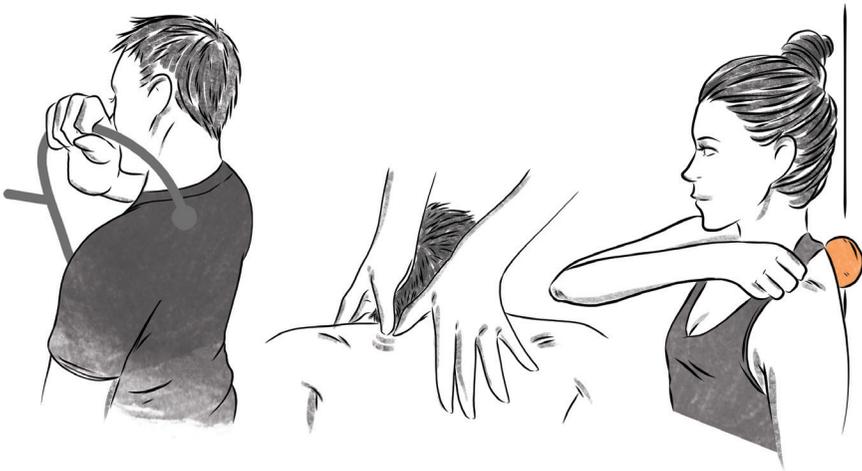
### Warm it up, Buttercup

One way to release the tension in a muscle is through introducing more circulation to the area. Both stretching and massage, as mentioned above, improve circulation. Circulation also increases with exercise, magnets, and heat methods such as a hot pack, sauna, hot tub, bath or shower, ultrasound, and forms of infrared light like a therapeutic laser, a biomat (a mat that gives infrared light), and an infrared sauna. Even being out in the sun helps (one of the many reasons it feels good to be outside). When circulation is increased to the muscle knot in one way or another, some of those mineral deposits and toxins get swept away. This gives that muscle more of a chance to relax. Increasing circulation to the area is a simple tool that works fairly well in addition to other techniques for muscle knots and tension.

### Pressure Is the Golden Ticket

Some muscle knots and trigger points can get better just by increasing circulation. For most muscle knots, however, it's not that simple. Using pressure to release the tension is often necessary (Travell, Simons, & Simons). Pressure release (often called trigger point release) is different than massaging the muscle, rolling on a foam roller, vibrating a muscle, releasing the fascia, or stretching. All of these are useful techniques, but they're not nearly as effective at releasing muscle knots and trigger points as prolonged pressure.

Pressure release technique involves finding the dense and contracted area of the tissue and putting prolonged pressure on that particular spot. The prolonged pressure at first will cause pain at the location of the pressure; it will be sore, and that's OK. If it's a trigger point, the pressure will soon cause a referral pain that will go somewhere else. Sometimes that referral pain feels dull, sometimes numb, sometimes intense. Remember the shoulder muscle causing a headache example? Holding constant pressure on the muscle knot will create a quick surge of increased circulation and change the pattern in the brain that is making that muscle stay contracted.



Ways to deliver prolonged pressure

The key to this technique is *prolonged* pressure. You can't just press it for a few seconds and then be done because that can activate a trigger point and will not soften it. You don't want to make it angrier; you want your efforts to produce results! The ticket is finding the knotted spot and holding it, without rubbing or moving, for thirty to ninety seconds, or as long as it takes for the pain that's referring to mostly go away. Maintaining the pressure without moving will allow that trigger point to relax to its optimal soft and supple state.

Up until now, the brain has chosen to hold tension in this muscle for some reason. Prolonged pressure finally tells the brain that it can now

allow that muscle to relax. The exhausted, swamp-filled muscle finally is free of its arduous work. No wonder it feels so good! If this pattern of the muscle knot is not treated, it would likely persist indefinitely. We are breaking an unhealthy pattern in the tissue.

Let's reiterate one more time the important distinction between rubbing and stationary pressure. I can't tell you how many clients of mine have left their massage sessions with more pain or headaches as a result of trigger points being activated by rubbing and not deactivated by pressure release. This prolonged pressure method along with warming up the muscle with stretching and heat is how we will release your tight hip.

## Happy Muscles Don't Hurt

As a self-mastery exercise, I encourage you to learn what you are supposed to feel in your body when you do specific motions, techniques, exercises, or stretches. If you don't know what you should feel, or you are feeling something different than what you should, you could be hurting yourself. I have seen clients doing a stretch incorrectly for years, even causing damage, because they didn't clearly know what they were supposed to feel. What they were actually feeling was not what was intended for the stretch. This is something to pay close attention to.

If, when performing a stretch to open up the chest muscles, for example, it is felt in between the shoulder blades and not the chest, the benefit of the stretch is lost and the shoulder blades are getting aggravated. Just because you can feel *something* doesn't mean it's the right thing to feel. It is your responsibility to know not only how to do a stretch or exercise, but exactly what you should be feeling. Ask your instructor, coach, or therapist what you are supposed to feel. If you don't feel the exact sensation that you should, then you are either not doing it correctly or the movement is not for you. If you are supposed to feel something specific with a stretch or exercise but you don't, that movement might not be doing anything at all for you; don't waste your time.