SAMPLE CHAPTER

yoga

for pain relief

A NEW APPROACH TO AN ANCIENT PRACTICE

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FOREWORD BY PEGGY CAPPY
a balanced body is a pain-free body

“Yoga is the study of balance, and balance is the aim of all living creatures: it is our home.”
—Rolf Gates

At least one hundred million Americans suffer from chronic pain. Chronic pain is defined as pain lasting longer than six months. That number goes much higher when we add the statistics for acute pain. Chronic and acute pain can range from mild to moderate to excruciating. Dealing with pain costs society over $600 billion dollars each and every year. This is a significant public health problem.

As a neuromuscular therapist, I have observed that the four most common complaints from my clients are back pain, neck pain, headaches, and knee pain. In fact, I will bet that many of you reading this book have suffered with some of these conditions or know someone who has. Chronic and acute pain will likely affect most people at some time in their lives.

Interestingly, back in the 1950s when I was growing up, low back pain was one of the most common reasons that compelled a person to seek medical help. Today in 2017, low back pain is still one of the most common reasons a person will seek medical attention. How can it be that in a country with such an advanced medical system that low back pain is still so persistent?

The answer is that usually when a doctor or therapist treats low back pain, they are treating symptoms, not the cause. Of course, treating the symptoms to achieve relief is well and good, but in the long term treating the cause of the low back pain will yield longer-term relief.

A great deal of research presents evidence that the root cause of many neuromuscular pain patterns is due to biomechanical malalignments caused by muscle imbalances. Therapists often refer to this as the muscles being locked long or locked short.

When you visit your doctor, you could be diagnosed with any one of hundreds of conditions. In our Western model of medicine, standard treatment for conditions like sciatica, plantar
fasciitis, carpal tunnel, tennis elbow, low back pain, most headaches, and herniated discs involves treating the symptoms, typically with a painkiller or an anti-inflammatory drug. Seldom does Western medicine treat the cause.

I am now going to reveal to you the “secret” I became aware of that finally relieved my headaches after the car accident. I use this knowledge almost daily to help people reduce or eliminate their neuro-muscular pain. The secret is correcting muscle imbalances. In my experience, these imbalances can account for 80% of the pain a person will experience in their lifetime! Correcting muscle imbalances will give you better posture, more energy, and reduce or eliminate many painful conditions.

Muscle imbalances are often the cause of many painful conditions you will experience in your life, including:

- Tension-type headaches and migraines
- Temporomandibular joint disorder (TMJD)
- Cervical muscle strain (neck pain)
- Thoracic outlet syndrome (TOS)
- Epicondylitis, lateral or medial (tennis or golfer’s elbow)
- Carpal tunnel syndrome (CTS)
- Lumbar muscle strain (low back pain)
- Piriformis syndrome (sciatica)
- Medial meniscus injury (knee pain)
- Plantar fasciitis (heel spur)
- Fibromyalgia
- Disc abnormalities
- Nerve compressions
- Fascial restrictions
- Poor posture
- Knee and hip replacements
- Reduced flow in the energetic body (prana)
- ...and many more painful conditions.

**What is a muscle imbalance?**

A muscle imbalance occurs when muscles become either too long or too short. Muscles that are too short or long will cause the muscular system to become painful and possibly even inflamed.

Optimal functioning of the musculoskeletal system requires that muscles be in balance in regard to strength and length. If muscles do not possess this balance, they become painful, and the joint where these imbalances occur will become compromised. This often manifests as pain in that joint and/or limited range of motion.
Illustration A demonstrates what muscles in balance look like. They are equal length and strength. Illustration B demonstrates what a muscle imbalance looks like. Notice that the muscle on the left is short and contracted. (This muscle is then considered strong.) The muscle on the right is too long and overstretched. (This muscle is then considered weak.) These small imbalances will cause the bigger imbalances we see in the next diagram.

The figure on the left is what a balanced body looks like. The figure on the right has numerous muscle imbalances. Most people exhibit at least some of these imbalances and are not even aware that they have muscle imbalances. Another way to think about imbalances is to look at your posture. If you have poor posture, you have muscle imbalances like the figure on the right. If your muscles are in balance, you have good posture like the figure on the left. To be concise, a muscle imbalance is when some muscles are too short and tight, and some muscles are too long and tight.

When muscles become too short, they will feel tight and will often become achy or painful. Now, pay close attention to this next statement. When muscles become too long, they also will
feel tight and will often become achy or painful. At first this doesn’t seem to make much sense. Let’s take a closer look.

Imagine a rubber band. Imagine that you are now pulling two ends of the rubber band farther apart. This stretching of the rubber band is making it longer and tighter, is it not?

Let’s experience this in our bodies. A common muscle imbalance in our culture is that many people have their shoulders rounded forward. This is due to improperly sitting in a chair. Try this now. Round your shoulders forward by contracting your chest muscles. Touch the chest muscles and they will feel tight, as you would expect. Now touch the upper back muscles between your shoulder blades. You will notice they also feel tight. As a matter of fact, they feel much tighter than the short muscles in most people. Muscles that are too long and tight often feel substantially tighter than muscles that are too short and tight.

When muscles are out of balance, they are either too short and tight or too long and tight. This is the knowledge we need in order to bring the body back into balance.

You are probably wondering at this point if you have any muscle imbalances. The answer is yes, you do. Almost everyone has muscle imbalances. If you sit at a computer, drive a car or watch TV for more than an hour a day, you most likely have some muscle imbalances. Poor posture is a telltale sign. If the imbalances are small, you probably don’t have any symptoms. If the imbalances are significant, you will have pain and limited range of motion in certain directions.

Since muscles are attached to bones, these muscle imbalances pull the bones out of alignment, and that’s what gives you poor posture. Muscle imbalances also put abnormal strain on the tendons and ligaments. A tendon is a band of tissue that attaches a muscle to a bone. A ligament is a band of tissue that attaches a bone to another bone.

Misalignment of the skeletal structure caused by muscle imbalances can cause compressions of the nerves, discs, and other structures in the body. It can also cause the fascia to be twisted and restricted. Fascia is a band of fibrous connective tissue enveloping, separating, or binding together muscles, organs, and other soft structures of the body. These twists, compressions, and tight muscles ultimately lead to less oxygen in the tissues at those areas. The medical term for this is ischemia, which means that the blood getting to the tissues is inadequate. Since blood is the carrier of oxygen, the tissue is not getting enough oxygen. This lack of oxygen is the source of a lot of pain.

what causes most muscle imbalances?

We commonly acquire muscle imbalances in three ways: by overusing certain muscles, keeping muscles in an unbalanced position, and by overstretching.

By using one muscle more intensely and frequently than its opposing muscle, it will become too short, thus pulling the opposing muscle too long. A common example is when people ride bicycles. When riding a bike, the quadriceps muscle group on the front of the upper thigh is used to push the pedals. The hamstrings on the back of the upper thigh are not used nearly as much when riding
a bike. This exercise will make the quadriceps shorter and stronger, thus pulling the hamstrings on the back of the upper thigh into a longer and weaker condition. These overstretched, too long hamstrings will feel tight. Because they feel tight, most people think they have short hamstrings, which is not the case at all.

**Here is a key concept to remember:** Muscles that are too long usually feel much tighter than muscles that are too short. Until you can identify the muscle as too short and tight or too long and tight, you will not know what pose to select to correct the imbalance.

Another way we commonly acquire muscle imbalances is by keeping the muscles in an imbalanced condition for long periods of time. The most common example is sitting in a chair. When sitting in a chair, the quadriceps muscles go into a shortened and strong position that, of course, pulls the hamstring muscles into a long and weak position. Given that most people sit at least several hours a day (computer, driving, etc.), we have now trained the hamstrings and quadriceps to be out of balance.

Stretching the same muscles over and over again and ignoring others can develop muscle imbalances. This often happens when a yoga practitioner or athlete stretches the same muscles and ignores others at every practice. Stretching muscles that are already too long also will make your muscle imbalances more pronounced. Stretching muscles that are too long is a common but easy mistake when practicing yoga because the muscle does feel tight, and stretching it does make it feel looser.

Let’s look at a common example. Many people present with a forward (anterior) tilt to their pelvis due to short, tight hip flexors (rectus femoris and psoas). This tilt will often lead to low back pain, an exaggerated lumbar curve, and a feeling of tight hamstrings. Since muscles work in pairs, if the hip flexors are too short, the hamstrings (one of the hip extensors) must be too long. So, of course, most people believe you should stretch the hamstrings. The stretching will make it feel better and looser, but ultimately you are increasing the imbalance by making the hamstrings even longer.

Kyle Stull, in his enlightening article, explains the mechanism by which this occurs:

An example of this is the person with an anterior pelvic tilt (excessive arch in the low back). As the pelvis tilts forward, the hamstrings are lengthened. Over time, these muscles begin to feel “tight.” In most cases, the individual will feel the need to stretch the hamstrings. As the hamstrings are stretched, the GTO (Golgi tendon organ) will inhibit the muscle spindles (autogenic inhibition) and the hamstrings will begin to feel as though they have relaxed. Yet this altered position of the pelvis causes a lengthened resting position of the muscle, and as soon as the GTO is no longer excited the muscle spindle will begin to signal for the CNS to contract, leading to reoccurring tightness.

—[http://blog.nasm.org/ex/exoveractive-versus-underactive-muscles-mean/#sthash.so0s2XpT.dpuf](http://blog.nasm.org/ex/exoveractive-versus-underactive-muscles-mean/#sthash.so0s2XpT.dpuf)
What Kyle Stull is saying is that even though the hamstrings feel tight, they are not short, and stretching them will not bring them back into balance. Many people that I treat in my private practice have tight hamstrings. Most of them believe that they should be stretching the hamstrings. Seldom have I ever treated someone with a short hamstring. They are tight, but they are overstretched tight. The correct course of action is to make them shorter, which will help them to relax into the balanced position.

**Myth**

My tight hamstrings are too short, so stretching them is the solution.

**Fact**

Short hamstrings are rare. Tight hamstrings are common, but they are not usually short; they are too long and tight.

Identify your current muscle imbalances first, then select the proper pose or exercise that will bring the muscles and bones into balance.

**Muscle imbalances can either be developed or exacerbated by doing the wrong yoga pose, Pilates exercise, or strength training exercise for your current musculoskeletal condition.** When practicing yoga, Pilates, or working out in the gym, you will achieve superior results by first identifying your muscle imbalances. Failure to do so will eventually result in some painful condition in the body. It is not adequate to identify a muscle as tight. If you do not know if it is short tight or too long tight, you simply do not know what action to take, i.e. what pose or exercise to practice to correct this imbalance.

**Fun Fact** The ancient Chinese recognized this imbalance between the quadriceps and hamstrings. They knew that people who walk upright did not use their hamstrings nearly as much as their quads. Their solution was to walk up hills backward to strengthen the hamstrings. This practice would make the hamstrings shorter and stronger and thus bring them back into balance.

If you try this practice yourself, you will quickly see how weak your hamstrings are. I do not recommend this practice, as there are better ways to strengthen the hamstrings that we will learn about in later chapters.

**Focus on these five major imbalances**

Recognizing muscle imbalances is imperative so you can select the correct pose that will help to bring the body into balance and out of pain. This endeavor is not nearly as difficult as one might expect. Since most people perform similar activities during their lives, most people present with similar muscle imbalances with variations on a theme.
The easiest way to identify muscle imbalances is to remember that in the beginning most people will present with muscles on the anterior (front side) of their body too short and muscles on the posterior (back side) too long except for the calves, which are typically too short. In my experience, the primary cause of this pattern is a lifetime of sitting in chairs.

Start looking at people and observing their posture. You will soon see that most people present exactly like I am telling you—too short in the front and too long in the back. Their heads are forward, chest collapsed, and the body bent forward at the waist.

The body can have many imbalances, but following are the five major imbalances. Once corrected, most of the smaller imbalances will fall into place. When you know what to look for, it is pretty obvious.

<table>
<thead>
<tr>
<th>What to look for</th>
<th>Muscle imbalance 1</th>
<th>Symptoms</th>
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<tbody>
<tr>
<td>Pelvis higher on one side</td>
<td>Short quadratus lumborum</td>
<td>Low back pain</td>
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<tr>
<td>One leg shorter than the other</td>
<td></td>
<td>Knee pain</td>
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<td></td>
<td></td>
<td>Sacroiliac pain</td>
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<td></td>
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<td>Disc issues</td>
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<td>Scoliosis</td>
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<tr>
<th>What to look for</th>
<th>Muscle imbalance 2</th>
<th>Symptoms</th>
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<tbody>
<tr>
<td>Pelvis rotated</td>
<td>Short piriformis</td>
<td>Low back pain</td>
</tr>
<tr>
<td>Feet &amp; legs rotated laterally</td>
<td>Short hip abductors</td>
<td>Hip pain</td>
</tr>
<tr>
<td></td>
<td>Long hip adductors</td>
<td>Knee pain</td>
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<td></td>
<td></td>
<td>Groin pain</td>
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<td></td>
<td></td>
<td>Sacroiliac pain</td>
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<td>Disc pain</td>
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<tr>
<th>What to look for</th>
<th>Muscle imbalance 3</th>
<th>Symptoms</th>
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<tbody>
<tr>
<td>Pelvis tilted forward</td>
<td>Short quads</td>
<td>Hamstring pain or tightness</td>
</tr>
<tr>
<td>Exaggerated lumbar curve</td>
<td>Short psoas</td>
<td>Knee pain</td>
</tr>
<tr>
<td></td>
<td>Long hamstrings</td>
<td>Sacroiliac pain</td>
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<tr>
<td></td>
<td></td>
<td>Low back pain</td>
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<td>Disc pain</td>
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<tr>
<th>What to look for</th>
<th>Muscle imbalance 4</th>
<th>Symptoms</th>
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<tbody>
<tr>
<td>Head forward/ shoulders forward</td>
<td>Short neck flexors</td>
<td>Neck pain</td>
</tr>
<tr>
<td></td>
<td>Long neck extensors</td>
<td>Headaches</td>
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<td></td>
<td>Short pectorals</td>
<td>TMJ</td>
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<tr>
<td></td>
<td>Long rhomboids</td>
<td>Sunken chest</td>
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<td></td>
<td></td>
<td>Upper back pain</td>
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Yoga can correct these muscle imbalances in a relatively short time once you learn how to choose the correct stretches for your symptoms. In chapter 2 we will learn about the brilliant mechanics of the human machine. We will learn the language of anatomy. This will be helpful in understanding muscle imbalances and the root causes of most painful neuromuscular conditions. This information will be useful in selecting the correct pose for your current imbalances.

**Key Points**

- **Muscle imbalances** account for 80% of the pain you will experience in your life.
- **Poor posture** is a telltale sign of muscle imbalances.
- **Muscle imbalances** are caused by overusing certain muscles and underusing others.
- **Muscles that are too long** usually feel much tighter than muscles that are too short. Until you can identify the muscle as too short and tight or too long and tight, you will not know what pose to select to correct the imbalance.
- **Muscle imbalances** can either be developed or exacerbated by doing the wrong yoga pose, Pilates exercise, or strength training exercise for your current musculo-skeletal condition.
- **In general, muscles on the backside of the body are too long**, except for the calves. Muscles on the front side of the body are too short.
- **Stretching muscles** that are already too long is a common mistake in yoga class.
- **There are five major muscle imbalances** you need to identify.
- **Yoga can correct these muscle imbalances** in a relatively short time once you learn how to choose the correct poses for your symptoms.
- **Correcting muscle imbalances** will give you better posture, more energy, and reduce or eliminate many painful conditions.