"To many of his patients [Dr. Fishman] is a miracle worker." —Jane E. Brody, *New York Times*

LOREN FISHMAN, MD

HEALING YOGA

Proven Postures to Treat Twenty Common Ailments—
from Backache to Bone Loss, Shoulder Pain to Bunions, and More

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Shoulder Pain to Bunions, and More

Loren Fishman, MD

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FOR CAROL

my best friend,
first and last lover
and greatest teacher.

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Introduction

Is Yoga for You?

MAN, WOMAN, CHILD, senior citizen: the answer is yes. Novice, expert, teacher: the answer is yes. In good, medium, poor physical condition and fitness: yes. In my opinion, yoga is for everyone. Yoga provides physical and mental strength, balance and flexibility. It improves coordination. It improves mood. It has been used for thousands of years to treat common (and uncommon) medical conditions. Yoga is convenient. You don't need special clothes or shoes. If you use equipment, it can be simple: an old belt, a book, a card table chair. Yoga is democratic. Because so many people all over the world regularly practice yoga, it's easy to find. And it's portable—you can do it almost anywhere: in the backyard, on a plane, in a chair. Also, yoga is inexpensive or free. If I sound like a yoga aficionado, that's because I am.

Yoga has snugly fit itself into all parts of our society. You can do it in the studio, in the gym or at home. It helps people in prison, those with cancer and other illnesses, those who have returned from war. People of all ages benefit from it. What an amazing thing! Theistic but nonsectarian, not a sport, not an art, not exactly a science or religion. I am convinced that if all the world did yoga, Earth would be more peaceful, if only because we would all be devoting part of each day to improving ourselves.

Choosing Your Yoga

The practice of yoga started thousands of years ago in India. It's a testament to yoga's usefulness, both physically and spiritually, that it has survived into the present day, and that it has grown and evolved exponentially in a process that is still going on. Think about it. When I was in my twenties and began doing yoga in India with my teacher, B. K. S. Iyengar, hardly anyone was doing it back home in the United States. It was thought of almost as a pastime of people who were a little . . . eccentric.

Now more than 20 million Americans practice yoga. And since so many of us are doing it, there is an almost infinite variety and richness of yoga types, styles and hybrids to choose from. You can do it in the air, while sweating in extreme heat, while laughing, while lounging in a swimming pool. You can do yoga with your dog, your child, your lover. You can do it quickly or slowly, competitively or not, with an emphasis on alignment, on breathing, on movement, on meditation or chanting. Some mix yoga and Pilates or other bodywork. You can find strictly therapeutic yoga to help you with just about anything that ails you, from addiction to knee pain (more about that below). You can go to class and learn yoga there. You can download courses or

buy instructional DVDs and teach yourself at home. And I have mentioned only a few of the thousands of possibilities!

If you are not already a practitioner, the choices can be daunting, so I will be bold in my recommendation to you. After practicing yoga for more than thirty years, I suggest that you try the yoga I learned in Pune, India, when I studied with B. K. S. Iyengar—the yoga and meditation I still practice every single morning without fail. For me, Iyengar yoga has become a way of life. It's profoundly deep and complex, yet elegant; it provokes my thought and helps keep my body healthy. Iyengar yoga is anatomically sophisticated and therapeutically oriented.

I admire Mr. Iyengar for plumbing yoga to its depths to help people with health problems both physical and mental. When I was with him in India, he concentrated on alignment, which brought out the balanced, classic beauty in the poses and had an almost immediate effect on my feeling of well-being. Mr. Iyengar did not expect his students to have cookie-cutter bodies. In the classes I took in the bungalow where he had his yoga studio across the street from his home in Pune, there were fat people and thin people, tall and short people, old and young. We were together in a room, six or seven of us, practicing in whatever temperature Pune had to offer that day. Mr. Iyengar recognized that everyone could not do every pose to its fullest and encouraged the use of modifications to allow people to progress at their own pace. He introduced blocks, straps and other props, which are immeasurably useful, especially for beginners and for people who are older or have medical conditions.

This is not to say that I believe other ways of practicing yoga aren't valuable or good—many are. But those who teach Mr. Iyengar's yoga have been through a rigorous training over a period of years. They are prepared to teach, knowing that it is possible to injure oneself doing yoga. If you can, I suggest that you take Iyengar classes until you have enough experience to begin doing yoga at home, on your own. No matter what type of yoga you decide to do, whether it turns out to be temporary or a lifelong practice, the benefits are significant.

Doing Your Yoga

In his book *Outliers*, Malcolm Gladwell posits that it takes about 10,000 hours to achieve mastery in a field. As a doctor, I have a medical practice. I go to the office and see patients every weekday from 8 am to 6 pm. I have kept this same routine and discipline for many years. The result of this constant reinforcement of my profession is that I feel I am a better doctor now than I was the day I graduated from medical school. I'm a better doctor than I was two years later and twenty years later. The more I practice the more proficient I feel I become, and I have completed Gladwell's 10,000 hours several times over. Certainly that maxim applies to yoga. In order to reap yoga's benefits, you must do it. The more regularly and seriously you do it, the more time you spend doing it (assuming you have a good teacher), the more mastery you will achieve. I understand that when a simple forward bend relieves a spasm in your back, making you feel better in just a few minutes, you may dust off your hands and think, Well, that's that. But for benefits in addition to the physical, for that all-important sense of emotional well-being, do yoga regularly. Practice it as if you can become a master. Your progress may be slow, but I have seen transformations take place in those

who practice patiently and with dedication.

Yoga changed the life of one of my patients, a reverend who was so obese he was beginning to have serious medical problems. His back, knees and feet hurt. He sometimes had trouble breathing. He began slowly and agonizingly, doing very simple poses and doing them with many modifications. As time went on something happened, perhaps because of his teacher, Cathy Lilly. He became interested in doing the poses. He got better at doing them. His self-confidence increased. He felt motivated to lose weight. He practiced yoga at home, in my office and even in Central Park, where, though he was still very heavy, he had a photograph of himself taken doing a near-perfect Ardha Chandrasana pose. Everything came together for this nice person. Yoga actually changed his life. He lost weight, and the last I heard he had started jogging as well and was signed up for a marathon. It sounds like a miracle. Maybe it *was* a miracle, but even if it was, this man's transformation began with yoga.

Yoga and Medical Science

When attending an International Association of Yoga meeting a while ago, I listened to Karen Sherman present her recently published clinical trial on yoga and back pain. That study got a tremendous amount of attention, and rightly so. It used rigorous Western standards to measure the efficacy of yoga and of ordinary stretching for treating lower back pain. It took Karen years to put together the model for the study and to bring it to fruition with participants. As I passed her in the hall after the meeting, I told her I was contemplating this book and asked if she had any suggestions. "Yes, I do," she said. "Please address the question of studying yoga with Western methods."

What is science? I immediately thought. What is "yogic" science? What, if anything, does the science we practice here in the United States—the science of double-blind, randomized, controlled clinical trials—have to do with the study of the chakras? How can we apply our Western standards to a science that didn't grow up in the same environment with them? Since all medical endeavors share a desire for results, one simple criterion for measuring the efficacy of yoga is: does it work? Controlled, double-blind, randomized studies work just as well for yoga as they do for toothpaste.

More deeply: if it is science, then there is a logical explanation for *why* something works, based on principles that are well supported. And that support is based on other principles, and so on back through thought and time. This is true for all our beliefs. The magical substance thought to reside in wood to make it flammable gave way to Priestley's principle of oxidation. The ancient ideas about medicine and physiology have given up the spotlight to molecular biology and anatomy. But the ancient methods of objective comparison, and of reasoning through to a conclusion, are as crucial as ever. And although the means of proof have evolved, the benefits of the ancient practice of yoga have remained, and have already been demonstrated through application of modern statistical analysis and Western (really global) science.

Safe Yoga

A firestorm of concern, even outrage, arose when William Broad wrote in his book *The Science of Yoga* that people can "wreck their bodies" and seriously injure themselves doing yoga. While I have seen very few extremely serious injuries sustained while doing yoga, and while I believe with all my heart that yoga is for the most part safe, I know injuries can and do occur. The way to avoid injuring yourself is to choose a responsible teacher who has had at least two years of training, a teacher who asks if you have any previous injuries, one who watches as you do your poses to make sure that you are doing them correctly. If your teacher gives you a physical correction while you are doing a pose, make sure he or she is not forcing you. A teacher's hand should be light and gently guiding; it should never push, pull or shove. As I said before, props help people modify poses, making them less dangerous. If you feel extreme pain while doing a yoga pose, don't tough it out—just stop.

In this book I have given contraindications to each pose. Unless specifically indicated, these are relative, and the pose can be practiced with suitable props or modifications. Some such suggestions apply to everyone doing the pose. An example is Mr. Broad's and Mr. Iyengar's caveat: when doing the shoulder stand, always place a blanket under your head and neck.

Pre-Pose Points

When you're in pain or not feeling right, you're not able to do as much as when you're feeling fine, so begin slowly and carefully. Use the easier versions of the poses in this book and attempt to progress with judicious bravery.

1. If you master the pose and still have pain of any kind, carefully go forward to the more challenging version.
2. Alignment is of utmost importance, so pay attention to the classical poses' anatomical positioning.
3. There are good studies confirming the value and safety of many of the poses that follow. Others have not been adequately studied in the usual formal manner, but I have included them because I have observed their efficacy and relative harmlessness over many years of practice.
4. As you get better at yoga, yoga will be better to you, with more natural alignment and greater curative power.

Start out holding the poses for 10–20 seconds, and gradually build to a minute or more.

Repeated Poses, Relative Contraindications, Adaptations

Some poses are good for more than one problem and therefore appear in more than one chapter here. Ardha Matsyendrasana is an example—I've used it for both facet syndrome and piriformis syndrome. I have repeated these poses so the reader does not have to look up instructions from one chapter to another. Sometimes, however, I have adjusted the introductory sections: "Benefits," "How It Works" and "Contraindications."

If you are pregnant, talk to your obstetrician about doing yoga. Prenatal yoga is beloved by many, but each person and each pregnancy is different, so I recommend proceeding with caution.

Last, while I have given many variations and adaptations for classical poses in these pages (all variations are not pictured), I believe that resourceful practitioners will invent adaptations if they help.

The Scope of This Book

The information covered in these pages reflects the discoveries and adaptations I have made in three decades of practice. I believe they are all useful, but are nowhere near a complete encyclopedia of how yoga helps people—nor, certainly, the last word on the few topics that are discussed.

Nearly half this book is devoted to the different causes of back pain and how yoga can be used to treat them. Back pain is America's second most common ailment, just behind the common cold, and is frequently misunderstood. Almost every one of us has already or will in the future experience back pain. According to the American Academy of Pain Medicine, back pain cost employers an estimated $7.5 billion in 2011. Like the common cold (I'll get to that in a minute), some musculoskeletal back pain is transient. It disappears on its own in a relatively short period of time, or it may be helped to pass more quickly if the patient does the correct yoga.

Often neglected in the treatment of back pain, and what can make it a topic that is seven times larger than it would seem to be, is that there are seven very different causes of back pain. Their treatments are diverse, sometimes even contradictory. Yet many physicians and even clinical trials lump all back pain together as if it were only one problem. Without knowing which of the seven types of back pain you are feeling, you have many fewer possibilities for relieving it. My mantra is: get a diagnosis. Without one, you cannot possibly embark on a rational plan of treatment.

Back pain is one of my areas of expertise. I have had the privilege of carefully experimenting with various yoga poses for each of the seven major causes of backache and even finding ways to help patients who have pain with more than one cause.

The other common medical conditions I address in these pages may seem random, but they are widespread. The common cold strikes us all sometimes; over 40 million Americans have or are at risk for osteoporosis; an estimated 10 percent of Americans suffer from depression. Further, I have included conditions which researchers are studying to see how yoga might help. And then there are my pets: three conditions—restless legs syndrome, bunion and plantar fasciitis—that seem to me to be perfect for medical yoga. I know of no research yet on these conditions, but I have begun to do some research on them and I present my preliminary ideas here.

Yoga has not been studied for all medical conditions, nor is it necessarily appropriate for all medical conditions. I can only hope that scientists will continue to investigate the ways yoga works to help all sorts of medical problems. As time goes on, I believe research will provide enough information for at least one more book about the benefits of medical yoga.

PART 1

Back Pain: An Overview

EVERYONE GETS IT at one time or another. A child with a big backpack can get it; a person whose second home is his or her desk chair can get it; those who lug or lift groceries or other heavy things can be laid low. Back pain is the leading cause of disability in Americans under forty-five years old, according to one study that also found that more than 26 million Americans between the ages of twenty and sixty-four experience frequent back pain.[1]

Literally thousands of people with aching backs have trudged through my office seeking relief. Some of them are in excruciating pain. Once I saw a banker wearing a three-piece suit and newly shined shoes lying face down on the waiting room floor, a stack of MRIs near his elbow. Another of my patients, an aspiring actress, fell while waitressing, injuring her spine and leading her on a years-long quest for help, putting off her wish to start a family, perhaps permanently. I too have experienced back pain caused by a bulging disc. But often back pain—even back pain with a serious cause—eases by itself within weeks or months.

My mantra is, know the cause of your symptoms. If you have not identified the specific reason for your discomfort, you are unlikely to be able to treat it successfully. Back pain is a symptom, not a diagnosis. But a symptom of what? One symptom may have very different causes, as a man may limp due to arthritis or due to a stroke. Many of my patients who have practiced yoga with the goal of relieving back pain due to multiple causes have had amazing success. I can honestly say that yoga helps in almost every case. But at the same time, I have to caution everyone who wants to help himself or herself with asana (yoga postures): the diagnosis is everything. There is a reason for your symptoms, and I must emphasize that you need to find out what that reason is. Yoga poses that cure one type of back pain might worsen an almost identical backache with a different cause. For instance, a forward bend may go a long way toward easing sciatica caused by spinal stenosis, but it could increase the pain or actually worsen a herniated disc.

As I am fond of saying, a person may have fleas or a person may have lice, or the person may have both fleas and lice at the same time. Don’t discount the possibility that more than one problem exists in your back simultaneously. Still, when there are two or more problems, one is usually the main pain generator. The crucial thing is to identify the cause(s) and determine which one is contributing the most to your misery. In this book you will find a discussion and yoga poses both for self-diagnosis and for pain relief.

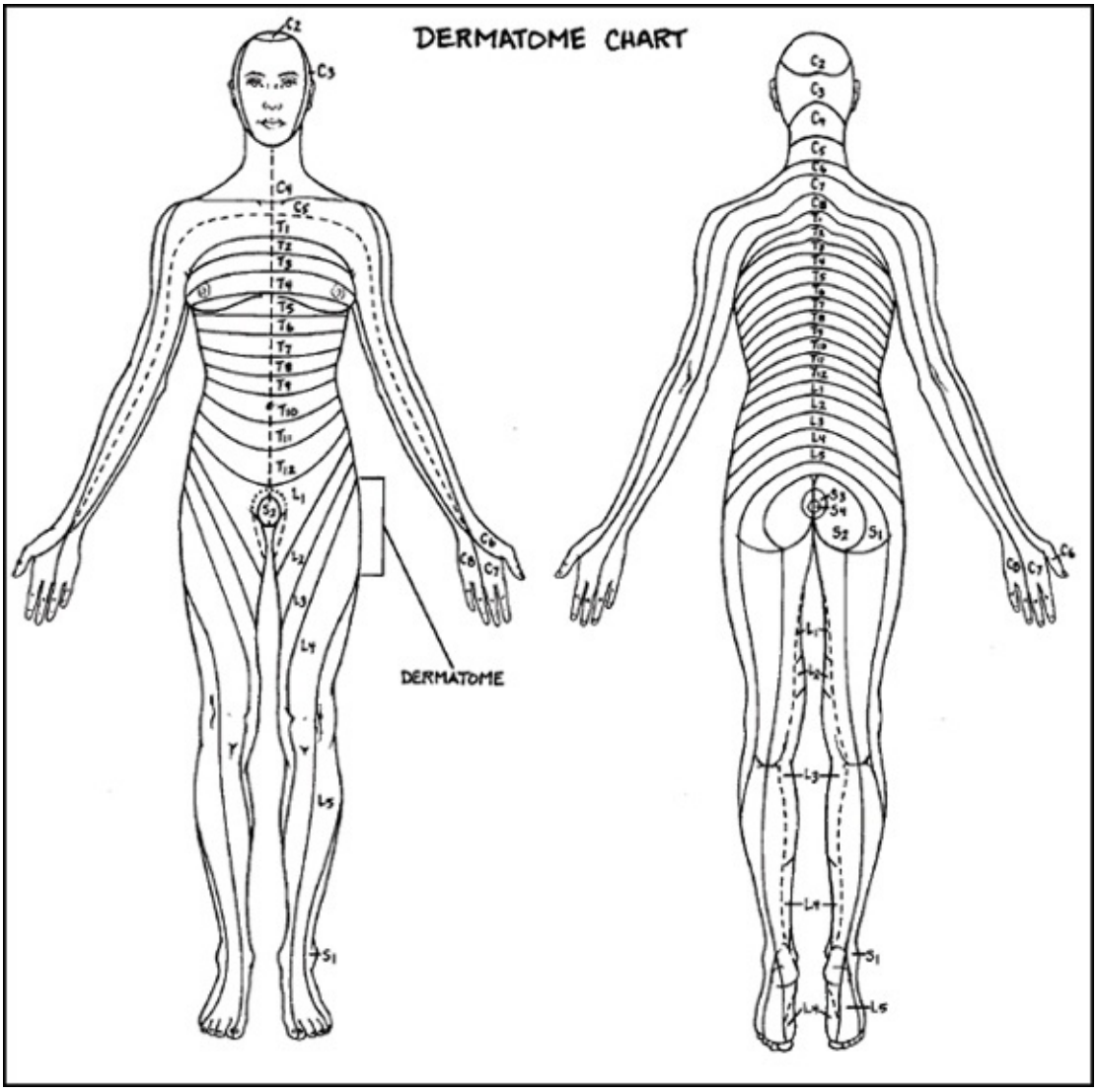
When to See a Doctor

I recommend you see your family physician or a specialist in rehabilitative medicine—my field—if your pain persists for more than ten days. If you lose bowel or bladder control, go to a hospital immediately. Your painful days are unlikely to reach into the double digits, but while you’re waiting to feel better it makes sense to do certain things. The intelligent patient will observe the pain, identify it and quantify it. Where is it? When and how did it begin? Did something specific trigger it? Does it occur

more at one time of day than another, more during one activity (such as sitting or driving) than another? How would you rate it on a scale of ten, where zero is no pain and ten is the worst possible screaming pain, and five is pain that intrudes on your concentration? What makes it better, even just a little bit? The answers to these questions are not just for your doctor. The more you know about your own condition, the more likely you are to be able to help yourself. The following sections will detail signs and symptoms you might recognize, and while you may not be able to diagnose yourself with complete accuracy, you can at least collect clues. If you do need to see your doctor, the information you have gathered will be valuable.

Neurological Pain

The first step in figuring out what's behind your back pain is determining whether the cause is musculoskeletal or neurological. This is almost always easy. If you have numbness or weakness or pain going down your leg (even if pain occurs only in some places along your leg), then the odds are that your pain is neurological. The neurological causes of back pain are generally compression or irritation of the nerve fibers that travel down and exit the spine in the lower back.



We are all very much alike—hardwired—with the same nerves serving the same patches of skin and activating the same muscles, joints and bones. This fact can help you determine the neurological origins of lower back pain and other symptoms. Each numbered segment, or dermatome, corresponds with a spinal nerve root. So, for example, paraesthesias, numbness or pain in your outer calf indicate a problem at S1.

Numbness, of course, is when you are unable to feel what is actually there: pressure, roughness, etc. There is an opposite condition, when you *do* feel things that are actually *not* there: tingling, pins and needles, hot and cold and other sensations that, like a mirage, don't actually exist. These feelings without an external cause are called paraesthesias. Their cause is almost always neurological.

It could also be that situation where there are both fleas and lice. So the next step is to determine whether symptoms appear elsewhere—say, in your arm or on the other side of your body. One part of your leg may be numb, while you experience a sensation of pins and needles in another area, perhaps your foot. Neurological symptoms ultimately have non-neurological causes. If you have severe arthritis which compresses nerve roots (this is not unusual), you may experience weakness. In some cases, the pain may be neurological but have nothing to do with your spine. You may become numb or experience paraesthesias due to a diabetic neuropathy.

Almost all the symptoms I've described appear along the course of the sciatic nerve. They're frequently lumped together by doctors and others under the category of sciatica, even though sciatica is not a disease; it's a symptom. Itching is also a symptom. Just as itching can be caused by poison ivy or chicken pox, conditions with very different treatments, sciatica can be due to dramatically different causes with dramatically different, even opposite, cures. When different kinds of back pain are lumped together under the umbrella of sciatica, the chances for relief are sharply diminished. As I said above but must repeat, if you try to treat the general symptom "low back pain" or "sciatica," you will often fail and may even injure yourself. In order to succeed, you must treat the thing that is causing the sciatica.

Sciatica

Sciatica—unpleasant sensations, from mild to intense, shooting down the back or side of one or both legs—is a symptom of something wrong in the back or buttock that is compressing or inflaming the sciatic nerve. The problem may also be much further up your back, if the nerve fibers that eventually form the sciatic nerve are compressed or irritated there. Often sciatica is caused by a herniated disc, where discal material presses on the nerve roots and inflames those fibers, or by spondylolisthesis. This Greek word sounds like what it is: slippage of one vertebra on the one below it, either forward, back or to one side. Spinal stenosis, a narrowing of the spinal column, can also result in sciatica. Then there is piriformis syndrome—unexpected under the umbrella of back pain, since it originates in the buttock rather than the spine—which occurs when the sciatic nerve is compressed by the piriformis muscle. Because it causes sciatica, naïve clinicians look for the source of pain in the lower back. To correct this limited view, I have included it in the section on back pain.

Of course sciatica can also result from an accident or (rarely) a tumor. You're more likely to develop sciatica if you lift heavy things or lift and twist at the same time, even with lighter weight. Sciatica may also result from poor posture, sitting too much,

or a bullet wound.

Sometimes the pain goes down the front of the leg, following the course of the femoral nerve, which also originates in the back. That isn't sciatica, but it is the same thing involving another nerve. What is that thing? In thirty-five years of practicing medicine, I have yet to see a case that does not have a cause.

Musculoskeletal Pain

Problems in the muscles of your back, the alignment of spinal bones and other mechanical malfunctions account for a majority of the low back pain that afflicts just about everyone now and then. Musculoskeletal pain often goes away by itself before a couple of weeks have passed, but it depends on the details of your case: the exact reason for the pain, its severity, your physical condition and other medical problems. Sometimes, though you feel an improvement, lesser pain persists.

When the muscles and bones of the back get out of synchronization or alignment, the garden-variety backaches sprout and flower and sometimes become chronic. Pain can occur in the lower, middle or upper back. These backaches can be caused by bad physical habits, poor posture, repetitive motions, the stress of a fast-paced life or emotional problems. When you're hurting, you are likely to make adjustments in the way you sit, walk and even sleep. These adaptations to pain in one part of the back can cause more pain or discomfort in another part. If a sprain or chronic slouching causes discomfort in the lower back, the postural or other adaptations you make to get more comfortable may cause problems in your upper back. Your overworked muscles protest by clenching and going into spasm, which is extremely painful and can last for days or longer.

Muscle strain and spasm are two of the most common types of back pain. They are caused by heavy lifting, repeated bending and straightening and other vigorous activity, or by inactivity followed by forcible movement. When muscles are pushed to their limits or just beyond them, inflammation ensues, causing the muscle or group of muscles to contract strongly and to stay contracted in spasm, making it difficult even to get out of bed. Muscle spasms can be excruciating. They sometimes cause people to go to the emergency room, and doctors frequently prescribe muscle relaxants. But I think the best way to counteract a muscle spasm sensibly and sensitively is to stretch the muscle by doing yoga.

SPRAINS AND STRAINS

These words are often used interchangeably, but they have different meanings. According to the American Academy of Orthopaedic Surgeons, a sprain involves a ligament—the tough, fibrous, string-like tissue that attaches bone to bone.[2] When a ligament is overstretched or torn, the joint can be destabilized, causing pain. Spinal joints that are out of kilter can press on nerves, causing sciatica. A sprain can be mild, moderate or severe, and sometimes it's difficult to know if you have one. Indications to look for, besides pain, are bruising and swelling around the joint. In extreme cases, you may be aware of the wobble of an unstable joint.

A strain is an injury to tendons and/or muscles. Tendons attach muscles to bone. Overstretching of these tissues may also cause injuries that destabilize the spine.

Strains and sprains can result from too much exertion, from lifting something heavy, from being overweight, taking a fall or a blow, even from a violent fit of coughing. People who jump in sports like basketball, or who engage in activities that twist or pull spinal muscles (sometimes to the point of tearing), can strain their backs. If that's what has happened, you may experience muscle spasm, weakness, swelling, cramping and in extreme cases an inability to move.

SPASM

When a muscle or a group of muscles in the back intensely contracts spontaneously and does not relax, you've got a spasm. Spasms often occur in muscles that are inflamed because of sports, pushing or pulling movements or sudden twists. Many back problems—arthritis, herniated disc and stenosis, to name a few—can contribute to the occurrence of a spasm. Postural problems, weak stomach muscles, weak or stiff muscles in the back and tight hamstrings are also common causes of spasm. Spasm is often underrated by the medical community: imaging studies are not conclusive, and blood tests seldom reveal a cause. But spasm is an unwelcome companion in many people's lives, and yoga is a simple and effective remedy.

Prevention of Back Pain

Though back pain strikes about a quarter of all adults for at least a day in every three-month period, there are tools that can be used for prevention, according to the National Institutes of Health.[3]

I believe a person who follows a regular yoga practice is less likely to have back pain than someone who doesn't, but as of this writing there are no large longitudinal studies that confirm this. What can be confirmed is that yoga increases strength, coordination, range of motion, reaction time, postural awareness and balance. It decreases anxiety. All of these benefits protect the back. Many of my patients who have back pain are afraid to exercise, afraid to move much at all. They're not babies, but the pain makes them baby their backs. The immobility increases stiffness and weakness and delays healing. Don't take to your bed if you have back pain. My advice is to rest if you need to, but also to move around a little, say about 40 percent of what you normally would do, and much more carefully—but *do* move, *do* stretch.

Standard Exercises for Simple Backache

The National Institutes of Health recommend four types of exercise for musculoskeletal backache, and I heartily endorse them. The first two, flexion and extension, involve stretching and occur in many yoga poses. Of course, physical yoga is all about stretching; it lengthens the muscles and soft tissues of the trunk, the legs, the arms and the neck, which can work wonders for those who are stiff and increases range of motion. Plus, it feels great. I recommend other movement too, including aerobic exercise, such as brisk walking, if you're up to it, which whittles away at stiffness, fear and the depression that sometimes comes over people who have bad backs. Aerobic exercise is good for your heart and good for general well-being; I suggest 30 minutes, but you can break this down into segments, then build up to your

goal. But please remember: low-impact exercise is the way to go if you have back pain. Running on pavement, tennis, squash and other field sports are not recommended. Don't do impact aerobic exercise if you have significant back pain, and consult your doctor before doing any aerobics.

The exercises above are analogous to the aspirin you would take for a headache. It may help, or it may be useless. I repeat: until you have a diagnosis, you are treating symptoms and you must do so tentatively. This is just the first thing to do—first aid. Approach these exercises just as you might put calamine lotion on an itch before determining its cause. Sometimes the itch—or the back pain—will vanish, and there will be no need to go further.

Flexion: Flexion is the process of bending. Bending forward, even if it hurts a little, helps back pain by getting you moving. When you flex, you create space between the vertebrae in your back and feel relief because the nerves have more room and are not squeezed as much or at all. When you put yourself in flexion, you stretch your spine and the muscles around it, and also the muscles around your hips. A forward bend also puts your abdominal muscles to use, strengthening them. I am one of the majority of physicians who believes a strong core supports the spine and helps keep it healthy.

Caution: If you think you have a herniated or bulging disc, do not do forward bends, especially if they cause more pain. If you have osteoporosis, always lie on the floor when stretching your legs; never do it from a sitting or standing position because it could cause a fracture.

Extension: Backward bends, leg lifts or raising your trunk while lying on the floor on your stomach are some extension exercises. They have a way of helping to reduce sciatica or pain that radiates out from its source to other parts of the body. Arching your back often minimizes radiating or referred pain that is due to a herniated disc. Extension also widens some spaces between vertebrae and strengthens the muscles near the spine.

Caution: Extension exercises are generally contraindicated in spinal stenosis and spondylolisthesis, and helpful with herniated disc.

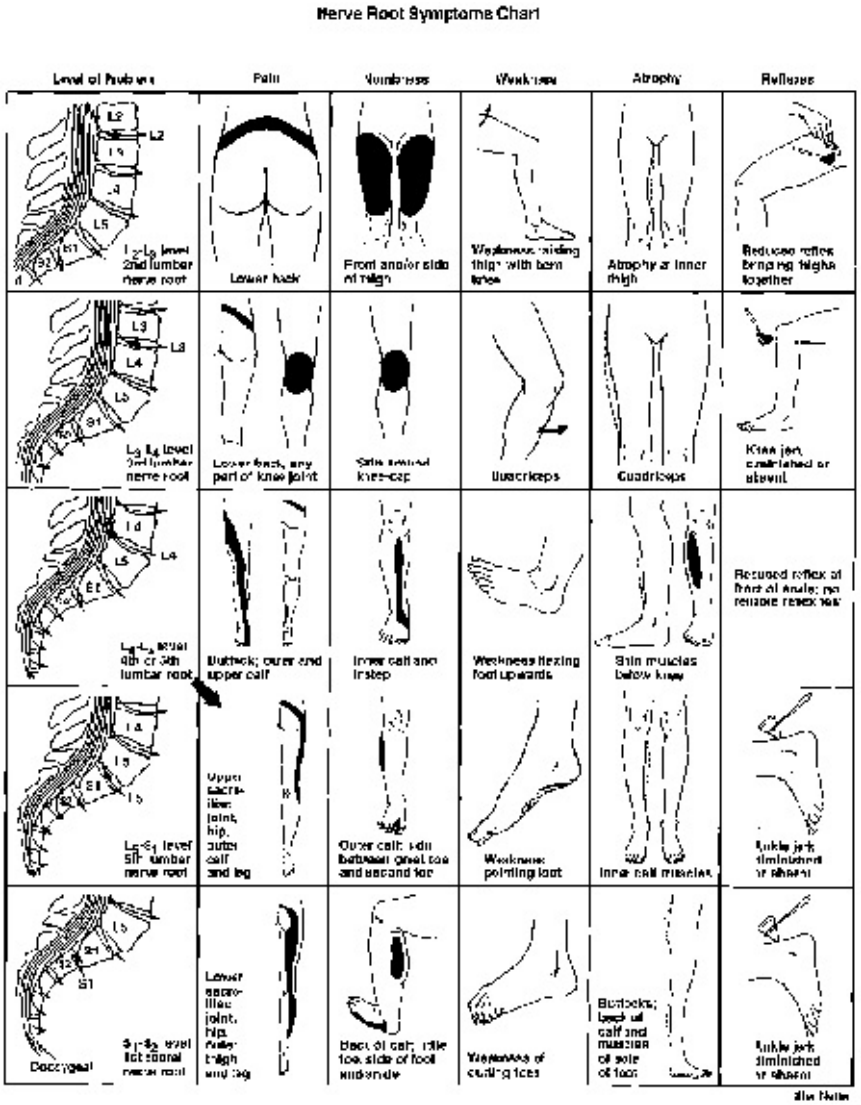
NON-POSE TIP

Change your shoes often.

Diagnose Yourself with Yoga

The suggestions below are not intended to substitute for a doctor's diagnosis and treatment. If your symptoms persist for more than two weeks, I suggest going to a rehabilitative medicine practitioner or to an orthopedist, neurologist or rheumatologist who can give you a definite diagnosis. In many cases, however, it is possible to get at least an idea of what's wrong by doing some yoga on your own. Again, I emphasize the importance of being careful. Be tentative. Don't push too much. I have developed these tests by trial and error, over years, and with the help of countless patients who have generously allowed me to try out my ideas while treating them.

- If forward bends help, you may have spinal stenosis; if flexion hurts, it suggests herniated disc or sacroiliac joint derangement. Exceptions: In a small number of cases, if the herniated disc is central—that is, in the middle of the spinal canal—or is broken off from the main disc mass, forward bends help and back bends hurt.
- If twists to one side help, and twists to the other side hurt, it suggests a herniated disc on the side to which turning is more painful.
- If back bends help, it suggests a bulging or herniated disc; if they hurt, your problem is more likely to be spinal stenosis or spondylolisthesis. But—and this may seem complicated—if the stenosis is due to a disc that is bulging into the spinal canal itself or a loose fragment, back bends hurt and forward bends may help. This occurs about 5 percent of the time, in my experience. That may not sound like a significant number, but if you are one of the 5 percent it is important. Be careful; don't push. It you feel worse, stop and try the opposite.



Nearly invariable motor and sensory functions of lumbar spinal nerve roots are an invaluable guide for locating the causes of paraesthesias, numbness, pain and weakness.

Since we are all hardwired identically (with very rare exceptions), the body itself is

a virtual map of injuries. Nerve fibers from each level of the spine activate the same muscles in all of us, and weakness or lost reflexes in those muscles indicate the level of the problem quite precisely. For example, if you have weakness walking on your heels, it's the anterior tibialis that is weak, and the problem is at L4 (see chart on page 20). If your Achilles tendon reflex is robust on the right and absent on the left, most likely the problem is at the left L5 or S1, as the chart indicates. Numbness, paraesthesias and/or patches of pain in the front of the thigh? That will be L3.

Other Simple Diagnostic Maneuvers

SPASM

Spasm may occur anywhere: in the calf, in the quadriceps, in the large or small muscles of the back. The best way to assess this is to compare the tightness and tenderness of the muscle on the painful side with the same muscle on the opposite side. When you stretch a muscle in spasm, two things happen: at first, it hurts even more, but as you keep stretching, the pain almost invariably subsides below the level it was at when you started stretching. This is due to what might be called an engineering defect: muscles need supplies and services when they are working, but when they're working they contract, actually narrowing the capillaries that bring the blood which supplies oxygen, glucose and proteins to the muscle and carries away the toxic products of muscle metabolism. Usually the body handles this dilemma by alternating which little muscle fibers are active, a cerebellar process called rate coding. But in spasm all the fibers are active at once, and as the capillaries supply less blood, toxic substances such as lactic acid build up and irritate the muscle fibers, causing them to contract more tightly. The direct effect of this is to narrow the capillaries even further, reducing the blood supply even more—and we're off on a vicious and painful cycle. Stretching the muscle reverses all this, although at first you must overcome the force of the contracted muscle, which may not be an easy matter.

Feel the place where the problem seems to be, or get someone to lend a hand if you can't reach it yourself. The muscle will feel harder on the painful side than on the other side, and the hardness will follow the outline of the muscle. When pressed, a muscle in spasm hurts more, with a steady soreness. Pure spasm has none of the numbness or tingling associated with neurological problems. The only trick is to know your anatomy well enough to know which muscle is hurting, and how to stretch it.

NEUROLOGICAL PROBLEM AT L4 OR L5

Lie on your back with a belt at hand. Loop the belt around the arch of one foot, straighten the knee and raise it as high as makes sense for you. Then do the same with the other leg. If it just hurts behind your knees, that's normal, but if it hurts in the back, your problem is probably neurological and most likely at L4 or L5. This test, called the straight leg raise, is an even stronger indicator if raising the right leg causes left-side back pain (the contralateral straight leg raise).

SACROILIAC JOINT DERANGEMENT

Place a towel on a sturdy table and lie on top of it on your back. Cautiously sidle over to one edge, going far enough so your entire right buttock and leg are off the table. To