

Chapter 1

Here a Stretch, There a Stretch, Everywhere a Stretch, Stretch

In This Chapter

- ▶ Figuring out the benefits of stretching
- ▶ Answering your common questions about stretching
- ▶ Discovering the different types of stretches
- ▶ Getting the most out of stretching: Partner stretching

Stretching is a powerful tool that you can always have access to and only requires a few simple movements (kind of like having your own ruby slippers). And the results can certainly be just like magic: new ease of movement, an increase in your physical capabilities, and deep composure that requires you to do nothing more than breathe.

Many of you may have been taught to fear and dread stretching by overbearing PE teachers who forced you to touch your toes. But the ideas and techniques I describe in this book were never heard in your parents' PE class (or mine for that matter). This training is a kinder, gentler form of flexibility based on hard science and decades of practical experience. And the key insight is that stretching is *not* supposed to hurt!

If this book has one mission, it's to demonstrate that stretching is easy and simple, or in other words, stretching is your friend. All the amazing benefits of stretching can be yours anywhere, anytime, without spending a dime (other than buying this book, of course). And it's really just as easy as clicking your heels like Dorothy in *The Wizard of Oz*!

The Why's of Stretching

Go ahead — ask your doctor, your trainer, your physical therapist, or your chiropractor whether you should stretch. Get ready to hear the exact same answer from all of them: a resounding *yes*. Even though they don't make a dime giving such advice, why would all these professionals so enthusiastically recommend stretching? The long list of amazing answers follows in this section.

You stand taller, look thinner, and your body works its best

Correct posture not only makes you look taller and thinner, but also it allows your body to perform the way it was meant to. What's more, good posture aids dramatically in facilitating free and effective breathing.

The main enemy of good posture however is tight muscles! Stretching can help you correct muscular imbalances that lead to incorrect skeletal alignment. One cause of this kind of imbalance is using one side of your body more than the other. Times that you may do this include

- ✓ Carrying your toddler on the same side of your body
- ✓ Carrying your briefcase in the same hand everyday
- ✓ Wearing your shoulder bag on the same shoulder
- ✓ Sleeping on the same side
- ✓ Using the same shoulder to cradle the phone while you're talking
- ✓ Using the same arm to put around your sweetie on a date



Such chronic imbalances can rob you of energy and efficiency in movement, or even result in back pain. So switch it up, and stretch regularly to help balance out these bad habits. Also be sure to stand up straight!

You can twist farther and feel looser

Over time, muscles naturally tend to shorten and become tight. So as you age, your ability to fully utilize movement in your body becomes compromised. Think about it: If a muscle is already in a chronically shortened state, then it can never attain its full power potential when you try to contract it because it's already semicontracted. A tight muscle limits your range of motion, and you can easily hurt yourself.

A few words to live by: Don't eat seafood in a month without an "R" in it, let sleeping dogs lie, and a tight muscle is a weak muscle. Ignore any of these time-tested maxims at your peril, and chances are, one way or another, you're going to get bitten.

Stretching increases your ability to function daily — called *functional flexibility*. This flexibility helps dramatically increase the range of motion in your joints, which enhances your performance in your chosen sport and helps in your everyday life by making it possible for you to reach higher or lower, bend farther, and reduce nagging aches and pains from tight, tense muscles.



Lack of functional flexibility can make small everyday movements annoying and even painful.

You help nip injuries in the bud

Numerous studies claim that stretching exercises increase flexibility and decrease the severity of injuries and the time it takes to recover from an injury. Stretching can actually reduce the chance of being injured in the first place, too!

Stretching reduces muscle sprain or joint strain in case of accidental overstretching of muscles or joints when engaging in sports or other physical activities. In short, although nothing can prevent injury completely, stretching can be a very low-cost, long-term insurance policy for your body — whether you engage in sports or not.

You keep stress from getting the best of you

Stress is a part of life! Some stress (even a little) is good because it can spur you on to take action and achieve great things. But too much stress can actually threaten your health and well being, resulting in depression, anxiety, and memory loss.

Stretching can be therapeutic for many people as *one* way to relieve stress. (You may already have an entire arsenal of things you do to relieve stress.) Of course, stretching can help individual muscles release and relax, but the deep, regular breathing that's so important to effective stretching can also oxygenate your blood and reduce overall stress and anxiety. What's more, the slow, meticulous movements in a good flexibility program can provide a meditative effect. And focusing intensely on the muscles you're stretching can help clear your mind of distractions. In the end, stretching can help make you more flexible, inside and out.

You keep your muscles from feeling achy

Current research suggests that stretching can reduce that post-exercise tight, tender feeling called *delayed onset muscle soreness* (DOMS). For decades many people thought this achy feeling was the result of lactic acid buildup in the tissues of your muscles. But it turns out they were wrong because lactic acid is a normal byproduct, resulting from the chemical reaction of muscle contraction during exercise.

So now cutting-edge thinking attributes this discomfort to tiny tears in muscle fibers caused by the requirements of unfamiliar training (also known as *eccentric* movements). By ensuring that your muscles are elastic and you have full range of motion in your joints, stretching protects you from sustaining the microscopic injuries caused by newly intense levels of exercise.

Stretching also decreases tension in your muscles and joints. Persistent muscle tightness can take a toll on your body by choking off blood flow to the muscles, which can result in raised blood pressure. This tightness can also decrease oxygen and nutrients in the muscle tissues, which in turn can cause the buildup of toxic waste products in the cells. The end result is persistent fatigue, as well as aches and pains in your tense muscles.



What's more, if a muscle stays partially contracted for an abnormally long time, the muscle can actually begin to shorten, which decreases range of motion and weakens the muscle, creating tightness and making the muscle less effective. A perpetually contracted muscle requires more energy to move than a relaxed muscle, so you wind up wasting energy with every movement.

So start a regular stretching program today to help reduce tension and tenderness in your muscles; the exercise can actually elevate the level of your overall health. Pretty amazing just from bending over and touching your toes!

The FAQs When It Comes to Stretching

Who, what, where, when, and why should you stretch? These questions are a few of the ones that you find answers to in the following sections.

When should I stretch?

Many trainers tell you to stretch either first thing in the morning or at the end of the day — or both. However, the rule of thumb is that you may stretch any time as long as your muscles are first warmed up (which means you've done at least five minutes of walking, hiking, biking, swimming, or calisthenics such as jumping jacks). Warming up your body properly allows you to gradually increase your circulation and get your blood flowing, which in turn makes you more flexible.

Picking a time that's just right for you, on the other hand, is an entirely different problem. And trying to force yourself into a schedule that doesn't really work certainly won't help you to stick with any flexibility program. So it's best to find a time of day that's most convenient for you and make that your special time for stretching . . . your body will thank you for the regular routine, and you'll soon see results.

How often should I stretch a particular muscle?

To increase flexibility in a muscle, generally you should stretch that muscle at least once a day. Elite athletes stretch even more than that — two to three times a day. But being realistic, the majority of people aren't professional athletes (and aren't getting *paid* the big bucks to stay stretched and fit), so finding the time to stretch that much can be difficult.



If you want to increase your present level of flexibility, engage in a focused flexibility program every other day to give your body a chance to rest and rejuvenate in between sessions. And when this pace of stretching becomes comfortable for you, maintain your new range of motion by stretching four to five times a week.

How long should I hold each stretch?

Studies demonstrate that the optimum effectiveness of a stretching exercise is reached after holding that stretch for approximately 30 seconds. If you stretch less, you don't really give your muscles time to fully lengthen and adapt to the exercise; stretching longer hasn't been proven to provide any additional benefits either. So stick with the 30-second rule, which equates to four to five slow, deep breaths.

For the scientist in you

If the doctor or scientist inside you is dying to know how the muscles technically work, here's the breakdown on the way your body makes the majority of its movements:

- ✓ A primary muscle (the *agonist*) is assisted by one or more secondary muscles (the *synergists*);
- ✓ Together they stretch the opposing muscle (the *antagonist*).

For example, when you bend your knee, the muscles on the back of your leg, including your hamstring (the *agonist*) and your gastrocnemius (your calf — the *synergist*) contract, which in turn stretches the quadriceps (the *antagonist*). Another example would be during a biceps curl: The biceps is the *agonist*, and the triceps is the *antagonist* . . . Got it?

How intense should the stretch be?

A stretch should feel no more than slightly uncomfortable. When you reach the point of resistance in your muscle, hold that stretch. In a few more days of stretching that muscle, you'll be able to comfortably move past that point.



When it comes to stretching, the old cliché “no pain, no gain” is dead wrong. In fact, pain is the most precise indicator of a stretch that has gone too far, either in degree or in duration. If you're stretching to the point where your muscle sizzles inside, or is quivering, or you actually find that you're becoming less flexible, back off. If you force a stretch, the strain can only set you back further than you were when you started.

Should I see a doctor before I begin a stretching program?

You should always consult a physician before embarking on any new fitness program — even a seemingly low-impact program such as stretching. And speaking to your healthcare professional is crucial before undertaking a regular flexibility program if you have arthritis, osteoporosis, or an injury that hasn't healed completely.



Try the stretches in Chapter 16, which are specifically for common aches and pains. And your doctor can advise you about specific stretches to focus on or to avoid and can help customize a stretching program to help meet your unique needs.

Should I stretch my muscles in a particular sequence?

After stretching a particular muscle group, you want to move on to a completely different muscle group so you don't overly fatigue that one group. The following list is my suggestion of the order in which to stretch your muscles:

1. Back (see Chapters 4 and 6)
2. Sides (see Chapters 5 and 8)
3. Neck (see Chapters 4 and 8)
4. Forearm and wrists (see Chapters 4, 8, 10, and 12)
5. Triceps (see Chapters 4, 8, and 12)
6. Chest (see Chapters 4, 8, 10, and 12)
7. Buttocks (see Chapters 5–8)
8. Groin (see Chapters 7, 8, 11, and 12)
9. Thighs (see Chapters 7, 8, 11, and 12)
10. Calves (see Chapters 7–12)
11. Shins (see Chapters 7–12)
12. Hamstrings (see Chapters 7–12)



Of course you can stretch one, some, or a handful of these areas, and if you stretch slowly and with control, you still receive all the benefits stretching has to offer. The model of the steps above is just one (really good) example of a progressive, complementary, full-body routine.

Differentiating between Two Types of Stretches

Stretching always bears the same concepts: to lengthen muscles and improve the range of motion in joints. But just like ice cream, stretching comes in different flavors. The two main categories of stretching techniques are dynamic stretches and static stretches. *Dynamic stretches* involve movement, whereas *static stretches* are held steadily. Because both of these techniques have different benefits and advantages, I cover both in this book.

Static stretches

Static stretching involves stretching to the farthest point you comfortably can and then holding the stretch (usually for 30 seconds). This technique is used primarily throughout this book for two reasons:

- ✓ They're the simplest and easiest form of stretching to master and perform correctly, so they're excellent for anyone new to flexibility training.
- ✓ The simplicity of the movements and the slow and gentle pace allow for mindful relaxation of the entire body.



Holding a comfortable position for 30 seconds or so allows your muscles to actually become accustomed to being stretched, which reduces your *stretch reflex* — a natural mechanism whereby a muscle under stress automatically contracts to protect itself. A gentle static stretch overcomes this natural defense mechanism and allows your muscles to efficiently relax and let go.

In the interests of full disclosure, static stretching can be further divided into two different types: static-passive and static-active.

- ✓ *Static-passive stretches* are stretches in which you assume a position and hold it for an extended period of time, using an external force such as your hands or strap or some type of stationary support such as a chair or a dancer's barre. Because this type of stretch is so accessible and straightforward, I choose to recommend it in this book.
- ✓ *Static-active stretches* are more advanced positions in which you stretch one muscle by contracting the opposing muscle (for example, stretching your hamstring by holding your extended leg as high off the ground as you can).



Although this stretching technique is highly effective when it comes to improving sports performance (see Chapter 12 for sports-specific stretches), it requires a more advanced level of strength and balance, which usually comes after a few months of routine stretching sessions.

Dynamic stretches

Simply put, dynamic stretching is a stretching technique that involves movement. When performing a dynamic stretch you simply use the weight of a portion of your body, such as a limb, to help overcome inertia in a tight muscle. You gently control the twisting of your torso or the swinging of your arms or legs in a movement that approaches the limit of your range of motion. The key word in that last sentence is *control* — dynamic stretches shouldn't be executed by bouncing or jerking. Think of your twisting or swinging motions as purposeful movements, almost like choreography.

A dynamic stretch that's being repeatedly forced beyond a comfortable range of motion is called a *ballistic* stretch. Ballistic stretching can be painful, counterproductive, and even cause injury. Bent over toe touching with a bouncing movement is a good example and is usually used by athletes who want to increase their range of motion. This type of stretching isn't used in this book.



Dynamic stretches should also develop progressively. Start moving through the stretch slowly and with a small range of motion. Gradually increase the range of motion until, eventually, after 8 to 12 repetitions, the move has reached its full range of motion and maximum controlled pace.

When One Just Ain't Enough: Stretching with a Partner

A helpful, caring partner can be the ultimate stretching prop (for more info on props, see Chapter 3). A partner can

- ✓ Gently urge you deeper into a position than you may be able to do yourself
- ✓ Help you get far more out of your flexibility routine than you may be able to on your own

Nevertheless, there are some disadvantages:

- ✓ Your partner can't feel what you feel every moment.
- ✓ Your partner can't respond to your discomfort as quickly as you may like.
- ✓ Your partner may force you into a deeper position than you're ready for.
- ✓ Your partner can move you too quickly, which can initiate the stretch reflex (see "Static stretches" earlier in the chapter for more info on the stretch reflex).



These instances can be a source of accidental injury, so maintain consistent communication with your partner to avoid uncomfortable situations.

In addition, using a partner is ideal for two types of stretches: isometric stretching and PNF stretching. Although I don't describe any of these types of exercises in this book, more advanced exercisers can adapt these techniques to the stretches I describe for beginners. Check out the next sections for the lowdown on these types of partner stretches.

Isometric stretching

Isometric stretching is a type of static stretch in which you tense a muscle in order to reduce tension in it. Sounds counterintuitive, doesn't it? Think of it as stretching in reverse.

The word *isometric* is comprised of the prefix "iso" (same) with "metric" (distance), indicating that in this type of exercise the length of the muscle doesn't change as a result of the flexing of a joint.



One of the best ways to perform an isometric stretch is to have a partner apply resistance against the muscle you want to stretch. For example, have a partner hold your extended leg up while you try to push it back down to the ground. Tensing your hamstring against that resistance actually reduces tension in the hamstring muscle. Plus, an extra added bonus of this type of stretching is that you can actually increase strength (a little) in the muscles you contract.

Static-isometric-static stretching

Proprioceptive neuromuscular facilitation (PNF) stretching is a big, fat phrase that means a static stretch, followed by an isometric stretch, followed by a deeper static stretch. In fact, PNF isn't really a type of stretch at all; it's more properly a stretching technique.

After comfortably holding a static stretch, your partner can add resistance to create an isometric stretch (see preceding section). The big payoff comes when the isometric stretch is released, and then after 10 to 15 seconds, your partner helps you move even deeper into the stretch than you were in the initial passive stretch. This addition is only made possible because of the concentrated stretch provided by the isometric stretch. But the end result is a more thorough stretch than you would ever have been able to achieve on your own.



I don't recommend PNF stretching (or isometric stretching for that matter) for children or anyone who may still be growing. Also, this type of stretch shouldn't be performed on a given muscle group more than once a day, or ideally, once per 36-hour period.

The Science of Stretching

This entire book is based on the miraculous capability of our bodies to adapt to the physical demands placed on them. Before you can use stretching to your benefit, you need to understand how it works, how it nurtures you, and how to maintain your body through stretching. No machine created has the awesome regenerative capability of the human body, so it's up to you to figure out how to properly take care of yourself and use stretching in that process.

What happens inside my muscles when I stretch them?

Visualizing and knowing what your body is doing while you're stretching is just as important as visualizing and knowing what muscle you're using when you're lifting weights (see Chapter 3 on testing your flexibility). So begins your science lesson for today . . . and, if you're anything like me, you have little interest in science, so I'll try to be brief and get right to the point!

The stretching of a muscle begins with the most elementary unit in the muscle fiber — the *sarcomere*. As the sarcomere is stretched, the overlap of the myofilaments decreases, allowing the muscle fiber to elongate (Whew! Now that's a mouthful). At that point, the surrounding connective tissue gives way to the force of your stretch and it also stretches. In other words, the greater number of myofilaments you can stretch, the greater flexibility you have in the muscle.

What is flexibility?

Flexibility is the extent to which your body is able to bend — without breaking or injury. So when you get right down to it, flexibility is a function of the number of muscle fibers you have been able to coerce into lengthening and the number of them you can *keep* lengthened.

Flexibility occurs when an electrical signal transmits from a nerve into the muscle fibers and stimulates the flow of calcium, causing the sarcomere to shorten, which generates force. When billions of sarcomeres in the muscle shorten all at once, the result is a total and complete contraction of the entire muscle fiber. Think of muscle fibers as being digital — they're either contracted or they're not. On/Off. But if there's no such thing as a partially contracted muscle fiber, how does the force of a muscle contraction vary in strength from strong to weak? Strength is a function of total muscle fibers involved — the greater the demand, the larger number of muscle fibers recruited to do the work.

Likewise, the length of the stretched muscle depends on the number of stretched fibers, which means that the more precise and thorough your stretching movements are — the more fibers you can involve — the greater benefit you receive from them.

How can I keep my muscles and joints stretched?

If you don't take your flexibility for granted, you can keep your muscle and joints stretched. Muscles are naturally inclined to contract for their own protection, so the only way to keep them elongated, and to keep your connective tissue lengthened, is to regularly stretch them. Remember, when it comes to stretching, the old saying "use it or lose it" truly applies.

