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PROLOGUE

Why read this book? I know that I can make a difference and help you expand your flexibility, regardless of your age, how out of shape or stiff you are and however many past attempts you have made to commit to a flexibility routine, just like I have taught thousands of clients over the past 20 years. Improving your flexibility does not need to be as difficult as people make it out to be!

People often self-sabotage their own progress by placing mental barriers in their way towards getting fit. The human body has a memory pattern and thrives on being healthy and strong and more supple. I guarantee that when these exercises are incorporated into a daily routine, anyone attempting them will be able to increase his or her flexibility, as well as improve muscle tone, shape and posture. You will notice your overall health will be improved and you will be able to participate in your chosen physical activities. By combining these methods of exercise you can change your physical appearance by improving your posture--standing and sitting taller and in more relaxed positions, reducing joint and muscle tightness all while enhancing your flexibility.

INTRODUCTION

While there are books on the market today that have covered stretches from daily stretching to sport specific, StretchSmart takes you instead through a series of dynamic functional stretching movements actively lengthening and relaxing major muscles groups while performing an easy to learn rhythmic series of exercises. StretchSmart will teach you how to eliminate improper straining and overcome structural limitations such as tight hamstrings or a stiff back, shoulder or knees. StretchSmart will help you conquer “bad” chronic posture while preventing injuries at the same time.

StretchSmart will show step-by-step a method for improving your flexibility, even for those who think they were born “stiff,” to provide fuller range of motion in joints and muscles for a more enjoyable lifestyle—be it improving your tennis or golf swing or just bending over to tie your shoes.

StretchSmart will vastly enhance your body awareness and motion. No difficult positions to learn or get into and maintain to benefit from these stretches. You’ll not have to hold awkward positions for a long period of time to improve your flexibility. While the StretchSmart exercises can be performed safely by all ages and fitness levels, simply following the instructions of gently moving the body through a series of movements using the path of least resistance will help you achieve a greater flexibility in a shorter period of time. These techniques have been used in providing therapeutic relief for thousands of my clients over the past 20 years at my center, and you can get the same positive results.

StretchSmart will offer a protocol for those who are “stiff as a board” to get on board to a healthy stretching routine, which they have been avoiding because of the difficulty in touching their toes or the discomfort associated with stretching for someone who has not done so in a very long time. StretchSmart will show you how to integrate stretching easily into your daily routine. Speaking of schedule, StretchSmart will appeal to those who are on the go and have only a few minutes a day to get in a workout, as well as the more athletic reader who wants to improve his or her range of motion to prevent injury.

CHAPTER 1

ULTIMATE STRETCHING PROGRAM FOR MUSCLE TENSION RELIEF

WHY YOU NEED TO STRETCH AND WHY IT DOESN'T HAVE TO HURT

By picking up this book you are one step closer to restoring your functional ability without the pain of getting there. By using exciting and challenging exercises, you'll increase your flexibility, which can help you in sports, training, and everyday life—from bending over and tying your shoes to better upright posture while standing and sitting. Stretching is a powerful part of any exercise program. Here's why—and how—to include stretching in your fitness routine.

THE KEY TO STRETCHING IS TO PREVENT INJURY

Whether you obtained your initial information from your sixth-grade gym teacher or picked up a few new moves at the gym, the key reason for stretching is to prevent injuries from occurring while doing other activities. Most people wait too late to start a stretching program, only seeking one after they have sustained an injury and need professional advice for their injuries. In most cases they are given stretches to help them speed their recovery back to health.

In my center, most of my new patients have injured themselves by over-straining a stiff muscle group or joints, and these injuries could have been easily prevented by daily stretching. Not just a few minutes before an athletic event or workout but as a routine of awakening your body for the day ahead, during and at the end of your day to truly improve the way you move and feel.

TO IMPROVE RANGE OF MOTION

I was introduced to the importance of stretching early on in age when I joined a martial arts club that emphasized kicking. So we spent a lot of time stretching our legs, hips, and lower back muscles to improve our range of motion for better performance and power and speed in our kicks. Today, later in life, I find it is so important to stretch to move in and out of positions that I would never had thought about at a younger age.

Your goal is to improve your motion, period. If you want to excel at your chosen sport or just want to work out the kinks out in your body, you need to incorporate stretching. Most people go about it the wrong way so they disregard it completely, or make a half-hearted attempt at swinging their arms in big circles or twisting themselves side-to-side at the waistline for a few times.

So many former professional and amateur athletes' careers are cut short due to an injury that possibly could have been prevented if they had taken the time to improve their flexibility, not only their strength.

If you or someone you know "pulled" a muscle, was it a result of not thoroughly warming up and stretching from every angle possible?

Pulled, or micro tears in the muscle groups, can be prevented by stretching your muscles and allowing the fascia (thin but strong connective tissue) that surrounds the muscle to adapt to your new range of motion. This will give you more flexibility and prevent "pulled" muscles from occurring in the first place.

The *StretchSmart* technique of stretching will pinpoint individual muscle groups with compound movements to allow you to perform at your highest potential, rather than just isolate a single muscle. Thus it is a less painful way of stretching because you are using your muscles as a whole unit as they function in everyday activities.

These series of stretches will reduce your workload by removing tightness so you can move more freely throughout your entire body, not just in one area.

These *StretchSmart* stretches transport oxygen to your sore muscles and quickly remove toxins from your muscles so your recovery is faster from your other workouts, improving your overall flexibility.

BETTER FLEXIBILITY RESULTS IN LESS JOINT PAIN

Good flexibility is known to bring positive benefits to the muscles and joints by

minimizing muscle soreness on a cellular level, while preventing future injury that might occur due to lack of motion, as well as improve efficiency in all your everyday activities and improve your quality of life and functional independence.

Rather than making your stretching attempts too brief, you'll be able to use *StretchSmart* routine to concentrate on your often neglected postural muscles that run throughout your entire body and have the tendency to be chronically stiff, in addition to stretching the major muscles groups in your body. By focusing on these muscles you'll utilize your time more efficiently and as your flexibility improves the movements become easier and more graceful.

StretchSmart is your comprehensive guide to the most important aspect of your fitness routine.

Whether you're a weight lifter, tennis player, runner, golfer or a walker or simply trying to get the kinks out after a long day of sitting, *Stretching Smart* is a proven way to improve your sense of body movement and fitness. By lengthening your muscles and lubricating the joints, stretching smart will prevent injuries from occurring due to tightness. Stretching smart will also promote recovery and improve your posture and balance. Learning these series of stretches correctly will help you maximize your other workouts.

The following chapters of stretching movements are easy to use, and take you through every muscle group in the body with step-by-step instructions on these dynamic functional stretches. Most stretches can be done anywhere, at work, home or in the gym by using common household items such as a towel, chair and a wall to help you make stretching a fun and effective part of your daily routine.

Increasing flexibility can also improve quality of life and functional independence. Good flexibility aids in the elasticity of your muscles and provides a wider range of motion in the joints. It provides ease in the body movements and everyday activities. A simple daily task such as bending over and tying one's shoe is accomplished with better flexibility.

STRETCHING SHOULDN'T HURT

As you know by now, stretching offers an array of health benefits. But like any physical activity, it's not completely risk free. If you've been stretching for a while, you or someone you know has probably pulled a hamstring, or experienced some type of discomfort while stretching. Injuries can be great teachers. They invite you

to uncover your stretching faults--misalignments or overzealous attempts to force your way into a position or to hold a position too long--and you learn to make corrections. But it's smart to learn the proper techniques, especially when it comes to your knee joints, hamstring tendons, sacroiliac joints, hip flexors and shoulder and neck regions. These parts are vulnerable to damage and take time to mend. With *StretchSmart* routine you'll learn ways to bypass the weak links that have been hindering your range of motion and you'll be able to improve upon your flexibility with a better understanding of how your body moves.

THE ROAD TO INJURY BY FORCING YOUR BODY INTO POSITIONS

Have you always found it difficult to touch your toes while sitting down with your legs outstretched in front of you, due to a tight lower back or even tighter hamstrings? Usually when trying to force yourself into a position like this you expose the vulnerable knee and hip joints to extreme resistance, resulting in limited motion and possibly pain. Rather than forcing your legs and lower back into this compromising position, sneak up on the movement by first bending your knees slightly and slowly lowering your upper body over your bent knees. From there gradually lower your legs out straight and relax into the stretch until you have reached your maximum position at that moment in time. This is how to overcome some of your earlier limitations when stretching these muscle groups, and by using the above *StretchSmart* method you can improve on your flexibility without struggling. This is just one of many examples of how you will learn an easier approach to becoming more supple.

HOW DOES STRETCHING PREVENT INJURY?

One of the greatest benefits of stretching is that you're able to increase the length of both your muscles and tendons to a certain degree. This leads to an increased range of movement, which means your limbs and joints can move farther before an injury occurs. Let's take a look at a few examples.

If your neck muscles are tight and stiff, this will limit your ability to look behind you, or turn your head as far as you would like. If for some reason your head is jerked to the side, past its normal range of movement, for example, this could

result in a muscle tear or strain related to a sport or auto accident. You can help to prevent this from happening by increasing the flexibility, and the range of movement, of the muscles and tendons in your neck.

And what about the muscles in the back of your legs? The hamstring muscles, these muscles are put under a huge strain when you are participating in any sort of sport that involves running. Short, tight hamstring muscles can spell disaster for many sports athletes. By ensuring these muscles are loose and flexible, you'll cut your chances of a hamstring injury dramatically. You may have heard it said that an athlete has "thrown out a shoulder"? While only a true dislocation could do this, the expression is most likely referring to a strained shoulder that has been overused and gone beyond the normal range of motion one too many times, resulting in an injury. You will learn how not to incur these types of injuries by using the *StretchSmart* movements to provide flexibility in every possible angle to enhance your muscles' abilities.

How else can stretching help? While injuries can occur at any time, they are more likely to occur if the muscles are fatigued, tight and depleted of energy. Fatigued, tight muscles are also less capable of performing the skills required for your particular sport or activity. Stretching can help to prevent an injury by promoting recovery and decreasing soreness. Stretching ensures that your muscles and tendons are in good working order. The more conditioned your muscles and tendons are, the better they can handle the rigors of a sport and exercises, and it's less likely that they'll become injured.

So as you can see, there's more to stretching than most people think. Stretching is a simple and effective activity that will help you to enhance your athletic performance, decrease your likelihood of sports injury and minimize muscle soreness.

While warming-up is important, a good cool-down also plays a vital role in helping to prevent sports injury. How? A good cool-down will prevent blood from pooling in your limbs. It will also prevent waste products, such as lactic acid, from building up in your muscles. Not only that, a good cool-down will help your muscles and tendons relax and loosen, stopping them from becoming stiff and tight. Allowing more time at the end of your workouts to stretch out your muscles will improve your flexibility dramatically.

TYPES OF STRETCHING

Now that you know why stretching is important, let's examine different types of stretching techniques and their uniqueness, as well as how you can utilize this information to improve your flexibility and enhance your workouts.

As a general rule the following stretches are categorized into groups of stretching. Stretches are either dynamic--meaning they involve motion, or static--meaning they involve no motion. The thought was that dynamic stretches affect active flexibility and static stretches affect fixed flexibility. As research techniques improved, we learned more about fast and slow switches, fibers, and the role of the Gogi tendon, to trick the muscles into relaxing. That is where *StretchSmart* comes into play, utilizing both methods to increase further range of motion in your muscles with the least resistance when doing the stretches, thus providing the benefit of better flexibility without the boredom of holding a position for a prolonged period of time, but more on that later. First, let's look at the variations of stretching categories.

THE DIFFERENT TYPES OF STRETCHING ARE:

- Ballistic stretching
- Dynamic stretching
- Active stretching
- Passive (or relaxed) stretching
- Static stretching
- Isometric stretching
- PNF stretching
- Ballistic Stretching

Ballistic stretching uses the momentum of a moving body or a limb in an attempt to force it beyond its normal range of motion. This is stretching by bouncing into a stretched position, using the stretched muscles like a rubber band that pulls you out of the stretched position. An example would be bending over and bouncing down repeatedly to try to touch your toes with your hands. This type of stretching is not considered helpful and can lead to injury for most people who try to do it. It does not allow your muscles to adjust to, and relax into, the stretch. It may

instead cause your muscles to tighten up by repeatedly activating the Gogi tendon reflex response at the joint muscle, resulting in more soreness than necessary to increase your flexibility.

DYNAMIC STRETCHING

Dynamic stretching involves moving parts of your body and gradually increasing range and speed of movement, or both. Do not confuse dynamic stretching with ballistic stretching. Dynamic stretching consists of controlled leg and arm movements that take you gently to the limits of your range of motion. Ballistic stretches involve trying to force a part of the body beyond its range of motion. In dynamic stretches, there are no bounces or "jerky" movements and these types of stretches make up the bulk of *StretchSmart* program. Dynamic stretching improves dynamic flexibility and is a complete workout in itself but also quite useful as part of your warm-up for any workout you may have planned after stretching.

ACTIVE STRETCHING

Active stretching is also referred to as static-active stretching. An active stretch is one where you assume a position and then hold it there with no assistance. Learning to incorporate your muscle groups as a unit is by far more effective and less painful, as shown in *StretchSmart* principle used throughout this book. For example, while standing, bring your leg up high above your waistline in front of you and then hold it there without using anything to rest on or hold on to other than your leg muscles themselves, to keep the leg in that extended position. The tension of the antagonists (opposing muscles) is an active stretch that helps to relax the muscles being stretched by the antagonist muscles. Thus, you are stretching more muscle groups with one movement rather than using many stretches to accomplish the same effect, while enhancing your balance and strength as well.

Active stretching increases active flexibility and strengthens your antagonistic muscles as a unit of activity rather than isolating one particular muscle. Thus, you rarely have to hold these stretches for prolonged periods of time to benefit from the stretch being performed. These are fun and challenging stretches done throughout your routine to keep your body temperature up and your core strong.

PASSIVE STRETCHING

Passive stretching is also referred to as relaxed stretching. A passive stretch is one where you assume a position and hold it with some other part of your body, or with the assistance of a partner or some other apparatus. For example, using the

wall to support yourself as you move from one stretch to the next or doing the splits with your legs while sitting down is another passive stretch by using the floor as resistance to maintain your position. You will learn how to use the floor, wall, chair, towel and anything else you can think of to help improve your flexibility, which is easier than straining into and holding a position.

Slow, relaxed stretching is useful in relieving muscle spasms due to an injury. Passive stretching is also very good for “cooling down” after a workout and helps slow down your heart rate and breathing while reducing post-workout muscle soreness and fatigue.

STATIC STRETCHING

Many people assume passive stretching is static stretching. However, there is a distinction between the two and it's key to your flexibility workouts.

Static stretching involves holding a position. That is, you stretch to the farthest point and hold the stretch.

Passive stretching is a technique in which you are relaxed and make no further efforts to increase the range of motion. Instead, using external forces such as the wall or towel creates an outside driving force to improve your motion with minimum exertion.

ISOMETRIC OR RESISTANCE STRETCHING

Isometric stretching is a type of static stretching that involves the resistance of muscle groups through isometric contractions or tensing of your stretched muscles. The use of isometric stretching is one method to develop increased static-passive flexibility and combined with dynamic and active stretching will speed up your flexibility as opposed to doing any of these types of stretches alone.

Isometric stretches also help to develop strength in your “tensed” muscle groups that helps to develop your flexibility.

The most common ways to provide the needed resistance for an isometric stretch are to apply resistance manually to one's own limbs, or to have a partner apply the resistance, or to use an apparatus such as a wall, chair, towel or the floor to provide resistance.

An example of manual resistance would be holding onto the ball of your foot to keep it from flexing while you are using the muscles of your calf to try and straighten your instep so that the toes are pointed.

An example of using the wall to provide resistance is, while you attempt to force

your back against the wall, you tilt your pelvis; this is another example that will be explained in a later chapter.

Isometric stretching is not recommended for children whose bones are still growing. This age group is usually already flexible enough that the strong stretches produced by the isometric contraction have a much higher risk of damaging tendons and connective tissue. It is also not for individuals who have had surgery on a joint in the muscle region; in this case the active and passive stretches would be better.

HOW RESISTANCE STRETCHING WORKS

The science behind resistance training is fairly straight forward and once you understand why your body responds in this way, the more stretches you can create to improve your motion. When a muscle is contracted, some of the fibers contract, not all, only enough to get the job done. As you increase the load on the muscles, you will increase the use of more muscle fibers. Similarly, when your muscles are stretched, some of your fibers are elongated and some remain inactive.

During an isometric contraction, some of your muscle fibers in the stretched position, or resting position, are being pulled upon from both ends by the muscles that are contracting. The result is that those resting fibers become stretched as well.

The effectiveness of the isometric exercise occurs when your muscle group that is already in a stretched position is subjected to an isometric contraction. In this case, some of the muscle fibers are already stretched before the contraction, and, if held long enough, the initial passive stretch overcomes the Gogi reflex response and triggers the lengthening reaction, inhibiting the stretched fibers from contracting. When the isometric contraction is relaxed and the contracting fibers returned to their resting length, the stretched fibers retain their ability to stretch beyond their past range of motion, before the stretch. The whole muscle group will be able to stretch beyond its initial maximum, and you will have increased your flexibility.

While you may not understand completely how the mechanism works, you will be able to feel the difference in your muscles after applying these methods in your workout.

PNF STRETCHING

PNF stretching is currently the more popular stretching style seen in professional sports today to increase flexibility. Unfortunately, when people try to pick up this technique they use it more as a bouncing method that, as we discussed earlier, can lead to injuries quickly if done improperly. Often this stretch is done with a partner and you need to put a lot of trust in that person not to cause you injury in the process and to offer enough resistance to get results. A tricky situation I'd rather not be in, nor should you. Instead I will explain what it is first then how you will be able to use this method in your *StretchSmart* routine to enhance your flexibility.

PNF is an acronym for proprioceptive neuromuscular facilitation. This stretching technique combines passive stretching and isometric stretching in order to achieve maximum flexibility in your muscles. These post-isometric relaxation-stretching techniques are when a muscle group is passively stretched, then contracted isometrically against resistance (a partner or wall) while in a stretched position, and then passively stretched again through the resulting increased range of motion.

Some PNF techniques also employ isometric antagonist contraction where the antagonists of the stretched muscles are contracted. This hold and relax drill is effective in overcoming tight muscles groups that normally do not respond to other stretching techniques.

Like isometric stretching, PNF stretching is also not recommended for children whose bones are still growing or a person who has had surgery to a muscle or joint region being stretched.

HOW PNF WORKS

Remember that during an isometric stretch, when the muscle performing the isometric contraction is relaxed, it retains its ability to stretch beyond its initial resting maximum length. PNF tries to take immediate advantage of this increased range of motion by immediately subjecting the contracted muscle to a passive stretch.

This stretching technique uses the period of time immediately following the isometric contraction to train the stretched Gogi tendon receptors to get used to this new, increased, range of muscle length.

Most people wait too late to start a stretching program, usually after they have sustained an injury and are seeking professional advice for their injuries and in

most cases are given stretches to perform to help speed their recovery back to health.

As you can see there is a number of ways to stretch your muscles besides bending over at your waist and hanging there trying to touch your toes. The stretching you will do as you incorporate the above stretching styles in your *StretchSmart* routine will help you prevent injuries from occurring in muscle groups that are too tight, as well as prevent you from overstraining while improving your flexibility and your overall range of motion and health. Now let's move on to the next chapter and discuss how you should start off in accomplishing a better stretching program for a more supple and stronger body.

STRETCHING—SCIENTIFICALLY?

WHAT ABOUT STUDIES THAT SAY STRETCHING DOES NOT PREVENT INJURIES?

Most of the studies I've reviewed attempt to determine the effects of stretching on injury prevention. Stretching, by itself, will not prevent injury. In fact, stretching can cause injury if certain precautions aren't taken.

Plus, it's not just a flexibility problem that can lead to injury.

It could be:

- A strength imbalance, when one side of your body is stronger than the other
- Instability or balance issues
- Postural imbalances
- A physical imbalance, such as one leg length longer than the other

Stretching is one very important component that assists in reducing the risk of injury. The best results are achieved when stretching is used in combination with other injury reduction techniques.

Stretching and its effect on physical performance and injury prevention is something that can't be measured scientifically. The effects of stretching are difficult to measure and all the studies that I have seen are nothing more than anecdotal.

You see, stretching is not a science. It is nearly impossible to prove anything about stretching, scientifically. Sure, you can measure the effect of stretching on

flexibility with simple tests like the “Sit and Reach” test, but then to determine how that affects athletic performance or injury susceptibility is, again, nearly impossible. So while studies are beneficial for learning about how your muscles function in a given parameter, it’s best to focus on how you feel and move during your stretching routine to improve your flexibility.

Science you can use:

STRETCH REFLEX

When a muscle is placed into a stretch, the muscle spindle inside the muscle belly records the change in length and sends signals to the spine, which conveys this information to your brain. This triggers the stretch reflex, which attempts to resist the change in muscle length by causing the stretched muscle to contract. The more sudden the change in muscle length, the stronger the muscle contractions will be. This basic function of the muscle spindle helps to maintain muscle tone and to protect your body from injury.

One of the reasons for holding a stretch for a prolonged period of time is that as you hold the muscle in a stretched position, the muscle spindle in theory becomes accustomed to the new length and reduces its signaling to contract your muscles. Gradually, your muscle’s stretch receptors adapt to the lengthening of your muscles due to the stretches.

MUSCLE GOGI TENDON REACTION

When your muscles contract, tension is produced at the point where the muscle is connected to the tendon, where the Gogi tendon is located. The Gogi tendon records the change in tension, and the rate of change of the tension, and sends signals to the brain to convey this information. When this tension exceeds a certain threshold, it triggers the lengthening reaction that inhibits your muscles from contracting and causes them to relax. This basic function of the Golgi tendon helps to protect the muscles, tendons, and ligaments from injury. The lengthening reaction is possible only because the signaling of the Gogi tendon to the brain is powerful enough to overcome the signaling of the muscle spindles telling the muscle to

contract.

For this reason you will learn how to use resistance to enhance this lengthening reaction to occur, thus helping your muscles to relax into the stretches.

CHAPTER SUMMARY

Why we stretch and the benefits of doing so:

- Stretching is key to preventing injuries due to lack of motion
- You will improve your range of motion
- The advantage of more flexibility is stronger muscles working at full capacity
- You will improve your circulation
- You will restore optimum body function, providing ease in your body’s movement and everyday activity
- You will help minimize muscle soreness
- You will build up your muscle capacity to withstand your other training exercises
- You will prevent stiffness and improve your body’s biomechanics
- Stretching should not hurt
- Keeping hydrated when performing stretches will help prevent muscle aches
- There are many variations to stretching and you’ll learn to use them all to improve your comprehensive flexibility

STIFF AS A BOARD? PROTOCOL FOR EASING INTO IT.

This chapter was created for all those individuals who think they can't stretch no matter how hard they try and fail to completely stretch out their bodies. And for those who want to improve upon their flexibility by enhancing their efforts.

Let's address some concerns about your limitations and when to stretch before dealing with the recommended protocols for improving your flexibility.

BEYOND STRUCTURAL LIMITATIONS

Are there "normal" ranges of flexible motion for everyone? Not really, there are only guidelines based on the general population and their guidelines do not take into account past injuries to joints, ligaments, muscles or bone fractures. Don't worry if you don't fit into a certain category when it comes to your flexibility. The only one you should be competing with is yourself.

So you never could touch the floor when bending over at the waist while standing--this doesn't mean you can't improve on your muscle flexibility by outsmarting some shortcomings in your structure, such as long legs and shorter arms or a longer torso and shorter legs, disproportional body parts will not slow your progress during *StretchSmart* program.

Using *StretchSmart*, you'll be able to overcome these barriers and improve your flexibility and the way you feel with new and improved range of motion. You'll be able to notice this in a shorter period of time than with traditional reach-and-hold stretches.

How far you travel within a given joint and muscle range determines your flexibility, while being able to travel through the whole range without pain is key and always desirable. This chapter will teach you how to accomplish that in the shortest period of time using science and relaxation techniques to enhance your flexibility regardless of how stiff you are now.

WARM-UP BEFORE STRETCHING?

This by far is the most typical question I get from my patients and clients at seminars. I have a two-part answer. First, what time of year is it for you? Is it warm where you live year round? Or do you have four seasons? Okay, let's narrow this down: when it's hot, like in the summer, your body temperature is elevated to start with and you need less motion to work up a sweat, and overall, your joints are not nearly as tight as in the middle of the winter. If it's winter time and very cold, it will take you longer to warm up your body's temperature. A good idea in the wintertime is to wear layers so you can take off clothes as you begin to sweat. As a general rule, warm muscles are much more easily stretched than cold muscles.

Always warm-up first to get your blood circulating throughout your body and especially in the muscle groups. A warm-up should be slow and rhythmic, addressing the larger muscle groups first before moving onto the smaller muscles. There is no set time to accomplish a warm-up. You can go through this sequence of exercises below to warm up your entire body.

Example of warming up before stretching

- Walking 10 to 15 minutes at an easy pace with some arm swinging
- Riding a bicycle.
- A few pushups against a wall
- Body weight half squats
- Body weight lunges
- Calf raises
- Warm-up at a low intensity

This provides the body with a period of adjustment between rest and activity. Once you have warmed up and broken a light sweat you are now ready to do your stretching exercises.

STRETCH BEFORE AND AFTER CARDIO-RELATED EXERCISING

I recommend stretching both before, during and after exercising, each for different reasons. Stretching before an activity (after the warm-up) improves your range of motion and reduces the chance of injury. Stretching during a workout helps

keep your muscles supple and more responsive. Stretching after exercise ensures your muscles will relax and facilitate your normal resting muscle length to joint and tissue structures, and most importantly aid in the removal of unwanted waste products, thus reducing muscle soreness and stiffness.

STRETCH DURING YOUR WEIGHTLIFTING WORKOUTS

Both strength training and flexibility training are so important. Those of you who have a hard time finding time to incorporate two different types of workouts into your routine can combine your stretching with your strength training programs. If you have had any experience in strength training, you know that for each exercise and muscle group you train, you have a certain number of sets, usually between two and three.

Between each set, you need to rest and let your muscles recover before going on to the next set. Well, what better use of your time than to stretch the muscles that you're currently training and the muscles around them?

STRETCHING PRINCIPLES AND GUIDELINES

When done correctly, stretching can prevent injuries, increase your range of motion, promote relaxation, improve athletic performance and improve your posture, reduce your stress and keep your body feeling loose and agile. Use these guidelines to get the most out of your StretchSmart program.

NO BOUNCING

I am still amazed to see people bouncing or more like jerking themselves into positions, tensing their muscles into a stretch. Not only is this counterproductive but dangerous too. All too often I hear someone tell me they pulled their back or hamstring trying to stretch out. This of course will happen over and over again if you try to launch yourself beyond your muscles' and body's ability by using fast-paced motion, which only further triggers the body's protective mechanism to fire off at the joint and muscle junction. This bouncing process will just slow down your progress. Rather, *StretchSmart* exercises will keep you going through one continuous loop of movements, improving your range of motion without fits of jerking, or stop-and-holds, to accomplish greater flexibility.

TEMPO

Similar to the drawbacks of bouncing, you do not want to go too fast through your stretches nor do you want to hold on forever in one particular position. You want to set a tempo to your movement patterns with a rhythmic pace that allows you enough time to feel the stretch while keeping your breathing even and allowing your body to warm up gradually. Each person is different and I can only give you guidelines to follow—it has to feel right to you.

DO NOT REACH BEYOND YOUR LIMITS

When you bring your arms forward, reaching over your legs while sitting, there are no markers to say where your hands should end up, so why make it a goal to grab your feet and hold them? Rather, feel your muscles lengthening; your body will let you know the right length to reach for. Don't compromise your posture and your joints and muscle integrity to just go a little further. With all your stretches, get into a comfortable zone and feel your muscles stretching rather than pulling due to an exertion.

DO NOT HYPEREXTEND

Since hyperextended joints are basically a problem of too-loose ligaments and tendons around the regions commonly located in the wrists, elbows and knee, you can cause or exacerbate such looseness through poor alignment in your stretching routine. The soft tissues at risk of being overstretched include your ligaments deep inside the joints. There are also several large tendons that normally help prevent hyperextension from occurring but for whatever reason they are not. If you fall into this category you need to pay close attention to the way your muscles feel during the movements and not go beyond your joint integrity. *StretchSmart* exercises will help stabilize your joints by strengthening the surrounding muscles while improving your flexibility.

USE PROPER POSTURE ALIGNMENT

We have all been told since we were children to sit and stand up straight. Posture has been considered important for our health and our image, but it is also very important to our stretching ability as well. Staying supple rather than rigid, when moving into one position and the next, will help you tremendously by improving your range of motion, and by not allowing your spine to tighten up while you move. Keeping your core strong will affect your flexibility and endurance in sustaining the positions you wish to achieve.

STRETCH YOUR MUSCLES AS A UNIT NOT AS ONE INDIVIDUAL MUSCLE AT A TIME

Commonly you will isolate a particular muscle group, let's say the quadriceps--the muscles on top of your thighs--by standing and pulling your ankle back behind your hip and holding it there for a few seconds then repeating with the opposite leg. Did you really work only the front of your thighs with that stretch? It takes the hip flexors in front of your thighs to relax and your hip extensor-glutes to relax for you to stretch the quads. A more productive method of stretching allows you to stretch all three major groups like they were intended to move, because they work as a unit. For example, they work together when you walk or jog or go up a flight of stairs. *StretchSmart* exercises allow you to stretch more muscle groups with a single movement, making your stretching routine more efficient and more productive in improving your flexibility in a shorter period of time.

EXERCISE ORDER

One of the most effective ways to stretch is to do so in a certain order to thoroughly warm-up and stretch muscles that you are going to use in the next movement so your muscles will work together, rather than stretching one particular muscle group then moving on to the next and so on. The old theory of working your bigger muscle groups does not hold true for *StretchSmart* stretches. Rather, the pattern of stretches will allow you to open up your range of motion in your muscles as they warm up, allowing more flexibility into the muscles as they are lengthening with greater range. By stretching synergist muscle groups, you will actually stretch several muscles and the benefit of this is that you are able to better stretch by using the supporting muscles to help increase your flexibility in a particular movement. Ideally, by organizing the exercises within your stretching routine, you minimize the effort required to perform your routine, and maximize the effectiveness of your stretching time.

BREATHING

Why is breathing so important when doing stretching?

Simply put, you unconsciously breathe at the rate in which your body uses energy. For example, when you start to jog from a walk your lungs adjust to the load and the need to supply your muscles the desirable level of oxygen that is required to complete the task. It only becomes an issue when you try to force yourself to

breathe a certain way and you end up holding your breath or forcing out too much air, causing your body to tighten up when you should be relaxed while stretching. What exactly are you tightening up, you might wonder? It's your diaphragm and the surrounding muscles in the abdominal and back muscles. When you breathe out, the diaphragm contracts to move your lungs up, thus causing your lungs to be contracted and lowering the pressure in your lungs. When you inhale, the diaphragm muscles relax down and allow your lungs to expand and fill up with more air.

PROPER BREATHING CONTROL

Proper breathing is important for successful stretching. Proper breathing helps to relax your body, increases blood flow throughout your muscles, and helps to mechanically remove lactic acid and other by-products out of the muscle region. You should be taking slow, relaxed breaths when you stretch, trying to exhale as the muscle is lengthening and inhaling when changing positions or resting.

Breathe in slowly through your nose, expanding your diaphragm, not lifting or sticking out your chest, and then exhale slowly through the nose.

Inhaling through the nose has several purposes, including cleaning the air and insuring proper temperature and humidity for oxygen transfer into the lungs. The breath should be natural and the diaphragm and abdomen should remain soft. You should not force your breathing.

The rate of breathing should be based on the overall exertion of the movement. Allow your body to adapt to the new position and relax into the stretch, while also relaxing your breathing as you move into each new position.

STRETCH YOUR POSTURAL MUSCLES DAILY

Making sure your postural muscles are supple throughout the day will improve the stretching of the rest of your muscles. These muscle groups become fatigued due to our static positions of sitting throughout the day hunched over a computer or driving in a car. In the next chapter you will learn how easy it is to stretch out these important muscle groups and how doing so will improve your range of motion.

RELAX

As I discussed above, the importance of breathing is reflected in your ability to relax while you stretch. It does sound like common sense but it is so easy to self-sabotage yourself by tensing and holding your breath or flexing muscles that should be relaxed. Take a few minutes to clear your mind before stretching;

listening to relaxing music while stretching can help you further decompress to improve your flexibility.

DON'T COMPETE

Since childhood, I have had the fortunate opportunity of training with some of the best competitive martial arts athletes and now see many professional and amateur athletes in my center. What they all have in common is the desire to win, and so they are driven in their workouts. Unfortunately, many end up injured now and then and many still neglect the practice of stretching properly. They choose to be aggressive even while stretching when they should be as relaxed as possible, allowing their bodies to conform to the stretch rather than be forced into a position.

BODY MECHANICS

Proper body mechanics cannot be overemphasized when you are stretching or performing any other form of exercise. Being limp as a rag doll is just as bad as being rigid when performing your stretches. It's important to find that groove in between where you are in control of all your muscle groups throughout the duration of the movement.

VARIATIONS

Throughout this book you will be instructed to perform movements in a certain order and way that you may not be able to achieve right away. The instructions should be used as a reference and not an end point of a completed movement. You may feel more comfortable supporting yourself on your forearms rather than your hands to feel the stretch more effectively. By all means, go ahead, do what works best for your body type and the state of your flexibility at that moment in time. Some movement will be offered with a number of ways to perform the stretch with similar results or to further enhance your range of motion with a slight variation.

PATIENCE

The flexibility progress is usually so gradual that you won't notice a day-to-day improvement. It's more likely that after a few weeks, you'll look back and realize that your stiffness has decreased and you are able to move more freely than when you first started this program. As you improve you will become less sensitive to a particular movement and you'll breathe easier during the action as well.

DO NO HARM

Don't try to force yourself into a position or stretch out hard all your muscles at once in a given workout period. Gradually build up to the amount of time it takes you to complete the movements. Don't rush into the program. Being overly sore because you are pushing too hard will just slow your progress to becoming more supple.

SETS AND REPS

These are general guidelines for you to follow. If you are unable to complete the entire recommended workout, don't fret. Use them as short and long term goals toward your progress in achieving the best flexibility you can during any given workout. Hold times if any are given with the description of the exercises in the proceeding chapters. Your rest periods between repetitions and sets should be treated like those in any of your other workouts except that you will be resting less to maintain your body's temperature elevation to keep your muscles loose.

A note about intensity levels in your workouts. Intensity is usually used on some type of pain scale. Instead I want you to think more of the number of times you perform the movement and how long it takes you to recover before moving onto the next exercise. For example, it takes you ten minutes to do your wall stretches and you still feel you have plenty of energy left to go through them again. This would be considered a light intensity workout. While doing an intermediate workout, you may feel fairly tired after going through a set of exercises and need more energy to do them again. You get the idea. Based on your own personal energy levels, the exercise is light if you still have something left to give in your workouts, and advanced if you are ready to hit the showers and be done with your workout.

Beginner level 1

- Light intensity
- Three times per week
- Rest days
- Two times per week or more
- Duration
- 20 to 25 minutes per workout

Beginner level 2

- Light intensity
- Two times per week
- Medium intensity
- One time per week
- Rest days
- Three times per week or more
- Duration
- 20 to 25 minutes per workout

Intermediate level 1

- Light intensity
- Two times per week
- Medium intensity
- Two times per week
- Rest days
- Two times per week or more
- Duration
- 25 to 30 minutes per workout

Intermediate level 2

- Light intensity
- Two times per week
- Medium intensity
- One time per week
- Rest days
- Three times per week or more
- Duration
- 20 to 25 minutes per workout

Advanced level

- Light intensity
- Two times per week
- Medium intensity
- Two times per week
- Hard intensity
- One time per week, followed by a rest or light workout the next day
- Rest days
- One time per week or more
- Duration
- 40 to 50 minutes per workout

As you can see you have a wide variety of ways to change your workouts around to suit the way you feel each day and how you are improving your flexibility. Note the way you get up in the morning and walk around--are you stiff and sore at first and then you loosen up as you move more? Or is the soreness consistent throughout the day after your workout? Being aware of how your body moves over the next couple weeks and months will help you learn more about yourself and your thresholds, as you break through to achieve greater range of motion and flexibility in areas you thought were impossible until now.

Now let's move on to the next chapter and focus on those important-to-your-posture muscle groups to enhance your flexibility and get into your routine for stretching your body and improving the way you feel and move.

CHAPTER SUMMARY

- No bouncing
- Do not overreach beyond your limits
- Use proper posture alignment
- Stretch your postural muscles daily
- Stretch your muscles as a unit
- Variations
- Patience

CHAPTER 3

PERFECT POSTURE— BEYOND STRUCTURAL LIMITATIONS AND IMPROVING HOW YOU LOOK

WHAT IS PERFECT POSTURE AND HOW DO YOU GET IT?

Why do you need it anyway? What are the benefits of good posture? We have always been told to sit and stand up straight since we were children. Posture has been considered important for our health and image, but what is perfect posture? How do you compare it from one individual to the next? I'll tell you clearly that it is not about sitting like a board in a rigid position staring straight ahead in an uncomfortable position with your back muscles tight and your shoulders thrown back.

First let's look at your own posture and see how it not only affects your image and how you feel but also how it influences your range of motion. You can't stretch out your muscles if you hold yourself in an improper position when you are not exercising.

Poor posture not only affects your muscle flexibility, it also makes you look older, shorter and heavier as well. Beside the appearance, your health is affected by poor posture, by its causing your breathing to be forced and labor-intensive, and compressing your spine and weakening your core in the process.

A LOOK IN THE MIRROR

What is the first thing about your posture that you notice when you stand in front of a full length mirror?

- Any head tilt to the right or the left when you look straight ahead?
- Does your chin drop to one side, right or left?
- Does one ear appear higher than the other?
- Is one shoulder higher than the other?
- Are one or both shoulders rounded forward?
- Do your hands rest out to the side or is one hand turned in more than the other?