

Stretching for Seniors

Simple and Safe Exercises to Reignite Your
Flexibility and Balance

Mark Kemp

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INTRODUCTION

You are only as young as your spine is flexible. —Joseph Pilates

Are you feeling the effects of aging, and want to turn back the clock? Is chronic pain causing you to feel stressed and insecure? Are you wishing there was something you could do to take back your life?

It doesn't have to be this way; you don't have to feel the frustration or embarrassment of looking and feeling like you've aged; that you're an "elderly person" who's no longer up to living an active lifestyle.

You are about to learn about a new and exciting stretching program specifically developed for seniors, which is going to transform your life.

Whether you feel it's the years you've lived or the miles you've covered, your body is letting you know about the wear and tear that's the natural consequence of a life that you've actively lived. On top of aches and pains, your joints and muscles don't have the flexibility and resilience they once had. Stiffness has settled in to restrict movement, and hold you back. It's causing you to have less balance, and you're concerned about the risk of falling.

Maybe the worst part is feeling that you're not up to challenges, whether it's lifting, bending, or even heading up a flight of stairs. Do you feel weak and find yourself asking for help, and sense that you've lost that independence you were once proud of? It's tough when things you took for granted now require an extra effort, or you just can't do any longer.

Where Does It Hurt?

How's your back doing as your spine loses flexibility? Are the discs losing elasticity and preventing you from reaching and turning? Is it getting harder to turn your head from side-to-side as your neck stiffens up, or are your knees complaining as you go up and down stairs? Do your hips hurt and slow down your walking? Is stiffness and inflexibility something you've been living with for years, and getting worse?

Are the effects of aging interfering with your trying to stay in good physical condition?

You may be committed to retaining muscle mass and staying strong, but find that resistance workouts, in a fitness center with weights and cables, or at home with bodyweight calisthenics, is hurting too much, and you're worried about pulled muscles and strained ligaments.

Your efforts to adhere to heart-healthy cardiovascular conditioning may have become too tough to keep up with, causing aching knees, hips, and shoulders that make even walking or cycling a hardship instead of the pleasure these daily aerobic exercises once were.

You may have tried a yoga class to gain flexibility with the poses and stretches, only to find that you couldn't keep up with the class, and found the movements too difficult. You may have had trouble with your balance.

Of course there are medications that can be prescribed, and over-the-counter painkillers and supplements that you see advertised, but you'd prefer a natural, drug-free solution.

Here's the good news. There is a natural, safe, holistic option for you; one that will return your flexibility and loosen those stiff joints and tight muscles and ligaments, and give back the feeling of youth:

It's *Stretching for Seniors*, and it will change your life as it reopens those doors of constraint and pain, and gets you back on the path to full fitness and strength.

Get Ready for Flexipendence

So if you are a senior who's ready to regain your physical capabilities, and be the person you want to be, this book is for you. Be prepared to enter the world of '*flexipendence*'—the independence of flexibility and resilience, balance and stability, and the end of having to depend on others. You will be able to forget the ravages of aging, and return to pain-free mobility and regaining independence.

This is a comprehensive stretching program for seniors to help you maintain a mobile, active, and healthy lifestyle from age 50 and beyond. You will receive the most complete and comprehensive flexibility and balance instructions, including the traditional standards, and new stretches based on medical science. All listed for easy selection and access. It's almost like having a trainer at your side as you learn:

Stretching for flexibility exercises to loosen, condition and revitalize every part of your body; from your neck all the way down to your toes. Each stretching movement is explained and thoughtfully described so you can easily follow along and perform the stretches correctly and safely.

Exercises and positions for balance, to restore your equilibrium and help to prevent falls, missteps, and bumping into things. You'll be surprised how much you will improve your balance, and you will appreciate how this restores your self-confidence.

The stretching prescribed specifically for seniors in this book will be easy for you to do, and you will feel great, as you stretch correctly, and in the glow you'll feel after completing your stretches. Our instructions will allow you to customize a routine that targets your areas of concern. Before long you will experience a marked improvement in how you feel, with pain reduced, flexibility enhanced, and a far better quality of living. You'll feel younger, vibrant, and *flexipendent!*

Meet the Author

Mark Kemp is a physical training professional and expert on nutrition, who is the author of *Stretching for Seniors* and soon-to-be published *Strength Training for Seniors*. He is deeply focused on the importance of maintaining good health and fitness among those who are approaching, or experiencing their retirement years. This is a time to be enjoying life, feeling great, and staying active; not succumbing to stiffness and inflexibility, pain, immobility, and imbalance.

Mark knows how much quality of life matters to seniors; early in his career, when he was visiting an older relative, he realized he could share his expertise and give seniors the skills they need to live more comfortably. Subsequently, as a volunteer in retirement communities, he has helped hundreds to regain the powers and capabilities they thought were lost.

He has continued this work throughout his career, working with both younger retirees and those more advanced in years, and believes it's one of the most valuable things he has to offer the world. With patience and compassion, he customizes stretching and physical training, treating each senior on an individual basis.

Although he has worked with a broad range of clients, he has always been frustrated by the fitness industry's focus on the younger generation. He believes that physical training targeted specifically to older adults can have a huge impact on their quality of life and has fueled his writing this book.

He has seen the enormous positive effect that stretching and physical training can have on seniors, and is determined to share his expertise with you, and all those whom he can help regain independence and live life to the fullest.

Mark lives in the UK with his wife and two dogs. He loves hiking, climbing, and cooking, and enjoys nothing more than spending a Saturday outdoors before coming home to let his imagination run wild in the kitchen.

What You Will Learn

This stretching for seniors program you will develop with this book will give you the motivation to get moving and start living a happier, healthier life:

You will access a complete library of stretching exercises specifically for seniors, covering your body from your head and neck all the way down to your feet and toes.

You'll learn the science and principals behind the stretching, to help you to fully appreciate the benefits of every stretch.

You will learn how to perform each stretch correctly and safely for fullest benefits.

You will learn how to breathe diaphragmatically for optimal effects from your stretching, and to calm you and eliminate stress.

So if you're ready to start down the road to your *flexipendence*, let's head to Chapter 1 and take a look behind the curtains of stretching and flexibility to get a handle on the basics.

BEHIND THE CURTAINS OF STRETCHING AND FLEXIBILITY

Welcome to the World of Stretching!

You may be tempted to skip ahead and get started learning and practicing some of the stretches, but there's a good reason those instructions are in later chapters: There are many important things you need to know about stretching before we get into the details of the stretches, and what they can do for your body.

Your patience will be well rewarded by giving yourself a foundation of knowledge and understanding. You'll make more informed selections of stretches based on your condition and needs, and will be better prepared to follow and benefit from the instructions.

Consider this chapter a course through Stretching 101 where you will learn what is happening to your body and the importance of stretching and flexibility for seniors.

The Background of Flexibility

If flexibility is the objective that stretching will help you to achieve, let's begin by defining what it is.

Flexibility is adaptability to changing conditions, or pliancy. In physiology, flexibility refers to the degree of movement that can be achieved around a set of joints, although we tend to think of flexibility as "how far can you go" when bending over, twisting, turning, or reaching. It's more accurate to consider flexibility in degrees, rather than absolutes: We all have amounts of flexibility; it's just a question of how much at each joint.

But it's not your joints or bones, tendons or ligaments that will be the principal targets of your stretching; it's your muscles, and the fascia sheath that cover them, that will be the primary beneficiary of your flexibility training. "While bones, joints, ligaments, tendons and skin do contribute to overall flexibility, we have limited control over these factors," according to *StretchCoach* (2021).

Two Types of Flexibility

There are two different types of flexibility, based on the absence or presence of motion, whose momentum can extend the range of motion:

Static flexibility is how far you can extend yourself without movement; the range of motion you can achieve by turning, or bending, or by reaching, and being able to hold that position steadily, without bouncing. For example, slowly bending over at the hips, keeping knees locked, and trying to touch your toes.

Dynamic flexibility, in contrast, refers to turning, bending, or reaching with movement, to extend the fullest range of motion that you can achieve by applying velocity when you stretch. Imagine going through the same reaching-for-the-toes effort, but moving faster and being able to get closer to your toes, if only momentarily before you bounce back up.

The Background of Stretching

Stretching, as applied to physiology, is the placement or movement of specific parts of the body into positions that lengthen certain muscles and connected soft tissues. A regular stretching routine can lead to physical changes within the muscles, and the fascia, ligaments, and tendons, as well as affecting the skin and scar tissue.

We've all stretched at various times, perhaps when getting up in the morning, or to ease some stiffness at any time when something feels tight. Many people associate stretching as a warm-up to exercise, or for cooling down when the workout is over. You may have seen joggers looking like

they're trying to push a tree over as they stretch their calves and hamstrings.

But stretching needs to be done correctly, at the right time, and involving the right muscle groups, to optimize the effects, and avoid injury. Certain stretches are to warm up; others are to cool down. You'll learn why.

So what is stretching, and what does it do for you? Just as static and dynamic descriptors apply to flexibility, they define stretches as well, with static stretches best performed after exercise, and dynamic stretches ideal for warm-ups:

Static stretching techniques require you to hold muscles and joints in designated positions for a length of time, such as 15 to 30 seconds. The goal of static stretches is to help loosen and elongate your muscles, post workout, after they're warmed-up. Static stretches help relax muscle tension, and improve blood flow to the muscles to help recovery.

About 60 seconds for each static stretch is recommended; either continuous, or three repetitions of 15 to 20 seconds. These movements are good for you, and feel good!

Dynamic stretches are active movements performed repeatedly in a brief period, to enable your muscles to loosen and warm up gradually, and prepare them for more demanding exercises. For example, before heading out for a jog, stretching with calf raises, and bending and reaching toward your toes.

"For dynamic stretches, we perform the stretch for just a few seconds for each repetition," advises The Physio Co (2022). "Aim for 8-12 repetitions, with each area taking roughly 30-60 seconds; include 5 to 10 minutes of such stretches in your warm-up routine." Since the muscles are not yet fully warmed, be careful not to force or strain.

Looking closer, there are different types of static and dynamic stretches you should be aware of. Here are the most common, briefly described.

Types of Static Stretches

Traditional static stretching is a very common form used for a range of stretching needs. It's performed by stretching the muscle until a gentle pulling sensation is felt, and there is no further stretching. The immobile stretch is maintained in this "just enough" position for at least 10 to 20 seconds before relaxing the muscle to end the stretch.

Static stretching is frequently used to improve flexibility, especially after a muscle injury, like a pull or a strain. It's often used when caution is required, but for healthy, strong muscles, techniques like PNF may be preferable for improving flexibility (see PNF, below).

Assisted stretching is performed by one person helping another to perform the stretch. It has recently become popular in fitness centers, gyms, and spas after a long-term history of use in athletic training settings.

Assisted stretching increases the flexibility and mobility of a single muscle or group of muscles. It is a gentle technique that can benefit children and adults, the elderly, and people with physical disabilities. But assisted stretching should not be performed by the inexperienced: It requires advanced training in body movement, and is typically performed by physical therapists, massage therapists, athletic trainers, and chiropractors.

Active stretching is another technique to improve flexibility, involving active contraction of one muscle (called "the agonist") to stretch an opposing muscle ("the antagonist"), with no other force applied: No bands or straps or other devices. Example: Lying on your back; lifting your leg towards the ceiling until your hamstring feels the stretch.

It's also known as static active stretching, which recognizes that it's unmoving, because the position of the stretch is maintained for a certain time: Typically held for 10–15 seconds (any longer is tough).

Proprioceptive neuromuscular facilitation (PNF) may assume different forms, like contract-relax, hold-relax, and rhythmic initiation. It's popular among physiotherapists, licensed trainers, and sports injury specialists. It is applied both passively and actively.

The therapist guides the person's limb through the ranges of motion in passive PNF; whereas in active assisted PNF, the person being treated participates in the treatment following an isometric stretch to prepare the muscle.

Muscle energy techniques (MET) are similar to PNF, and use an isometric contraction of the agonist before stretching. But the force of the MET isometric contraction is much lower.

Isometric stretching engages the resistance of muscle groups by tensing as they are being stretched. It is demanding, so it should be limited to once a day, but is very effective compared to other forms of active or passive stretching. Isometric is recognized as one of the fastest ways to achieve passive static flexibility.

The key to isometric stretching is resistance, which can be applied manually to the limbs, either by having a partner apply the resistance or a wall may be used for resistance. After assuming the position for the static stretch, the muscle needs to be tensed for 10–15 seconds, resisting against a force, then the muscle is relaxed for 20 seconds, and then the tense-relax cycle is repeated. Example: Have your partner pushing up your leg as you try to force your leg back down.

Types of Dynamic Stretches

Traditional dynamic stretching has become popular, especially to warm up for sports or exercise. Typically, it involves stretching your muscles during movement, such as leg swings, or sports-specific drills.

For example, swinging your right leg up to its limit, then allowing it to fall back down; swinging up and down again, continuously, increasing the range of motion, without straining or overextending. Repeat with the other leg after about 12 repetitions.

Dynamic stretching engages muscle spindles, which are sensors in the muscle which sense the speed at which muscles are being stretched. The sensors can help you prevent overextension injuries.

Ballistic stretching exercises involve stretching the muscle up to its comfortable limit, then briefly extending the stretch with a 'bounce' that forces the movement a little further. Example: Bending down as far as you can to almost reach your toes, then bouncing down to actually touch your toes.

Ballistic stretching is frequently discouraged by professional therapists and trainers because forcing a muscle beyond its comfort zone risks strains or other damage. Exceptions are made when extended range of movement is required, such as for ballet dancers, and during certain types of rehabilitation.

An example of ballistic stretching is reaching over to touch your toes and bouncing to increase the range. This type of stretching is rarely recommended due to the injury possibilities and no beneficial effect over other, safer, forms of stretching such as PNF and dynamic stretches.

Active isolated stretching (AIS) is a method of muscle lengthening and fascial release that provides effective, dy-

namically stretching of various muscle groups, plus physiological restoration of deep and superficial fascial planes.

This is a prolonged static stretching technique, requiring forceful stretching lasting up to 60 seconds, and has been advocated for decades.

But more recent studies are finding that the extended stretching time of the forced stretch can decrease blood flow within the tissue, which then creates lactic acid buildup (which causes stiffness) and localized ischemia. In addition, it can lead to trauma and overuse syndromes, like injury to local muscular, lymphatic, tendinous, and neural tissues.

Resistance and loaded stretching is a form of static stretching, involving weights—a load—that increases tension in the muscles being stretched, as well as increasing the degree of stretch that is achieved.

Loaded stretching can extend your potential range of motion, taking you beyond your body's normal limits; the extra load can help you achieve a more effective stretch. An additional benefit is increased tension in the muscles; strengthening those muscle fibers at that particular length. Be careful not to overload the weight and risk straining.

As We Age: Effects on Our Bodies

Few things in life are as inevitable as aging. In return for our longevity, nature exacts its price: We gradually—almost imperceptibly—slow down, lose strength and flexibility, and can't seem to do the things we once took for granted. We may have hoped that the problems that other seniors were experiencing would pass us by.

But while you can't stop aging, you can slow it down. You can take action to regain much of that lost vigor and energy. You can increase your strength, become much more flexible, and live the active lifestyle that you have the potential

to experience. You can reduce the risks of injuries that might incapacitate you.

Before we get deeply into stretching and other actions to get ourselves back on track, let's learn what aging is doing to us.

What Happens to Our Bodies as We Age?

As we get older, one of the more obvious effects is the loss of flexibility as a result of the normal aging processes. Your spinal disks, joints and tissues lose water and the lubrication it provides, leading to stiffness in your back and joints; your muscles, tendons, ligaments and surrounding tissue lose their elasticity. This is why bending, turning, and reaching are becoming increasingly difficult; reduced flexibility impacts walking by shortening and slowing strides, and increasing the risk of falls:

Falling can cause injury to anyone, but especially as we get older, when age-related reduced bone density (osteoporosis) raises the risks of broken bones.

Your diminished flexibility and reduced range of motion reduces your ability to function normally, messing with many aspects of your everyday life. Your condition may be compelling you to limit physical activity because you don't feel flexible enough to do what you've always done, without a thought.

With age, comes stiffness, slowness, and a loss of balance. Doing things often hurts. A common aging condition is osteoarthritis, which results from use—or overuse—of the joints, resulting in wearing down the cartilage that protects the joints and keeps the interacting parts smooth. The knees frequently fall victim to cartilage loss, accounting for many knee replacements. Osteoarthritis affects over 33 million adults in the U.S.A.:

“Most people will develop some degree of osteoarthritis. That is what usually causes joint aches and pains as people get older,” according to New York-Presbyterian Hospital's Keith Roach, M.D. (*WebMD*, 2021). This usually begins in our 50s, and affects women more than men.

A cycle. It gets worse: The limitations that reduce flexibility can lead to a self-perpetuating cycle of reduced motion and activity, resulting in even greater inflexibility and loss of function:

When you don't use your joints, muscles, and other tissues as much as before, they tend to create even more decreases in flexibility. Muscles that are not regularly worked through their full range of motion won't be able to maintain their length, and muscle mass and strength can diminish.

But these losses of flexibility with aging are not inevitable. As Dr. Victoria Bowen, PT, DPT, sums it up: “The good news is that we have the ability to slow or reverse some of these changes in our body!” This is why stretching is going to make a big difference in your life! (Bowen, 2022).

Important: Just be aware that joint pain and reduced motion and mobility can have other causes, like an overactive immune system, so it's a good idea to get your condition checked out by a doctor, just in case there's an underlying condition that needs to be treated.

The Importance of Flexibility

When you were younger, flexibility was probably not a concern, but with maturity, things change, and you are not as flexible or 'loose' as you once were. Your knees may 'disagree' when you try to get up from a chair, and it's not so easy to raise your arms to reach up to grab something on a high shelf. How about brushing your hair, or tying your sneakers? If you're a senior, a loss of flexibility comes along with the years.

Flexibility leads to a return to **independence** because you can do what you used to do, without having to ask for help. Think of turning back the clock on stiffness and regaining the ability to do things, from dressing to shopping, and being able to work out like you used to when you could stay in shape and manage your weight.

Flexibility can help keep you **safe from falls**. Did you know that falls are quite common among older people, with one in three seniors falling every year? It's largely due to a loss of balance that occurs when hips and ankles aren't flexible; your body has trouble correcting itself if you stumble. Regaining flexibility helps improve your balance.

Flexibility makes you **feel better**, with less pain and strain overall, and especially bringing back pain to an end (just remember to be careful when lifting heavy objects and keep your back straight!). Regaining flexibility improves blood circulation, and builds muscles to better support your body, and ease your movements. Flexibility can straighten your posture, to prevent straining your spine and core.

The Importance of Stretching

It's a problem/solution scenario: Inflexibility is the problem; stretching is the solution. Stretching keeps your muscles and ligaments flexible, strong, and healthy, and you need that flexibility to maintain a full range of motion in the joints.

If you tend to sit for much of the day and don't stretch those muscles, your hamstrings and glutes will gradually tighten and shorten your stride. If your back is not stretched regularly, your spine will stiffen and make it harder to bend. Sudden movements or exertions, like trying to return your tennis opponent's backhand, can pull or strain tight muscles, taking you out of the game.

The great thing is that **stretching works!** If you can commit to stretch on a daily basis, you will work on overcoming inflexibility and loss of range of motion on a daily basis:

"A lot of people don't understand that stretching has to happen on a regular basis. It should be daily," advises physical therapist David Nolan of Harvard-associated Massachusetts General Hospital (*Harvard Health Publishing*, 2022).

Even better, the benefits improve over time as you gain increased flexibility and strength. Your capabilities will extend, you'll be able to do more, and you'll be much less sus-

ceptible to falls and other causes of injury. But don't be impatient; gaining flexibility is a continuing, gradual process:

Physical therapist Nolan says, "It takes weeks to months to get flexible, and you'll have to continue working on it to maintain it."

The recovery of independence, as mentioned above, means you can do things—simple and not-so-simple, light and heavy—without having to ask anyone for assistance. You can reassure others who try to help, "No thanks, I've got this!"

So the choice is clear: Stretch and become flexible, and avoid the risks of muscle damage, strains, and painful, inflexible joints.

Coming up. With these basics on the importance of stretching and flexibility to the quality of your life, you are ready to take the next step on the journey of stretching to improve your overall health. The next chapter will go more deeply into the benefits of stretching and what it can do for your body.

THE BENEFITS OF STRETCHING

Get Ready to Live a Pain-Free and Healthy Life

Let's pick up the pace and broaden the scope: You've taken a peek behind the curtains of stretching and flexibility, but that's just the tip of the iceberg. There is still an entire world of knowledge and understanding that remains for you to discover.

In this chapter, you will explore all the benefits of stretching and how it can really help you live a pain-free and healthy life, so get ready for an extensive look into what the benefits of stretching really are and how they can bring a range of improvements to your complete being.

Benefit: Reduction of Lower Back Pain and Arthritis

As we age, arthritis becomes the dominant cause of many joint-related aches and pains, but especially in the lumbar, or lower region of the back. As you'll recall, osteoarthritis is the most common form of arthritis, and it's the primary source of pain and discomfort in the lower back. As the years pass, the cartilage that separates and protects the spinal facet joints—to prevent friction between the vertebrae—gradually deteriorates.

The lower back pain may be intermittent, but over time can persist. And it's not limited to one region of the body: osteoarthritis can affect your neck, hips, knees, hands and fingers, and toes, causing pain wherever there is joint movement.

Spinal stenosis is another source of lower back pain. It's the narrowing of the spinal channel that the spinal nerves travel through as they carry signals between the brain and skeletal muscles. As the channel narrows, the spinal nerves can become compressed and lead to the pain of sciatica, along with numbness, weakness, and tingling, in the buttocks and legs, as well as the lower back. This condition is often called a "pinched nerve."

Back pain from osteoarthritis and spinal stenosis are considered to be natural and inevitable consequences of the aging process, but as you are coming to realize, the pain and stiffness they cause can be controlled by selected stretching exercises, performed correctly to avoid injury, which could make the pain worse. When performed regularly, stretching by seniors can improve elasticity, flexibility, and range of motion in the spine and other affected joints.

Benefit: Reducing the Risk of Falling

Falling is more serious than most people realize, until they get older and it happens, and in addition to the shock of the experience, they may suffer the potentially serious injuries that falls can cause; broken bones included!

You'll recall from the previous chapter that falls are more common among seniors than you'd expect, with one in three hitting the ground or tripping on the stairs each year. Falls are the leading cause of injuries among those who are age 65+, reports *Harvard Medical School* (2022); 2.5 million of them will need emergency facility attention annually, *Lifespan* (2021) notes.

Given the serious risks that falling poses, it's important to recognize the importance of flexibility in allowing a greater range of motion, which helps you not only to improve your balance, but also extends your stride so you can step far enough to keep your stability and stay on your feet when you slip or stumble.

Specifically, "Improving flexibility in the hamstrings, quadriceps, and the lower back along with greater mobility in the

hip joint is important in the prevention of falling in older adults" (*Lifespan*, 2021).

Benefit: Improving Your Posture

Your posture depends on the strength and resilience of ligaments and tendons in the chest and shoulders; but these connective tissues gradually lose flexibility and elasticity as their water content is reduced over the years. Combined with years of bad posture habits—especially sitting bent forward computing or reading—the tightening of these tendons and ligaments generally leads to continual poor posture:

It's characterized by forward leaning, the rounding of the upper back and shoulders, and hips thrust forward, instead of being vertically aligned. In addition The 'S-curve' of the lower spine compresses, resulting in lower back pain. These effects are obvious among many seniors.

Reversing these postural defects and discomforts begins with stretching routines to improve flexibility, combined with new behavioral practices to sit up and stand more upright. With consistent stretching, you can loosen tight muscles, tendons, and ligaments to extend your range of motion. A further improvement in posture will result from strength training; just be sure to follow a routine designed for seniors to prevent injury.

As a simple way to get started, Pilates instructor Emma White recommends a front stretch, plus a back stretch that will bring the spine "Back into an upright position, stretching the muscles in the front alongside strengthening the muscles in the back," which she says will help support the spine and keep it upright to "improve and maintain optimal posture" (*Lifespan*, 2021).

Benefit: Increased Energy for the Day

Stretching is an ideal way to warm up and get your body ready for the entire day. After a night's sleep, your respiration and circulation—breathing and blood-flow—are at

their lowest levels, and stretching can gently get those levels up, and help keep them up.

Stretching can raise your energy level by increasing the flow of blood throughout your body. But not all types of stretching achieve the increased blood flow: This effect depends on the movement that defines dynamic stretching, as compared to static stretching, which is without motion. Typical dynamic stretches include arm swings, leg swings, half squats, and lunges; those who practice yoga and tai chi perform dynamic stretches in their routines.

Dynamic stretching is more about warming up the muscles than fully extending them, as it increases circulation and the flow of oxygen and nutrients to every cell; raising the body's energy levels, along with performing its primary function of increasing flexibility and lengthening your muscles. Renewed energy helps seniors to be not only more physically active, but more socially active and independent as well.

Benefit: Reduced Discomfort

Discomfort: It's an inevitable consequence of aging; of gaining the senior status that you've earned with the years. Even if you've been able to avoid the onset of serious diseases, there are the pains, the aches, the tightness and inflexibility that remind you of the vulnerabilities that arrive over time. Seniors also experience a nonspecific, general feeling of discomfort, like things just don't feel that good, which can lead to inactivity and even depression.

But stretching can be your trusted ally in turning back the clock on many of these annoying and potentially debilitating discomforts. Stretching can relieve the pent-up tension that's been building up in your muscles and connective tissues.

In Chapter 1 we covered the different types of stretches, and in later chapters, you're going to receive training in these stretches; for now, be aware that the benefits of stretching are waiting for your commitment to regular—ideally,

daily—practice. You'll start slowly, and build up to longer, and deeper stretches.

Many seniors find that working with a trainer or therapist; what's called "Kika Method," results in more profound relief of discomfort, as the other person pushes your range of motion beyond what you could do yourself. Just be sure to let the trainer know when *enough is enough*; you don't want to overextend!

Benefit: Relief From Stress

Many people don't realize just how stressed they feel until they do a round of flexibility stretching, and discover just how relaxed and calm they've become after a few minutes. It's as if the tension simply evaporated.

We all experience stress; it's a natural part of living, but what matters is what we do about it. Our species evolved over many centuries to be able to react to danger, and this led to the sympathetic nervous system response, better known as fight-or-flight. It may have once kept us safe from lions and bears, but now it kicks in when someone is rude to us, or there's a deadline pending, or a driver just cut in front of us.

Our heart rate increases, blood pressure rises, and our muscles tighten. But stretching can help relieve this tension: "Stretching helps relax tight muscles while also taking personal time to focus on your body and slow down," according to Cristina Chan, personal trainer and creator of Australia's AF45 Recovery. She says that in combination, stretching plus intentional movement and taking time to breathe help you to decompress and get back to normal (*Live Science*, 2021).

Benefit: Fitness and Recovery

Fitness improves as circulation improves, and stretching is a great way to start circulation in preparation for an exercise session, or when you're just getting up and getting going in the morning. Dynamic stretching in particular, with movement and motion of the limbs and core, gently gets the heart muscle to increase pumping, and causes increased, deeper

breathing to ensure that the oxygen uptake needed by the muscles is in good supply.

Pilates instructor Emma White points out that “Dynamic stretching increases blood flow to the muscles and is a great way to prepare the body for more intensive exercise like running or cycling” (*Live Science*, 2021). She further explains that the increased, oxygenated circulation enhances physical performance, “By stretching our muscles, it can increase the mobility of the joint, therefore maximizing the potential of the muscle to produce more force.”

Stretching before and after exercise or any other physical activity also lowers the risk of injury to the muscles, ligaments, tendons, and joints. Conversely, stretching is generally used to assist in the recovery of injuries; the specific types of these recovery stretches are prescribed by experts in rehabilitation, to be practiced and increased gradually for safe recovery.

Benefit: Sleep Better; Sleep Longer

It is now well established in the medical community that we—all of us, no exceptions—need at least 7 hours of sleep every night, ideally 8. Those who claim to only need 4 hours of sleep a night are potentially doing harm to themselves. Sleep is when the brain sorts through the day’s inputs as you dream during the REM (rapid eye movement) phases, and enables the deep phases when brain and bodily repairs occur.

But stress, anxiety, worries, fears, and just too much thinking about what was, and what will be, cause many of us to have trouble falling asleep, and staying asleep (insomnia). The treatments are numerous: Avoiding caffeine late in the day; reducing alcohol consumption (it messes with your sleep cycles); not working or looking at digital devices before bed; and going to bed and getting up at the same times every night.

In addition to those good practices, stretching before bed can help you to sleep well, and *without* taking supplements like melatonin, or sleep-inducing drugs:

“Stretching can improve the quality of sleep by reducing mental stimulation,” says former professional dancer and now physical trainer Natalie Simmonds (*Live Science*, 2021). When you’re stretching and deeply breathing, you go from “sensory overload” to slowing down, and a sense of relaxation travels through your body.

Try several static (nonmoving) stretches, with some deep slow breathing, just before climbing into bed: nothing strenuous; just feel the stretch as it pulls the tension out of your muscles.

Benefit: Mental Clarity

Who doesn’t want to think more clearly, to be sharply focused? The range of distractions we experience combines with the tensions, pressures, and stresses of contemporary life to make it hard to think with clarity. We often have too much to do, and too little time to get everything done.

Avoid multitasking, which is stressful and ineffective, as your brain can only process one thing at a time. Work on one thing at a time, give it your full concentration, and see it through to completion before starting the next project.

Can stretching help? Let’s recall stretching’s range of benefits for seniors, and recognize how each helps to improve mental clarity:

Reduction of pain and discomfort. If you hurt less, your mind can move on and not be preoccupied.

Lowering the risk of falling. One less thing to worry about as you walk, and less chance of having injuries to contend with.

Improving posture. Standing straighter raises your self-esteem as well as helping to prevent muscle and joint strain.

Increased energy. More oxygen and nutrients are delivered to your brain, so it is able to function at a higher level of neural connectivity.

Relief from stress. Your heart rate and blood pressure can return to normal as the fight-or-flight response subsides. Anxiety diminishes and confidence returns.

Fitness and recovery. As with increased energy, the brain receives a rich supply of oxygenated and nutrient-rich blood, improving its functionality.

Better, longer sleep. The brain can repair and restore neural connections and lower stress as it organizes thoughts at the subconscious level.

In wrapping up this chapter, you are able to recognize that stretching is highly beneficial on many levels, offering many incredible ways to help your body and your mind.

With all these benefits of the power of stretching that you can look forward to, hopefully you're motivated and excited to continue your stretching journey.

Let's head to the next chapter and get to better know the principles of stretching by confronting and debunking the common myths about stretching. Some of these may surprise you.

CHAPTER 3

THE DEBUNKED MYTHS OF STRETCHING

What You Can Trust and Believe

The internet has become the most important source of information for most of us, but it's a mostly unregulated resource, exposing you to quite a bit of false and misleading information that's coming from dubious sources. These uncertainties might make you hesitant about starting your stretching journey.

Here, we will debunk some of the myths out there so you can have an informed and well-educated experience with your stretching exercises.

Information and Misinformation

How often do you hear the term 'misinformation'? It's in popular usage now because people are tending to believe whatever is said online or on TV; unsubstantiated data and conclusions accepted as facts. Psychologists long ago identified the "power of the printed word" to identify the phenomenon—now updated, of course, to the "digital word," and accelerated by social media.

Even in science and medicine, opinions can count more than clinical research, with a tendency to jump to conclusions based on a few observations. It's what's known as anecdotal evidence, e.g., "Three of my friends didn't get a flu shot and didn't get sick." So what can you trust? Look for statistically significant findings in a controlled test among a large sample that is representative of the population.

The fields of nutrition and physical fitness are loaded with myths and misconceptions, shared from person to person, and based on less-than-factual information. For example:

Is **breakfast** the most important meal of the day? Not according to nutritional studies; it's a myth perpetuated for generations, without any basis in fact. Our bodies do best based on the entire day's diet, and there's no harm if breakfast is light—just don't base it on donuts and sugar-laden beverages!

Why is it an accepted physical fitness goal to take **10,000 steps** a day? Not based on research: It was a marketing idea from a Japanese maker of pedometers. Another myth! New studies are lowering the bar, and one report says 7,000 steps reaches a good threshold. Other research is emphasizing the intensity of the exercise over the quantity.

You need to drink *eight glasses* of water every day to stay hydrated. Says who? We get water in beverages, fruits, and vegetables. Do drink extra water when it's hot, after heavy sweating, whenever you're thirsty, and just be sure your urine isn't dark; that's a signal you need to hydrate.

Carbohydrates are bad for you, right? Wrong. Carbs provide the energy our bodies run on and should account for over 60% of a healthy diet. It's the nutritional quality of the carbs in your diet that counts: Go for vegetables, fruits, whole grains that retain their nutrients and fiber, beans, nuts and seeds, but not refined grains and sugar!

Sit-ups and crunches will get rid of that pot belly. Not really. That's a myth that ignores the reality that you can't spot-reduce. The only way to lose fat on your belly, or hips or thighs is to lose overall body fat, and that means burning more calories than you take in, primarily by eating less.

Nine Stretching Myths Debunked

Be prepared for a few surprises: Stretching is subject to myths that might throw you off track on what results to expect, when and how to do the stretches, or may even lead to injury, so let the debunking begin!

Myth #1: You Can Never Stretch Enough

It's definitely possible, even easy, to actually stretch yourself too much. In fact, stretching too much would mean you are overworking yourself, and overexertion is something you shouldn't do, even with stretching. We tend to think that overdoing it applies to high-stress activities like weightlifting, and pulling or straining something, but when we stretch, it can be tempting to push that extra few inches, or try to create that 'burn' when a joint has gone as far as it can.

When you overextend a stretch, you can irritate your muscles, or create a strain. In the extreme, muscles and tendons can detach, or tear. As a result, instead of improving your flexibility and conditioning, you can take yourself out of commission for weeks, or longer. It's not worth the risk! "It is important to slowly begin a stretch and focus on lightly lengthening into the stretch during an exhale," says Luke Lombardo, who is an AFAA certified trainer (*Prevention*, 2017). He advises not to force anything that causes you pain, or that doesn't feel right.

If a particular area is causing pain and you find that stretching provides some relief, but it's temporary, it may be better for you to focus on strengthening the muscles in those areas instead. For example, chronic lower back pain may be lessened by strengthening the muscles of the core, which support the lower back.

None of this is meant to imply that stretching should not be performed daily, or before and after exercise or other strenuous activity; just don't overdo it.

Myth #2: Stretches Must Be Held for 30 Seconds

Therapists and trainers debate about how long to hold each stretch, but no research is able to verify the optimal duration time of a stretch, or even if there is an optimal time: Stretch time may vary from person to person and their individual needs and capabilities.

There's agreement that a stretch may range from 15 to 60 seconds, or it could be two or three shorter stretches of

15 to 20 seconds, each over 60 seconds. For example, stretch for 20 seconds, let up for 10 seconds, then back to the full stretch for another 20 seconds.

This perspective is from *Healthline*: “Breathe deeply while you hold the stretch for 15 to 30 seconds. Then relax, and repeat the stretch, trying to move a little bit further into it during the second stretch” (Kilroy, 2018).

Another point of view comes from *CrossFit Gotham City* (2021), recognizing that stretching should be shorter before the workout, and longer afterwards: “Short duration (less than 30 seconds) static stretching can help prepare the body for performance,” and further identifying, “A huge benefit (attributes) to longer duration static stretching post workout, and during active recovery sessions.”

Summing up: When you stretch, extend until you feel you’ve gone as far as you can without straining or forcing (remember, it takes days, weeks, and months to develop flexibility, so don’t try to get there all at once). When you’ve completed the stretch and feel comfortable, move on to the next stretch. Keep the stretches brief before exercise, and longer when cooling down.

Myth #3: Stretching Prevents All Types of Injuries

With the understanding that there is no blanket claim of injury prevention that can be made for stretching, there is consensus among therapists that stretching does provide some degree of protection against injuries from sports, exercise, and other forms of exertion. Light stretching before, and deeper stretching after workouts is recommended.

Orthopedist Dr. James Larson cites both sides, saying, “A plethora of studies show that static stretching does improve joint range of motion. But an equally impressive number of studies show that it doesn’t prevent injuries!” (Larson, 2018).

AFAA certified trainer Luke Lombardo, believes that stretching offers at least a degree of protection, saying “When done correctly, stretching can help reduce your like-

lihood of injuries because it increases blood flow to the muscles and increases joint range of motion” (*Prevention*, 2017).

But there are limits that you need to recognize: While stretching definitely increases the flexibility of muscles, ligaments, tendons, and joints, if you overextend a movement, or lift too heavy a weight, or assume the wrong posture (like bending over to lift a box), you can pull muscles, regardless of how diligently you stretched beforehand.

Injuries in sports and athletics at all levels may be attributed to many causes including muscle imbalances, poorly performed techniques, and not warming up sufficiently. Trainer Kelvin Gary says in *Greatest* (2012) that the “Risk can be minimized by stretching regularly as part of a warm-up and cool down,” adding his view that injuries can be complicated, but “Stretching may be one way to keep them at bay.”

Stretching should not be prioritized for injury prevention, but considered precautionary; the first priority for injury prevention should be caution and restraint when performing the exercises and activities.

Similarly, if you’ve overextended your muscles during a workout, stretching may help relieve some of the discomfort, but won’t heal or cure an injury.

Myth #4: You Only Need to Stretch a Few Times a Week

In principle, if you are going to use your muscles, connective tissues, and joints every day (and you will unless you stay in bed all day), they should be flexible, to ensure ease of movement, and (as in the previous myth) to reduce the risk of strains.

It depends: For some people, full body stretching on every day of the week may be overdoing it. A good rule of thumb is to at least stretch on days when you will be working out, or involved in physical activity.

Some advocates of stretching like the feeling and the flexibility it provides, and would feel they were missing some-

thing if they did not begin, or end, every day with a light round of stretching. They may do some stretches on their own, or as part of a yoga or tai chi routine. According to triathlon coach Andrew Kalley, “Consistent stretching is key to increasing flexibility, range of motion, and potentially reducing the risk of muscle strain” (Schwecherl, 2012).

So it’s your call to stretch on at least three or four days a week, or up to seven, with the added incentive for more days than fewer being that consistency is the best way to fully appreciate the benefits of stretching.

Myth #5: Stretching Doesn’t Improve Performance

Dynamic stretching uses movement that not only loosens muscles, but strengthens them as well; not as much as resistance workouts with weights, but enough to help give your muscles a boost. With the muscles pre-conditioned by dynamic stretching, the workout that follows may have a head start on performance; whether it’s an aerobic cycle ride or treadmill uphill walk, or a round of bodyweight calisthenics.

Pre workout stretching can make it easier to perform certain movements, exercises, or to hold static poses, according to trainer Lombardo, who counsels “It increases joint range of motion, which in turn can help your muscles be more efficient” (*Prevention*, 2017).

The increased flexibility you get when you stretch will improve your range of motion, allowing you to reach, bend, jump and climb in ways that can really boost your performance and endurance.

Myth #6: Stretching One Muscle Group Will Relieve It

The first thing to realize is that your muscles and muscle groups are interconnected, so no muscle or muscle group operates in isolation. A pain that you feel in your lower back, for example, may actually be caused by strains or pulls in muscles in your hips or your core. Discomfort in your upper back might derive from a tough workout you gave to your chest and shoulders.

So even if you stretch the muscles in your lower back, it may not relieve the back pain. The same goes for the upper back problem. The better technique is to go through a total body set of stretches; that way all of the muscles associated with the back pain will be flexed and toned, and should provide some pain relief. Another benefit provided by the full set of stretches is the overall good feeling of relaxation that it provides, which can further diminish your awareness of the back pain.

Myth #7: I’m Flexible, So No Need to Stretch

Stretching does far more than improve flexibility (although almost everyone could further improve their flexibility with stretching!) Even someone who is ‘naturally’ flexible, and makes impressive movements, may not be at peak flexibility.

Stretching can be an effective pain reliever: As explained in the previous myth, a total body set of stretches can ease all of the interconnected muscle groups. Prior to exercise, stretching can increase blood and oxygen flow to muscles, warming them up to “ease into” the workout, improve performance, and reduce the risk of injury.

Myth #8: Stretching Needs to be Uncomfortable

This myth goes back to the now discredited “no pain; no gain” concept, which has been found to be incredibly false! Pain is a warning; it lets you know that damage is about to be done, so back off; don’t push on. We ignore pain and discomfort at our own peril!

As already mentioned in the principles of stretching, should you feel sharp pain or extreme tension during a stretch, that means you either aren’t following the technique correctly, or you are overextending and pushing too hard. Ease up!

Stretching should feel good, and it always will when it’s done right. Pain and discomfort have no place in this beneficial and relaxing discipline.

Myth #9: Stretching Makes You Weak

It's hard to imagine how this myth got started, but it obviously wasn't thought of by anyone who takes stretching seriously, and performs it correctly. Can you imagine athletes like gymnasts or competitive weightlifters *not stretching* before a competition because it might make them weak?

They know the many benefits of warming up, including getting the heart to slowly increase the rate blood flowing and carrying oxygen and energy-supplying nutrients to the muscle fibers. Athletes in every field, and anyone who takes exercise seriously know that stretching not only warms them up, but helps prevent injuries, when done correctly.

Pre workout and pre competition stretching has been proven to *improve* strength by enabling muscles to contract more effectively and generate force through an extended range of motion.

Now, the principles. With nine myths debunked, and the truth revealed, you're ready to officially start your stretching journey by going through the main principles.

CHAPTER 4

THE PRINCIPLES OF STRETCHING**Maximizing the Potential**

Now is the time when you really start your stretching journey. You've learned a lot so far, but now you're going to take a deep dive into the fundamentals of when to stretch for optimal benefits, and when not to stretch to avoid risking doing harm.

The principles of stretching you will learn in this chapter will really help you maximize the potential of the effort you make to stretch correctly, at the right time and in the right way.

Guidelines, not rules. It's necessary to point out that the rules of stretching are not rigid and inflexible. There are varying opinions among physical therapists, chiropractors, and trainers; for example, whether you should stretch every day, or several times a day, or how long a stretch should last. You'll be able to determine what works best for you, based on your own physiology and preferences.

Where all the authorities concur is when it comes to safety and prevention of injuries. It's agreed that muscles are far more effectively and safely stretched when they're warmed up than when they're cold. Do only light dynamic stretching (if any) before working out or exercising, and save the more serious stretching for when the muscles, ligaments, and tendons are warmed and more flexible.

Another caution that is consistent is to avoid overextension. Overdoing a stretch can cause pulls and strains, and even if you don't do damage, overextending a stretch can cause the muscles to contract, defeating the purpose of the stretch; why this happens is explained below.

The following section on the basics of stretching leads off with safety precautions, given their importance.

The Basics of Stretching

First, do no harm. —The Hippocratic Oath

The fundamental purpose of stretching is to increase the length of the resting muscle that is being stretched. In doing so, your first priority is to avoid injuring yourself, in the spirit of the Hippocratic Oath's opening pledge by doctors to do no harm to their patients. This caution is based on the reality that when you are stretching muscles, you are also putting stress on other soft tissues that are less able to be stretched, and have different responses to stimulation.

A key factor in stretchability is elastin, which the Cleveland Clinic (2022) defines as "A stretchy protein that resembles a rubber band." Elastin is among the most abundant proteins in the human body, and it's capable of stretching out and shrinking back, or recoiling. "It's a major component of tissues in your body that require stretchiness."

Elastin is abundant in the tissues of your muscles, giving those muscles an appreciable ability to stretch. But nature was not generous in handing out elastin to the tendons and ligaments that connect the muscles and bones; tendons and ligaments contain very little, or no elastin. Yet tendons play an essential role in stabilizing the connective tissue between your muscles and your bones, and ligaments connect and stabilize your bones to each other.

The key point here is that you can easily stretch your muscles, but not the tendons and ligaments that are also being stretched. Thus the need to not overextend and end up pulling or tearing tendons or ligaments, even if the elastin-rich muscles can stretch farther and don't complain!

Adding to the "First, do no harm" caution is recognizing that nerve fibers—which run through muscle tissues—have limited stretchability, and overextension can have painful consequences. Further, there are nerve stretch reflex receptors within muscle fibers: "If a muscle is stretching too far and too fast, these receptors send the appropriate signal and tell the muscle to contract," which is the opposite effect you are seeking when you stretch (Watson, 2013).

When to Stretch

We've already touched on the merits and risks of stretching before and after exercise; now let's take a more in-depth look, based on research conducted by a trusted resource, the American College of Sports Medicine (ACSM). You may see similarities and differences compared with what you've read earlier; what follows is research based, and presumed to be reliable.

Warm Not Cold

A principle conclusion from their studies is that stretching should not be performed when the muscles are cold. Obviously stretching after working out or exercising is okay; it's the pre workout stretching that is of concern. ACSM concluded that athletes "Who stretch while cold prior to training may be more prone to injury than if they didn't stretch at all!" (Watson, 2013).

Other studies have found little benefit to stretching while your muscles are cold, and it is not likely to protect you from injuries. "Therefore, the best time to stretch is when your muscles and connective tissues are warmed up."

This does not mean you can't stretch before your exercise or workout:

A few minutes of walking and activities like light flexing can start the warming up process. Massaging your muscles, especially with foam roller, will add to the warming up. Just some firm rubbing of the muscles for 20 seconds or so can loosen the muscles, and start the blood flowing.

Dynamic stretching, as we discussed in Chapter 1, is an ideal way to warm up cold muscles. Try rising up on your toes, doing a few leg lifts, swinging your arms, bending over to reach for your toes, and lying on a mat (on your back) and pulling your knees towards your chest. Remember, these are done gently, not forcefully). You will have a full rundown of dynamic and static stretches coming up in Chapters 7-10.

Relieving Tension

Stretch when you are tense; in most cases it will do some good, at least in the short-term. Stretching tense neck or back muscles can have a therapeutic effect, but be careful to start slowly, and be ready to back off if the pain increases. This could indicate that there's an injury that needs professional attention. "Tension or increased muscle strain is a protective mechanism and can easily be triggered again if no further action is taken" (EGYM, 2022).

It's not known definitely whether stretching induces any physical changes in tense muscles, or what causes certain muscle groups to tighten up under stress. But even if the resulting relief is purely psychological, it's worth the effort to try stretching as a solution. You should stretch if you believe it will help, and it probably will.

In addition, tension in susceptible muscle groups may be reduced by strength training, which further increases circulation in the muscle fibers. Long-term neck and back pain may be prevented by the combination of stretching and resistance exercises (when performed correctly and without straining, of course).

The Main Principles of Stretching

There Should Be No Pain

The objective is to stretch effectively and to do so comfortably, without pain; stretching should feel good to do good. It's not complicated: "To be effective, stretching should be done

slowly, gently and frequently," according to the Physiotherapy Department of Misericordia Community Hospital (MCH):

Slowly implies that the muscle being stretched is being extended slowly and gradually, enabling you to remain aware of the tension in the muscle at every stage of the stretching movement. No sudden movements; you want to be able to know when you've gone far enough and can safely stop before stretching too far. If there is pain, the stretch has gone too far.

Gently allows you to manage the tension in the muscle that you're stretching so that you can hold the full stretch for up to 30 seconds without straining or feeling pain or discomfort. Then relax, wait for 10 to 20 seconds and repeat the stretch for up to 30 seconds. If the tension is too great; if there is pain, ease back to the point of comfort.

Frequently is based on the principle that to be effective the stretching should be performed every day, without incurring pain, although when you are starting out, up to four shorter stretching sessions per day is recommended by the physio team at MCH.

Stretching four times a day, every day, seems excessive, but their findings show that multiple brief stretching sessions is more effective than one long session until flexibility is improved: "Once you have achieved the flexibility you require, doing the exercises once or twice per day will be sufficient to maintain the flexibility" (MCH, 2022).

Stretching is able to increase flexibility, relax your body and help even to moderately strengthen your muscles by warming them up. This all depends on doing stretching right, so that your muscles can react in the way you intend.

Do not force a stretch or overexert yourself. Again, "First, do no harm," and make safety and injury-prevention your top priority.

In the event that your stretching causes intense pain, something you are doing is wrong, and you need to ease back or

stop, immediately. Of course, slight discomfort during a stretch may mean you're at your limit, so hold it if you can, or back off slightly.

Stay On Track

Here are some headlines to cover additional key principles:

Stick to the basics during your learning stage, by limiting the number of different stretches until you master the fundamental stretches, and can perform them without difficulty. You may try various methods to elongate your muscles; through trial and error you will determine which methods work best for you.

Resist the temptation to skip around to try lots of different stretches before you are fully capable and comfortable with the basics. Strive to find one or two stretches for each major muscle group: Neck, shoulders, arms, chest, core, hips and glutes, upper legs, lower legs, ankles and feet.

When you are comfortable with the basics and feel you are ready, you can study some more advanced stretching techniques and build them in your stretching workouts

Stretch the correct muscle, and stretch it correctly. This book will provide you with instructions for each muscle group; be attentive to these instructions and follow them to optimize the stretches and avoid pulls and strains.

Stretching needs to be frequent; Rome was not built in a day, and flexibility cannot be achieved in a day either, or in two or three days, or a week. It takes time, and unlike building a city, it has to be renewed continuously. Frequency is essential; first to achieve a good level of flexibility, and then to sustain that degree of flexibility.

Your commitment to frequency is what will condition you, and keep you conditioned. So consider the advice of MCH above, and plan to perform four brief sessions of stretching every day for the first weeks, then cut back to three each

day, and about a month or so after you've started stretching, you can plan on one or two sessions each day. Work these stretching exercises into your schedule. In addition to physically conditioning you, those few minutes will lower stress and tension.

Go slow and hold the stretch for best results. Stretching needs to be done gradually, so hurrying up is not encouraged. Ease into each stretch, feel it elongating the muscle, and hold it long enough for the stretch to reach its full potential.

Holding can be for one long stretch, for up to 60 seconds (but no more than 60), or two or three shorter stretches, like 15 to 20 seconds each, with a rest of 10 seconds between stretches.

The 11 DON'Ts of Stretching

Don't push yourself too hard or too far. The feeling should be a slight stretch in your muscles as you extend gradually, but as has been emphasized earlier in this chapter, your stretching should not be painful.

Don't limit yourself to the same few stretches repeatedly. You'll be exposed to the instructions for many types of stretches, and by performing a wide assortment, you can ensure that you are working towards achieving full-body flexibility.

Don't extend your limbs fully straight while stretching. You will help prevent injury to joints and tendons by slightly bending your arms and legs, and not locking your elbows and knees.

Don't bounce during your stretches, or risk overextending the stretch and straining a muscle or tendon. It's okay to give a little extra when you feel you've reached the limit, but keep it gentle, not forceful.

Don't stretch a muscle that's injured; the stretch may make the injury worse! Injured muscles respond best to warmth,

gentle massage, and especially rest, to allow the repair process to proceed.

Don't neglect warming up before stretching. We've cautioned about stretching cold muscles; in addition to light movement and walking before stretching, you can count on massaging the muscles, or even taking a warm shower.

Don't continue the stretch when you feel pain. We've covered this already but it's worth repeating: "First, do no harm." Pain means you are doing something wrong, or a muscle, ligament, or tendon is being overextended. Back off if it hurts!

Don't hold your breath or forget to breathe. Sometimes you concentrate so intently on the stretch that you inadvertently stop breathing. You need to keep the oxygen flowing during the stretch (or any exertion), and deep breathing will help relaxation. (This will be the subject of the next chapter.)

Don't lift your shoulders when you do a head lift. Your objective is to stretch and strengthen your neck muscles, so those muscles need to be isolated. Don't let the shoulders do the work for the neck!

Don't tilt your head back when doing a neck roll, because there's a risk you could put a strain on the vertebrae in your neck. To stretch your neck safely, turn and tilt your head to each side, and tilt your chin toward your chest. You may also extend your chin forward and straight back (without tilting), advises WebMD (2022).

Don't hold an intense stretch longer than 20 seconds, and be careful not to overextend. Less intensive stretches, as mentioned, can be held for at least 30 seconds, and up to 60 seconds, at most. You may prefer two or three shorter stretches (e.g., 20 seconds each, with a few seconds rest in-between, as noted in the previous section).

Okay, breathe. We've mentioned the role of deep, managed breathing earlier; now is a good time to get serious about breathing, and the important role it plays in helping your stretching, as well as lowering stress.

CHAPTER 5

THE POWER OF BREATHING

Stretching and Breathing: A Positive Relationship

Breathing is not something we think about. It's automatic, it's continuous, it's an unconscious reflex action, and we only become aware of it at times when it stops—like when you hold your breath, or can't breathe for some reason—or when you've exerted yourself to the point that you're breathing fast and hard after a hard workout, or a high intensity interval—like running flat out for 30 seconds, or trotting up a flight of stairs.

But a growing number of people are making a conscious effort to be aware of their breathing at other times, especially when practicing meditation or mindfulness, or during yoga. There are some who combine deliberate breathing with stretching and exercise. We refer to this as managed or proper breathing, and you are going to learn why it will add to the positive effects of your stretching. Breathing and stretching go hand in hand!

This chapter will instruct you on how to breathe with your stretches. Learning how to properly breathe can really enhance the entire stretching experience because most of their benefits are mirrored, and their combined effect is synergistic.

The Basics of Breathing

What happens when you hold your breath? It's okay for a short period, maybe 20 or 30 seconds, but then unless you are trained and conditioned, very quickly you begin to feel a need to resume breathing. As the seconds tick by, the urge to breathe intensifies, and before long, the battle is over and you're taking deep breaths. Even highly conditioned divers

who can stay underwater for two minutes or more, have their limits.

Your brain is hardwired to keep your breathing going, without exception, because of our body's absolute dependence on oxygen. The brain sends signals via the ubiquitous vagus nerve to the respiratory system to keep it going at a given pace, just as it sends signals through another vagus branch to regularize your heartbeat.

The collaboration of breathing and the pumping of the heart keeps us alive. You can survive up to a month without food; a few days without water; but it's a matter of minutes when oxygen is concerned.

Why You Breathe

Breathing is essential for life because it brings in the oxygen that is needed by our cells. Here's how it works:

The air we breathe contains about 20% oxygen; the rest is mostly nitrogen. It's the oxygen that matters, because our cells need a continuous supply to metabolize and create energy and build proteins.

This is a 24/7 process, whether you are walking, sitting, or sleeping, with the amount of oxygen needed depending on the level of activity.

When the air you inhale enters your lungs, it finds its way into many small alveoli, or air sacs that line the lungs, where the oxygen enters the bloodstream and is absorbed into tiny blood vessels, called capillaries.

Most of these oxygen atoms are absorbed by the red blood cells, which contain the protein hemoglobin. Each hemoglobin molecule contains two iron atoms that bond readily with the oxygen atoms.

The oxygen-enriched red cells (there are trillions of them!) travel through your arteries and then into increasingly smaller blood vessels—capillaries—to be delivered to every cell in every part of your body.

At the cellular level, the oxygen is released to enter the cells, and the waste gas of metabolism, carbon dioxide (CO₂), leaves the cells to enter the bloodstream and be picked up by the hemoglobin (that has released its oxygen), and carried back to the lungs through your veins, where it is released and exhaled.

The hemoglobin is then free to acquire fresh oxygen, and the cycle repeats like this with every one of the 10 to 15 breaths you normally take every minute.

How You Breathe

Your breathing is the process of inhaling air and exhaling air, filling and emptying the lungs rhythmically and steadily. This cycle is supported by your diaphragm's expansions and contractions. The diaphragm is a large, flat muscle that extends below the lungs, and forms the floor of the chest cavity. We tend to think of the ribs and chest muscles as being responsible for breathing, but your diaphragm plays a key role:

As you inhale and air begins to flow into your lungs, the diaphragm expands downward and outward; this lowers the air pressure in the chest cavity, which increases the expansion and filling of the lungs. Imagine blowing up a balloon in a vacuum.

When you exhale, the reverse happens: The diaphragm pulls back inwards, increasing the air pressure in the chest cavity, and helping to force the air out of the lungs. Imagine letting the air out of that balloon in a high pressure chamber. Whoosh!

While we can't see or directly feel our diaphragm, we can manipulate how far out it extends, and how far back in it contracts, giving us the ability to influence how deeply and fully we breathe.

The term "**diaphragmatic breathing**" is used in this chapter and refers to deep, slow, deliberate breathing with full extensions of the diaphragm by pushing your gut outward

on the inhale, and then full contractions, pulling your gut back in towards your spine as you exhale.

The Benefits of Proper Breathing

The experience of stretching is enhanced by doing deep, thoughtful breathing while the stretching is underway. In addition to the life-giving role of normal breathing, the increased oxygenation of managed, deep breathing can improve your stretching, by improving the elasticity of your muscles. This action not only increases the amount of blood that is delivered to the muscles; it also increases the oxygen concentration, meaning the muscles will have more energy and elasticity.

Helps to Relax

Deliberate breathing has been found to increase the relaxation effect of the stretches, as well as helping you extend and optimize each stretch. The Massachusetts Institute of Technology (MIT) advises, “Proper breathing while stretching increases circulation, relaxes the body and helps get rid of lactic acid buildup” (*The Nest*, 2022).

(Lactic acid is a byproduct of exercise; when it builds up in muscle fibers, it makes muscles sore and causes the day-after-workout discomfort you may have experienced.)

As we’ve indicated, we are too often subject to overreacting to life’s many pressures and incidents, resulting in stress, and the anxieties and worries that stress triggers. It’s unpleasant at best, and over time chronic stress can lead to chronic inflammation, and the diseases it can lead to, from heart disease to autoimmune disorders.

In addition to improving circulation and oxygenation of the muscles, the relaxation that deep breathing induces is also the result of toning of the vagus nerve, encouraging it to notify the brain that the fight-or-flight response of the sympathetic nervous system can stand down, signaling that “all is

well,” and the calming parasympathetic nervous system can prevail.

Lowens Blood Pressure

In addition to slowing the heart rate and making the body more relaxed, managed breathing can lower blood pressure; it can do this with just a few deep, thoughtful breaths for immediate, short term effects, and can have a less pronounced but measurable effect on blood pressure over the long-term.

Everyday Health (2021) cites a review that analyzed 17 studies involving a total of 1,165 participants that confirmed that slow, deep, deliberate breathing resulted in modest but significant reductions in blood pressure. “The authors concluded that breathing exercises may be a reasonable first treatment for people with prehypertension or low-risk high blood pressure,” and emphasized this applies “especially to those who were reluctant to take medication.”

Improves Quality of Life

Whether you are in good health or have respiratory medical issues, deep, deliberate breathing is beneficial. Those who meditate focus most of their concentration on their breathing; being aware of every inhale and exhale, timing their breaths as they recite a rhythmic mantra, and even in meditative techniques that are silent. The deep, slow breathing helps to achieve what Dr. Herbert Benson named the “Relaxation Response,” to describe the “Ability of the body to stimulate relaxation of muscle and organs” during his studies that verified the stress-reduction effects of meditative practices (*Wikipedia*, 2022).

This benefit is particularly applicable to those with respiratory problems, including asthma and COPD. The American Lung Association reports that slow, deep, diaphragmatic breathing is being taught in COPD pulmonary rehabilitation training, because it is believed to improve oxygen-intake by helping to make the lungs function more efficiently. (*Everyday Health*, 2021). Similar findings among COPD patients

were concluded following a “Systematic review and meta-analysis published in August 2019 in the *Annals of Rehabilitation Medicine*.”

In cases of mild to moderate asthma, diaphragmatic breathing exercises have been found to help reduce certain symptoms of lung dysfunction and hyperventilation, leading to improved quality of life, as reported in a 2020 Cochrane review.

Improves Immunity

Deep, slow, deliberate breathing brings a good supply of oxygen to the bloodstream, and onward to the cells throughout the body, as we’ve discussed; the full diaphragmatic exhales rid the body of not only carbon dioxide, but toxins, as well. Well-oxygenated blood ensures more effective functioning of all of the vital organs, and especially supports a vibrant, healthy immune system.

According to the *Times of India* (2020), a “Cleaner, toxin-free and healthier blood supply helps to ward off infection-causing germs from the base and strengthens your immunity.” Deep breathing is also believed to act as a “natural toxin reliever.” Faster recovery from illness is credited to better absorption of vitamins and nutrients, due to the higher oxygen level in the bloodstream.

Improves Sleep Patterns

Deep breathing before going to bed is believed to help you to fall asleep and to stay asleep. At first, this may appear to be counter-intuitive, with the increased oxygen supply bringing more energy—not what you’d expect when trying to sleep. But the dominant benefit at this time is the state of deep relaxation that the breathing exercise induces.

Being relaxed as you sleep encourages more cycles of REM sleep—rapid eye movement—when dreaming occurs and the brain sorts the previous day’s impressions, as well as more time in the deepest sleep phases, when the brain performs neural repairs, and the body does healing.

Detoxification is another benefit: “Taking slow, deep, long breaths can signal your body to detoxify and return to a sense of calm, which can help you sleep better,” the *Times of India* reports. Some who are subject to insomnia combine deep breathing with meditation before going to sleep and find they are better able to sleep through the night.

Stretching and Breathing: The Relationship

As we’ve discussed, deep, managed breathing increases the amount of oxygen of each inhale, which brings more oxygen to the muscles, energizing them, and increasing their resilience and elasticity. The expansions and contractions of the diaphragm also press on blood vessels and organs, further pushing the blood through the muscles.

Enhance the Relaxation

Intentionally managing breathing while stretching to optimize each stretch you perform, by relaxing your muscles and preparing your body to extend and hold the stretch. “By focusing on your breath, it reduces the risk that you may hold your breath as you are stretching” (*FLXME*, 2020).

Concentrating on your breathing throughout your stretches also helps you to relax your mind and your body. Remember to be attentive to your breath, and consciously to “Deepen it as you stretch and focus on the muscle that is being stretched.”

Yoga and tai chi exercises integrate deep breathing into their stretches and poses. These ancient practices are known for their combining stretching and managed, conscious breathing to improve flexibility, balance, and overall relaxation:

A 2019 analysis of data published in *Mayo Clinic Proceedings* showed that middle-aged adults who had high blood pressure, and who practiced **yoga** five times a week over 13 weeks, “Had significant reductions in their blood pressure; the improvements were even greater when the yoga practice included breathing techniques and meditation” (*Harvard Health Publishing*, 2022).

Managing your breathing throughout each stretch helps your mind and body to relax.

Consciously focus on your breath, and deepen it during each stretch, while being aware of the muscles that are being stretched. This effort is thought to control the flow of energy in your body, leading to clarity and a sense of inner calm after a vigorous stretching workout.

Breathing the Right Way

To underscore the point, breathing is something we do naturally and unconsciously, but when stretching, breathing takes on a new, conscious dimension:

Instead of breathing normally, deeper breaths are taken, consciously, with deliberate inhales and exhales, and without holding your breath.

Your diaphragm is pushed outward on each inhale; this is done by forcing your gut outward; on the exhale, your diaphragm is pulled back in, feeling like you are drawing your gut towards your spine.

Ideally, inhale through your nose, and exhale through your mouth with your lips close together to slow the airflow. But if your nostrils are blocked or stuffy, no worries; inhale and exhale through your mouth.

“Use your breath to increase the intensity of your stretches” (*AZ Central*, 2022), by moving a little further into the stretch as you exhale, and holding the stretch when you inhale. “These small increases, accompanied by your breathing, help retrain your body’s stretch reflex.”

The pacing of your breathing should be natural, neither rushed nor delayed. The objective is to enrich the circulation of oxygen in the bloodstream, so there should be no pauses between inhales and exhales.

Breathe fresh air whenever you can; when indoors, the room should have a flow of air and not be stale or stuffy. Avoid anywhere people have been smoking, to not be exposed to residual or secondhand smoke. Be alert to any

toxic, chemical smells. Outdoors, when stretching and breathing deeply, stay clear of traffic, and car and truck exhaust.

Navy SEALs Box Breathing

Let’s conclude this chapter with a special breathing maneuver that’s been attributed to the SEALs who use it for immediate calming down and steadying before a tactical operation; you can use it at any time you need to rapidly de-stress or get your entire body relaxed.

Unlike all of the previous breathing instructions, there is some brief breath-holding involved. Box breathing can be performed sitting or standing; just be aware there’s a chance of becoming lightheaded for a few moments, so sitting may be safer:

Inhale through your nose (ideally), deeply and fully, for a count of 1-2-3-4.

Hold your breath for a count of 1-2-3-4.

Exhale through your mouth with lips circled, deeply and fully, for a count of 1-2-3-4.

Hold your breath for a count of 1-2-3-4.

This completes one 4-step cycle. Inhale again, deeply and fully, for a count of 1-2-3-4 to begin the next cycle.

Perform at least five and up to ten cycles. Resume normal breathing. If seated, stand up slowly.

It may take some practice to fully inhale and exhale during the counts of 1-2-3-4, and to get used to holding your breath after exhaling. Try box breathing even when you’re not stressed to appreciate the speedy way it can bring calm and a sense of control.

Next: Nutrition. Your muscles, and all of you, need good nutrition for optimal health and fitness. The next chapter will cut through the fads and misinformation to provide a clear path to eating and living well.

INTO THE WORLD OF HEALTHY NUTRITION

Your Knowledge is Your Strength

Stretching benefits your mind and body, helping you to relax, to increase your flexibility and range of motion, and to exercise more effectively and safely. But there's another side of the health, fitness and well-being equation:

Nutrition. It's essential for the maintenance, growth and repair of your cells, organs and muscles; it provides the fuel to supply your energy; and it's necessary for your health and for life itself.

Good dietary practices will keep you strong and able to more fully benefit from stretching and all physical activity.

Bad nutrition can have serious consequences, even affecting susceptibility to diseases, and shortening longevity.

Who to believe? Yet few subjects are more controversial than *what and when* we should eat. There are diets that emphasize protein; others that are higher than expected in fat content; and diets to replicate the eating patterns of our paleolithic ancestors. New studies are encouraging fasting, for many hours, or for full days. We are bombarded with advertising for supplements and prepared meals offering to take charge of your nutritional needs, with minimal involvement on your part.

Calories. And leading the 'parade' of dietary books, blogs, articles, and social media advisories is the subject of weight loss. It's an American obsession, and no wonder, with two-thirds of adults overweight or obese. Most of them are lacking in knowledge and understanding of nutrition, and are hoping for a shortcut to lose weight and keep it off.

Knowledge. Now it's time for you to get the facts by learning what nutrition is really about, and how you can adopt dietary practices that will keep you healthier and happier, helping you to manage your weight without obsessively counting calories! You will have more energy and greater strength; you will look better and feel better, and live longer.

You will learn how to follow the most medically endorsed eating practices, and discover how much you will love the wide array of delicious foods you can choose.

All About Nutrition

Nutrition is the acquisition of your daily consumption—everything you eat and drink. Our bodies require three **fundamental food groups**, and everything you eat contains one, two, or all three:

Carbohydrates provide the fuel that provides the energy we need to function, from the basic microscopic cells up to the muscles to move our fingers to our legs and arms. Toss aside all the negatives you hold concerning 'carbs': As you read in Chapter 3's refuting of myths, "Carbs provide the energy our bodies run on and should account for over 60% of a healthy diet." It's the nutritional quality of the carbohydrates that we need to be concerned about.

Proteins are the building blocks of our bodies. The proteins we eat are digested and broken down to fundamental amino acids, which are then recombined in the cells and rebuilt into new proteins. DNA, the genetic code in our chromosomes, determines what each new protein will be: Skin, an organ, a red or white blood cell, a hormone, or a muscle; every structure. A nutritionally complete protein requires up to 20 different amino acids; nine of which, called 'essential,' must come from dietary sources.

Fats are also a fuel for energy, but are mostly not used immediately after eating, but stored for later usage, kind of like a battery. Excess calories that we ingest and do not metabolize and burn (put to use for immediate energy needs) are stored as fat. Its energy is condensed: One gram of fat con-

tains nine calories, compared to four calories in a gram of carbohydrates or protein. Fats and oils are the same; if it's solid at room temperature, we usually call it a fat; an oil is liquid at room temperature.

In addition, our nutritional intake includes fiber, which is a complex carbohydrate that is mostly indigestible, but aids the digestive process, and is eventually broken down and utilized by the microbiome; the beneficial bacteria in our colon. Foods also supply vitamins, minerals, and antioxidants.

The Major Food Groups

Various medical groups, including the American Heart Association and the American Cancer Society, along with the U.S. Department of Agriculture (USDA) and other nutritional and dietary authorities have defined the basic food groups that should form our diets: Fruits and vegetables, whole grains, nuts and seeds, meat and beans, milk and dairy, fats and oils. These are the primary sources of the carbohydrates, proteins, and fats in your diet. There are other sources of calories, like refined grains, and sugar, which are popular, but not recommended.

You will see which sources of each food group are recommended for optimal nutrition and health. Later, we'll introduce you to one diet which incorporates all of these recommendations, and can be an endless source of delicious, varied meals. Hint: It's the diet of the healthy, long-lived residents of the Mediterranean Basin.

Fruits and Vegetables

A diet that is rich in vegetables and fruits is the essential source of energy-generating carbohydrates, and should be the largest component of your diet. It is recommended by heart and cancer experts and registered dietitians. They recommend that you eat five or more servings of a variety of vegetables and fruits each day. "Nutrition experts say that variety is key, because different fruits and vegetables have

different nutrients” (*breastcancer.org*, 2022). Variety in taste and color will bring you different vitamins and minerals, and will keep you from getting bored:

Consider all the green **vegetables** that are readily available, from lettuces, collard greens, and kale to broccoli, spinach, string beans, zucchini, and asparagus. Other colors: Yellow squash, corn, and peppers; red beets, tomatoes, peppers, orange sweet potatoes, and purple eggplants.

Among **fruits**, there are red strawberries, apples, raspberries, and watermelon; yellow peaches, nectarines and bananas; blueberries and blackberries; oranges and mandarins. You can enjoy fresh fruit and also dried fruit; just be aware that dried apricots, figs, and dates are high in calories!

Whole Grains, Nuts, and Seeds

What’s the difference between a whole grain breakfast cereal, and a refined grain cereal? Whole grain is unpolished and complete, able to retain its beneficial outer bran layer and the germ, containing the grain’s natural vitamins, minerals, and fiber. Refined grains have been stripped of these valuable nutrients. The vast majority of breakfast cereals are made with refined grains; the same goes for breads and pastas.

You have a choice today, as food suppliers react to the new guidelines. You can now buy healthful, fuller flavor, whole grain cereals, breads and pastas in most supermarkets. Read the ingredient listings; if it doesn’t say ‘whole’ before the grain, it’s not. And ‘multi-grain’ does not mean whole grain.

Whole, unpolished grains that you can eat and enjoy directly as part of a meal include brown rice, oats, barley, and quinoa. You may be aware of oatmeal’s growing reputation as being heart-healthy; make oat-based muesli with raisins, prunes, seeds, nuts, and milk. For greater convenience, some cereal brands now offer whole grains, with added bran and flax seeds.

Nuts are recommended for their beneficial oils, protein, and carbohydrates. All popular nuts are nutritious: Cashews,

hazelnuts, peanuts, walnuts, pecans, macadamia, and even pistachios. **Seeds**, like flax, chia, sunflower and pumpkin seeds are similar to nuts in nutrients, and are high in antioxidant omega-3 fatty acids, which combat free radicals and prevent inflammation. Toss some into breakfast cereals, soups, and stews.

Meats, Fish, Eggs and Beans

This is the high protein group, containing most or all of the essential amino acids to ensure your own body’s protein needs are being met.

Meat, meaning lean low fat cuts of beef, lamb, pork, chicken, and turkey, is an excellent source of the needed protein and fatty acids. Red meat is high in iron (important for women). But red meat tends to be high in heart-unhealthy saturated fat, so keep portion sizes low (a deck of cards is often suggested as the guideline size).

Fish is the protein source most highly recommended by nutritional authorities, because of its healthier type of fat, which is lower than meat in saturates, and high in antioxidants. Cold water fish are the most endorsed, including salmon, cod, mackerel, tuna, halibut, sole, and sardines. Try to have fish as your protein source more often than meat.

Beans are an option for vegetarians and vegans, but are recommended for everyone. Soybeans are a unique vegetative source of complete protein, and all other beans—black, pinto, lima, kidney, cannelloni—supply complete protein when served with grains, like mixing rice and beans. Dried beans require overnight soaking and then long cooking times; canned beans are an equally nutritious option (just check the label and try to get lower sodium versions).

Eggs are an excellent source of protein and iron, and are now fully endorsed medically, despite earlier concerns about cholesterol, which have been diminished. Two eggs provide 14 grams of protein, and are lower in saturated fats than meat or most cheeses. But go easy on the butter if using

it to scramble, fry, or make an omelet; and beware of bacon's saturated fats!

Dairy

This food group includes milk, yogurt, and a wide range of cheeses. These foods are important for nutrition and health, and you should eat or drink three cups of milk and/or yogurt every day. Dairy gives you a good quantity of complete protein, plus the calcium you need for strong bones and teeth, plus vitamins A and D, and the mineral phosphorus. Among yogurts, the Greek and Icelandic styles are the highest in protein.

Yogurt has an additional benefit: It contains live bacterial cultures that benefit the colony of beneficial bacteria—the microbiome—which is believed to affect our health.

But there are caveats: Dairy products contain saturated fats, which can contribute to heart disease, as well as adding fat calories to your diet. And flavored yogurts and milks contain sugar, which is not recommended for its addition of 'empty' calories.

The solution is to select low-fat or fat free (skim) milk and yogurt, and to eat cheese in moderation. Cottage cheese is low in fat. If you are a vegetarian, there are many substitutes made from soy, almonds, and oats. Lactose-free milks are available if you are lactose-intolerant.

Fats and Oils

Fats and oils may need some better publicity: They are considered by many to be detrimental to our health and the cause of obesity. But they play an essential role in our diets, and we can't live without them; in moderation, that is: We all need fats and oils in our diet, but not too much. The USDA recommends about 30 grams of fats and oil per day, which is about 15% of a 2,000 calories daily diet; no more than 10% of your day's calories should come from saturated fats; ideally less. Read about saturated fats next.

There are three types of fats; one is of concern for your heart health; the other two can be beneficial:

Saturated fats tend to be solid at room temperature and are the fats to watch out for in your diet, due to their link to artery-clogging LDL ('bad') cholesterol. They're found in animal products like fatty meats, whole milk, butter, cream, and cheese; and from a few plant sources, notably palm and coconut oils.

Trans fats are a type of saturated fat created by hydrogenation, a process to make the fat hard in shortening and margarine. They're in cookies, fried foods, doughnuts, baked goods, pastries and pies with crusts, and processed foods made with hydrogenated oils.

Now for the positive news: The two types of fats that are beneficial:

Monounsaturated fat and polyunsaturated fats are in cold-water fish, and are the oils in plants, nuts, seeds and grains, and the oils that are extracted from them: Sunflower, corn, soybean, safflower, and canola.

Olive oil gets special notice: Cardiovascular health research findings credit monounsaturated oils with being beneficial in managing LDL cholesterol levels, noting its abundance in extra virgin olive oil and avocados.

Remember that due to their role in storing energy, fats contain more than twice the calories as proteins and carbohydrates; an efficiency that evolved to keep fat energy compact, but which can cause us to up our caloric intake if we're not careful.

The Benefits of Healthy Eating

Heart Health and the Mediterranean and DASH Diets

Let's cut through all confusion about diets and identify the **Mediterranean** diet, and its low-sodium parallel, the **DASH** diet, as the go-to diets for all of us. These diets are what the preceding major food groups include. Look no fur-

ther. Just follow these diets, which help keep the residents of the Mediterranean basin living healthier and longer.

But do as they do, and keep physically active, and eat in moderation. Feel free to have a glass of red wine in the evening, and enjoy some dark chocolate, which is high in antioxidants and low in sugar.

It's been long established by the American Heart Association (AHA) that a diet that promotes good health overall and heart health in particular, is based on vegetables, fruits, whole grains, beans, nuts and seeds, fish, very lean meat, low-fat dairy, eggs, and monounsaturated and polyunsaturated oils.

The Mediterranean and DASH diets are high in fiber, and low in saturated fats and highly processed meats, refined grains, and added sugar. One of these diets is also low in salt: The cardiologist-supported DASH diet to lower the risk of stroke due to hypertension (high blood pressure) limits sodium to 2,300 mg per day; ideally no more than 1,500 mg.

According to *Medical News Today* (2020), "It is possible to prevent up to 80% of premature heart disease and stroke diagnoses with lifestyle changes, such as increasing physical activity (including stretching) and healthful eating."

Lower Risk of Cancer

Many plant-based foods contain phytochemicals, including beta-carotene, lycopene, and vitamins A, C, and E, which act as antioxidants. These are especially found in fruits, vegetables, nuts, and beans. Fish is also a good source of antioxidants.

Antioxidants can reduce the risk of developing cancer by protecting cells from damage from free radicals, which are unattached oxygen molecules that bind to tissues and degrade them, possibly making them susceptible to cancer. "The presence of free radicals in the body increases the risk of cancer, but antioxidants help remove them to lower the likelihood of this disease" (Crichton-Stuart, 2020). Trials are underway to further understand these benefits.

Improvement in Mood

Can good dietary practices elevate your sense of self and well-being? Some research finds a relationship between your diet and mood. The key is to reduce consumption of foods that cause spikes in blood sugar, known as having a high glycemic load.

Studies in 2016 found that refined carbohydrates, like those made with sugar and refined grains, can cause symptoms of fatigue and depression. White breads, presweetened breakfast cereals made with refined, white flour, cakes, biscuits, and soft drinks are examples of foods with a high glycemic load.

In contrast, the carbohydrate-supplying foods in the heart-healthy diet above, including unrefined whole grains, fruits (especially berries), and most vegetables, have a low glycemic load, and will not depress mood or attitude.

Healthy Gut

The billions of beneficial bacteria in your gut, known as the microbiome, play an essential role supporting metabolism and digestion, assimilating tough-to-digest fiber, and keeping your brain informed of problems that need attention from the immune system. Some of your gut bacteria produce vitamins B and K, and can help destroy harmful bacteria and viruses.

Following the healthy diet we've been describing will keep your colon clear and functioning, and prevent bowel diseases and constipation. It "Provides a combination of prebiotics and probiotics that help good bacteria thrive in the colon" (Crichton-Stuart, 2020). (Fiber is a *prebiotic*; yogurt, sauerkraut, kimchi, kefir, and other fermented foods containing live bacteria are *probiotics*.)

Conversely, too little fiber, vegetables, fruits, and whole grains, plus too much refined grains, fats, and sugar diminishes the microbiome's vitality and can lead to intestinal inflammation and other disorders, including irritable bowel syndrome, colon cancer and diverticulitis.

Improved Memory

Your brain is as dependent on good nutrition as the rest of your body; maybe even more so! The brain's 100 billion or so neurons, and their trillions of neural connections need to be nourished: "A healthful diet may help maintain cognition and brain health," *Medical News Today* (2020) reports, indicating that a study in 2015 "Identified nutrients and foods that protect against cognitive decline and dementia."

The researchers identified the brain-enhancing benefits of vitamins C, D, and E; omega-3 fatty acids, especially EPA and DHA from fish, and ALA from flaxseed; and flavonoids and polyphenols. Both the Mediterranean and DASH diets ensure a good supply of these nutrients.

Studies are finding possible links between nutrition and ADHD, PTSD, Parkinson's, dementia, schizophrenia, depression, and cognitive decline, including Alzheimer's, reports Yvette Brazier in *Medical News Today* (2021).

Weight Loss

Losing weight, as we discussed in the opening of this chapter, is a priority for the two-thirds of Americans who are overweight or obese. Maintaining a normal weight can help prevent the onset of chronic health conditions, including heart disease, some types of cancer, bone density issues, and type 2 diabetes:

Diabetes control is helped by a healthy diet that is low in sugar and refined carbohydrates, which keeps blood glucose levels down.

Weight gain is fundamentally the result of eating more calories than are expended. Exercise helps, but eating fewer calories is the primary way to lose weight, and this can be done without "hardship and starvation" by eating moderate amounts of the right foods, and avoiding or cutting back on the wrong ones.

Medical News Today (2020) sums it up: "Many healthful foods, including vegetables, fruits, and beans, are lower in

calories than most processed foods," and furthermore, "Maintaining a healthful diet free from processed foods can help a person stay within their daily limit without monitoring calorie intake."

Plant-based foods are high in dietary fiber, which helps regulate hunger by making you feel fuller for longer. Same goes for protein-rich foods, which digest slowly and stay in the gut longer.

Strong Teeth and Bones

As we become seniors, our need for calcium and magnesium increases; fortunately, a healthy diet can help prevent osteoporosis and easily broken bones, as well as keeping teeth strong. Following the Mediterranean and DASH diets will go a long way to keep you well supplied with these and other key minerals.

Be especially attentive to including low fat dairy products in your daily routine, and try to have several servings a week of broccoli, cabbage, or cauliflower. Also consider canned fish, especially sardines. Tofu and legumes (beans) are also recommended.

Sleep Better

Healthy eating habits can help you sleep better. First, by not overeating, and avoiding greasy fried foods, and fatty meats you can reduce the chances of indigestion that can keep you up at night. By eating healthy, your foods are more easily digestible.

A healthy diet can help prevent sleep apnea, which is blocked nasal passages that can cause difficulty breathing at night. Other good dietary practices for better sleep include limiting coffee and tea in the evening—the caffeine will keep you awake—and limiting alcohol intake, since it can interrupt sleep cycles.

The Relationship Between Stretching and Nutrition

Everything we've covered in this chapter on nutrition can be tied back to physical fitness, and stretching in particular. Your body is an incredibly complex organism, with actions and chemical reactions going on within trillions of microscopic cells, as metabolism is going on nonstop. Energy is needed to keep everything running, and protein is needed to structurally build and repair.

So it's true: You are what you eat!

The Healthy Foods

The quality and nutritional completeness of what you eat will contribute directly to your ability to get the most from your stretching exercises, especially foods that have anti-inflammatory benefits. Preventing inflammation allows your muscles to rebuild and repair after stretching and exercise; a vital process called hypertrophy, which builds muscles as well as increases their elasticity.

Foods that are effective in fighting inflammation as well as being nutritious include:

Green, leafy vegetables like spinach, kale, arugula, collard greens, and the various types of lettuce. Begin your evening meal with a salad; it'll also help fill you up at a low caloric expense, while reducing your hunger for the main course and dessert.

Nuts such as almonds, pecans, walnuts, Brazil nuts, pistachios, Macadamia nuts, peanuts and cashews contain healthy monounsaturated oils as well as being anti-inflammatory. Same goes for seeds. Snack on these for protein, too.

Fish which are high in anti-inflammatory omega 3 fatty acids include salmon, tuna, mackerel, cod, and sardines. Have a serving of these high protein cold-water fish at least twice a week.

Berries like strawberries, blueberries, raspberries, blackberries and gooseberries; and fruits such as cherries, grapes, melons, apples, pears, and oranges.

Flex Your Connective Tissues

Connective tissue health helps increase the flexibility you need for your stretching exercises. It's defined by the National Cancer Institute (NCI) (2022) as "Tissue that supports, protects, and gives structure to other tissues and organs in the body." The NCI explains that "Connective tissue is made up of cells, fibers, and a gel-like substance, and includes bone, cartilage, fat, blood, and lymphatic tissue."

You can help nourish and improve the condition of your tissues to improve stretching flexibility and range of motion with foods like:

Fruits in general, and most berries and kiwis in particular.

Vegetables, especially broccoli, cabbage, Brussels sprouts, and cauliflower.

Spices, including cinnamon, chili peppers, ginger, and turmeric.

Keeping Well Hydrated

How much water does your body contain? About 55% of your body if you're a woman; 60% if you're a man. You are continuously using and losing water which needs to be replaced, as proper hydration is needed by every organ and every cell; by your blood and lymphatic system; and by your muscles, ligaments, and tendons.

Hydration lubricates your joints and helps to regulate body temperature; it helps with the delivery of nutrients to fuel your body and support your stretching performance.

Don't wait until you are thirsty to drink a glass of water. The old 'rule' of eight glasses of water a day has been debunked; as you read in Chapter 3:

We get water in beverages, fruits, and vegetables. Do drink extra water when it's hot, after heavy sweating, whenever you're thirsty, and just be sure your urine isn't dark; that's a signal you need to hydrate.

Make water your primary source of hydration, and be wary of sugary juices, soft drinks, and even sports beverages.

On to stretching! You've completed your in-depth education on stretching; now you are ready to put it to work. The next four chapters are your stretching instructions, starting at the top with your neck and shoulders.

CHAPTER 7

THE STRETCHES: NECK AND SHOULDERS

Reducing Tension, Strengthening, and Protecting

This chapter will present you with step-by-step instructions 25 stretches that can help you relieve tension and stiffness, and strengthen your neck and shoulders. This is a good place for you to begin, because your shoulders and neck carry a considerable amount of tension. They are also susceptible to strains and other injuries, making it extra important to stretch them correctly and effectively.

Caution: If you have trouble getting up from the floor, stick with stretches done standing and sitting in a chair, and avoid stretches lying on the floor.

Neck Stretches

Neck muscles and joints tend to stiffer as we age; neck stretches are a great way for seniors to warm joint fluids to increase lubrication, and to warm up deep muscle fibers to increase their range of motion.

Neck Flexion Stretch

Benefit: You will safely stretch the muscles and tendons in the back of your neck, increasing your head's downward range of motion.

Sit or stand upright, holding your shoulders back and down. Look forward.

Lower your chin towards your chest as far as you can without straining. Do not lean your shoulders or body forward.

Extend the stretch by holding the back of your head and gently pressing downward, being careful not to strain.

Hold the stretch for 20 seconds, rest for 10 seconds, then repeat the stretch-and-rest two more times. Relax for a few seconds before continuing.



Neck Extension Stretch

Benefit: You will safely extend the muscles and tendons in the front of your neck, increasing flexibility.

Sit or stand upright, looking straight ahead, with your shoulders relaxed.

Raise your chin back and up, trying to see the ceiling. Tilt your head upward as far as it does not strain or hurt. Do not lean backwards.

If there is any pain, ease up by lowering your chin slightly.

Hold the neck extension stretch for 15 seconds, rest for 5 to 10 seconds, then repeat the stretch-and-rest two more times. Relax for a few seconds before continuing.



Neck Side Flexion Stretch

Benefit: You will stretch the muscles and tendons in the sides of your neck, extending their reach and increasing flexibility.

Sit or stand upright, with your shoulders relaxed and down. Look forward.

Lower your ear towards your right shoulder as far as it is comfortable. Be careful to lower your head without raising your shoulder.

You may extend the stretch by reaching up with your right hand and gently pulling your head downward, being careful not to strain or cause pain.

Hold the stretch for 30 seconds, then repeat the stretch on your left side. You may repeat the cycle one more time on each side.



Neck Rotation Stretch

Benefit: By stretching the muscles lining the sides of your neck, you will increase your head's sideways range of motion, improving your ability to see without turning your body.

Sit or stand upright, relaxing your shoulders without raising them, and look straight ahead.

Turn your head to one side without straining. Move smoothly, without jerking or bouncing; turns to the side can cause pulls if not done carefully.

Do not tilt your head as you turn.

Hold the neck rotation stretch for 20 to 30 seconds, then turn your head to the other side and hold for 20 to 30 seconds. You may repeat the cycles one or two more times, especially after you get used to it.



Levator Scapular Stretch

Benefit: The muscle to be stretched is the levator scapular, two muscles which run up the rear sides of your neck, to connect the shoulders with the upper spinal column. They are hard to isolate; this stretch gives you access to this important set of supportive muscles.

Sit or stand upright, looking straight ahead, with your shoulders relaxed.

Turn your head to one side as in the neck rotation stretch, pause for a moment, and then lower or tilt your head downward, as if you are trying to look at your shoulder on that side.

You will feel the stretch on the opposite side, behind your neck and shoulder.



You can extend the stretch by holding on to the back of your head and pulling gently in the direction of the stretch. Be careful not to overextend.

Hold the stretch for 20 to 30 seconds, then turn your head to the other side and repeat the stretch.

Neck Rotation and Side Bend

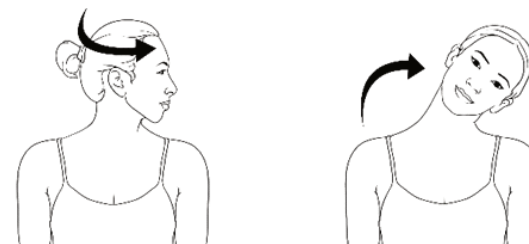
Benefit: The upper back and scapular muscles need to be flexible so that you can easily turn your head to see to either side, without having to twist your body, such when driving. This rotation and bend stretch helps improve that needed flexibility.

Sit or stand upright, with your shoulders relaxed, as you look forward.

Rotate your head to the right side as far as you can without hurting. Do not turn or twist your body. Hold for 10 seconds, then return your head to the forward-facing position. Repeat on the left side.

Tilt your head to the right side by lowering your right ear towards your right shoulder as far as you can without straining, and without raising your shoulder. Hold for 10 seconds, then return your head to the upright position. Repeat on the left side.

You may repeat the neck rotation and side bend stretches 2 or 3 more times.



Neck Side Stretch

Benefit: This is another simple neck stretch that helps with everyday activities; it increases flexibility in your upper back as well as your neck.

Sit or stand upright, with your shoulders relaxed, as you look ahead.

Begin by reaching your right arm behind your lower back, being careful not to strain your shoulder.

Reach up with your left hand and place it on your head. Then gently pull your head towards your left shoulder. Be careful not to overextend the stretch.

Hold the stretch for 5 to 10 seconds, then relax as you return your arms and head to their original positions, and repeat on the other side: Left arm behind your back; right hand to pull your head towards your right shoulder.



If reaching up to your head is difficult; don't worry, just tilt your head towards your shoulder as best you can. You may repeat the neck side stretch up to 3 more times.

Upper Trapezius Stretch

Benefit: This stretch isolates the trapezius muscles through an added pulling effort. The stretch also extends the flexibility of the neck's side and rear (scapular) muscles.

Sit in a chair with your shoulders relaxed (not raised) as you look forward.

Begin by reaching down with your right arm to grip the side of the chair.

Slowly tilt your head to the left, lowering your ear towards your left shoulder. Feel the stretch on the right side of your neck. Extend the stretch by leaning your body slightly to the left.



Hold the stretch for 20 to 30 seconds, then repeat on the other side by gripping the left side of the chair and tilting your head to the right.

Shoulder Exercises

How many times a day do you reach for something, and need to put your shoulders and upper back to work? There may be some pain, which is common among seniors whose years of effort and activity have gradually strained the group of shoulder muscles known as the rotator cuff. The correct stretches can ease that pain, and help prevent injuries.

Shoulder and Upper Back Stretch

Benefit: This stretch helps to flex, lengthen, and strengthen the muscles of your shoulders, along with your upper back and scapular. Your chest muscles will also benefit.

Sit or stand upright, facing forward. Standing is recommended, if you can, to improve your balance.

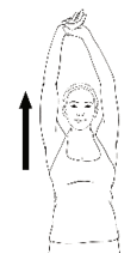
Press your palms together in front of your chest (it's called the "prayer position").

Inhale, then exhale as you raise your arms upward, reaching towards the ceiling to fully extend your arms, with your palms now turned to face forward. Hold this position, reaching without straining, for 5 to 10 seconds.

Inhale and lower your extended arms outwards until they are horizontal. Then pull your hands together to return to the starting position.

Try to press your forearms together as you begin to raise your arms and squeeze your shoulder blades together as you lower your arms.

Do 3 to 5 repetitions, and try to do it throughout the day, up to 10 times.



Shoulder Rolls

Benefit: These movements will extend the range of motion in your shoulders and upper back, as well as improving the flexibility of your rib muscles. They're easy to do, and there is no likelihood of straining.

Sit or stand upright, facing forward. Hold your hands in your lap, if seated, or at your sides, if standing.

Roll your shoulders up, then back, then downwards, in a continuous motion. With practice, this will become easy, and fun to do.

You can do shoulder rolls whenever you feel stiffness in your shoulders or upper back, and do a few rolls just before reaching upwards to get something from a shelf.



Shoulder Circles

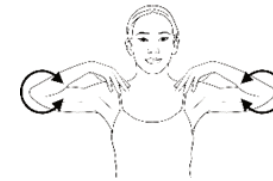
Benefit: These are similar in benefit to shoulder rolls, extending the range of motion in your shoulders and upper back, and improving the flexibility of your rib muscles.

Sit or stand upright, hands in your lap or at your sides.

Raise your hands and place your fingertips on your shoulders—or close to your shoulders if you're feeling stiff and can't quite reach your shoulders. Your elbows should be pointing to the sides, not forward.

Circle or rotate your shoulders in a forward motion. Make about 15 to 20 rolls, then reverse direction and circle in a backwards motion.

You can include shoulder circles in your daily stretching routine, and can do them whenever your upper back or shoulders feel stiff or tight.



Overhead Reach

Benefit: By practicing overhead reach stretches you can relieve upper body and shoulder stiffness, and increase your range of motion. You'll become better able to reach things on high shelves as well as in low places, like taking dinner out of the oven.

Sit or stand upright, hands in your lap or at your sides.

Bring your hands together and interlace your fingers, and then raise your hands upwards, extending your arms as far as you are able, comfortably.

Keep your fingers interlaced, and hold the stretch for 5 to 10 seconds before lowering your hands.

Repeat the overhead reach stretch up to 10 times.



To extend the stretch and increase upper body flexibility, lean to one side when your arms are fully extended; hold the side stretch for a few seconds, then return to upright before lowering your arms. Repeat the lean on the other side on the next lift.

Diagonal Outward Shoulder Raise

Benefit: This movement uses a light weight to help strengthen your back, shoulders, and also your upper arms. You will improve shoulder mobility and be more able to reach objects above your head.

Sit or stand upright, with a light weight of about 5 lbs held in one hand in front of the opposite hip. So if the weight is in your right hand, hold it in front of your left hip, palm facing inward.

Raise your arm across your body until it is fully extended upward and as far to the side as you can reach without discomfort. Your palm should be facing outward.

Return to the starting position and do 10 repetitions. Switch the weight to your other hand and repeat for 10 reps. With practice, you can do 2 or 3 sets of 10 reps.

Be careful not to increase the weight too much, and risk straining a shoulder muscle.



Diagonal Inward Shoulder Raise

Benefit: This movement also uses a light weight to help loosen and strengthen your back, upper arms and shoulders. You will improve shoulder mobility so your arms swing easier as you walk, and be able to reach high objects.

Sit or stand upright, with a light weight of about 5 lbs held in one hand in front of the hip on the same side. If the weight is in your right hand, hold it in front of your left hip, palm facing inward.

Raise the weight across your body to the opposite shoulder, or as far you can reach without discomfort. Your palm should remain facing inward.

Return to the starting position and do 10 repetitions. Switch the weight to your other hand and repeat for 10 reps. With practice, you can do 2 or 3 sets of 10 reps.

Be careful not to increase the weight too much, and risk straining a shoulder muscle.

Bent-Over Row

Benefit: You will improve your ability to pull and lift heavy objects as you improve your shoulders' range of motion while strengthening your shoulders and back muscles.

Sit bending over with your chest on your knees, or standing, bent over and leaning on a bench or table.

Hold a weight in one hand; a weight you can lift multiple times without straining. Your arm should be fully extended towards the floor.

Raise the weight and your elbow directly upwards, bringing the weight to shoulder height, or as close as you can. Keep your arm and elbow close to your body.

Lower your arm slowly without pausing, and extend your arm fully. Repeat 10 times and switch the weight to the other hand to repeat the 10 reps. You may rest for a minute or two and repeat the cycle if you feel up to it. In time you may carefully increase the weight.

Lying Down Shoulder Press

Benefit: You will stretch and strengthen your chest and shoulders, and increase their mobility. This will make it easier for you to lift heavy objects and to reach.

Lie on your back, holding weights in each hand. Be sure the weights are not too heavy.

Your hands and the weights should be held near your shoulders, with your elbows facing out to the sides.

Raise your hands and the weights up towards the ceiling; extend your arms fully, and then lower the weight back down, keeping elbows pointed outward to the sides.

Repeat 10 times. You may rest for a minute or two and repeat the cycle if you feel up to it. In time you may carefully increase the weight.

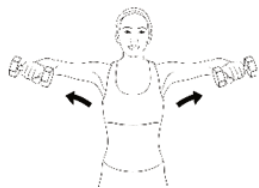


Side Shoulder Raise

Benefit: This movement helps strengthen your back, upper arms, and shoulders, and will improve shoulder and chest mobility. This will help you to push and pull heavy objects without straining.

Sit or stand in an upright position, hold a manageable weight in one hand, with your arm fully extended downward. Your palm should be facing inward.

Keeping your arm fully extended, raise your arm upwards and outwards to the side. Go as high as you can, but stop if you feel pain. Slowly lower the weight until you reach the starting position.



Repeat 10 times and switch the weight to the other hand to repeat the 10 reps. You may rest for a minute or two and repeat the cycle if you can do so without straining.

Standing Arm Swings

Benefit: It's a dynamic warm-up exercise that increases blood flow to the shoulder joint, and increases shoulder and upper back mobility and range of motion.

Stand upright, looking forward and holding your arms extended by your sides.

Tighten your core (abs) as you swing your arms forward and upwards, without raising your shoulders. Reach as high as you can without causing pain or discomfort. Keep your arms fully extended.

Without pausing, lower your arms fully and repeat in a fluid up-and-down motion..

Continue nonstop for 30 to 60 seconds. You may rest for a minute and repeat.

For variety, raise your arms at an oblique angle; midway between forward and side.



Shoulder Pass-Through

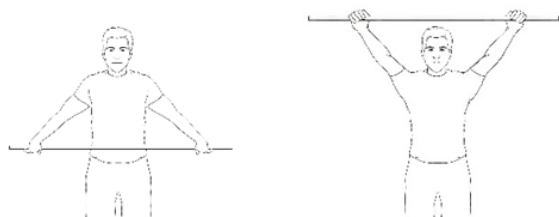
Benefit: For this dynamic stretch, you need to hold a stick; a mop or duster handle will work. Your shoulder joints will increase mobility while the rotator cuff muscles are being engaged.

Stand with good posture, legs shoulder-width apart for balance, and the pole held a bit wider than shoulder-width apart. Extend your arms fully downward, with your palms facing inward—an overhand grip.

Raise your arms and the pole upwards and outward by keeping your arms fully extended as you bring the pole over your head, or as far as you can without pain.

Pause at the top for a moment or two, and then lower the pole, keeping your arms fully extended

Repeat 5 to 10 times, rest for a minute, and repeat. If comfortable you can repeat the cycle 2 or 3 times.

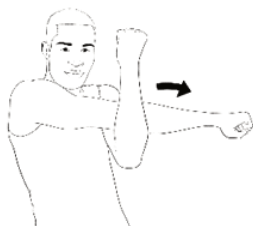


Cross-arm stretch

Benefit: This movement stretches the rotator muscles in your shoulder, increasing their mobility, and helping to prevent injury.

Stand with your feet slightly apart, and face forward, with good posture.

Raise your right arm straight ahead, fully extended, and reach across with your left hand to hold and support your right elbow. Use your left hand to gently pull your right arm across your body.



Feel the stretch in the back of your right shoulder as you hold the stretch for 30 seconds.

Lower your arm and repeat the stretch on the left side.

Sleeper Stretch

Benefit: The internal rotation of the shoulder is stretched and benefitted by the sleeper stretch. It's helpful to gently stretch injured shoulder muscles and for gradual, safe rehabilitation.

Lie down on the side to be stretched, with the shoulder on that side directly under your body. Let's assume you're beginning with the right shoulder, so you are lying on your right side.

Extend your right arm, and bend it at the elbow so your fingers are pointed up towards the ceiling.

Reach over with your left hand and place it over your right wrist. Push the right arm towards the floor, feeling the stretch in the right shoulder.

Extend the stretch as far as you can without discomfort or straining, being especially careful if the right shoulder has been injured. Hold this position for 30 seconds, then release the pressure.

Do 3 repetitions, with a brief rest in-between. Then switch sides and repeat.



Doorway Stretch

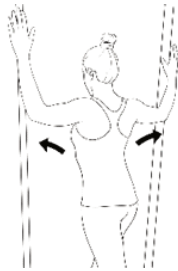
Benefit: You will open your chest and relieve tightness as you stretch your pectoralis muscles, and improve your posture. You will also improve shoulder mobility with this stretch.

Stand in a doorway with your feet about shoulder-width apart, for balance.

Reach up and place your right hand on the doorway so that your elbow is at shoulder height, and your forearm is pointing upwards, forming a 90-degree angle.

Turn your body to the left, until you feel your chest muscle stretching. Extend as much as you can without pain or discomfort.

Hold the stretch for 30 seconds, then release and repeat with your left arm. Do 3 repetitions on each side.



Seated Shoulder Stretch

Benefit: This simple stretch will extend your shoulders' range of motion while strengthening your chest and back muscles.

Sit on the edge of a chair with no side arms, and reach back with both hands and grip the sides of the seat as far back as you can reach.

Lean forward to begin the stretch. Keep your arms fully extended, and go forward as far as you can without discomfort and hold for 30 seconds. Pause, then repeat the stretch 2 more times.

If possible, your reach can extend your grip up to the lower section of the chairback.

Your neck and shoulders can be subject to considerable tension when you are stressed and under pressure.



The stretches you have just learned can help you release discomfort in these sensitive areas, while increasing their range of motion.

In the next chapter, let's move on to the stretches of your arms, wrists, and hands.

THE STRETCHES: ARMS, WRISTS AND HANDS

Flexibility, Strength, and Dexterity

Now that you have finished with the upper part of the body, the neck and the shoulders, it's time to focus on the arms, wrists, and hands with simple and safe exercises that you can learn to increase the strength and flexibility of these areas.

Caution: If you have trouble getting up from the floor, stick with stretches done standing and sitting in a chair, and avoid stretches lying on the floor.

The Stretches: Arms

Triceps Stretch

Benefit: You will stretch and strengthen the triceps muscles at the back of your upper arms, and work the shoulders, too.

Sit in a chair and raise your right arm straight ahead and fully extended, palm up.

Reach your right arm back over your right shoulder, or as far as you can reach.

Raise your left hand and place it on the elbow of your right arm, and press the elbow back to stretch the right triceps muscle.

Hold the stretch for 15 to 20 seconds, then lower your arms and repeat the stretch on the left side. Repeat the stretch with both arms one or two more times.



Arm Raises Stretch

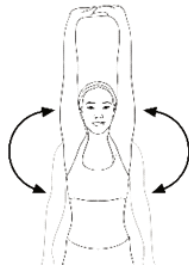
Benefit: You will extend the range of motion of your upper arms and shoulders with this movement you can do easily.

Stand with good upright posture, with your arms fully extended at your sides.

Inhale deeply as you lift both arms towards the ceiling. Pause when you've reached the top of the stretch and feel the extension, then exhale fully as you lower your arms to the starting position.

Continue raising and lowering your arms for a total of 10 repetitions. You may pause and do a second set of ten reps.

This stretch is done every day, and whenever you feel tension in your arms, neck, and shoulders.



Alternating Arm Reaches

Benefit: This is one of the stretches that can improve your posture by opening up tight chest muscles (which can cause you to bend forward), while strengthening weak back muscles.

Sit upright or stand, pressing your upper back and hips against the chair or a wall. Look forward.

Inhale deeply and reach up with your right arm, as you try to press it back against the wall.

Extend your arm, reaching upward until you feel the stretch in your upper back, and your chest. Go as far as you can without straining and hold for 5 seconds.

Lower your right arm and repeat with your left arm.

Continue raising and lowering your arms for a total of 10 repetitions with each arm. You may pause and do a second set of ten reps.



Arms Across Chest Reach

Benefit: You will increase the flexibility of your core, back, upper arms and shoulders with this stretch. Use it for great ability to twist and turn, to reach for things, and to roll over in bed.

Sit in a chair or stand with feet apart, knees slightly bent.

Raise your right arm and stretch it horizontally across your chest, reaching as far as you can.

Extend the stretch by twisting your trunk to the left; stay upright and do not lean. Feel the stretch in your upper back as you hold the stretch for 5 seconds.

Lower your right arm and repeat reaching across with your left arm.

Continue reaching across for a total of 10 repetitions with each arm. You may pause and do a second set of ten reps.



Eagle Arms

Benefit: This move stretches your upper back, upper arms, shoulders and trapezius muscles, while adding flexibility to your shoulder joint and extending range of motion. Good for reversing slumping and bad posture.

In a sitting or kneeling position, inhale and extend both arms out to the sides, horizontally and fully.

Exhale and swing your arms, one under the other, and grasp onto your shoulders.

If you are flexible, release your shoulders and twist your forearms around each other. Try to press the palms of your hands together, if possible.

Once you have extended as far as you can, hold the stretch for 5 seconds, then inhale and raise your elbows to extend the stretch for another 5 seconds. Exhale as you lower your elbows, and relax your arms.

Repeat the eagle arms stretch, reversing the upper and lower arms. Repeat the cycle one or two times.



Reverse Prayer

Benefit: You will stretch and strengthen your upper arms as well as your forearms. You'll also give your shoulders a good stretch as you rotate your arms internally.

Note: If this stretch is too difficult, see the following *modified version*.

While standing with good posture and your feet slightly apart, reach your arms behind your back and extend your fingers downward.

Inhale, then turn your hands and try to bring the palms together with your fingers pointed upwards: The reverse prayer position.

If you are able, press your palms together as you exhale, and try to raise your fingers and hands further upwards. Hold for 10 seconds then release.



Modified version:

While standing, extend both arms outward, fully extended to the sides, with palms facing downward. Turn your palms to face backwards as you roll your shoulders forward.

Reach behind your back to grasp your wrist. Pull to the sides, and raise your arms as you feel the stretch. Hold for 5 to 10 seconds, being careful not to strain. Repeat with the other hand grasping the other wrist.

Cow Face Pose Arms

Benefit: This pose stretches your shoulders, upper arms, including your triceps, and chest. It helps loosen tight shoulders, but if yours are too tight for this pose, see the modified version.

While standing upright and facing forward, reach behind your back with your right arm, raising your hand up your back as far as you can.

At the same time, raise your left arm, and reach towards the ceiling and then reach back towards your left shoulder, trying to reach your left shoulder blade.

Extend your two hands towards each other, trying to reach and grasp each other, even if they can't make it that far. Don't strain.

Hold the extended stretch for 10 seconds, then relax, and reverse, with the right arm extended up and to the shoulder, and the left sliding up the back.



Modified version:

Hold a towel, strap or rope in the upper hand, so it hangs down your back, and reach for it and grasp with the lower hand as it extends upward.

Pull the two hands closer together, without straining.

Assisted Side Bend

Benefit: It stretches your arms, and extends your torso as it opens up your side body. It's a comfortable stretch that can reduce pressure in your shoulder joint and relieve pain.

Sit upright on a mat or carpet.

Inhale and extend your arms out to the sides and then upward towards the ceiling.

Grasp your left wrist with your right hand, and, keeping your arms fully extended, pull to the right to bend your body as far to the right as you can, without losing your balance.

Hold the stretch for 10 to 20 seconds, feeling it in your left shoulder and along your left side. Return to the upright position, grasp your right wrist with your left hand, and repeat the side bend on the left side.



Standing Biceps Stretch

Benefit: This will stretch your biceps, which are the big muscles at the front of your upper arms, and will also stretch your chest and shoulder muscles.

Stand comfortably with your arms extended downward, and reach your hands behind your back, by the base of your spine.



Interlace your fingers and turn your hands so your palms face downwards.

Keeping your arms extended, raise your hands upwards as far as you can without pain or strain.

Hold the stretch for 30 to 60 seconds, then relax. Pause and repeat 1 to 3 times.

Seated Biceps Stretch

Benefit: This is another way to stretch your upper arm biceps, as well as your chest and shoulder muscles.

Sit on a mat or carpet with your knees raised and your feet flat and in front of you.

Reach back and put your hands directly behind you on the floor, with your fingers pointing outwards.

Balance your weight between your feet, buttocks, and hands.

Slide your buttocks forward, without lifting, toward your feet; don't move your hands. This is the stretch position; you should feel it in your upper back, chest and shoulders

With your arms extended, stay in this position for 20 to 30 seconds.

Return to the starting position. Relax, then repeat the stretch 2 or 3 times.

For a less difficult alternative, you can stand in front of a table, facing away. Reach back to place your hands on the table, then squat down to create the stretch.



Doorway Biceps Stretch

Benefit: You will stretch your biceps, shoulder and chest muscles to relieve tightness and improve mobility.

Stand in a doorway with your feet slightly apart.

Reach up and place your right hand on the doorway so that your elbow is at shoulder height, and your forearm is pointing upwards, forming a 90-degree angle.

Step forward with your right leg, bend your knee, and shift your weight forward to create the stretch. Do not twist or turn your body.



Hold the stretch for 30 seconds, then release and repeat with your left arm. Do 3 repetitions on each side.

Wall Biceps Stretch

Benefit: This simple stretch will extend your arm and shoulder's range of motion while strengthening your chest and back muscles.

Stand about 2 feet in front of a wall, with your right side facing the wall.

Reach up with your right hand and place it against the wall, around shoulder height.

Turn your body to the left until you feel the stretch in your right arm, shoulder, and chest.

You can adjust the height of your hand and placement of your feet, as needed. Hold the stretch for 20 to 30 seconds, then repeat on the left side.



Horizontal Arm Extensions

Benefit: This simple stretch will strengthen your arms while lightly stretching your biceps.

Sit or stand in a comfortable position.

Raise both arms to the sides, parallel to the floor.

Turn your thumbs downward so your palms face backward.

Flap your hands back and forth for 30 seconds.

Lower your arms and relax. Repeat 1 or 2 times.



Horizontal Hand Rotations

Benefit: This variation of the previous stretch will also strengthen your arms while lightly stretching your biceps.

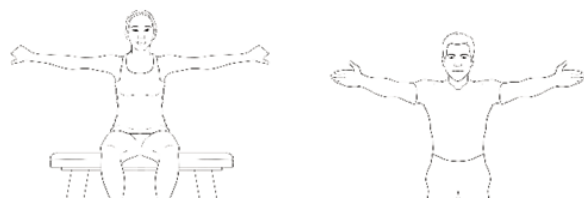
Sit or stand in a comfortable position.

Raise both arms to the sides, parallel to the floor.

Turn your thumbs downward so your palms face backward.

Turn your thumbs upward so your palms face forward.

Rotate your hands for 30 seconds. Repeat 1 or 2 times.



The Stretches: Wrists

Wrist Rotations

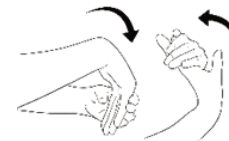
Benefit: This will stretch the muscles, ligaments, and tendons that connect your hands and wrists.

Extend one arm forward, with your palm facing upward and bend your hand at the wrist, and point the fingers down until you feel a stretch. With your other hand, grasp the outstretched fingers and pull the raised hand downward without straining.

Keep your arm steady; the only movement is the bending of your wrist. Hold for 3 to 5 seconds.

Reverse direction by pointing the fingers toward the ceiling until you feel it stretching. With your other hand, gently pull the raised hand downward. Hold this position for 3 to 5 seconds. Relax and switch hands.

Repeat three times with each hand.



Prayer Position

Benefit: This will stretch the muscles, ligaments, and tendons that connect your hands and wrists. It will also stretch your upper forearms.

Sit at a table (or counter), with your elbows resting on the table. Press your palms together with fingers pointing upward in the prayer position.

Lower your hands slowly downward, allowing your elbows to slide to the sides.

Continue until you have stretched without straining. Hold for 10 seconds, rest, and repeat 2 more times.



Open-Hand Extension and Flexion Stretch

Benefit: This paired wrist stretch will extend your wrists and make them more flexible.

Stand in a comfortable position and raise your right arm.

Bend your right hand upward, with the palm facing forward. Stretch your hand back towards your body.

Reach over with your left hand to further stretch your right hand upward, feeling the stretch in your wrist and forearm.

Now bend your right hand downward with your palm facing towards you; use your left hand to assist the stretch.



Hold for 10 seconds in each position. Repeat with the left wrist being flexed.

Pronation and Supination Stretch

Benefit: You will be stretching the rotation muscles in your wrists, making them more flexible and extending the range of motion.

Be seated at a table, and rest your right elbow on the table, with your palm facing upward. Turn your hand clockwise as far as you can. Hold for 5 seconds.



Now rotate your hand counterclockwise until your palm is facing downward. Turn as far as you can comfortably for 5 seconds.

Repeat with the left hand. Repeat with each hand 2 or 3 times.

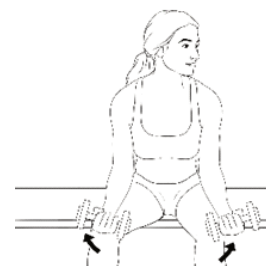
Wrist Curls

Benefit: You will use a weight for resistance in this movement that will flex and strengthen your wrists.

Sit on a chair or bench, holding a dumbbell in each hand.

Lean forward and rest your forearms on your thighs, extending far enough that your wrists extend past your knees.

With your palms facing upward, lower the weight as far as it will go, then curl (raise) the weights upward towards the ceiling. Pause, then lower the weight to the lowest position. Do 10 repetitions, rest, and repeat 1 or 2 more sets of 10.



Wrist Circles

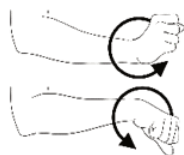
Benefit: A simple movement that will loosen your wrists and increase their flexibility.

While sitting or standing, hold your arms against your body, and raise your hands so your forearms are parallel to the floor.

Hold your arms so your palms are facing downward; this will optimize your range of motion.

Make fists and begin to rotate your wrists in a circular motion. Turn clockwise for a few turns, then reverse to counter-clockwise, back again to clockwise, and so on.

Do 15 to 20 circles in each direction. Relax and repeat 1 or 2 more times.



Backward Facing Wrist Stretch

Benefit: You'll get good wrist extension with this stretch that uses body weight for extra leverage.

Get down on all fours—hands and knees—in a tabletop position, with your hands below your shoulders and your arms fully extended.

Position your hands by rotating your wrists so your fingers are pointing backward, towards your knees (or as far as you are able to turn).

Lean your body back to sit on your knees, as you keep pressing your palms flat on the floor.



Then lean forward to the starting position and repeat for 5 reps; on the 5th rep, hold the backward lean for 10 seconds, then lean forward and relax.

Do a 2nd round, ending again with the 10 second backward lean.

Forward Facing Wrist Stretch

Benefit: You'll also get good wrist extension with this stretch that uses body weight for extra leverage; it's a reversal of the previous stretch.

Go back down on all fours—hands and knees—in a tabletop position, with your hands below your shoulders and your arms fully extended.

Position your hands so your fingers are pointing forward.

Lean your body forward to flex your wrists, keeping your palms flat on the floor.

Lean your body back to the starting position and repeat for 5 reps; on the 5th rep, hold the forward lean for 10 seconds, then lean back and relax.

Do a 2nd round, ending again with the 10 second forward lean.



Palm Heel Up Side-to-Side Stretch

Benefit: This variation of the previous two stretches will also strengthen your arms and shoulders as it stretches the muscles between your wrists and hands.

Be on all fours, with your hands below your shoulders and your arms fully extended. Your weight should be evenly distributed.

Position your hands so your fingers are pointing forward and are spread.

Raise the heels of your palms so your shoulders and upper body are supported on the uppermost part of your hands, and your fingers.

Roll your hands from side-to-side for 15 seconds. You should see your thumbs going up and down as you roll your hands. Rest and repeat once or twice.



Wrist Shakes

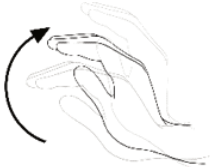
Benefit: Loosen your wrist muscles, tendons, and ligaments with this simple movement.

Be seated or kneeling, with your buttocks on your heels. You may also do this standing.

Hold your arms close to your body and bend your elbows to raise your forearms to be parallel to the floor.

Bend your wrists so your fingers are pointing downward, and start shaking your hands and wrists from side-to-side. Just let the hands flap around in a circular shaking motion.

Continue shaking for 15 to 20 seconds. Stop, relax, and repeat one time.



The Stretches: Hands

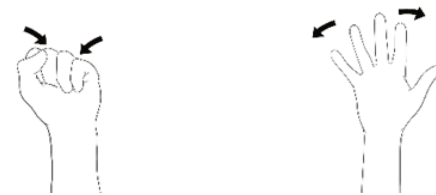
Hand Stretch

Benefit: This movement is a simple yet effective way to stretch your hand and finger muscles, and keep the hand and wrist joints supple, widening the range of motion.

Sit or stand and raise your arms and hold them forward and parallel to the floor.

Turn your hands so your palms face downward. Clench your fingers to make a tight fist.

Open your hands and spread your fingers as wide as you can. Hold for 2 seconds, then clench your fist tight. Hold for 2 seconds, then spread your fingers wide again to repeat the cycle. Do a total of 10 hand stretches.



Fingers up and Down Stretch

Benefit: You can stretch the muscles and connective tissues in your hands and wrists.

Sit or kneel in a comfortable position. Raise your right arm and hold it out in front, fully extended.

Turn your right arm so your palm faces downward, and extend your fingers.

Tilt your hand upward so your fingers point to the ceiling, feeling the stretch in your wrist. Reach over with your left hand, grasp your right hand, and pull it further back, extending the stretch, but without straining.

Hold for 10 seconds then reverse the position by flipping your right hand and fingers downward. Use your left hand to extend the stretch by pulling the right hand backwards. Hold for 10 seconds then change hands and repeat the up and down stretch 2 more times.



Clenched Fists

Benefit: This simple movement can strengthen your grip so you can hold onto things better, and have an impressive handshake!

While seated, rest your hands on your thighs, open, with the palms facing up.

Clench your hands to form fists; firmly but not too tightly.

Keeping your forearms on your thighs, lift your fists and stretch back toward your body, bending at the wrists.

Hold this stretch for 10 seconds, then lower your fists and open and spread your fingers wide. Do 10 repetitions.



Finger Stretch

Benefit: A little stretch to extend muscles in your fingers, and sharpen your manual coordination.

While sitting or standing, raise both hands and extend your fingers, holding them together, with palms facing downward.

Now create two pairs of fingers by separating them between the middle and ring fingers: Ring and pinky fingers are together; middle and index fingers are together.

Hold for 5 to 10 seconds, then relax, and repeat 10 times. This may take some practice, and one hand may be better at this than the other.



Finger Touch

Benefit: A simple, easy stretch that helps your finger dexterity, and to reduce arthritis symptoms.

Hold one hand in front of your face, palm facing towards you. You may also do this with both hands at the same time.

Touch your thumb with your index finger, keeping your other fingers extended.

Continue, in sequence, with your middle finger, your ring finger, and then your pinkie. Be sure to do this with both hands; together or individually. Repeat 10 times.



Thumb Stretch

Benefit: This will flex your thumb muscles, and help if you use your thumbs for texting.

Hold one hand in front of your face, palm facing towards you. You may also do this with both hands at the same time.

Reach your thumb across your palm to touch the base of your pinkie. Keep your other fingers extended. Hold for 5 to 10 seconds.

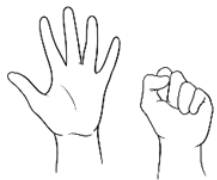
Be sure to do this with both hands; together or individually. Repeat 10 times.



Knuckle Bend

Benefit: This will flex your thumb muscles, and help if you use your thumbs for texting.

Hold one hand in front of your face, palm facing towards you. You may also do this with both hands at the same time.



With your fingers pointing upward, curl them down to reach the top of your palm. Feel the stretch in your finger joints. Hold for 5 to 10 seconds.

Be sure to do this with both hands; together or individually. Repeat 10 times.

You're ready! With these stretches for your arms, wrists, and hands now familiar, it's time to move on to ways to stretch, flex, and strengthen your body: Chest, back, and hips.

CHAPTER 9

THE STRETCHES: CHEST, BACK, AND HIPS

Focus on the Center

Good job on making it this far! Well done. You've made it through half of the stretch instructions, and we I hope the stretches are easy to follow!

Our focus will now shift to the center of the body with stretches that target your chest, back, and hips.

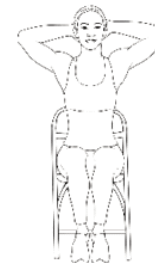
Caution: If you have trouble getting up from the floor, stick with stretches done standing and sitting in a chair, and avoid stretches lying on the floor.

The Stretches: Chest

Chest Stretch

Benefit: This will improve flexibility and mobility in your upper shoulders and chest, making it easier for you to fully inhale and exhale. It will help improve your posture and lung functioning.

In a seated position, reach up and place your hands behind your head, with your elbows out to the sides.



Breathe in deeply through your nose and stretch your head, shoulders, and elbows back, taking care not to tilt your head up.

Pause briefly, and exhale fully through your mouth as you relax the stretch.

Repeat 3 more times, being sure to inhale and exhale fully.

Above-the-Head Chest Stretch

Benefit: Tight pectoral muscles will pull your shoulders in and cause rounded shoulders and forward-leaning posture; this stretch will help reverse that.

You may be seated or standing. Raise your arms above your head, bring your hands behind, or on top of your head, and interlock your fingers.

Pull your elbows back and try to squeeze your shoulder blades together.

Try different heights of your hands to vary the stretch: Hands on top of your head, behind your head, above your head.

Hold for 15 to 30 seconds, relax, repeat 2 or more times.



Behind-the-Back Elbow-to-Elbow Grip

Benefit: You will stretch your shoulders and upper arms while your opening pectoral muscles are extended, helping to improve your posture.

Be seated or standing, with your arms at your sides, lower your shoulders.

Try to squeeze your shoulder blades together, and feel your chest stretching open.



Raise your arms behind your back and grab hold of your elbows with the opposite hands. Extend the stretch by gently pulling your elbows inward.

Hold for 15 to 30 seconds, relax, repeat 2 or more times.

Bent-Arm Wall Stretch

Benefit: This stretch will flex each side of your chest, especially the pectorals, and your shoulder joint range of motion will benefit too.

Stand in the left-side of a doorway, and extend your right foot forward. Reach up and place your left hand on the door post, high enough for your elbow to be head high.

Lean your body forward into the doorway to feel the stretch in the left-side of your chest.

Try different heights of your left hand to vary the effect. Hold for up to 30 seconds without straining.

Switch side; move to the right-side of the doorway and raise your right hand to repeat the stretch. Do 2 to 3 reps on each side.



Extended Child's Pose on Fingertips

Benefit: The child's pose is a yoga standard; this version increases the stretch with your arms to engage your chest muscles.

Kneel on a mat or carpet, and sit back on your heels; you may point your toes behind you or position so you are resting on the balls of your feet.

Keep your knees shoulder-width apart. Touch your heels together.

Lean forward as far as you can, still sitting on your heels, and extend your arms fully forward. Face your palms downward.

Lift the heels of your hands so your arms are resting on your fingertip and are elevated. Press your chest to the floor. Feel the stretch in your chest.

Hold for 20 to 30 seconds, then relax for 15 seconds and repeat 1 or 2 times.



Side Lying Arm Chest Stretch

Benefit: This is another stretch that will flex each side of your chest, especially the pectorals, and extend your shoulder joint range of motion.

Lie on your left side with both arms fully extended outward at eye level; bend your knees by sliding your feet up part way towards your buttocks.

Raise your left arm, fully extended, and continue in a circular motion towards the ceiling and beyond, turning your body by opening your chest.

Continue the movement as far as you can go without pain, trying to reach the floor behind you with your left hand.

Hold for 20 to 30 seconds, and repeat on the right side.



Camel Pose

Benefit: This will flex the muscles of your upper and lower back, your shoulders, and will help open your chest.

Kneel on the floor, remaining upright with your thighs, body, and head pointed upward.

Place your knees hip-width apart, and bring your hands behind you, on your waist.



Sit on your toes or place your instep against the floor. Reach down behind you to grip each heel. Pull, if you can, to extend the stretch.

Feel your chest opening, and your shoulders arching back and down. Gently push your hips forward. Hold for the stretch for

15 to 20 seconds, and repeat 2 or 3 times, resting briefly between each.

Floor Angels

Benefit: A simple stretch of your pectorals, with increased mobility of your shoulders.

Lie on your back on a mat or carpet. Raise your knees as you pull your feet back towards your buttocks. Your feet should be hip-width apart. Press your lower back into the floor.

Place your arms on the floor in a goal post position: Elbows pointed out to the sides; hands and forearms on the side of your head at a 90-degree angle. Palms facing upward.

Slide your arms and hands past your head until fully extended. Hold for 15 to 20 seconds, then slide your forearms back to the 90-degree angle.

Repeat 10 times, and perform 3 sets of 10 repetitions.



Pec Releasev

Benefit: This can be a good warm-up muscle massage for your pectorals, before more intensive stretching.

Place a tennis ball against a wall at chest height and lean your right or left pec into the ball, pinning it in place.

Slowly roll the ball by moving your body, pressing the ball into different parts of the muscle, to loosen its tension.

After 20 to 30 seconds, shift the ball to the other pec muscle and repeat.



The Stretches: Back

Seated Spinal Stretch

Benefit: As seniors, our spines lose mobility, flexibility, and extension, making it hard to turn, to move, and causing us to bend. This stretch works to reduce those symptoms and restore mobility.

Be seated, and place the palms of your hands on your knees.

Round (bend) your spine, and tilt your chin toward your neck (not toward your chest), and rock toward the back of your buttocks.

Widen and lengthen your back from side-to-side, top-to-bottom, and in a spiral or diagonal motion. Steady yourself by pulling tight on your knees as you lean, turn, and stretch.

After 20 to 30 seconds, return to sitting upright.

Arch your spine while releasing and widening your chest and shoulders, raising your sternum and face upward.

Return to sitting upright, pause, and repeat the stretch, moving from rounded to arched positions.



Overhead Side Stretch

Benefit: This upper body movement stretches your back, shoulders, and the core abdominal muscles.

Stand with your feet shoulder-width apart. You may also do this while sitting.

Reach upward with both arms, and extend them fully towards the ceiling.

You may keep your hands apart, or press palms together, or interlace your fingers.

Lean your arms to one side, feeling the stretch on the opposite side. Hold for 15 to 30 seconds, return to the upright position, and lean in the opposite direction. Repeat 1 or 2 more times in both directions.

If reaching up fully extended is difficult, place your hands on your head or hips; it's the lean that counts.



Seated Gentle Backbend

Benefit: This stretch helps prevent forward curvature of the upper spine by flexing your spinal extensors, your anterior neck muscles, and your pectorals.

Sit on the front of a chair, facing forward. There should be room between your back and the back of the chair.

Reach back with both hands and place them on your hips, with your fingers pointed downward, and your thumbs gripping your hips.

Exhale and arch your upper and mid spine by leaning back from your head and shoulders. Press your hips forward. Point your chin upward without dropping your head back too far. Be careful not to overextend or strain.



Hold the stretch for 5 full breaths and return to upright. Repeat 3 to 5 times.

Reach Back

Benefit: Your chest pectoral muscles and shoulder anterior deltoid muscles will be stretched, and your shoulder range of motion will improve. This helps reverse slouched posture.

Sit on a bench or other backless seat. Reach back with arms extended and interlace your fingers or clasp your hands together. Or, grasp your wrist.

Sitting fully upright, and keeping your arms extended, raise your hands as far as you can without pain or stretching. As you raise your hands, pull them in the opposite direction. Feel your shoulders rolling back.

Hold the stretch for 3 deep breaths, then relax. Repeat up to 3 times.



Modified extended version:

Upon reaching the full Reach Back stretch, continue to sit upright and begin to lean forward at the hips. Keep your arms extended and keep pulling up and outward to extend the stretch. Lean as far forward as you can without straining.

Cat Cow

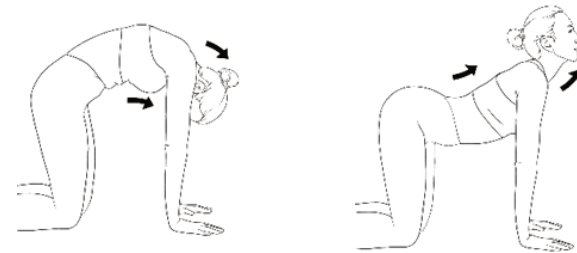
Benefit: This stretch will give your spine good extensions and increase flexibility, while relieving lower back tension. It's a yoga classic that can be done anytime.

Get down on all fours (hands and knees) on a mat or carpet to protect your knees. Keep your arms fully extended.

Arch your back upward toward the ceiling, looking like an angry cat. Inhale and then exhale. Take 4 full breaths.

Now lower your spine, pushing your gut and chest towards the floor; your spine will curve downward, looking like a swayback cow. Take 4 full breaths.

You can continue the stretch by alternating cat and cow with single breaths before switching back and forth.



Modified seated version:

If your shoulders won't support you, try this modified seated version:

Sit in a chair, place your hands on the seat and press down with your palms.

Alternatively, place your hands on your knees, fingers pointing inward.

Look up toward the ceiling and arch your back rearward in the cat pose, pressing down on the chair or your knees.

Then look down towards the floor, push your gut outward and curve your back forward for the cow pose.

Gentle Twist

Benefit: Twisting your spine helps with digestion and abdominal toning, in addition to relieving lower back pain. Even your neck muscles are extended with this gentle twist.

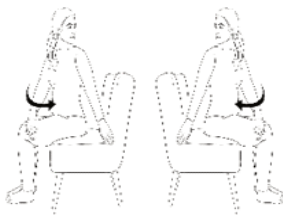
Be seated in a chair, with your feet flat on the floor and your knees at a 90-degree angle, pointing forward. Sit a little forward so there's some room behind you.

Raise both arms upward and extend fully, fingers pointing to the ceiling.

Twist your body to the left by reaching with your right arm to hold the outside of your left knee. With your left hand, grip the back seat of the chair, for added support. Turn your head to the left, fully but without straining.

Slightly extend the twist by pulling gently with your right arm. Do not strain as you feel the stretch along your right side.

Hold the stretch for 3 to 5 breaths, relax, and repeat the stretch on your right side. Do 2 stretches on each side.



Back Extension

Benefit: An easy exercise to stretch lower and mid back muscle, to overcome the forward leaning that comes from drooping over as we read or use a keyboard. In yoga it's called the sphinx when resting on your elbows, and cobra when arms are extended.

Lie facedown on a mat or carpet, and place your hands at the sides of your head, and spread to shoulder-width apart.

Press upward with your forearms to raise your head and shoulders, and arch your back. Feel the stretch, especially in your lower back, being careful not to strain. Inhale and exhale and then slowly lower to the starting position. Repeat for a total of 10 stretches.



Modified version:

For the more intensive cobra version, continue to push upward by extending your arms until they are straight. Hold the stretch for 4 breaths, then lower. Repeat 2 to 4 times.

Bridge

Benefit: This will strengthen the core muscles of your lower back, as well as strengthening the muscles of your buttocks, and increasing your hip flexors' range of motion. You'll improve your ability to shift your position in bed.

Lie on your back on a mat or carpet, with your knees raised. Keep your arms comfortably at your sides.

Raise your bottom up off the floor by tightening your core and buttocks, and pushing down with your feet. Lift as high as you can comfortably, and hold for 1 or 2 breaths. Do a total of 10 repetitions.

This will show good results if practiced every day.



Pelvic Tilt

Benefit: You will stretch your lower back and hip muscles with this fundamental movement to extend the flexibility and range of motion of your pelvic region.

Lie on your back on a mat or carpet, with your knees raised. Keep your arms at your sides, or folded across your chest.

Press your lower back and your bottom downward into the floor by tightening your abdominal muscles, and forcing your hips down, as if pushing into the floor. Hold for 1 or 2 breaths. Do a total of 10 repetitions.



Sit Backs

Benefit: You'll be better able to get up from a chair and hop out of bed with this exercise that strengthens your abdominal and lower back muscles.

Sit on a mat or carpet with your knees raised and your feet positioned about midway back to your buttocks. Cross your arms across your chest, grasping your upper forearms.

Keeping your back straight, slowly lean back, inhaling through your nose.



Lean back as far as you can without rolling on your back, or having your feet leave the floor. Pause for a moment, then exhale and tighten your abdominals to pull your body back up to the sitting position.

To increase the effort, hold a light weight (e.g., 2 lbs) in each hand. Try raising one leg off the floor as you lean back.

Child's Pose

Benefit: We covered a version of this basic yoga stretch in the previous section; this is a simplified version that will gently stretch your lower and upper back, and shoulders.

Get down on all fours—hands and knees—and then sit back on your heels.

Now lean your body forward, keeping your buttocks on, or near, your heels. Extend your arms forward as you lower your chest towards the floor. Hold for 10 to 20 seconds, or about four deep breaths, then relax.

Do 4 to 6 repetitions, being sure to inhale and exhale fully.



Modified versions:

If your buttocks won't reach back to your heels, try spreading your knees apart.

Place a pillow or cushion under your head for support if your neck feels a strain.

If your shoulders won't let you extend your arms forward, bring your hands to shoulder level or slightly forward. Or, rest your head on your hands.

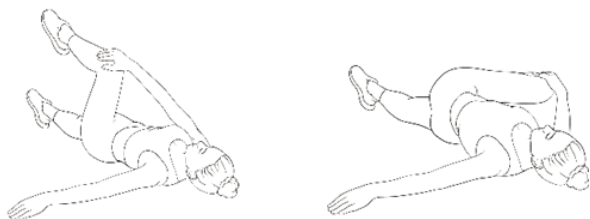
Lying Knee Twist

Benefit: This is a variation of the back twist that uses the weight of your legs to add tension to the stretch. It's simple but effective in stretching your lower back, and your hips.

Lie down on your back on a comfortable surface, like a mat or carpet. Extend your legs forward and spread your arms out in a T position.

Raise your right knee and bend it over your left leg. To extend the stretch, use your left hand to push the right knee down with light pressure. Hold for 20 seconds and return your right leg to full extension.

Repeat with your left leg and knee extending over the right leg. Do a total of 3 to 4 repetitions with each leg.



Modified versions:

To increase the twist, raise both knees together and lean them to one side, keeping your shoulders on the floor to keep the twist in your lower back. Extend further by gently pressing on your knees with your hand. Repeat on the other side and do 3 or 4 reps.

Instead of lying on your back, you can be seated, with both legs extended forward. Raise one leg and stretch it across the other leg. Extend the leg as far as comfortable, and turn your head and shoulders in the opposite direction.

The Stretches: Hips

Kneeling Hip Flexor Stretch

Benefit: Your hip flexor muscles tighten as a result of sitting too long; this stretch helps with posture, spine alignment, and lengthens your stride.

Kneel down on a mat, carpet or towel, with your body upright, head high, and your shins on the floor behind you; your feet are stretched out.

Raise your left knee and step forward, so your left thigh is horizontal, and your left shin is vertical. Your left foot is flat on the floor.

Place both hands on your left knee, and sink your body downward to extend the stretch. Slide your left foot forward a bit, if you can.

Hold the stretch for 15 to 30 seconds, return to kneeling, then repeat with the other leg forward. Repeat once if desired.



Lunge in a Chair

Benefit: This will stretch your hip flexors and increase mobility. It uses two chairs: One for the stretch; the other for balance.

Line up two chairs, one in front of the other, and about 3 feet apart.

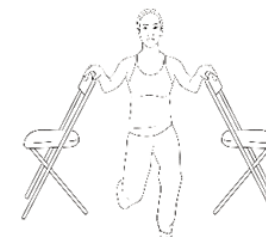
Stand in front of the rear chair with your back to the chair.

Lift one leg and rest your shin on the seat of the rear chair.

At the same time, lean forward and grip the back of the front chair.

Dip your standing leg by bending at the knee and pressing your hips forward and down.

Hold for 10 to 30 seconds and reverse legs.



Standing Hip Flexor

Benefit: You can alleviate pain or tightness in your hips and increase hip mobility with this simple stretch.

Stand upright behind a chair, leaving room to raise your legs, bend from the hips.

Place both hands on the back of the chair, for balance, and raise one leg, and pull your thigh up to your chest.

You can use one hand to grab the uplifted leg at the shin and pull up to your chest to extend the stretch.

Hold for 20 to 30 seconds, then repeat with the other leg raised.



Hip Flexion

Benefit: This will use your body weight to stretch and flex your hips and knees. It will keep your lumbar (lower) spine supple, which will help with bending and reaching. Be careful not to overextend, keep your abs tight, and keep your spine straight.



Get down on your hands and knees, and keep your head face down.

Keep your back straight and shift your hips to the rear, exhaling as you move back. Go as far back as you can without bending or arching your spine.

Pause, then inhale and shift your hips forward to return to the starting position.

Do a total of 10 repetitions.

Seated Lifts

Benefit: This will flex your hips and increase their range of motion, as well as loosening tight muscles in your lower back.

Sit upright in a chair, and reach down to hold on to the sides of the seat.

Raise your right knee and pull it to the left; this will raise your right hip. Extend up and over, without straining. You can extend the stretch by pulling your right knee with your left hand.

Hold for 10 to 20 seconds then repeat on your left side.



Hip Side Stretch

Benefit: A simple but effective stretch of your hips, and an assist in improving your balance.

Stand with your left side about a foot from a wall. Reach up and place your left hand against the wall, at about head height.

Move your right leg across your left leg, and try to press your right foot to the floor. Shift your left hip towards the wall.



Hold the stretch for 10 to 20 seconds, then return your right leg to the starting position, and turn and repeat with your other leg.

Hip Rotation

Benefit: You will flex and improve hip mobility, and make your legs more agile, making it easier to walk, go up and down stairs, stand up from sitting, and getting in and out of a car.

Sit upright in a chair, and raise your right knee, tilt it to the right, and place your right ankle on your left knee.

Using your right hand, press down on your right knee and feel the stretch in your right hip. Don't overextend.

Hold for 20 seconds, and then repeat the stretch with your left leg on your right knee.



Chair Stand

Benefit: You will be squatting up and down from a seated position, and will stretch your hips and the muscles controlling your knees. You will also strengthen your quadricep muscles in your thighs.

Sit midway back in a chair, with your feet flat on the floor, and cross your arms across your chest, holding on to the opposite shoulders.

Lean forward slightly and keep your back straight as you stand up to a full upright position. Pause and sit back down slowly, in a controlled motion.

Repeat the up-and-down movement 10 times. You may repeat the cycle after a brief rest.



Lying Knee Lift

Benefit: This will stretch your hip flexors, and knee joints.

Lie on your back with your legs fully extended. Use a mat or carpet for comfort.

Pull your right knee up to your chest, and reach around your right shin to pull your knee closer to your chest.

Hold for 10 seconds, then switch legs. Do 10 repetitions with each leg.



Internal Hip Rotator

Benefit: It's another stretch to extend the hips' range of mobility. It's similar to the hip rotator, but this version adds body motion.

Sit upright in a chair, and raise your right knee, tilt it to the right, and place your right ankle on your left knee.

Place your hands on your right knee and right ankle.

Exhale as you lean your body forward and downward to stretch the right hip. Keep your back straight; all bending is from the hips.

Hold for 20 seconds then repeat with your left leg.



External Hip Rotator

Benefit: Another stretch for hip rotation mobility; this uses your arm to exert additional leverage to extend the stretch.

Sit upright on a carpet or yoga mat, keeping your back straight and your legs extended.

Raise your right leg and cross it over your left leg and rest your right ankle next to your left knee.

Using your left arm, push or pull your right knee toward your left shoulder until there is resistance. Slowly exhale. Stop before there is pain.

Hold the stretch for 20 to 30 seconds. Repeat with the left leg.



Double Hip Rotation

Benefit: You will like the full range of motion in your hips with this popular “hip roll” stretch.

Lie on your back on a mat or carpet and extend both of your arms outward.

Pull your knees up so your thighs are pointing upward, and your lower legs are parallel to the floor.

Roll your legs to the left, and lower them so your left knee reaches the floor (or as close as you can get). Turn your head to the right, and keep both shoulders on the floor.

Hold the position for 20 to 30 seconds, then return to the upright starting position, and repeat the stretch, rolling to the right.



Hip Extension

Benefit: You will extend your hip flexors and make the hip joint more supple with this easily performed backwards leg lift.

Stand facing a wall and lean forward to support yourself with your hands on the wall. Or, stand behind a chair and use the back of the chair for support.



Raise one leg behind you, extending back and up as far as you can without pain. Keep the raised leg straight, without bending your knee.

Hold for 5 seconds then lower your leg back down. Repeat with the same leg 10 times. Then lift the other leg 10 times.

If you prefer, alternate your legs, by lifting left, right, left, right, etc. Lift each leg 10 times.

Hip Abduction

Benefit: This is a variation of the previous stretch; this time your legs will be extended to the sides.

Stand facing a wall and lean forward to support yourself with your hands on the wall. Or, stand behind a chair and use the back of the chair for support.

Swing one leg out to the side, extending out and upward as far as you can without pain. Keep the raised leg straight.

Hold for 5 seconds then lower your leg back down. Repeat with the same leg 10 times. Then swing the other leg out to the side 10 times, again holding for 5 seconds.

If you prefer, alternate your legs: Swinging left, right, left, right, etc. Swing each leg out to the side 10 times.



Well done! You've made through three groups of stretches, from neck down to hips. All that remains are the very important legs; that's coming up next.

CHAPTER 10

THE STRETCHES: LEGS, ANKLES, AND FEET

Powering You Forward

We are finally at the last chapter of the stretching instructions before you can go off and transform your body with the stretching program that follows. In this chapter of mobility, you will learn all about the stretches that target your legs, feet, and ankles.

Caution: If you have trouble getting up from the floor, stick with stretches done standing and sitting in a chair, and avoid stretches lying on the floor.

The Stretches: Legs

Calf (Soleus) Stretch

Benefit: It's a frequent issue with many people of all ages, especially seniors: Your calf muscles knot up or cramp. This easy stretch will help to alleviate those issues!

Stand facing a wall (or pole, or tree) and be about 2 feet away.

Lean forward to place your hands on the wall, and as you do so, step forward with one leg while keeping the other leg back.

Bend the knee of the forward leg, keep the rear leg straight, and keep both feet flat on the ground.

Feel the stretch in the calf of that rear, straight leg, and in the hip. Increase the stretch by dipping the forward knee.

Hold the stretch for 30 seconds, then switch leg positions and repeat the stretch. Do a total of 3 reps per leg.



Hamstring Stretch

Benefit: Your hamstrings are the strong muscles that run up the back of your thighs, and they can get tight from too much sitting. This stretch will loosen them up.

Sit upright on a chair or bench, with both feet flat on the floor.

Raise one foot forward and extend the leg fully forward, and raise it as far as you can without discomfort.

Now lean forward to extend the stretch. Feel the hamstring stretching.

Hold the stretch for 20 to 30 seconds, the lower the leg and repeat with the other leg. Do 3 stretches per leg.



Standing Quadriceps Stretch

Benefit: This will flex the big 'quads' that are the muscles in the front of your thighs. When you get up from a crouch, or a squat, or from sitting, it's your quads that push you up. This stretch will keep your quads from tightening.

Stand by a chair, a table, or even a kitchen counter. Place your left hand on it for support and to keep your balance.

Raise your right foot rearward and grab your right ankle with your right hand. Your right knee should be pointing downward.

Pull your right heel towards your right buttock. Press your right knee to the rear to extend the stretch.

Hold the stretch for 15 to 30 seconds, and repeat with your left leg.

Tip: Try lifting your supportive hand to improve your balance, but be careful to regain your support if needed.



Seated Knee to Chest

Benefit: In addition to stretching your hip muscles, you will extend the muscles that support your knees and your lower back, all from a sitting position - no need to stand or lie down!

While seated in a chair, with both feet on the floor, raise your right knee, and grasp your knee and lower leg with both hands.

Keep your body upright as you pull your knee up towards your chest. Pull up as far as you can without straining. Feel the stretch in your hips and buttocks (glutes).

Hold the stretch for 20 to 30 seconds, then lower your right foot to the floor and repeat the stretch with your left leg. Do 1 or 2 more reps with each leg.

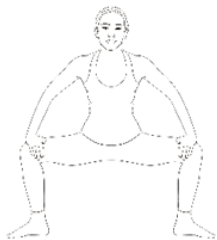


Inner Thigh Stretch

Benefit: This will improve mobility in your thighs, and will improve your ability to stand, walk, and climb stairs.

Stand behind a chair or close to a table or counter, which will provide support. Your feet should be about shoulder-width apart.

Place both hands on the support as you turn your feet outward to a 45-degree angle.



Keep upright, slowly squat down, extending your knees to the sides. Extend the stretch by pulling your knees to the sides.

Hold the stretch for 10 to 20 seconds. Return to the upright position, pause for a few seconds, and repeat the stretch 2 more times.

Knee Extension

Benefit: You can improve the flexibility of your knees, and increase their range of motion with this stretch. It will ease the pain and discomfort you may have, and help your standing, walking, and stair climbing.

Be seated in a chair, with both feet on the floor, and raise your right leg, and extend it upward to a horizontal position. Keep the leg straight; do not bend your knee.

Keep your body upright and extend the stretch by tilting your toes back.

Hold the stretch for 5 to 10 seconds, then lower your right leg to the floor and repeat the stretch with your left leg. Do 10 reps with each leg.



Standing Knee Flexion

Benefit: This will flex your hamstrings and the muscles that hold your kneecap in position. It will help your walking and stair climbing.

Stand behind a chair, table, or counter, and place your hands on it for steadiness.

Raise your left foot, aiming your heel towards your left buttock. Your left knee will be flexing. Do not flex your hips; just the knee.

Hold the stretch for 5 to 10 seconds, then lower your leg and repeat the stretch with your right leg. Do 10 reps with each leg.

To improve your balance, try letting go of the support, or use a finger only.



Straight Leg Raise

Benefit: In addition to helping your hip flexors, this stretch will strengthen your abdominal and quadriceps muscles.

Lie on your back with your legs extended and your arms at your sides, palms facing the floor. Use a mat or carpet for comfort.

Raise your left knee by sliding your left foot back partway; keep the left foot flat on the floor.

Raise your fully extended right leg up to the height of your left knee. Hold this position for up to 10 seconds, then lower the right leg to the floor.

Repeat raising your right leg 10 times, then do the same stretch 10 times raising your right knee and left leg.



Supine Leg Stretch

Benefit: You will benefit from this stretch in your hamstrings, calf muscles, ankles, and lower back.

Lie on your back with your knees bent and pointing upward.

Lift your right knee and reach your arms out to hold on to the right leg and pull it toward your body.

Extend your right leg and point your foot towards the ceiling, extending as far as you can without straining.

Extend the stretch by pulling your thigh towards your chest.

Flex your foot back-and-forth 3 times and then rotate your foot and ankle in a circular motion, 3 times in each direction.

Lower your right leg and repeat with your left leg.



The Stretches: Feet

Towel Stretch

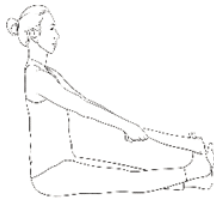
Benefit: It's an easy way to stretch your feet so they can become more flexible and make walking easier.

Sit on a mat or other cushioned surface, and extend your legs forward. Hold a towel for this stretch.

Lean forward and loop the towel around the front part of your feet: Toes and ball of your foot.

Gently pull the towel towards you; feeling the stretch in your feet.

Hold the stretch for 15 to 30 seconds; pause and repeat 2 more times.



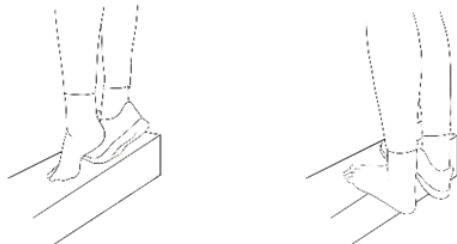
Step Stretch

Benefit: Another foot stretch to help prevent injury and improve walking. Good for relief from plantar fasciitis.

Stand on a step with only your toes, and your heels extended back off the step.

Lower your heels as far as they'll go without straining, and hold for 15 seconds, then lift your heels to rise back up to the starting position.

Repeat 5 to 10. If the movement feels difficult, stretch each foot separately by keeping one foot fully on the step, and dipping your heel down with the other foot.



Toe Stretch

Benefit: An easy way to stretch your toes, and strengthen your foot isometrically.

Sit on a chair or bench with your bare feet flat on the floor.

Spread your toes apart and hold for 5 seconds. You may keep your feet flat, or rise up slightly on your heels.

Do 10 repetitions, with a few seconds pause between each.



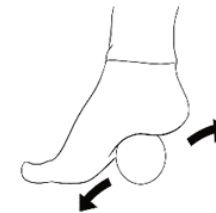
Foot Roll

Benefit: Your feet will feel good as you perform this ball-rolling exercise.

With bare feet, stand and place one foot over a golf ball or tennis ball, and roll it back-and-forth from toes to heel. You can also use a small frozen juice can.

Put as much weight on the ball (or can) as you can without discomfort.

Roll each foot for 20 to 40 seconds.



Independent Toe Lift

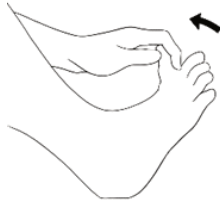
Benefit: It allows you to exercise your toes and arches, improving the mobility of your feet.

With bare feet, be seated with your feet flat on the floor.

Raise the big toe on both feet, and hold it extended for a few seconds.

Lower the big toes and now raise the remaining 4 toes, and hold for a few seconds.

You may find it easier to work each foot separately. However you do this, each foot needs 10 repetitions.



Short Foot

Benefit: This will help stabilize your arches while activating your nervous system to control your joints as you run or walk.

With bare feet, be seated with your feet flat on the floor.

Keep one foot in contact with the floor as you raise the toes, which will contract the arch.

Press downward into the floor at each corner of your foot: Ball of the big toe and of the small toe; the outer and inner heel.

Lower your toes while maintaining the downward pressure for 5 to 10 seconds, and then relax. Do 10 repetitions with each foot.



Toe Raise

Benefit: This is a three-part exercise that will flex and stretch your feet and toes, and increase their circulation.

With bare feet, be seated with your feet flat on the floor.

Raise your heels while keeping your toes on the floor, until just your toes and the balls of your feet contact the floor. Hold for 5 seconds.

Slide your toes back and further raise your heels so just the tips of your big and second toes contact the floor. Hold for 5 seconds.

Keeping your heel off the floor, roll your toes even further under so the tops of your toes touch the floor. Hold for 5 seconds.



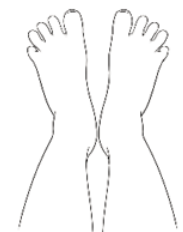
Toe Splay

Benefit: This will flex and loosen your toes and help you to control your toe muscles.

With bare feet, be seated with your feet flat on the floor.

Spread the toes of both feet wide and upward while keeping your foot flat on the floor.

Hold for 5 seconds then relax. Do a total of 10 reps.



Toe Extension

Benefit: This will flex your foot and toes, and provide relief from plantar fasciitis heel pain.

With bare feet, be seated with your feet flat on the floor.

Raise one leg and place it across the opposite thigh.

Reach over and grab hold of the toes on the unelevated foot and bend the toes back towards your ankle. Feel the stretch along the sole of your foot and in the heel.

With your other hand, massage the sole of your foot to intensify the effect of relaxing your foot. Massage for 10 seconds then repeat with your other foot.



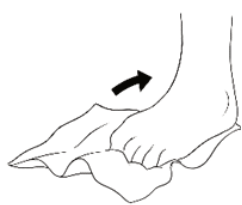
Toe Curls

Benefit: This exercise will strengthen the small but important muscles in your toes and the top of your feet.

With bare feet, be seated with your feet flat on the floor.

Place a kitchen towel or similar light fabric in front of one foot and slide the end of the towel under the toes.

Begin grabbing the towel using only your toes to 'scrunch' the fabric and slowly drag it back towards you.



When too much fabric bunches up, reach down and extend the bunched fabric back to your heel, and resume scrunching to collect more fabric under your toes.

Continue for 20 to 30 seconds, then switch feet.

Tennis Ball Roll

Benefit: This ball rolling exercise will massage the bottom of your feet, and is another pain reliever for plantar fasciitis.

With bare feet, be seated with your feet flat on the floor.

Place a tennis ball or other hard ball under one foot and roll it around, applying gentle but steady pressure as you roll the ball from the toes back under the arch to the heel.

Roll for up to 2 minutes under each foot.



The Stretches: Ankles

Ankle Circles

Benefit: This will increase the range of motion in your ankles. Can also help with swollen ankles by improving circulation.

Be seated upright, with your feet on the floor.

Raise one leg and extend it forward.

Rotate your ankle in a circular motion 10 times to the right and 10 times to the left. Lower your leg and repeat the circular rotation with your other leg.

If you're having trouble holding up your leg, you can support it by placing it on the knee of your other leg.

Ankle Stretch

Benefit: You will help your ankle to bend up and down with this stretch, and that will help with walking and standing.

Sit on the front part of a chair with an unobstructed bottom. Have both feet flat on the floor.

Slightly lift your right foot and swing it back under the chair.

Lower your right foot, toes pointing downward, and press your toes to the floor.

Your ankle will be stretched as you press your toes down for 20 to 30 seconds.

Repeat with your left leg.



Heel Stand

Benefit: This will stretch your ankles and improve circulation, resulting in reduced swelling and improvement in walking and stepping over things.

Stand upright behind a chair, and hold onto the chair back for balance.

Roll back on your heels, lifting your toes up off the floor. Exhale.

Inhale as you roll back and lower your toes. Repeat 10 times for one set. Pause and do a second set of 10.



Achilles Stretch

Benefit: Your Achilles tendon connects your heel to your calf and needs to be flexible for you to walk, and to prevent heel ankle, and foot pain.

Stand facing a wall, and place your palms against the wall, with arms fully extended.

Extend one leg behind you, and bend the knee of the other leg. The heels of both feet should be flat on the floor.

Bend forward from the hips, keeping the back leg fully extended and heel down.

Feel the stretch in the Achilles tendon of the extended rear leg.

Hold for 30 seconds, relax, and repeat with the other leg extended back. Do 3 reps with each leg.



Single Leg Balance

Benefit: This exercise will primarily benefit your balance. Be patient, and discover how with practice your balance will improve.

Stand upright and stretch your arms out to the sides. Be close to a chair, table, or counter in case you need to steady yourself.

Lift one foot off the floor by raising your knee upward as high as you feel comfortable.

Balance on the one foot for up to 60 seconds. Don't worry if you need to step down for a moment; just lift your knee back up and resume balancing.

Repeat balancing on your other leg. Do 1 or 2 more reps with each leg.

As you improve, try closing your eyes, which will make balancing more challenging. Also lower your arms, or stand on a cushion or pillow.



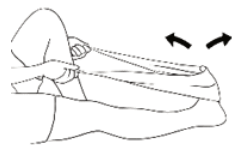
Ankle Flexion

Benefit: This will flex and strengthen your ankle and heel (plantar flexion). You will need a rubber resistance band.

Sit on a mat or carpet with one leg fully extended and the other leg with the knee partially raised.

Lean forward and loop the resistance band around the bottom of the upper part of the extended foot; keep the heel on the floor.

Hold one end of the resistance band in each hand, and lean back to the upright position, putting tension on the band.



Press your toes forward against the tension and then flex back and forth, forward and back slowly for 20 to 30 seconds. Repeat with the other leg. Do a total of 3 sets with each leg.

Alternative version (dorsiflexion):

Attach the loose ends of the resistance band to a table or other heavy object, or use a circular band, with no loose ends.

Sit as in the previous version, but loop the resistance band over the front of your extended foot and slide back to be seated far enough back that there is resistance, as previously.

Flex your foot forward and back as you did previously, and for the same number of reps.

Toe-Heel Walks

Benefit: This will flex and strengthen your feet and ankles. You may do this barefoot or with shoes or sneakers on.

Walk about 30 feet standing on your toes. Walk back standing on your heels.

Do three repetitions of the toe and heel walks.

You may do this anytime, anywhere, for further improvement.



Way to go! You've covered the four chapters on stretching, concluding all instructions. All the stretches you will need to get your body back on track are at your disposal.

Make sure you read the instructions well, practice, and take things slow! We've covered far more stretches than you or anyone could do, so it's important for you to select the ones most important for you, and program them into a schedule; up next.

THE STRETCHING PROGRAM

Now that you have all the exercises at your disposal, it's time to put them together into a full-body program.

You can do these exercises for 10 to 20 minutes a day during the morning or evening, before a walk, or anytime that works. If your schedule permits, it's a good idea to have a set time each day to stretch: This will ensure you don't forget, and will avoid planning anything that might conflict with your stretching routine.

Remember to keep your stretching light before warming up, and put more effort into your stretches after exercise when your muscles and body are warmed up, with good circulation.

Also, remember the caution: If you have mobility issues getting up from the floor, stick with stretches done standing and sitting in a chair, and avoid stretches lying on the floor, unless you have help.

This chapter is in two sections, created to help you know what and when to stretch, and a checklist so you can record and keep track of your progress:

Daily Stretching Schedule is a 14-day plan to provide a total body stretching routine every day, with a different group of 11 stretches for you each day.

The schedule includes every one of the 116 stretches that are instructed in Chapters 7, 8, 9, and 10. You are encouraged to follow this all-inclusive schedule so you can experience every stretch over the 14 days, without having to spend too much time each day stretching. After 14 days, you can adjust to your needs.

If time limits prevent you from running through all 11 stretches in one session, consider doing some in the morning, and the remainder later in the day or in the evening. You can also use the schedule as a checklist.

4-Week Stretching Checklist will enable you to keep track of your stretches, since remembering what you've done can be tough. You'll be able to follow your progress, and see what you've missed, so you can catch up in your next session.

You'll be surprised how much satisfaction you'll derive from entering your progress and seeing how much stretching you've accomplished!

Stretch Schedule: Day 1

Neck	Neck Flexion Stretch	
Shoulders	Shoulder and Upper Back Stretch	
Arms	Tricep Stretch	
Rest		
Wrists	Wrist Rotations	
Hands	Hand Stretch	
Chest	Chest Stretch	
Rest		
Back	Seated Spinal Stretch	
Hips	Kneeling Hip Flexion Stretch	
Legs	Calf (Soleus) Stretch	
Rest		
Feet	Towel Stretch	
Ankles	Ankle Circles	



Stretch Schedule: Day 2

Neck	Neck Extension Stretch	
Shoulders	Shoulder Rolls	
Arms	Arm Raises Stretch	
Rest		
Wrists	Prayer Position	
Hands	Fingers up and Down Stretch	
Chest	Above-the-Head Chest Stretch	
Rest		
Back	Overhead Side Stretch	
Hips	Lunge in a Chair	
Legs	Hamstring Stretch	
Rest		
Feet	Step Stretch	
Ankles	Ankle Stretch	



Stretch Schedule: Day 3

Neck	Neck Side Flexion Stretch	
Shoulders	Shoulder Circles	
Arms	Alternating Arm Reaches	
Rest		
Wrists	Open-Hand Extension and Flexion Stretch	
Hands	Clenched Fists	
Chest	Behind-the-Back Elbow-to-Elbow Grip	
Rest		
Back	Seated Gentle Backbend	
Hips	Standing Hip Flexor	
Legs	Standing Quadriceps Stretch	
Rest		
Feet	Toe Stretch	
Ankles	Heel Stand	



Stretch Schedule: Day 4

Neck	Neck Rotation Stretch	
Shoulders	Overhead Reach	
Arms	Arms Across Chest Reach	
Rest		
Wrists	Pronation and Supination Stretch	
Hands	Finger Stretch	
Chest	Bent-Arm Wall Stretch	
Rest		
Back	Reach Back	
Hips	Hip Flexion	
Legs	Seated Knee to Chest	
Rest		
Feet	Foot Roll	
Ankles	Achilles Stretch	



Stretch Schedule: Day 5

Neck	Levator Scapular Stretch	
Shoulders	Diagonal Outward Shoulder Raise	
Arms	Eagle Arms	
Rest		
Wrists	Wrist Curls	
Hands	Finger Touch	
Chest	Extended Child's Pose on Fingertips	
Rest		
Back	Cat Cow	
Hips	Seated Lifts	
Legs	Inner Thigh Stretch	
Rest		
Feet	Independent Toe Lift	
Ankles	Single Leg Balance	



Stretch Schedule: Day 6

Neck	Neck Rotation and Side Bend	
Shoulders	Diagonal Inward Shoulder Raise	
Arms	Reverse Prayer	
Rest		
Wrists	Wrist Circles	
Hands	Thumb Stretch	
Chest	Side Lying Arm Chest Stretch	
Rest		
Back	Gentle Twist	
Hips	Hip Side Stretch	
Legs	Knee Extension	
Rest		
Feet	Short Foot	
Ankles	Ankle Flexion	



Stretch Schedule: Day 7

Neck	Neck Side Stretch	
Shoulders	Bent-Over Row	
Arms	Cow Face Pose Arms	
Rest		
Wrists	Backward Facing Wrist Stretch	
Hands	Knuckle Bend	
Chest	Camel Pose	
Rest		
Back	Back Extension	
Hips	Hip Rotation	
Legs	Standing Knee Flexion	
Rest		
Feet	Toe Raise	
Ankles	Toe-Heel Walks	



Stretch Schedule: Day 8

Neck	Upper Trapezius Stretch	
Shoulders	Lying Down Shoulder Press	
Arms	Assisted Side Bend	
Rest		
Wrists	Forward Facing Wrist Stretch	
Hands	Hand Stretch	
Chest	Floor Angels	
Rest		
Back	Bridge	
Hips	Chair Stand	
Legs	Straight Leg Raise	
Rest		
Feet	Toe Splay	
Ankles	Ankle Circles	



Stretch Schedule: Day 9

Neck	Neck Flexion Stretch	
Shoulders	Side Shoulder Raise	
Arms	Standing Biceps Stretch	
Rest		
Wrists	Palm Heel Up Side-to-Side Stretch	
Hands	Fingers up and Down Stretch	
Chest	Pec Release	
Rest		
Back	Pelvic Tilt	
Hips	Lying Knee Lift	
Legs	Supine Leg Stretch	
Rest		
Feet	Toe Extension	
Ankles	Ankle Stretch	



Stretch Schedule: Day 10

Neck	Neck Extension Stretch	
Shoulders	Standing Arm Swings	
Arms	Seated Biceps Stretch	
Rest		
Wrists	Wrists Shakes	
Hands	Clenched Fists	
Chest	Chest Stretch	
Rest		
Back	Sit Backs	
Hips	Internal Hip Rotator	
Legs	Calf (Soleus) Stretch	
Rest		
Feet	Toe Curls	
Ankles	Heel Stand	



Stretch Schedule: Day 11

Neck	Neck Side Flexion Stretch	
Shoulders	Shoulder Pass-Through	
Arms	Doorway Biceps Stretch	
Rest		
Wrists	Wrist Rotations	
Hands	Finger Stretch	
Chest	Above-the-Head Chest Stretch	
Rest		
Back	Child’s Pose	
Hips	External Hip Rotator	
Legs	Hamstring Stretch	
Rest		
Feet	Tennis Ball Roll	
Ankles	Achilles Stretch	



Stretch Schedule: Day 12

Neck	Neck Rotation Stretch	
Shoulders	Cross-arm stretch	
Arms	Wall Biceps Stretch	
Rest		
Wrists	Prayer Position	
Hands	Finger Touch	
Chest	Behind-the-Back Elbow-to-Elbow Grip	
Rest		
Back	Lying Knee Twist	
Hips	Double Hip Rotation	
Legs	Standing Quadriceps Stretch	
Rest		
Feet	Towel Stretch	
Ankles	Single Leg Balance	



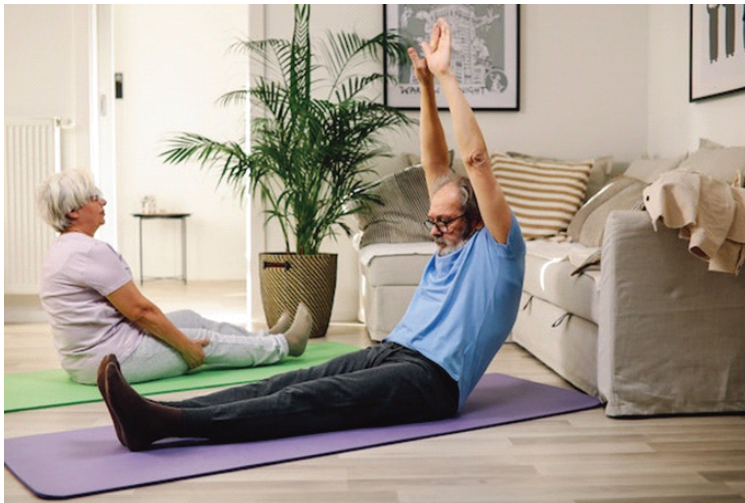
Stretch Schedule: Day 13

Neck	Levator Scapular Stretch	
Shoulders	Sleeper Stretch	
Arms	Horizontal Arm Extensions	
Rest		
Wrists	Open-Hand Extension and Flexion Stretch	
Hands	Thumb Stretch	
Chest	Bent-Arm Wall Stretch	
Rest		
Back	Seated Spinal Stretch	
Hips	Hip Extension	
Legs	Seated Knee to Chest	
Rest		
Feet	Step Stretch	
Ankles	Ankle Flexion	



Stretch Schedule: Day 14

Neck	Neck Rotation and Side Bend	
Shoulders	Doorway Stretch	
Arms	Horizontal Hand Rotations	
Rest		
Wrists	Pronation and Supination Stretch	
Hands	Knuckle Bend	
Chest	Extended Child’s Pose on Fingertips	
Rest		
Back	Overhead Side Stretch	
Hips	Hip Abduction	
Legs	Inner Thigh Stretch	
Rest		
Feet	Toe Stretch	
Ankles	Toe-Heel Walks	



4-Week Stretching Checklist

Use this checklist to keep track of your progress, and to ensure you are stretching the body parts that you have targeted: This may be all 11 body parts listed, or limited to those areas of your body that are of greater priority to you.

Checklists may seem old-fashioned, but they are now making a positive difference in fields as diverse as medicine—in surgeries and physical therapy—and air travel—as the use of preflight checklists by pilots, navigators, and maintenance teams has markedly improved airlines' safety records.

How to use: The value of a checklist is directly proportional to the attention you pay to it, so make a commitment to using it:

Check off each stretch soon after you've completed the session, so you won't forget, and you will be able to see at a glance what's been done, and what needs to be made up.

You can make notes in the right column, such as the types of stretches done.

Alternatively, instead of putting an X or check in the boxes, you can make abbreviated notes directly in the checkboxes to indicate what stretch was performed.

For example, in the boxes on the row for Neck, you could note 'flex' for Neck Flexion; 'exten' for Neck Extension; and "side fl" for Side Flexion.

On the row for Shoulder, you could enter "upper bk" for Shoulder and Upper Back; 'rolls' for Shoulder Rolls; and 'circle' for Shoulder Circles.

Enter any abbreviations that you'll recognize, and you will be able to see the specific stretches you've done.

Stretching Checklist (1) that follows is an example that you can use, or you can create your own, either with pen and paper, or digitally on your tablet, smartphone, or laptop. Stretching Checklist (2) is fully customizable.

Stretching Checklist (1)

Week of: _____

	Sun	Mon	Tue	Wed	Thu	Fri	Sat	Notes
Neck								
Shoulders								
Arms								
Wrists								
Hands								
Back								
Chest								
Hips								
Legs								
Feet								
Ankles								

Stretching Checklist (2)

This is a more customized form of checklist. It allows you to enter up to 6 stretches per row; if you do more than 6 in a day, just enter on the next line, and note the date.

[illegible]

CONCLUSION

The *Flexipendence* Lifestyle

Creating *Stretching for Seniors* has been a journey of enlightenment and discovery for me, and I trust it has been enlightening and inspiring for you. The importance of stretching for you, as a senior, cannot be overstated, with the inevitable, gradual tightening and stiffening of muscles, tendons, joints, and ligaments.

This book began with a description of '*flexipendence*'—the independence of flexibility and resilience, balance and stability, and the end of having to depend on others:

The promise is worth repeating: You will be able to forget the ravages of aging, and return to pain-free mobility and regaining independence.

Stretching costs you nothing more than some minutes each day, yet pays huge dividends in the improvements you will experience in flexibility, strength, agility, dexterity, and balance.

You will be protecting yourself from pulled and strained muscles and torn connective tissues, and from the dangers of falling, which, as you've read, is a shockingly common occurrence among seniors.

The instructions will allow you to customize a routine that targets your areas of concern. You will experience a marked improvement in how you feel, with pain reduced, flexibility enhanced, and a far better quality of living.

You'll feel younger, vibrant, and *flexipendent*!

Recall the Benefits

Stretching for flexibility loosens, conditions and revitalizes every part of your body; from your neck all the way down to your toes. Each of the 116 stretching movements has been

explained and thoughtfully described so you can easily follow along and perform the stretches correctly and safely. You'll appreciate how much your balance will improve.

If you exercise regularly—and I certainly hope you do—stretching is a mandatory accompaniment to improve your cardiovascular conditioning and resistance strength training, and definitely to prevent the injuries that can keep you sidelined.

Take exercise and physical conditioning seriously, as they can not only keep you fit and able, but the evidence is clear that regular exercise can add to your overall health and well-being, and your longevity. If you're out of shape, be sure to check with your doctor first, to be advised on the types of exercise you can safely do.

Nutrition is another major contributor to staying healthy and keeping going better and longer. Refer back to our coverage of the benefits of healthy eating, so that along with stretching and exercise, you can make a commitment to the good foods, and say goodbye to the bad ones.

By following good dietary practices, like the Mediterranean and DASH diets, you'll be able to regain lost energy and endurance, and manage your weight. Eat in moderation and you won't have to obsess over counting calories.

On a personal note, I'd like to say as I did in the Intro, that I have long been frustrated by the fitness industry's focus on youth, when it's seniors who actually can benefit from activities to combat the challenges of aging.

I believe that stretching and physical training targeted specifically to older adults can have a huge impact on their quality of life. My dedication to them and their well-being has inspired me to write *Stretching for Seniors*.

Sharing the Experience

Having seen first-hand the positive effect that stretching and physical training can have on seniors, I became deter-

mined to share my expertise with you and others, and help you to regain independence and live your lives to the fullest.

You can help the cause by spreading the word. Tell other seniors whom you know that *Stretching for Seniors* is a *must-read*; a book that can transform their lives. There's a strong likelihood that they will thank you for caring about them.

You can help even further by giving *Stretching for Seniors* a high rating; 5 stars on the scale, and if you can, say a few words in testimonial, like "This incredible book transformed my life!" By doing this, your words can reach a wide audience of potential readers.

Wishing you *flexipendence*, good health, and great senior years,

Mark Kemp

PostScript

Check out the **Ultimate Stretching Glossary**, where you can find a list of terms that might pop up during your stretching journey and need an instant definition. It's coming up next.

You'll also find the **References**, where you'll find links to all of the articles, columns, and research that contributed insights and information to this book.

THE ULTIMATE STRETCHING GLOSSARY

A

Active Stretching: It's when a muscle is stretched by contracting it against the muscle you are actively stretching. It's the opposite of passive stretching. For example, lying on your back and raising your leg until your hamstring feels the stretch. Many yoga stretches are based on active stretching.

Agonist and Antagonist: During active stretching is a technique to improve flexibility, involving active contraction of one muscle (called "the agonist") to stretch an opposing muscle ("the antagonist"), with no other force applied: No bands or straps or other devices. Example: Lying on your back; lifting your leg towards the ceiling until your hamstring feels the stretch.

Assisted Stretching: Performed by one person helping another to perform the stretch. It has recently become popular in fitness centers, gyms, and spas after a long-term history of use in athletic training settings. Assisted stretching increases the flexibility and mobility of a single muscle or group of muscles.

B

Ballistic Stretching: If you force a muscle to stretch beyond its normal range of motion by using the momentum of a moving limb or part of your body, that's a ballistic stretch. It's often used during warmups where you bounce (carefully) in and out of the stretch.

C

Cardiovascular Conditioning: Also called aerobic exercise, it strengthens the heart muscle (myocardium), widens and increases the flexibility of the arteries, and ensures greater delivery of oxygen to the muscles and all parts of your body. It requires at least 75 minutes per week of walk-

ing, jogging, cycling, swimming or other rhythmic exercise that increases the heartbeat appreciably. It helps prevent heart disease.

Contraction: This is the opposite of stretching a muscle. Imagine holding one arm fully extended at your side. Your upper arm bicep muscle is stretched. Now if you curl your hand up towards your shoulder, you have contracted that muscle.

D

Diaphragmatic Breathing: A form of conscious, managed breathing that increases the flow of oxygen to the cells, and improves the elimination of waste CO₂. It also tones the vagus nerve to calm the autonomic nervous system. It involves inhaling deeply while extending the diaphragm (gut region) outward, and pulling it back in towards your spine on a full exhale.

Dynamic Stretching: Performed by moving limbs or your body in a rhythmic series of movements performed repeatedly in a brief period, to enable your muscles to warm up gradually for more demanding exercises. These can include arm and leg swings, and twists of your torso or head. For example, swinging your right leg up to its limit, then allowing it to fall back down.

F

Flexibility: The degree of range of motion in your joint (or in a group of joints) is a measure of flexibility. If you place the heel of an extended leg on a counter, or bend over to try to touch your toes, how close your nose gets towards your knee, or your fingers to your toes, is a measure of your flexibility.

Flexipendence: The concept of the degree of independence that you will achieve with improved flexibility and resilience, balance and stability, and not having to depend on others for support and assistance. It also implies greater overall freedom and self-confidence, and less risk of falls and injuries.

I

Isometric Stretching: Doing isometric stretching is the opposite of motion stretching. You stretch by tensing a muscle, or group of muscles and holding the position. For example, pressing the palms of your hands together firmly for 10 or 20 seconds to isometrically tense your pectorals, lats, triceps, and wrist muscles.

M

Mediterranean Diet: A lifestyle that is credited with the health and longevity of residents of the Mediterranean basin, especially those living in nonurban areas, and are physically active. The diet—and the closely-related DASH and MIND diets—emphasize vegetables, fruits, whole grains, nuts and seeds, fish, low-fat dairy, eggs, and olive oil; while limiting fried foods, heavily processed foods, and saturated fats, sugar, and salt.

Muscle Energy Techniques (MET): These are similar to PNF (see below) as guided forms of stretching involving a therapist or trainer, and use an isometric contraction of the agonist before stretching. But the force of the MET isometric contraction is much lower than in active assisted PNF.

O

Overstretch: When you extend a stretch past the limit the muscle can handle, you are overstretching and risking injury to the muscle and its connected ligaments and tendons. Ideally you won't push to the point of pain, which is the warning signal.

P

Parasympathetic Nervous Response: It's the opposite to the energizing sympathetic response (see below), and is the cooling down of the heartbeat and blood pressure, and return to calm, known as the rest-and-digest phase. During times of stress, your application of stretching and deep managed breathing can help replace the sympathetic response with the parasympathetic.

Passive Stretching: This involves assuming a stretch and holding it with another part of your body, or a device, like a towel or rubber resistance band. Example: Lying on your back, raising your leg, with the assistance of a towel across the arch of your foot, so you can pull and extend the stretch. It can also involve the support of another person.

Proprioceptive Neuromuscular Facilitation (PNF):

A guided form of stretching popular among physiotherapists, licensed trainers, and sports injury specialists, applied both passively and actively. A therapist guides the person's limb through the ranges of motion in passive PNF; in active assisted PNF, the person being treated participates in the treatment following an isometric stretch to prepare the muscle.

R

Resistance Training: The use of weights like dumbbells and barbells to tense your muscles; generally performed in three sets of eight to twelve repetitions, three or at most four days a week to build and strengthen the muscles. Alternative forms of resistance include bodyweight calisthenics and using rubber stretch bands. Static stretching is performed after resistance workouts to keep muscles from shortening.

S

Static Stretching: Extending one or a group of muscles to its limit and holding that position. You hold muscles and joints in designated positions for a length of time, like 15 to 30 seconds. The goal of static stretches is to help loosen and elongate your muscles, post workout, after they're warmed-up.

Sympathetic Nervous Response: When you perceive danger or become stressed, this reactionary response releases hormones that send glucose to your muscles for energy, and causes your heartbeat and blood pressure to rise, and turns off your digestive system to redirect energy; it's the fight-or-flight call to action.

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