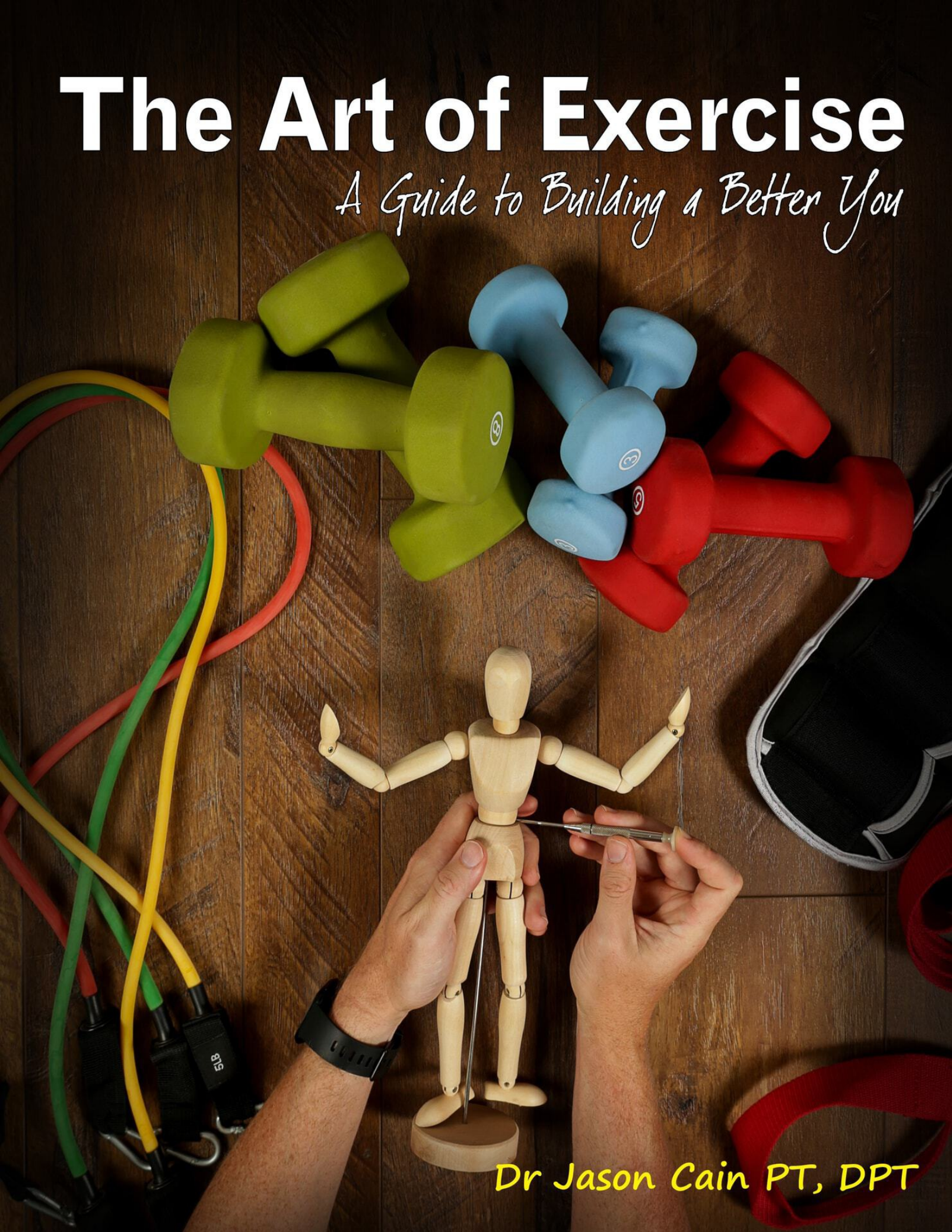
The Art of Exercise

A Guide to Building a Better You



Dr Jason Cain PT, DPT

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Dr. Jason Cain PT, DPT

Disclaimer

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Dedication

Thank you to all the friends and family who have helped with the creation of this book. And for their understanding and patience. I couldn’t have done it without you!

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"Our body is a machine for living."
- Leo Tolstoy

Section 1: The Art of Exercise

Introduction

The intention of this book is to offer a key selection of exercises that you should perform in order to maintain the machine that is your body. This book is about building better body awareness, improved posture, and generalized strengthening. Although many of the exercises can easily be progressed to higher levels of resistance for building muscle bulk that is not the intention of this book. The goals is to help prevent you from having to see a physical therapist of other medical practitioner for something that could have been easily avoidable with a selection of targeted exercises.

As a practicing physical therapist for over a dozen years, I have gained a better insight into exercises that have been maximally beneficial to the health of my patients and could help you, too. First, we will look at what is wrong so that you can have a better understanding of how to make it right again.

What causes Issues?

Inactivity and Technology

We are designed to move. There are few living creatures on this planet that do not move, even plants have the ability to bend towards the sun. Whether it be mammal, bird, reptile, or insect, moving is generally required by animals to find nourishment, chase prey, escape an enemy, or find shelter. Due to our "great intellect," humans have learned to manipulate the world around them; creating more permanent shelters and devices to transport us from place to place, we no longer need to use our bodies to create motion as our ancestors once did. We have been able to adapt the world around us, changing it to meet our needs, giving us more free time for other pursuits that lead to further technological innovations. As advancement occurs, we tend to require less and less movement, leading to a sedentary lifestyle.

Think how many hours are in a day: 24. Now, how many of those hours are spent sleeping/lying around in bed (6-8 on average)? Let us say the average American spends 60 minutes getting to and from work, roundtrip. At least

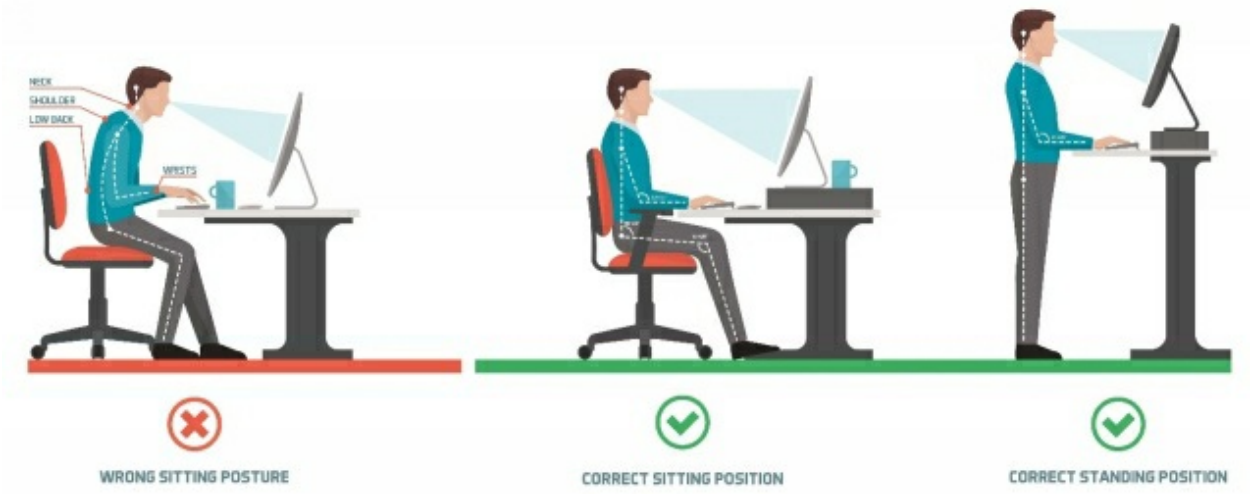
another hour is spent sitting while eating all your different meals (breakfast/lunch/dinner). For many people, about 8 hours of work is spent sitting at a desk. Add another 2 hours of sitting while watching TV, looking at an electronic device, or reading a book. So far, we are at 18-20 hours of relative inactivity. What are you doing those remaining 4-6 hours? Any more sitting? If you are moving, are you moving enough to elevate your heart rate?

Chairs were not commercially available to the masses for leisure and comfort until more recently. Despite having been created and in use for almost 5000 years, chairs that are comfortable have predominantly been used by the upper classes during leisure time. As manufacturing technologies have advanced, it has become easier to obtain goods that were only accessible to a select few, even chairs. Even though chairs are now more easily acquired, there are many cultures in the world that limit their use. Rather those people tend to sit cross-legged or crouch on the ground to perform daily activities or relax. Can you sit comfortably on the ground with your legs crossed?

During my casual observations of people in various settings (business offices, restaurants, park benches…), I have noted several areas where we do not use chair properly. The most common infraction is either slouching and/or not using the backrest properly. The typical posture while working on a computer can be seen in figure 1 on the left side of the panel. In the middle panel of the figure we see the proper posture while sitting working on a computer; the hips are slid back to the backrest, the back is resting against the backrest, to help reduce the slouching the monitor has been raised so that the head does not have to look downward as far.

It is important to note that you cannot use the backrest properly unless you slide the hips all the way back. It is ideal for the spine to be fully supported while it is at sitting, most of us are not capable of keeping an upright posture while sitting in a chair. If the back is not supported while slouching, the ligaments and bones take undue stress since the muscles are not engaged. Alternatively, if the hips are slid forward while the back is against the backrest, there is a gap left underneath the back which can put additional stress, especially on the more vulnerable lumbar vertebrae of the low back. If you are unable to scoot all the way back to the backrest, then use a pillow to fill the vacant space behind the low back.

It is also crucial to have the feet properly supported. When a chair is too high, the feet can be left dangling; this leads to the low back having extra pressure placed upon it due to torque produced by the hanging leg pulling on the pelvis. Use a box to give you the support that you need.



[Figure 1: Improper ergonomics are seen on the left side, while the middle and right panes sections show proper posture while sitting and standing and using a computer. Note in the middle sections how the hips/back are placed against the backrest and the screen has been raised. The arms should be able to rest comfortable at the side or be supported on the table without having to reach too far forward. Picture adapted from: elenabsl/Shutterstock.com]

In both figures 1 above and 2 on the next page, we can see the head and shoulder slumping forward. This is partially due to the body's natural tendency to lean in closer to objects of interest in order to see and analyze the object better. The remainder of the issue is that the screen is positioned too low. In figure 1's middle panel, a platform is placed under the monitor in order to raise the screen higher while sitting, and the standing desk is raised high enough to allow the arms to comfortable reach the keyboard and again a platform is placed under the monitor to raise the screen high enough as to not strain the neck.

It should be noted that depending on the type of eyewear is being worn will dictate where the monitor should be placed. If you wear monofocal lenses or do not wear glasses, the top of the screen should be around the eye level to top of the head. The eyes should be able to scan the screen without having to tilt the head. With bifocal or blended lenses, you may be able to have the

screen lower as you will be looking out the lower portion of the glasses. In a world where multiple screen use is becoming more common, try your best to line yourself up with screen(s) that is getting the most use.

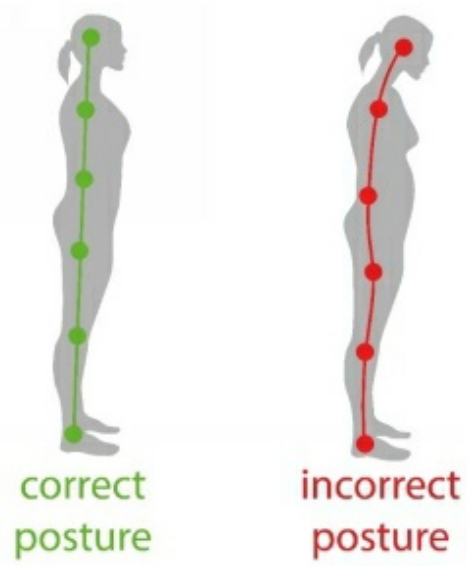
[Figure 2: Improper ergonomics while using a handheld device during standing or sitting with their corresponding corrections. Picture adapted from: elenabsl/Shutterstock.com]

The use of electronics or other handheld objects can place a strain on the body. In figure 2, we can see that the arms must be raised to hold the screen at the appropriate height. On the left side we see an individual standing; if the device is held at the stomach, the head must bend forward in order to see what is going on. By raising the hands upward we bring the device up to the head, decreasing the need to look down and reducing the strain on the neck. It should be noted that holding the phone up closer to the head will eventually put strain on the shoulders if this position is held for too long; it is ideal to have the arms supported if the positioned is to be maintained for a longer period of time. A sitting position is observed on the right side of the figure; by placing a pillow under the arms we are able to bring the screen higher reducing the stress load on the neck and shoulders. Despite the pillow being placed the screen is still too low for my taste and should have a thicker pillow under the arms to place the screen even higher. This information also applies to books, magazines or anything that is held in the hands to be viewed.

Weakness and Compensation

If you are reading this book and do not perform desk work or sit as often,

there are still other issues that negatively affect everyone. Performing the base level exercises outlined within can assist in reversing these negative effects. Teachers, cashiers, and other occupations require standing for long periods of time which places a different stress on the body compared their counterparts who are sitting. As I said before, we are designed to move. Standing in one place makes it harder for blood to properly move through the body; swelling becomes more common in the ankles and legs. Weakness still develops throughout the body with insufficient movement. Also, when standing in place for a long period of time, most individuals can be seen "hanging out" on their joints rather than keeping themselves upright with the use of their muscular system. The "hanging out" is due to poor posture or weakness and places an additional load on the knees, hips, and spine. Figure 3 shows the correct posture, where each major area of the body is kept in alignment, which provides proper support for neighboring areas. When areas are not aligned stress can be developed over time. Injury occurs slowly over the years if not corrected. The exercises and advice listed in this book will help to counteract some wear and tear that accrues over time.



[Figure 3: Correct and incorrect posture. Picture adapted from: Lemurik/Shutterstock.com]

Genetics and Environment

Genetics obviously play a role on our health, but there is little we can do to change this. On the other hand, our environment and how we choose to interact with it have the potential to augment the effects of our genetics positively or negatively. By exerting our wills over the things that we do have the most control over, such as the quality of foods we eat or the activities that we do, we have a chance to impact what type of life we want our bodies to endure.

Weight

Another culprit is the rise in obesity. We can point many fingers, but inactivity and nutrition are the easiest to blame. The foods we eat are meant to fuel our muscles and to sustain life. Food provides us with the building blocks needed to restore our bodies from the abuses that we place upon it.

There is more to losing weight than simple calories in/calories out, but it is a good place to start considering a change. If you eat too much and do not move around enough, extra calories must go somewhere; generally, the body stores those extra calories as fat, especially around your stomach or buttocks. There are many different ideas about what we should and should not eat but diving into them is not the purpose of this book. An easier piece of advice that I can impart upon you is looking out for the hidden sugars in foods and

keeping in mind that the more processed the food that you are eating, the more chemicals that likely have been placed into that food. Read the nutrition label on the back of that cereal box

Time

Lastly there is the effect of time and aging. As we get older the body is not able to rebuild itself and recover from trauma as easily. However, I like to say that it is not so much about aging as it is the cumulative effect of disuse over the passage of time that places the greatest toll on our bodies. With disuse comes weakness; with weakness comes compensation; with compensation comes further weakness until we eventually spiral down to unintended injury. When injury is added to the equation the lack of strength makes it that much more difficult to use the body properly without compensation and lengthens the time to
recovery.

You have now started to open your mind that sitting too much can have negative effects on the body. To be more specific sitting too much causes weakness in the transverse abdominus, tightness in the hip flexor, and deactivation of the glutes. That is where this book will assist you on your path to recovery and building yourself a better foundation.

How can I get better?

Posture

Working on becoming more aware of your posture will reduce compensation and stress on the body. Several of the exercises outlined in this book will assist you with improving your posture. Keeping the shoulder back and being aware of your pelvic positioning are the 2 easiest ways (click the links for scapular retractions and pelvic tilts).

Massage

Whether you go get a massage from a professional, a friend, or do it yourself, massaging tight and sore muscles can allow for improved muscular performance and range of motion. If you are looking for more affordable ideas of how to perform self-massage or just unsure of how to do it, please

refer to my other book “The Art of Self Massage” available on Amazon.

Stretching

What can we do to right the wrongs of inactivity? First, we can look at our animal friends. What do they do when they get up after they have been lying around? STRETCH. Humans need to do the same thing after they have been inactive. We have become too focused on the world around us that we neglect what our bodies are trying to tell us. If you are not resting and you have found yourself lying around or sitting for an extended period of time, stand up and stretch for a moment. Reach for the sky. If you are going to move, you need more blood flowing towards your muscles.

Stretching helps to prepare the pathways to motion. Have you ever felt lightheaded after standing up quickly? One of the reasons this happens is because your circulatory system is not able to keep up with you, blood is leaving the head too quickly, making you feel dizzy or woozy. If you start by stretching and moving the body more before you actually stand up, then you will help prepare the body for movement and the blood will be redirected to the appropriate areas prior to standing, reducing the chance for being lightheaded.

Note: If you have felt unsteady after rising, it is best to hold onto something as you gently start stretching your limbs in the standing position. These are moments where you are at risk for falling or bumping into something causing injury. If the sensation of dizziness is strong enough, you may need to sit down again rather than trying to force the body to stretch and move. If this occurs often, it is a wise idea to talk to your health care provider to determine the cause.

Exercising Properly

Exercising the body is like building a house: you must first have a solid foundation before you can put up the walls. Once you have solid support, then you can put on the roof. Beyond the basic house, you can then add more amenities. This book focuses on gaining that foundation and building the support needed. Higher level exercises are more like the amenities in the house, to be taken care of later down the road after you have finished your house.

Each exercise listed will have the rationale behind why it is important enough to be included. Many pictures and descriptions are included to show the proper form. Repetitions for the exercises will not be focused upon; I have noticed over the years that people tend to get caught up on what number they are on rather than the quality of the motion that they are performing. Instead, set a timer for 30 seconds and perform as many high quality repetitions as you can. Since we are focusing on quality of the exercise, it is also important to remember that we are not trying to achieve as many repetitions as possible; rather we are focusing on doing as many PERFECT repetitions as possible. This means going slower and putting thought into the activity. If 30 seconds is too easy, then perform it for a minute. Most of the exercises listed within can be performed for 30-120 seconds at a time. The focus on these exercises is not building the size of a muscle, but control and subtle strengthening.

Note: there are apps on cells phones that can be downloaded to provide intervals. Setting up intervals of exercise and rest breaks can be helpful and less tedious than having to keep hitting a timer on and off. Example: 30 seconds of exercise, 15 seconds of rest before performing another round of the same exercise or switching to a different one.

How Often

The question always comes up as to how often an exercise should be performed. To keep things easier and to allow for proper recovery of a muscle, it is best to have a day of rest after exercising a muscle when you are working into fatigue and muscle burn. One easy method of maximizing time and recovery is to work the upper body one day and the lower body on the opposite day. Another methods is to set a certain amount of time for exercise —say 30 minutes—perform as many exercises as you can perform in that time frame and the next day pick up from where you left off.

Warming Up

Before performing the intermediate level exercises, you may need to warm up the body. I am not including calisthenics exercise in this book as many of the exercises themselves can be used as a warmup if performed in modified positions, using less weight/resistance, or performing an exercise through a partial motion. Do not start with a heavier resistance without preparing the body by warming up. Walking or riding an exercise bike is one of the easiest ways to get your heart pumping and blood flowing before exercise. Listen to

your body to see what it needs. Again, this is a base level book for exercises that everyone should be doing. Exercises involving or preparing the body for jumping and landing require more advanced techniques than what are intended for this book.

Cardio

Again, the focus of this book is about building a base for better posture, body awareness, and balance; it is not about developing a better cardiovascular system. Walking, jogging/running, biking, swimming, and other cardio based exercises are great for the body and should be performed on a regular basis for overall good health. Talk to your health care provider if assistance is needed in determining which format is best for you.

Breathing

Oxygen is important to sustaining life; breathing is the means by which you get oxygen inside of you. Holding your breath for too long can obviously have negative consequences. But to keep this simple, the main reason that holding your breath while exercising is not advised is due to the spike in blood pressure that occurs and the potential stress that it places on the heart. Make sure that you continue to breathe in and out while performing any exercise.

Equipment Requirements:

I tried to cover as many exercises or variations as possible that would require the least amount of equipment purchases. Here are some easy and inexpensive options for your new home gym.

Bands

Exercise bands are relatively inexpensive. To make them even more effective, I would recommend getting a doorway anchor to place the band into the doorway (see figure 5-6). This allows for reduction of wear on the bands and for improved placement of the bands to the height that you need. The anchor can be placed around any area around the door as it meets the frame; it is safest to have the anchor placed on the side of the door that will further pull the door shut rather than open. As a rule of thumb if you can see the hinge (as seen in figure 6) then the door will have a chance of opening on you. Placing the bands on the opposite side to the hinge will reduce the risk of having the door and bands come flying at you.

[Figure 4-6. Top shows examples of exercise tubing band, handle attachments and doorway anchor attachment. The middle picture demonstrates the placement of the anchor, while the bottom shows the door hinge. If the hinge and the band are on the same side, then you are on the wrong side of the door.]

There are several varieties to the bands. Most come in either ribbon (not shown) or tubing forms. The tubing works better for upper body exercises while the ribbon works better for lower body exercise. This is not a hard rule and either can be used as you will see in the later sections; it is more of a matter of comfort than anything else. Most bands are color coded for their resistance; each manufacturer has their own color/resistance scheme, so read

the directions of the ones you purchase.

Warning: bands can cause injury to the eyes and skin when they break, depending on the direction that you are pulling/pushing on them. Please make sure that the band does not have nicks or tears. Also, the material should feel the same all the way throughout the band; they may start to dry rot over time which will give them a different texture and increases the likelihood of breaking. Make sure that you are using the proper resistance level of band. Using too light of a resistance will either be too easy or increase the risk of tearing the band if you pull it too far; the band is only designed to stretch a certain amount before reaching a breaking point. Conversely using a band that is too hard for you to control can negatively impact your quality of motion.

Weights

[Figure 7-9: The top 2 pictures show examples of hand and ankle weights. While the bottom picture shows the ankle weight attached around the wrists.]

Weights come in several varieties, see figure 7-9. You can buy a solid dumbbell that cannot be changed in weight; there are also bars/plates or other interchangeable weight systems. Ankle weights are another form of weight that can be strapped onto legs; many of them are made so that the resistance can be adjusted by adding or subtracting weight from sewn compartments. Another nice feature of ankle weight is that if you have pain in the hands or wrists with holding a dumbbell the ankle weight can be wrapped around the wrist; this allows for exercises to be performed more comfortably while still providing resistance for the upper arm and shoulder. Lastly, you may not need to buy anything, just putting some canned goods into a sturdy grocery bag may be enough for a homemade weight. Use your best judgement as to what you need.

Warning: please do not walk for distance or run with ankle weights on the

legs; short distance walking while focusing on not hyper extending the knees can be tolerated, but caution should be used while walking with weights attached to the legs.

Machines

If you want to use machines, I generally recommend getting a gym membership. Most people have poor compliance to exercise, machines tend to collect dust or become clothes hangers rather than serve a function for building a better you. If you are dead set on buying a piece of exercise equipment for strength gains, then I would recommend the Total Gym® (as seen in figure 10). It allows you to work many areas of the body while taking up much less space (unless you buy all the extra components). An entire book could be written on Total Gym® Exercises alone; as that is not the focus of this book, there will not be any Total Gym® specific exercises listed.

[Figure 10: A picture of the Total Gym®, supplied by Total Gym®.]

Pain

There is one more thing we should discuss before diving into the exercises. It is important to understand what pain is. Many times I have heard the adage of "no pain, no gain." However, I prefer "no pain, more gain." Pain is the bodies way of telling the brain that something is not right within the body and damage may be occurring.

While exercising you should never have pain in your joints. You may, however, experience a "burning" sensation in the musculature while working out. This is typically your bodies way of letting you know that the muscles

have been working hard and that it cannot perform the activity much longer. Also, as the body is adapting to new stresses that you are placing upon it, soreness can be expected, but it should only last for a few days at most.

You do not need to have any muscle burn to make improvements with exercise. Part of exercise is about building a better brain-muscular connection. If you are looking for bigger gains in muscle growth though, you do need to make sure that the muscle is getting worked sufficiently which does require fatigue and usually the burning sensation. It is not uncommon to have muscle soreness for 1-3 days following a new exercise routine, typically the harder you work the greater your chances are for soreness. Remember though that there is a difference between soreness and pain. If you are experiencing lingering symptoms that lasts for more than 3 days, seek help.

To prevent things from getting too complicated, if you are experiencing pain while even doing the exercises that are outlined in this book, then you likely need to have further medication examination to determine the cause of your pain. Likely you will need the services of a physical therapist to guide you.

If you find yourself wanting to clench your teeth, ball your fists, or curl your toes while performing any of the exercises listed in this book, you are trying to move the body in a way that it is not ready for or is not able to do.

You need to work on becoming more aware of yourself. Grow into a better self-listener. As you become fatigued during an exercise, it might mean you need to take a break, recover, and then perform more repetitions rather than sacrificing form in order to meet your goal for that set. For example, if you notice that you must significantly lean your body in order to lift a weight, listen to the cue that is being provided and use a lighter weight that is more manageable without causing compensations.

WARNING

Again, the information provided does not take the place of common sense and should not go against the advice of your own medical professional. Please read the descriptions and notes for each exercise for your safety.

And one more time: Control and quality are much more important than the number of repetitions that are accomplished.

There are thousands of exercises that can be performed-- I have selected over 50 that I feel would benefit everyone else as much as they have benefited my patients. They target the areas with the most common issues and that are prone to weakness. Several of the exercises are grouped together due to similarities of cuing or positioning.

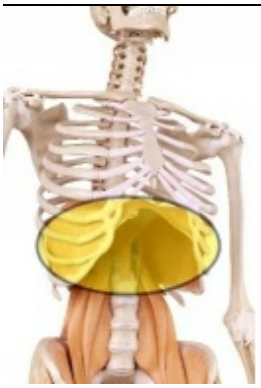
Enjoy!

The Foundation (Base Level Exercises)

These nine exercises will lay the foundation for the rest of the for the rest of the book. Without mastery of these basic exercises, the body will not be in as ideal a position/posture when performing the intermediate level exercises and beyond. This will lead to issues down the road due to compensations. The focus here will be on isolation and control. The exercises are as follows:

- Diaphragmatic Breathing
- Scapular Retraction
- Shoulder Rolls
- Chin Tuck
- Cervical Isometrics
- Transverse Abdominous
- Pelvic Tilt
- Glute Set
- Toe Yoga

Diaphragmatic Breathing



[Figure 11: Muscles worked. Picture adapted from: SciePro/Shutterstock.com]

Background:
Most of the backgrounds for the exercises are much shorter than this one. Since many people do not breathe properly, I wanted to reinforce why this exercise is so important. Without making this a full blown anatomy lesson, I will try to keep this as simple as possible. Many people take breathing for granted, and do not use the proper muscles to breath.

The diaphragm is one of our prime breathing muscles; it separates the chest from the abdomen (as seen in figure 11). Its sole purpose is to pull air into the lungs. It does this by moving downward into the abdominal area. As it contracts, a negative pressure is created in the lungs allowing air to move in. Muscles between the ribs act as primary/secondary breathers as well, lifting the ribs to create the negative pressure in the lungs. There are several muscles from the neck and shoulders that attach onto the ribs further assisting the task of breathing. As activity level increases, such as when running, more air is needed, and a greater number of muscles will be recruited in order to meet the oxygen demands of the body.

While sitting, the organs are pressed upward, decreasing the space for the diaphragm to move downward. Over time, the diaphragm operates less, before deciding to take a vacation. In the end, the shoulder and neck muscles will play a larger role in casual breathing by assisting with lifting the ribs. But remember the prime function of the shoulder and neck muscles is to operate the neck and shoulders, not basic breathing. This transition to greater reliance on assistor muscles leads strains and tightness in the neck and

shoulders.

A bonus effect of doing diaphragmatic breathing is the potential effect on the nervous system. You may have heard of the "fight or flight" response that deals with the sympathetic nervous system; the purpose of this portion of the nervous system is to prepare the body to fight for your life or prepare to run away to save yourself. The problem is that now-a-days, there are too many things in our lives that stimulate this portion of the nervous system and which make it harder to get ourselves into a more relaxed state due to the over activity of the nervous system. There is a flip side to the "fight or flight" called the "rest and digest." This side operates from the parasympathetic system, where a long and important nerve runs along the back of the chest cavity called the vagus nerve.

As you lie on your back and perform deep diaphragmatic breathing, the diaphragm rubs against the vagus nerve stimulating it causing the "rest and digest" response. It takes about 10 minutes of deep diaphragmatic breathing in order to stimulate the nerve and help get the body back to a baseline level and not be so overly excited. The response might occur as well in other positions, but it is easiest when done lying on the back. Lie on down and try it to see if it relaxes you. Try and not get frustrated if you have trouble performing the exercise as it may not be easy to perform right away.

The Exercise:

To aid in awareness, start by lying on your back. Just try and relax; start with paying attention to how you are breathing currently. Is the hand on the chest moving first? Do you feel constrained? Is there any wheezing? If you answered yes to the second two questions you may need to be examined further by a medical practitioner. If you the only thing you noticed was that the chest was rising before the stomach, read on.

After assessing your current patterns, let us focus on using the diaphragm:

1. Place one hand on your stomach (right around the level of the belly button) and the other hand on the chest (middle of the breastbone). See figure 12.
2. Next try to push more air into your stomach. The hand that is placed on your stomach should rise first before the hand on the chest. See

figure 12.

3. Exhale and repeat

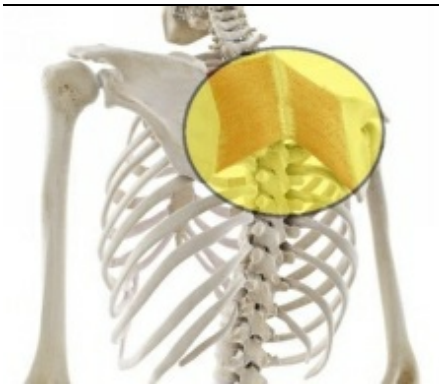
Unless you are trying to swallow the air, the air will not literally be going into the stomach, rather the diaphragm will be moving, and the gut will stick out slightly as the pelvis prevents the abdominal contents from shifting further downward.

Do not get frustrated. This is NOT easy to do at first. As you practice, you will begin to start breathing more with the diaphragm without even realizing it.

As you become more comfortable with using the diaphragm you will be able to practice in any position and activities—practice while going for a walk or a run.

[Figure 12: The figure shows a hand on the stomach and the chest. The stomach moves first before the chest; the yellow is to remind you that the chest is not supposed to move first.]

Scapular Retraction



[Figure 13: Muscles worked. Picture adapted from: SciePro/Shutterstock.com]

Background:
Along with the transverse abdominous and the glute set exercises, this is one of the most important exercises that you need to learn how to perform. In order for the shoulders to work properly the shoulder blade (scapula) must be in the correct position. When the shoulder blade is improperly positioned, the ball of the humerus (upper arm bone) does not sit properly in the socket. By gently retracting the shoulder blade (squeezing them towards each other) you allow the shoulder joints to be positioned more naturally.

Squeeze your shoulder blades together. Was that easy? Did your shoulders rise slightly? Well, they should not have, our bodies find the easiest way to do things, not necessarily what is best for us, so the body cheats. Most of us tend to have more forward rolled shoulders, our heads pushed more forward, and potentially even extra curving in the upper back. For an extreme visual image, think of the Hunchback of Notre Dame. We spend long periods of time typing on computers, staring down at handheld devices, and possibly reading actual print. Since the body follows the head, the more you look down the more the body will fold in on itself. This exercise is also made more challenging by tightness in the pectoralis muscle which further pull the shoulders forward.

Remember, gentle practice makes perfect. You may not be able to perform this exercise with a large motion; it does not need to be a large motion. What we are trying to achieve is re-education of where the shoulder blades are supposed to be at rest.

The Exercise:

1. Start with gently pulling the shoulders blades back, or down and back.
2. Make sure that you are not moving your shoulders themselves to initiate the movement as seen in figure 16. They will want to help, but do not let them.
3. The motion should be small and controlled. It is sometimes best performed in front of a mirror as it can be hard to tell of you are shrugging or swinging your arms.

Note:
Make sure that the lower back is staying neutral and relatively relaxed, it should not be tightening any further. It certainly should not be arching at all while you are trying to squeeze your shoulder blades back.

[Figure 14-15: Transition between the two pictures above, with the top most showing the relaxed state and the bottom picture with an arrow pointing backward and slightly downward for the motion of the shoulder blades.

[Figure16-17: Picture on the top shows too much activation of the shoulders, as seen by the arms being too far behind the body. The picture on the bottom shows the upper traps being involved too much as seen by the shrugging.]

Shoulder Rolls

[Figure 18-19: Muscles worked. Picture adapted from: SciePro/Shutterstock.com]

Background:
The shoulders tend to be tight because of a multitude of reasons—stress and poor posture are some of the major causes. This exercise is a nice and gentle way to help get blood flowing more efficiently into the shoulder and neck region. They should feel more relaxed after performing this exercise.

The Exercise:

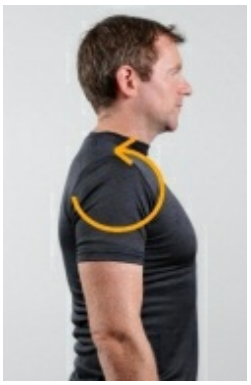
1. Start with good posture.
2. Shrug the shoulders up towards the ears.
3. In an exaggerated manner squeeze the shoulder blades together.
4. Finish by pulling the shoulders downward, then gently bringing them forward and back up into a shrugged position for another roll.

Repeat the motion going the other direction.

1. Start with good posture.

2. Shrug the shoulders up towards the ears.
3. Push the shoulders forward and roll downward.
4. Finish by pulling the shoulders backward and upward preparing them to be pushed forward for another roll.

Note: If you were to look at your body from the right side (as seen in figure 20), it would look like you are rolling your shoulders in a **clockwise or counterclockwise** circle. I would recommend backward roll direction over the forward direction since we already spend most of our time in the forward position with daily activities. The directions for the other direction are below though if you want to try it out.



[Figure 20: The picture shows starting with good posture. The arrow directs us to in a circular pattern going backwards. Going backwards really helps to awaken the muscles of the upper back.]

Chin Tuck

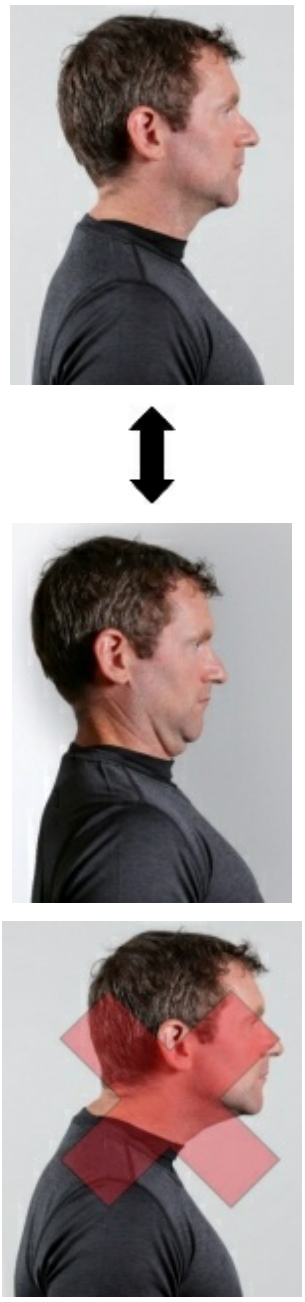
[Figure 21: Muscles worked. Picture adapted from: SciePro/Shutterstock.com]

Background:
Poor posture and decreased ability to use the cervical spine is prevalent in our society due to the nature of most occupations and excessive use of electronics. This exercise works on the deep cervical flexors, which will help to improve the overall stability of the neck. Work on not being a bobble head figurine.

The Exercise:
Position 1:

1. While sitting comfortably, gently pull the head backwards as if you are trying to touch the chin to the middle of the neck (where the Adam's apple would be on a man). See figure 22-23.
2. Upon relaxing make sure not to push the head forward as seen in figure 24.

Note: DO NOT strain to touch the chin to the neck; over-working this exercise can put undue stress on the upper portions of the spine. Also, you might feel a stretch in the back of the neck, as long as it is gentle this will be fine. We are working the deep muscles of the front of the neck; you should not feel any "work" in the back of the neck. Remember to keep this a gentle and controlled exercise, do not race through it.



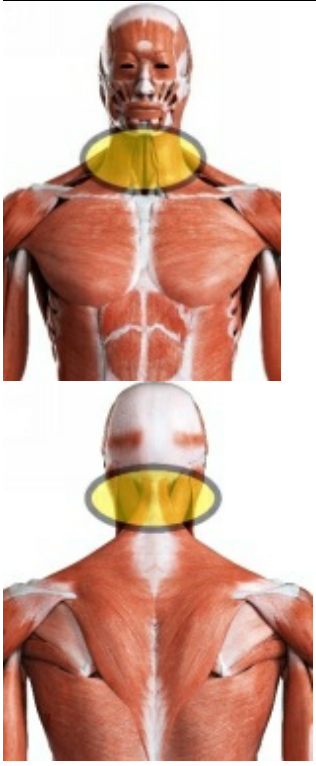
[Figure 22-24: Transition between the top two pictures; aiming for the Adam’s apple as you pull back. Upon releasing make sure that you do not push the head forward as seen in the picture on the bottom.]

Position 2:
The same exercise can be performed while lying on your stomach, especially if you slide to the edge of your bed so that no support is provided, maximizing the work against gravity. Nothing changes with the motion.

1. Gently pull the head backwards as if you are trying to touch the chin to the middle of the neck as seen in figure 25-26.
2. Avoid extended the neck back as seen in figure 27.

[Figure 25-27: The picture on the top shows relaxed state, while the picture in the middle shows a gentle tucked position; transition between these two. The picture on the bottom shows the head being extended back rather than being tucked; remember the focus of the muscles being worked are in the front of the neck, not the back.]

Cervical Isometrics



[Figure 28-29: Muscles worked. Picture adapted from: SciePro/Shutterstock.com]

Background:
As mentioned in the previous exercise, the head being improperly positioned too far forward results in the muscles of the neck being weak. By focusing on strengthening all the muscles of the neck, you will gain better support for your head and reduce the risk of having pain, numbness, or tingling into the arms. If you feel overwhelmed with the number of exercises to perform, I generally recommend focusing on the neck extension-based motion, which can easily be done against a headrest in your car.

Exercise:
Version 1: Using hands
Extension

1. Place the fingertips behind the head.
2. Apply gentle pressure backward against your hands, while the hands provide equal pressure back into the head. There should not be any

motion being produced.

3. Hold for 5-10 seconds at a time.

Note: I recommend using both hands at the same time with this exercise. The problem with using only one hand is that the head will push more towards one side instead of going purely backwards or forward, see figure 34. Also the elbows/forearms do not need to be pulled out to the side, the forearms can rest against the sides of your head.

[Figure 30: pushing the head backward into the hands.]

Flexion

1. Place the heel of the hand or the fingers tips on the forehead or cheek bones as seen in figures 31-33. (DO NOT press on the jawbone).
2. Apply gentle pressure forward against your hands, while the hands provide and equal pressure back into the head. There should not be any motion being produced here.
3. Hold for 5-10 seconds at a time.

[Figure 31-33: Three examples of hand placement for isometric flexion. On the top, the heel of the hand, the middle shows the fingertips on the forehead, the bottom the fingertips on the cheek bones.]

Note: Once again, I recommend using both hands at the same time with this exercise. The problem with using only one hand is that the head will push more towards one side instead of going purely forward.

[Figure 34: Do not use just one hand for forward or backward pushing.]

Side Bending

1. Place the heel of the hand or the fingertips on the side of the head just above the ear as seen in figure 35.
2. Apply gentle pressure sideways against your hands, while the hands provide and equal pressure back into the head. There should not be any motion being produced here.
3. Hold for 5-10 seconds at a time.

Note: Sometimes it is best to perform this exercise in front of a mirror to make sure that you are not moving.

[Figure 35: Pushing the head sideways into one hand. One hand is ok for sideways and rotational movements.]

Rotation

1. Place the heel of the hand or the fingers tips on the side of the forehead or cheek bones as seen in figure 36. (DO NOT press on the jawbone as seen in figure 37).
2. Apply gentle pressure as you turn your head into your hand, while the hand provides equal pressure back into the cheekbone. There should not be any motion produced here.
3. Hold for 5-10 seconds at a time.

[Figure 36-37: Turning the head, take note of the hand position on the cheek bone (on the top) rather than the jaw (on the bottom). One hand is ok for sideways and rotational movements.]

Version 2: Using object

Some people may find it difficult to have the hands pressing against their head, due to shoulder or neck pain. An alternative is using a ball, rolled towel, or a pillow.

Extension

As I mentioned earlier, the headrest in your car works very nicely for strengthening the back of the neck. Simple place the back of the head against the headrest and press into the padding. While at home:

1. Place a towel against the wall behind the head as seen in figure 38.
2. Press the head into the towel.
3. Hold for 5-10 seconds at a time.

[Figure 38: Pushing backward against a rolled towel on the wall. Note the body does not need to be touching the wall. Do not lean, keep a good posture.]

Flexion

1. Place a towel against the wall at your forehead as seen in figure 39.
2. Apply a gentle pressure forward into the towel, do not try and force the towel through the wall.
3. Hold for 5-10 seconds at a time.

[Figure 39: Pushing forward against a rolled towel on the wall. Note the body does not need to be touching the wall. Do not lean, keep a good posture

Side Bending

1. Place the towel to the side of the head while standing perpendicular to the wall as seen in figure 40. Make sure that the object is big enough you do not want the neck to actually bend as seen in figure 41.
2. Press the head sideways into the towel.
3. Hold for 5-10 seconds at a time.

[Figure 40-41: The figure on the top has the proper side bend, while the figure on the bottom uses too small of a towel which cases the neck to side bend incorrectly. Remember to keep a good posture, there should not be any motions with this exercise.]

Rotation—It is easier to perform rotation with the hand than with an object.

Transverse Abdominous (TrA)

[Figure 42: Muscles worked. Picture adapted from: SciePro/Shutterstock.com]

Background:
Along with the scapular retractions and glute sets, this is the most important exercise and the foundation to over half of the other exercise that you will perform. Most people are familiar with the rectus abdominous (your six-pack muscles) and many are familiar with the obliques, but these are movers or anti-movers, they do not excel at stabilization. The TrA is one of your prime low back stabilizing muscles. By wrapping most of the way around the torso, a cylindrical effect is created when the muscle is engaged. The weight and downward force of the upper body on the lower body is more evenly disbursed around the abdomen rather than solely applying the pressure to the spine.

If you are not convinced, think of it this way. By taking a piece of paper and rolling it into a loose cylinder (place a piece of tape to keep in rolled), a plate can be placed on top of the cylinder and supported. In much the same way the upper body is supported on top of the pelvis. As you attempt to lift, push, or pull on objects, the trunk must be properly supported and the TrA engaged. Otherwise more stress is placed onto the spine rather than be disturbed move evenly around the trunk.

NOTE: Once again the most important times to use this muscle are any time that you change positions or apply pressure on an object to lift, pull, or push.

The Exercise:
The easiest position to start in is lying on the back due to gravity assisting this motion.

1. Gently draw the belly button to the spine, as if you are sucking in and trying to fasten a tight pair of pants as seen in figure 43.
2. Hold 0-5 seconds at a time.

The key here to keep in mind is that you do not need to perform a strong contraction for this muscle to be used effectively. When contracting too aggressively the other abdominal muscles will likely kick in, which can throw the posture off by pulling the upper body forward.

[Figure 43: The arrow shows the direction of the belly button being drawn in towards the spine.]

Variations:
You will want to practice this exercise in every position. You can also work on drawing the belly button into different depths. Think of rest being 0% and drawing in being 100%. Practice pulling in 25%, 50%, 75%, 100% think of it like an elevator going to different floors, it may jump around to varying heights, not always to the top or the bottom. Remember, exercise is about control; make sure that you keep a smooth transition as you draw in and release to varying amounts.

Glute Set

[Figure 44: Muscles worked. Picture adapted from: SciePro/Shutterstock.com]

Background:

The last of the most important muscle groups—along with the transverse abdominous and scapular retractors. The glutes are not just seat cushions, or at least will not be after you start working them more often. Due to the excessive sitting and inactivity that we all put our bodies through, the gluteus maximus tends to not work properly. The sitting starts in grade school and tends to continue many years into our adult lives. We significantly under utilize our gluteus maximus. It should be one of the prime pushers in propelling us upstairs/inclines and contributes to pelvic positioning while walking. By controlling the pelvic position there is a reduction in stress placed upon the low back. By having weak glutes, you put yourself at a greater risk to having low back pain.

The Exercise:
In any position gently clench your glutes. Focus on trying not to have any other muscle contract. If you are sitting, you should feel yourself rise up slightly as the glutes tighten underneath of you.

Variation 1:
If you are having trouble getting the buttocks to clench:

1. Lie with your feet out straight.
2. Gently press the heels together as seen in figure 45. Other muscles will contract at the same time, however, this should cause the glutes to fire more easily.
3. Hold 0-10 seconds apiece.

[Figure 45: Example of pushing the feet together.]

Note: As you can start being able to isolate the contraction of the glutes, push the heels together less forcibly until you are able to tighten your glutes without pushing the heels together at all.

What else may have activated? Did you feel your thighs tighten up as well? Just as you can wiggle your fingers independently, you should be able to tighten your buttocks without having to tighten the thighs. It can take time to re-establish the proper brain muscle connection needed to isolate this powerful muscle.

Variation 2:
If you are having trouble getting the buttocks to clench:

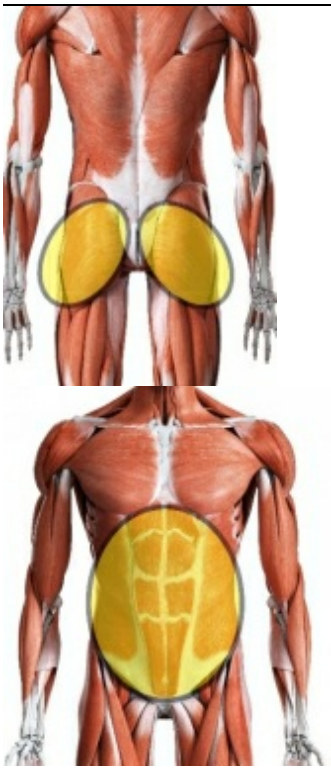
1. lie with the knees bent comfortably as seen in figure 46.
2. Gently press the heels into the ground without lifting your hips from the ground.
3. Hold 0-10 seconds apiece.

Note: we will talk about bridging later, right now focusing on feeling the glutes tighten under you.

[Figure 46: Example of pushing the heels into the ground.]

After successful isolation of the glutes while lying down, start practicing in other positions such as while sitting or standing.

Pelvic Tilt



[Figure 47-48: Primarily the glute max is used, with assistance from the core. Picture adapted from: SciePro/Shutterstock.com]

Background:
Being able to control the pelvic positioning is important for the proper care of the low back. While standing, most people tend to let the pelvis tip forward (called an anterior pelvic tilt). This forward motion puts the low back into a further arched positioned placing undue stress onto the low back. Learning how to gently tilt the pelvis backward will help reduce stress and pain in the low back. From a functional standpoint, the goal is to be able to obtain a neutral position in the low back while standing; we do not want to over correct, which will overly flatten the low back.

The exercise will be performed in two different positions. The purpose to start in the lying position is to work on the control aspect of the motion, whereas the standing is to work on the functional relevance of the exercise. While lying down you will be able to flatten the back further. The standing motion will be more of a challenge and a subtle motion.

Note: there are two muscle groups that can perform this exercise. The abdominal muscles can pull the pelvis towards you or the gluteal muscles can create the tilt. The end goal is to be able to use your glutes, they are the muscles that actually drive most of the motion while standing. The abdominal muscles are more meant to assist the motion rather than being the primary driver. If you have trouble engaging the glutes or are not even sure what the glutes are, click here to go back to the glute sets.

The Exercise:
Lying down

1. Lie on your back with the knees bent to a comfortable amount.
2. Gently try to flatten the low back to the floor. Think of the pelvis as being like a bucket, the goal is to try and pour the bucket toward your head.
3. Hold for 3-10 seconds and relax.

Note: Practice both full tilts and partial tilts (not tilting fully).

[Figure 49-50: Start in relaxed position with knees bent. Try to use your glutes to flatten your back to the ground. The picture on top has been zoomed in to try and show the arching of the low back and the light coming from underneath, while the picture on the bottom has an arrow to show the motion and the back all the way flattened.]

Progression:
Standing

1. Start with the hips and upper back against the wall as seen in figure 51 (the head does not need to touch the wall).
2. Tilt the pelvic back toward the wall, like you are trying to pour the bucket behind you. See figures 52-53.
3. Hold for 3-10 seconds and relax.

[Figure 51: Tilt against the wall.]

Notes: The closer the feet are to the wall, the more challenging this exercise will be, the farther away the feet are from the wall the easier the exercise will be. Practice both partial tilts and full tilts. Do not strain to flatten the back, the motion will not be able to be as large as while lying down.

[Figure 52-53: Top picture shows some light peeking through behind the back for the start position. The picture on the bottom shows the backwards tilting motion (“dumping the bucket behind you”). Transition between the two pictures.]

Toe Yoga

[Figure 54: The main muscle in the foot that is worked with toe yoga. Several other muscles work during this exercise, but this one is the most important. Picture adapted from: SciePro/Shutterstock.com]

Background:
Just as the fingers are capable of wiggling independently, the big toe has separate musculature from the little toes (which all share a common muscle). The big toe should be able to move the opposite direction of the little toes which allows for better stabilization of the foot/ankle, which in turn can allow for better control higher up the leg since everything is connected. By having better control in the foot/ankle you can help reduce the instances of ankle sprains and reduce pressures on the knee.

The arch of the foot is supported by very few structures. The plantar fascia is the main support structure; it is made of strong inert connective tissue, there is nothing here to strengthen. The muscle that helps to push the big toe to the ground is located within the arch as well and when it operates properly, more support is provided, and pressure can be alleviated from the plantar fascia.

One cause to excess pressure to the plantar fascia is tightness within the calf. If the calf is too tight, the heel lifts from the ground too early causing extra strain on the plantar fascia. (click the link to learn how to properly stretch the calf.)

You might have significant trouble performing this exercise the first time that you try it. Do not beat yourself up. Due to several different reasons (shoes being the main one in my opinion), this exercise is not normally easy to perform. But mastery of the exercise will gain better control of the muscles

within the foot.

The Exercise:

1. Start with keeping the foot flat. You want to make sure that you maintain your arch the entire exercise, the heel and the forefoot should stay grounded.
2. While pressing down with the big toe, try and raise all the little toes as one (the little toe may not lift as high, but do not worry too much about it).
3. After completing about a 30-90 seconds of this exercise, switch and press down with the little toes, while raising the big toe.

Note: the height is not the important part currently, focus on the quality of the lift. You will have an opportunity to gain more height as you get stronger.

[Figure 55-56: On the top we see the big toe up while the little toes push down. The bottom shows the little toes up while the big toe pushes down.]

Progress for the exercise is simple: as it gets easier, rather than sitting, perform while standing with both feet on the ground. You will progress to being able to perform while standing on one leg which allows this exercise to also become a balance exercise.

While performing the exercise, make sure that you do not curl the toes as the other toe(s) raise up. The down toes must be pressing down into the ground to get the most out of the exercise while staying as flat as possible. Also make sure that you only use your toes to perform the exercise, do not try and use your hand to hold the toes down. Using your hand will defeat the purpose of the exercise which is to gain better control of the toes. Once again, the height/size of the movement is not as important as the control side.

[Figure 57-58: Top we see the toes incorrectly scrunched, while the picture on the bottom shows the toes staying nice and flat. (my second toe is naturally crooked, just ignore it).]

The Support (Intermediate Level Exercises)

Here are 25+ exercises that build upon the foundation that you have laid down—several of the exercises have been grouped due to similar instructions. Make sure that you have reviewed the basic exercises and are able to perform them. If you have not built that foundation, you will have issues down the road due to compensations. The exercises are as follows:

- ITYW
- Chops/Lifts
- Lat Pull
- Shoulder Diagonals
- Rowing
- Anti-Rotations
- Step Outs
- 3-Way Shoulder
- Bilateral External Rotation
- Push-Up
- Plank
- Leg lift with core stabilization
- Crunch/Cross Crunch
- Bridge
- Superman
- Hip Abduction Lying Down
- Farmer Carry
- Hip Hinge
- Single Leg Deadlift
- Squatting/Lunges
- 3-Way Hip
- Single Leg Balance
- Tandem Balance
- Heel Raises

There are many pieces of equipment that could be used, but to keep things simple and less expensive we will keep the following exercises to bands and weights. If you have access to a gym or are even lucky enough to have one at your house, then by all means use what you have at your disposal.

ITYW

[Figure 59: The prime workers are the upper back muscles, while the shoulders and the lower back are worked more through modifications. Picture adapted from: SciePro/Shutterstock.com]

Background:
As mentioned several times already, the upper back is weak due to disuse and poor posture. This is one of the best sequences for strengthening the upper back. The focus of this exercise is on using the shoulder blade muscles to drive the motions and minimize the actual shoulder use. For those looking for more of a shoulder work out, there is an "ITYW+" variation discussed after the lying and standing versions are discussed.

No matter which version you are doing, you must drive the motion with the shoulder blade; the scapular retraction as the basis of the exercise. Due to the variance in positioning you can work more muscles than just the upper back and shoulder. The neck and low back stabilizers as well as the glutes are able to be worked based on how the legs are positioned while standing or how much of the upper body is supported while lying down.

This exercise gets its name from the arm positions:

I: The arms are at the side next to the body with the arms straight.

T: The arms are straight out to the side with the arms straight.

Y: The arms are overhead at a slight angle with the arms straight (extra work for the lower traps).

W: The arms are over head with the elbow bent at about 90 degrees (extra work for the rotator cuff).

The exercise can be performed either while lying down or while standing. Standing requires the use of bands, while lying down can either be with or without weights.

Before discussing the specifics of the exercise there are a couple of things worth mentioning.

While Lying down

- Try and perform the exercise without having the head supported as this will give you further work for the neck stabilizers at the same time (try using the chin tuck position 2).
- When using the ball, the closer that the ball is to the chest the easier the exercise will be for the low back and lower body, the closer you get the ball to the hips the more work that will occur at the low back and lower body. Remember that the focus of the exercise is supposed to be the upper back, so adjust accordingly as to not strain the low back muscles.

While standing

- You must use bands. Hand weights do not give the correct resistance while standing.
- The foot positioning does make a difference. If the feet are in line/shoulder width apart from each other the low back and hips will work harder to maintain an upright posture. While the feet are staggered with one forward and one back, you will be able to focus more on the upper back with less back and hip activation due to

being more stable.

No matter if you are lying or standing, you want to make sure that the hand stays in line with the shoulder and does not travel farther behind the body during the basic ITYW, they are not allowed to travel further back until you get to the “+” a little further on.

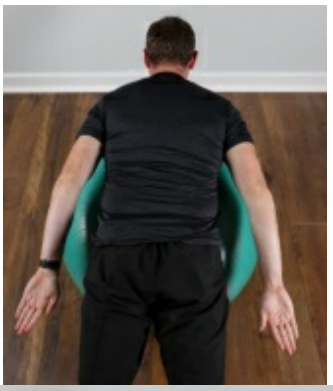
The Exercise:

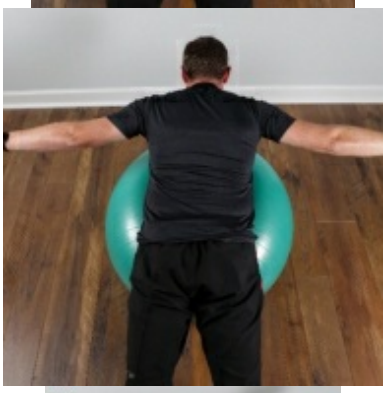
Lying Version:

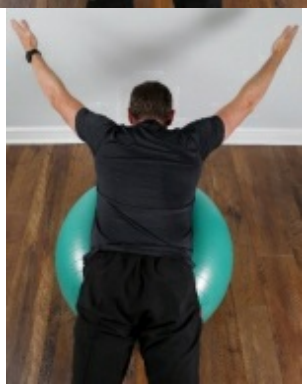
1. Start with lying face down on a bench, over a ball, or on your bed.
2. Position the arms either at your side, out to the side, or over your head as seen in fig 63-66.
3. Squeeze the shoulder blades back as you lift the rest of the arm up, keeping the arm in line with the shoulder blade.
4. Relax the shoulder blade and arm back down.
5. Hold the squeezed position 0-5 seconds repeating over 30-60 seconds for each letter. You will typically need more resistance when the arms are lower and closer to the body, and less resistance with the overhead position.

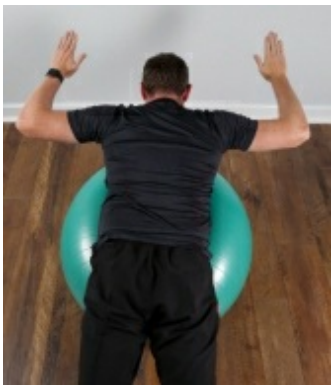
The arm only looks like it is moving backward because it is attached to the shoulder blade, but it should not move farther back behind the shoulder.

Remember the exercise is subtle, it is not a large motion.









[Figure 60-63: Over a ball. The top shows the “I”, the second picture is the “T”, the 3rd the “Y”, and the bottom the “W”.]

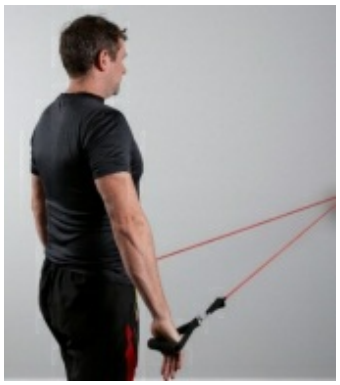
Standing Version:
The bands will be anchored in fronted of you. For optimal resistance:

- I- the anchor will be set between waist and chest level.
- T- the anchor will need to be around chest level.
- W and Y- the anchor will need to be around head or overhead level.

1. Starting with the bands anchored in front of you, step back far enough that you have a little tension on the band.
2. Squeeze the shoulder blades backward, keeping the arm locked in line with the shoulder blade.
3. Relax the arm to the start position.
4. Hold the squeezed position 0-5 seconds repeating over 30-60 seconds for each letter. You will typically need more resistance when the arms are lower and closer to the body, and less resistance with the overhead position.

The arm only looks like it is moving backward because it is attached to the shoulder blade, but it should not move farther back behind the shoulder.

Remember the exercise is subtle, it is not a large motion.



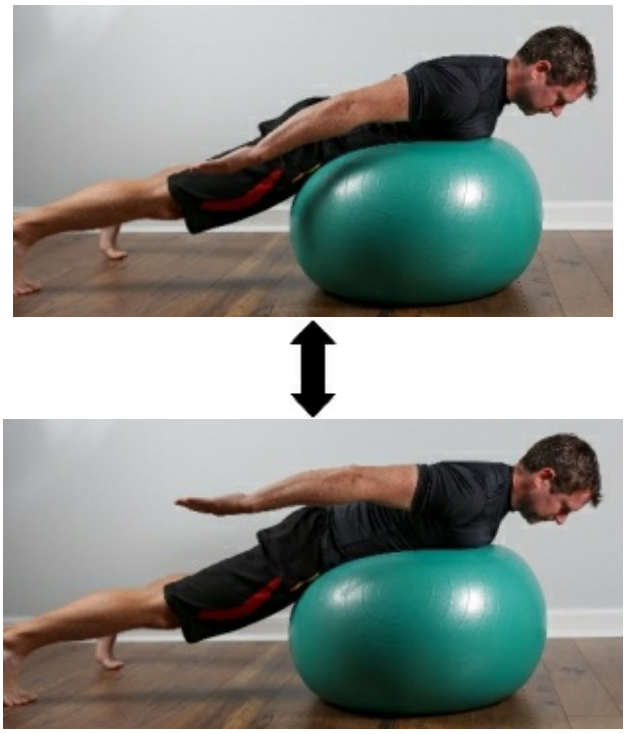
[Figure 64-67: Using the bands. The top shows the “I”, the second is the “T”, the third is the “Y”, and the bottom the “W”.]

Extra Variation “ITYW+”:
As mentioned earlier, the focus is on the shoulder blade. Once you have done your sets of regular ITYW, you can perform this variation—over the ball or in standing. The shoulder will get more work here, the deltoid and rotator cuff to be exact.

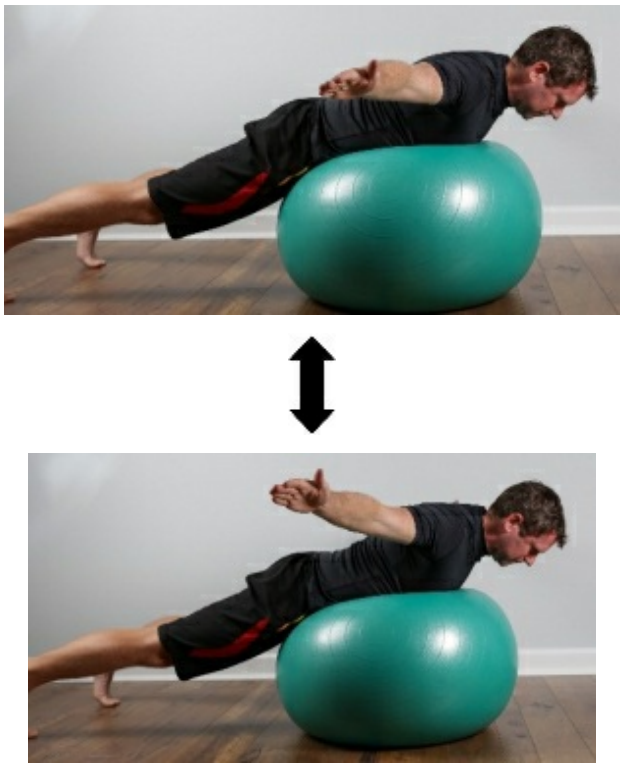
To achieve the extra work, we will NOW let the hands travel farther back than the shoulders. We do still want to make sure that you are initiating the motion with the shoulder blades. Many times, I have seen people use only the shoulders while the shoulder blades are stationary and not pulled back.

To perform the exercise, you will start with the regular ITYW as mentioned on the previous page, but then let the arm will be moved back farther.

The motion is easiest to perform in the I and T positions. While doing the “+” in the Y and W is much harder to perform and will not be an exceptionally large motion past the shoulder.



[Figure 68-69: Top is the standard “I”, while the black arrow below it directs the transition to the “I+” on the bottom.]



[Figure 70-71: Top is the standard “T”, the black arrow below it directs transition to the bottom for the “T+”.

[Figure 72-73: The Y (top) and the W (bottom) typically have such limited ROM that a “+” motion is not typically needed.]

Chops/Lifts

[Figure 74-75: The two pictures above are muscles for the chop. Picture adapted from: SciePro/Shutterstock.com]

[Figure 76-77: Two pictures are muscles worked during the lift. Picture adapted from: SciePro/Shutterstock.com]

Background:
This is exercise has similar attachment set up to the shoulder diagonals, although both hands will be used at once. This is primarily a core exercise plus a little bit of shoulders. As you rotate and move, you also get to work the hips, especially as you focus more on stabilizing the trunk/core.

The Exercise:
Chop:

1. Band anchored high, you will stand perpendicular to the attachment so that the band can come down and across the body as seen in figure 78-79.
2. The hands start high to one side of the body, then lower crossing the body in a diagonal pattern cutting low and across towards the opposite hip. The trunk will twist and bend SLIGHTLY as it follows the arms.
3. No hold time is needed, repeat the motion for 30-90 seconds, then perform on the other side. No significant rest time should be needed

when switching sides.

Note: there should be a gentle bend in the knees while standing. It does not need to be a squat, but do not stand with the knees locked. Also, the hips will pivot slightly like swinging a bat, and the foot on the starting side may want to pivot, if so, allow it and the heel raise up slightly.

[Figure 78-79: Start with both hands high to one side as you come down and across the body towards the other hip. Note the slight trunk flexion, you should not be bent over when performing this exercise, it is not a crunch. Transition between the two pictures.]

Lift:

1. Band anchored low, you will stand perpendicular to the attachment/band so that the band can come up and across the body as seen in figure 80-81.
2. The hands start low to one side of the body then raise crossing in a diagonal pattern cutting low to high finishing above the head on the opposite side of the body.
3. No hold time is needed, repeat the motion for 30-90 seconds, then perform on the other side. No significant rest time should be needed when switching sides.

Note: There should be a gentle bend of the knees while standing. It does not need to be a squat, but do not stand with the knees locked. The hips can pivot slightly like swinging a bat, and the foot on the starting side may pivot and the heel raise up slightly. The lift can be performed using a weight, but the diagonal resistance of the band is lost since gravity pulls downward on the weight.

[Figure 80-81: Start with both hands down by one hip and bring the hands up and across the body. You will be pushing through the ground with the foot closer to the band attachment—the left foot in the picture above. Transition between the two pictures.]

Lat pull down

[Figure 82-83: Muscles worked. Picture adapted from: SciePro/Shutterstock.com]

Background:
This is a great exercise for the shoulders and upper back. The Latissimus Dorsi (lats) have fibers that blend into the low back as well, which helps to give further support and protection to the back in general. This exercise is the brother to a pull up; the difference is that the muscles are pulling the opposite direction since the hands are coming down toward the body, rather than the body coming upwards to the hands. Pull ups are a great exercise as well, but I would consider them to be more of an advanced exercise that is outside the scope of this book.

The Exercise:
This exercise can be done with bands or machines.

1. Position bands anchored at the top of the door frame or similar height.
2. Kneel down or squat in order to keep a light tension on the bands.

3. Pull down towards the body as seen in figure 84-85.
4. Relax the arms back above the body.

There are several variations of hand positions that can be performed:

a) Pull your hands down to your chest with your palms facing forward.
b) Pull your hands down to your chest with your palms facing you.
c) Keeping the hands wider, pull your hands to your shoulders with either the palms facing you or forward.

Each position gives slightly different muscle emphasis, so try each one out.

[Figure 84-86: Top picture- arms positioned over the head with light tension on the band to start; transition back and forth with the middle picture—pulling the hands to the front of the shoulders. The bottom shows an alternative finish position with the arms closer in.]

Shoulder Diagonals

[Figure 87-88: Muscles worked. Picture adapted from: SciePro/Shutterstock.com]

Background:
This exercise focuses on the shoulders, chest, and upper back depending on which direction you are working. The nice thing here is that the exercise works on simulating functional movements that require the arm to cross the body.

The Exercise:
Variation 1
High to low:

1. Anchor band above the head.
2. Stand perpendicular to the door with the left side of the body nearer to the band attachment.
3. With the right hand positioned across the body by the left shoulder, pull down and across the body past the right hip in a diagonal pattern.
4. No hold time is needed, repeat the motion for 30-90 seconds. Then

perform on the other side.

Note: This will work on the shoulder and upper back. There will be no hip motion.

[Figure 89-90: A high anchor point. Transitioning between the top and bottom picture; starting across the body and pulling down and out.]

High to low:

1. Anchor band above the head.
2. Stand perpendicular to the door with the left side of the body nearer to the band attachment.
3. With the left hand positioned out to the side by the left shoulder, pull down and across the body past the right hip in a diagonal pattern.
4. No hold time is needed, repeat the motion for 30-90 seconds. Then perform on the other side.

[Figure 91-92: A high anchor point. Transitioning between the top and bottom; starting out to the side and pulling down and across the body.]

Low to high:

1. Anchor band near the feet.
2. Stand perpendicular to the door with the left side of the body nearer to the band attachment.
3. With the left hand positioned out to the side by the left hip, pull up and across the body past the right shoulder in a diagonal pattern.
4. No hold time is needed, repeat the motion for 30-90 seconds. Then perform on the other side.

Note: This will work on the shoulder and upper back. There will be no hip motion. The low to high can be performed using a weight, but the resistance will not be quite right as the resistance of gravity goes straight down, where the band is at an angle.

[Figure 93-94: A low anchor point. Transition between the two pictures; pulling up and across the body; starting down and out to the side, pull up and across the body.]

Low to high:

1. Anchor band near the feet.
2. Stand perpendicular to the door with the left side of the body nearer to the band attachment.
3. With the right hand positioned across the body by the left hip, pull up and across the body past the right shoulder in a diagonal pattern.
4. No hold time is needed, repeat the motion for 30-90 seconds. Then perform on the other side.

Note: This will work on the shoulder and upper back. There will be no hip motion. The low to high can be performed using a weight, but the resistance will not be quite right as the resistance of gravity goes straight down, where the band is at an angle.

[Figure 95-96: A low anchor point. Transition between the two pictures, start with arm across the body and coming up and out to the side of the body.]

Variation 2:
This can also be done with a band using both arms at the same time.

1. Start with holding the band at about chest height.
2. Take the left arm up and out to the left side, while at the same time the right arm goes down and out to the right side as seen in figure 97-98.
3. Repeat to the opposite direction. No hold time needed.

[Figure 97-98: Transition between the two pictures, start with both arms out in front then pull apart in opposite directions.]

Variation 3:
The last variation is a self-anchor where one arm moves at a time.

1. Start with both hands above by the left shoulder.
2. Pull the right hand down across the body past the right hip as seen in figure 99-100.
3. Repeat on the other side.

And

1. Start with both hands down by the right hip.
2. Lift the left hand up and across the body past the left shoulder as seen in figure 101-102.
3. Repeat on the other side.

[Figure 99-100: Instead of using an external anchor you can use your other non-moving arm as the anchor as seen above. Transition between the two pictures, starting up to one side pulling down to the other side.]

[Figure 101-102: Instead of using an external anchor you can use your other non-moving arm as the anchor as seen above. Transition between the two pictures, starting down at one side and pulling up to the other side.]

Rowing

[Figure 103-104: Muscles worked. Picture adapted from: SciePro/Shutterstock.com]

Background:
The upper back is a heavily neglected area. You will see that the scapular retraction mentioned earlier is going to be important for this exercise as well. When most people are exercising, they tend to work the arms and the chest but forget about the upper back. The upper back is responsible for pulling based activity, while the chest muscles are for pushing. There are more than twice as many muscles that work for pulling as compared to those that work for pushing, and we need to work on rebalancing the muscles. I would even say that the back should be stronger than the chest.

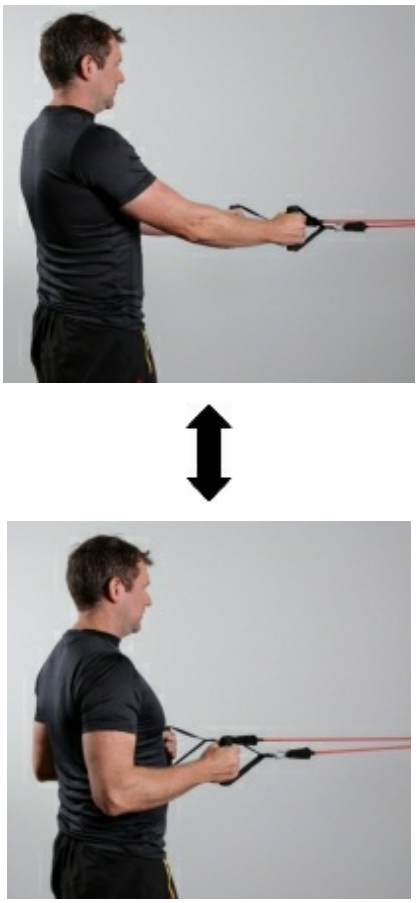
The Exercise:
Bands or weights are required for this exercise.

Bands

1. Anchor the bands to about chest height.
2. Keeping the arms out in front of you while stepping back far enough

so that the band has slight tension.

3. Initiate the motion by squeezing the shoulder blades together while you pull the hands towards your mid to lower ribs. Hold 0-3 seconds, relax and repeat.

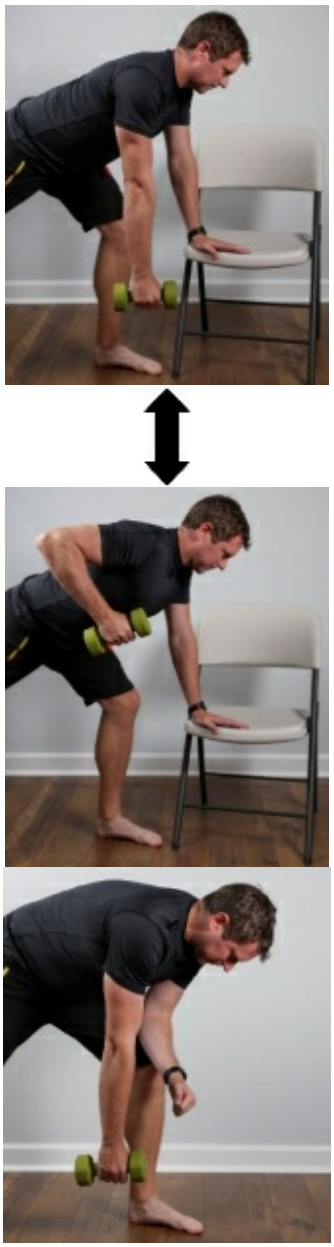


[Figure 105-106: On the top, hands out in front of the body with a light tension on the band, do not let the band sag. Transition between the two pictures. On the bottom we see the shoulder blades and arms pulled back (make sure to lead the motion with the shoulder blades). Pulling towards the ribs.]

Weights

1. Hold the weight in one hand, use the free hand to support your back by placing it either on your thigh or on some other low object such as a chair.
2. Let the weighted hand dangle toward the ground.
3. Squeeze the shoulder blade back while you pull the weight towards your arm pits, but you do not need to make it that far. Hold 0-3 seconds, relax and repeat.

Caution: With the elbow on the knee it is harder to maintain a straight back depending on the length of your upper arm. Avoid bending. Of the examples in the figures below, the hand on the chair is more appropriate for me to keep proper alignment.



[Figure 107-109: Transition between the top two pictures; top shows the empty hand is placed on the chair for support/protection of the low back. The bottom picture is with elbow on the knee (see cautionary note above).]

Note: When performing this exercise, do not forget to engage the TrA to help better support the posture and prevent compensation from the low back.

Anti-Rotations

[Figure 110-111: Muscles worked. Picture adapted from: SciePro/Shutterstock.com]

Background:
A great core exercise that focuses on the obliques. The key to this exercise is maintaining control. The function of the obliques is to either create motion or stop it, this is a perfect example of stopping the motion that the trunk wants to perform. Bands will be needed for this exercise.

The Exercise:

1. Anchored band between stomach and chest height (whichever is more comfortable for the shoulders).
2. Stand with the feet shoulder width apart, perpendicular to the door, with a little tension on the band.
3. Hands will start close into the body somewhere between the stomach and the chest.
4. Keeping the core gently engaged (using TrA), push the hands straight out from the body as seen in figure 112-113. Only push the hands as far from the body as you can control without compensation.
5. Hold this position for 3-10 seconds and bring the arms back in toward

the body. Repeat for 30-90 seconds.

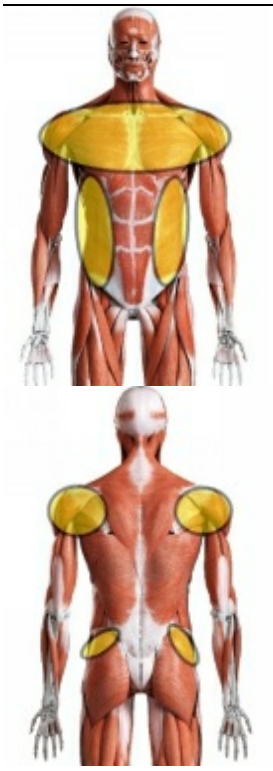
You should feel that you are being pulled/rotated back towards the band attachment while the muscles of the core engage to resist the rotational force. If you do not feel much of a pull, step farther away from the attachment site and try again. Besides the obvious of using thicker bands, the farther that the hands are from the body, the more resistance that you can achieve.

Note: Do not lock the knees, stand with a slight bend to them. Keep in mind that figure 113 is shot at a slight angle to better see the arm position, the hands are still lined up with the middle of the body as they should be, whereas figure 114-115 are showing the over and under compensation.

[Figure 112-113: Start with the hands close into the body while the band has gentle tension on it (top figure). Transition to the right picture where the hands are pushed forward away from the body, making sure that the hands stay lined up with the middle of the body (bottom figure).]

[Figure 114-115: Do not let the hands drift behind (top figure) or push ahead of the body (bottom figure).]

Step outs



[Figure 116-117: Muscles worked. Picture adapted from: SciePro/Shutterstock.com]

Background:
A great core and hip exercise. In addition to the muscles worked with the anti-rotation exercise, you will have an additional workload in the hip. You will be working the side stabilizers as well as the hip rotators. Bands will be needed for this exercise.

The Exercise:

1. Anchored between stomach and chest height (whichever is more comfortable for the shoulders).
2. Stand with the feet together perpendicular to the door, with a little tension on the band.
3. Hands will start close into the body somewhere between the stomach and the chest.
4. Step out to the side away from the attachment site; you should feel that you are being pulled/rotated back towards the band attachment.

5. Hold this position for 0-5 seconds. Step back in towards the attachment to relieve the tension. Repeat for 30-90 seconds.

The easiest way to make this exercise easier or harder without changing the band is to either take a second step or start farther away from the attachment site (be conscious of how far the band will actually bend, do not break it).

You can also adjust the challenge of the exercise by how straight you have the arms. Figure 118-119 shows the arms farther away from the body allowing for more torsion to occur, thus making more of a workload to resist the rotational forces—the exercise is harder. If you keep the elbows bent a little and the hands closer into the body, there will be less rotational force acting on the body—the exercise is easier. Remember control is the most important part of this exercise, so adjust accordingly.

[Figure 118-119: Side stepping back and forth to transition between the pictures as seen above. Keep the arms straight in front of the body.]

3-way Shoulder

[Figure 120: Muscles worked. Picture adapted from: SciePro/Shutterstock.com]

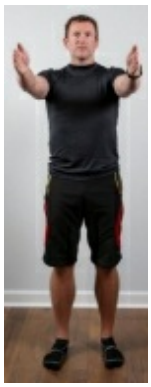
Background:
This is a great exercise for building stronger shoulders. The focus here will be placed on the deltoid and supraspinatus muscles. We will focus just on the front and middle portion of the deltoid here; the backside of the deltoid was worked earlier with the ITY exercise.

The Exercise:
This exercise is three motions all together. You can separate the motions out for each set, or you can cycle through them. You can hold each exercise for 0-5 seconds at the top position before coming back down to rest.

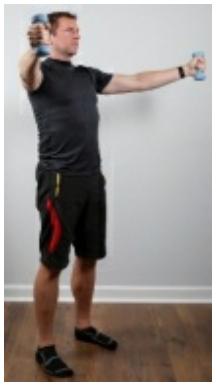
Start with the arms at your sides (figure 121):
1.) Lift the arms forward up to shoulder level with the thumbs up(figure 122).
2.) Lift the arm at about a 30-45 degree angle to shoulder level, like you are reaching out to hug someone who happens to be a little on the larger side. Again, with thumbs up (figure 123).
3.) Lift the arms straight out to the side to shoulder level. Keeping the palms down helps to focus the exercise more on the middle portion of the deltoid (figure 124).
Note: A band or weight can be used for extra resistance as seen on the following two pages. Same instructions apply.

Caution: Some people prescribe this exercise with the thumb down. I feel that the risk significantly outweighs any potential benefit due to the potential

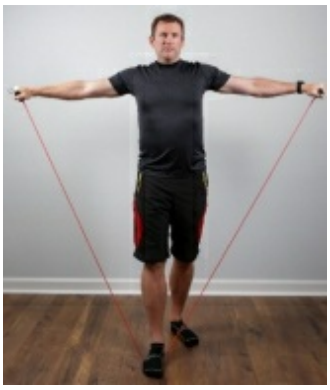
impingement that can be placed on the shoulder musculature.



[Figure 121-123: Transition between the arms resting at the side and each of the above pictures. Top: arms forward. Middle: arms out at 45 deg. Bottom: arms out to the side.]



[Figure 124-126: Transition between the arms resting at the side and each of the above pictures. Top: arms forward. Middle: arms out at 45 deg. Bottom: arms out to the side.]



[Figure 127-130: Transition between the arms resting at the side and each of the above pictures. Second: arms forward. Third: arms out at 45 deg. Bottom: arms out to the side.]

Bilateral External Rotation

[Figure 131: Muscles worked. Picture adapted from: SciePro/Shutterstock.com]

Background:
I may hate the name that many know this exercise by ("No Money"), but it is a great exercise for a generally weak area. The rotator cuff serves to rotate the arm and support the shoulder in the socket. Having this muscle stronger will help the shoulder be happier later into life.

The Exercise:
You will need a band or a weight for this exercise.

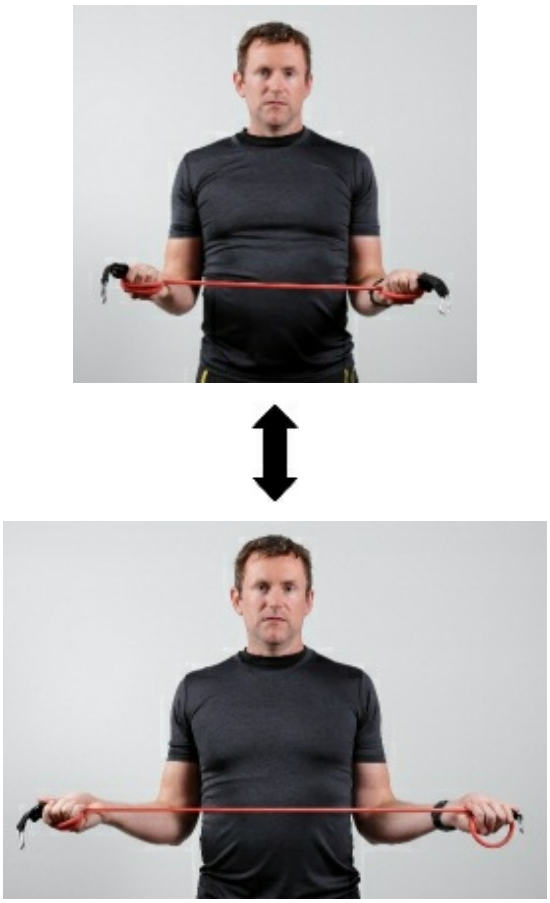
Standing/sitting—with band (figure 132-133)

1. Hold a band in both hands, keeping the arms bent at about 90 degrees with the elbows at your side. Palms up.
2. Pull outward with each hand at the same time, make sure that you also gently squeeze the shoulder blades together.
3. Hold the position for 0-3 seconds before releasing and controlling the hands back to the starting position.

Side lying-- hand weight (figure 134-135)

1. Lie on your right side, use a weight in the left hand.
2. Pull the hand up and out to the side as far as you feel comfortable.
3. Relax back down, no hold time is needed.
4. Repeat on the other side.

Note: Try to keep the elbows bent at the same angle the entire time. Do not let the elbows flare out from the side—while in either side lying or upright, a towel can be placed under the arm(s) being worked to help keep proper alignment (figure 134-136). Figure 137 shows the neck not properly supported, use either your other arm or a pillow to keep the neck in alignment with the body. Remember, control is key.



[Figure 132-133: Top - arms relaxed, palms up; transition to the bottom by pulling outward, keeping the elbows at your side.]

[Figure 134-135: Top starts lying on the side with weight in relaxed position; transition to the bottom picture squeezing the shoulder blade gently back as the arm is rotated out to the side.]

[Figure 136-137: Top- if you have trouble keeping the elbows at your side you can put towel roll underneath the arms. Bottom shows improper neck positioning.]

Push-up

[Figure 138-139: Muscles worked. Picture adapted from: SciePro/Shutterstock.com]

Background:
There are not many exercises that are more basic but effective than a push-up. It is a great workout for the shoulders and chest, as well as the core. Although simple to perform, this exercise is also very easy to mess up. The goal is to keep the body straight as you would while performing a plank. Try not to let the hips drop or raise too high.

The Exercise:
Standard (figure 144-145)

1. Start with straight arms, palms on the ground underneath the shoulders to support the upper body, toes and forefoot supporting the lower body; focus on staying straight as a board.
2. Lower your chest as close to the ground as you can COMFORTABLY.
3. Push yourself back up to the start position.

Note: You may not have the strength to get the chest to the ground at this time. Do not worry, practice makes perfect and you stronger, which grants more control in turn. For more of a challenge while performing this exercise, you can pause for several seconds with the chest hovering over the ground before you push yourself back up.

Caution: Trying to perform a push-up too low to the ground can cause aggravation to the shoulders if you are too tight in the chest or do not have quite enough strength. As you get stronger you will be able to go lower.

[Figure 140-142: Top is an easier position on the knees. The middle transitions to the bottom picture for a standard pushup

Note: Do not let the elbows fling into a locked position as you come back up to the start position, especially if your elbows hyper extend-- focus on controlling the motion. If the exercise is too challenging, then have the knees on the ground or change the angle of the body so that the hands are higher—such as on a chair, counter, or wall.

Variation/Progression:
Where you place your hands will place a different stress load on the chest and shoulders. Instead of having the hands under the shoulders:

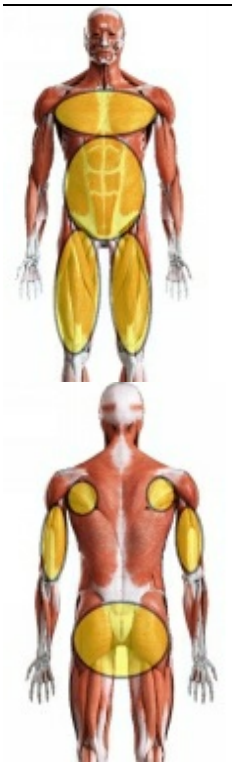
- Try putting them narrower (figure 143).
- Try putting them wider (figure 144).
- Try putting them lower around the nipple line.
- Try raising the hips raise higher and placing your hands above the head—you will look like a triangle; this will allow you to work the upper portion of the pec more.

The options are many; be creative BUT keep it comfortable.

[Figure 143-144: Top picture has a narrow hand placement, while the bottom picture has a wide hand placement.]

Note: If the wrists bother you by having the palm flat on the ground, you can use hand weights or push-up assist bars to keep the wrist in a more neutral alignment which will help you avoid bending your wrists back too far.

Plank



[Figure 145-146: Muscles worked. Picture adapted from: SciePro/Shutterstock.com]

Background:
This is a great core exercise, but one that I see go wrong especially as people start to fatigue. You want to make sure that the body stays straight and that your core is engaged to protect the low back. If the core is not sufficiently engaged, the hips will drop and extra arching occurs at the low back, increasing the risk for damage. There is little advantage to exceed 60 seconds for this exercise; from a functional standpoint, going longer is merely for bragging rights. Instead, I have given progressions to the exercise to make the exercise both more dynamic and challenging (which equals more fun, in my book).

The Exercise:

1. Start with the knees on the ground (padding is always preferred to protect the knees) and palms on the ground under the shoulder.
2. Putting pressure through the toes and ball of the foot, raise the knees

up from the ground. You will be in push-up position. Keep your gaze slightly in front of your hands to help keep alignment of the neck and spine.

3. Try to maintain this position for 30-60 seconds. See the figures on the next page for the standard plank.

If the exercise is too hard, you can always change the angle. Start from a standing position and lean against a counter or chair. The closer to the ground that the body gets, the harder the exercise becomes for the core to properly maintain.

Note: If you start to fatigue and cannot maintain the proper alignment, you can push the hips slightly higher in the air which will reduce the load on the core but not put undue stress on the low back; or you could just stop and take a break. As mentioned above do not let your hips droop. Also, make sure that your elbows are not completely locked out.

Front Plank

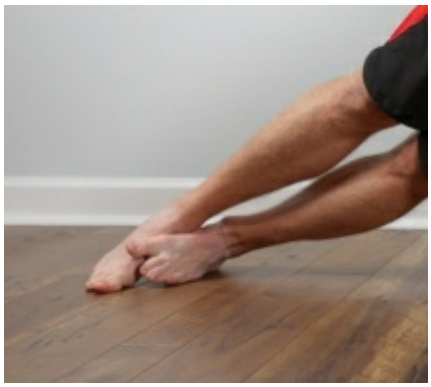
[Figure 147-149: Top shows the easier version of a plank on the knees. The middle has standard plank with straight arms, while the bottom picture has the more challenging plank on the elbows.]

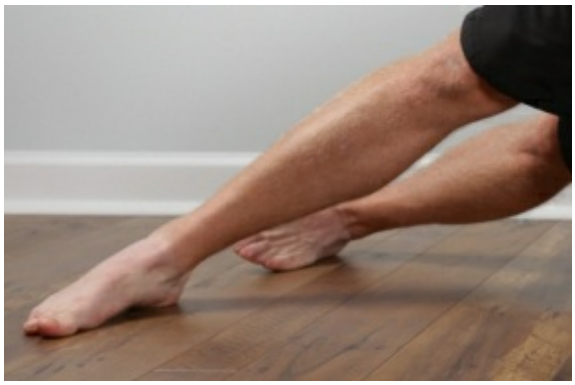
Improper Planks

[Figure 150-151: Be cautious with the top which shows the hips being too high, this does not work the muscles as much due to poor alignment. The bottom which the hips are too low placing pressure on the low back.]

Side Plank

To put more emphasis on the sides of the core (the obliques), a side plank can be performed. Figures below show the straight armed side plank. A bent arm side plank can be performed just like the front plank where pressure is being placed through the elbow rather than the hand (picture not shown). Varying foot positions are available and seen below.





[Figure 152-155: Top shows a modified side plank with one knee down to make it easier. The second shows a standard side plank. The bottom two pictures show variations of straight leg foot positioning. The feet being stacked is harder. Note: it is easier and more comfortable to perform a side plank with shoes on.]

Rotation

1. Start in the normal plank position.
2. Take the left arm and rotate to the left as if you are going to reach for the sky.
3. Bring the arm back down and repeat on the right side.
4. Try to maintain the planked position for 30-60 seconds while you rotate back and forth.

Note: Alternatively, you could do one side at a time.

[Figure 156-157: Transition between the two pictures for a full plank with rotation.]

[Figure 158-159: Transition between two pictures show the easier trunk with rotation while on your side with knee down.]

Forward reach

1. Start in the normal plank position.
2. Take one arm and reach out in front of you either overhead or tapping on the ground in front of you. Alternate the arms.
3. Try to maintain the planked position for 30-60 seconds while you alternate the arms.

[Figure 160-161: Pictures shows the kneeling reaching plank transition.]

[Figure 162-163: Pictures shows the standard reaching plank transition.]

Up, Up, Down, Down
This is a variation between a normal plank and a forearm plank.

1. Start in the normal plank position.
2. Place one forearm to the ground, other forearm to the ground, then back up to each hand.
3. Continue alternating between hands and forearms for 30-60 seconds.

Note: Make sure that you change the order to which arm is leading (1st round: right up, left up, right down, left down. 2nd round: left up, right up, left down, right down)

[Figure 164-168: The figures above show the cycle of the up/up/down/down.]

Core Stabilization with Leg Lift

[Figure 169-170: The prime muscles worked are all level of the core and the hip flexors during the core stabilization. Picture adapted from: SciePro/Shutterstock.com]

Background:

Working the core is more than just crunches, situps, and planks. There have been several other exercises listed so far that have worked the core while working working other parts of the body as well. The focus of the core stabilization with leg lift is to keep the low back and pelvis from moving while moving your legs. The most advanced form of this exercises is a common one seen at the gym, and it is commonly done incorrectly; when most people perform the double leg lift, you are able to watch there low back arch and flatten as the legs are lowered and lifted. The compensation of movement from the back and pelvis cause an extra stress load on the low back and can cause damage to the vertebrae. You must make sure that as you use the progression listed, master a level before moving onto the next.

The Exercise:

It is generally easier to start with the hips and knees bent to 90 degrees. This will allow the low back to start in a more flattened position which is generally easier to maintain. Keep the core engaged for all levels of the exercise. The transverse (TrA exercise) activation is needed to engage the core properly. The exercise is broken into 4 levels to get you towards the double leg lift properly. If you have trouble determining if the low back is moving, you can place you finger either on the front of the pelvis or just under the LOW BACK for feedback, not support. DO NOT place your hands under the PELVIS to stabilize it, that would be cheating as the core would not be working to create stability. If you cannot get your feet to the ground without arching the low back, you need to continue working only as far as you can control and build yourself up to it. This will take time.

Level 1

1. Start in the 90/90 position seen below.
2. Slowly lower one leg as far down towards the ground as you can control.
3. Back up to 90/90 position.

Make sure that the pelvis does not move.

[Figure 171-172: Level 1 transitional pictures.]

Level 2

1. Start in the 90/90 position seen below

2. Straigthen one leg outward and slowly lower it as far as you feel comfortable withbout losing pelvic positioning.

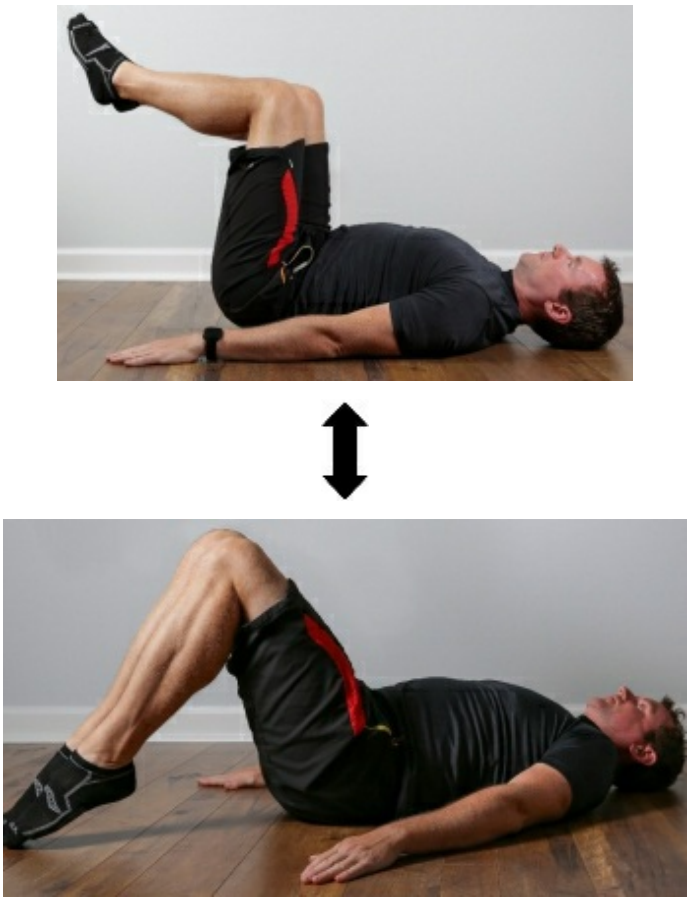
3. Back up to 90/90 position.

[Figure 173-174: Level 2 transitional pictures.]

Level 3

4. Start in the 90/90 position seen below.
5. Slowly lower both legs toward the ground.
6. Back up to 90/90 position.

Only going as far as you can control without losing the pelvic positioning.



[Figure 175-176: Level 3 transitional pictures.]

Level 4

1. Start with both legs up straight toward the ceiling.
2. Slowly lower both legs down towards the ground.
3. Bring the legs back up towards the ceiling.

If the low back starts to arch and the pelvis rocks forward you must come back up. I see people doing this exercise wrong all the time. Once again, having your hands under the pelvis is a form of cheating, you need to work on building the control within the body.

If you are having trouble going from level 3 to 4, the knees do not need to be perfectly straight. You can modify with a slightly bent knee level 4 and progressively perform the exercise with straighter legs as you become stronger.

[Figure 177-178: Level 4 transitional pictures.]

Crunch/Cross Crunch

[Figure 179: Muscles worked. Picture adapted from: SciePro/Shutterstock.com]

Background:
Everyone always wants to work the core, and most think of sit-ups. The problem with sit-ups is too much pressure can be placed on the low back, the hip flexors do more work than the core. There are ways to modify sit-ups, but the easiest thing to do is a crunch instead. We will be working the rectus and obliques with the crunch and cross crunch.

The Exercise:
To work the rectus:

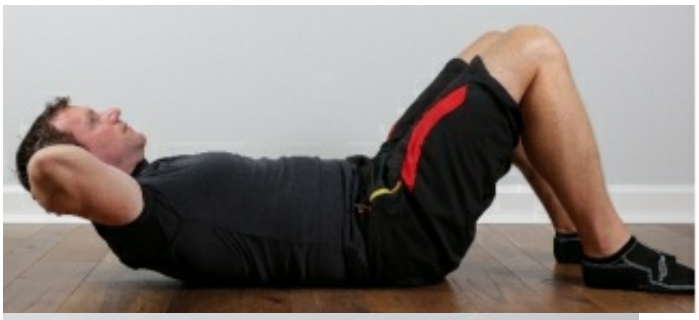
1. Start with lying on the back with the knees bent to a comfortable angle.
2. Use the core to gently pull the upper body towards your pelvis stopping when the shoulder blades start to lift from the ground—you can stop sooner, but when the shoulder blades lift, that is the maximum height.
3. The motion can be held 0-3 seconds.

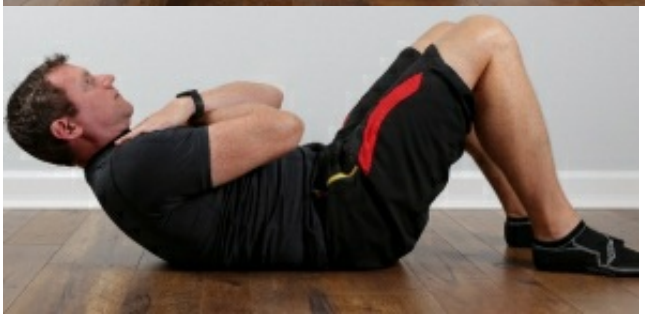
Note: Hands can be placed behind the head (as shown in figure 183), but keep in mind that the hands are there to support the neck, make sure that you are NOT pulling on your head. I have found that not interlacing the fingers helps to reduce the pulling that can occur; just gently rest the fingertips behind the head.

Progression: to make the crunch harder the legs can be lifted from the ground at a 90/90 angle and maintained while the crunch is being performed; just as will be seen with cross crunch (crunch/cross crunch).

Note: Draw the belly button in as you perform the motion for further core engagement.

[Figure 180-181: Above shows the transition between rest and the basic crunched position with the arms at the side, the easiest form.





[Figure 182-183: Top picture shows arms are crossed at the chest, which is slightly harder, and in the picture on the bottom has the arms behind the head which is the hardest form of a basic crunch.]

[Figure 184-185: These two pictures show incorrect form; on the top the head is being pulling on, while the bottom shows too high of a motion, the crunch is meant to just take the shoulder blades off of the ground.]

To work the Obliques:

1. Start with lying on the back with the knees bent to a comfortable angle.
2. Take one leg and cross it over the other. Have one arm behind the head
3. Gently pull the upper body towards the knee of the crossed leg, leading with the elbow.
4. The motion can be held 0-3 seconds.

Note: the hand behind the head is there to support the neck; make sure that you are NOT pulling on your head. Draw the belly button in as you perform the motion for further core engagement.

Progression: The lower figures show more of a challenge with the leg being lifted. The farther out the legs goes from the body the harder it is to maintain the position working the core harder, similar to the core stabilization.

[Figure 186-187: The basic oblique crunch transition.]

[Figure 188-189: The transition for the advanced form with one leg in the air. The farther the elevated leg is held away from the body the harder the exercise becomes.]

Progression Reverse Crunch:

1. Starting position will be on the back with the legs lifted into the air, hips at about 90 degrees, while the knees are relaxed.
2. Arms will be at your side for leverage.
3. Start with the motion of the pelvic tilt to protect the back, followed by lift the hips and pelvis as if you are trying to curl the pelvis toward the rib cage.
4. The motion can be held 0-3 seconds.

Note: Draw the belly button in as you perform the motion for further core engagement.

[Figure 190-191: The transition for the reverse crunch.]

Bridge

[Figure 192: Muscles worked. Picture adapted from: SciePro/Shutterstock.com]

Background:
Remember talking about the importance of the glutes earlier? Here is another exercise where maximizing and isolating the glutes is necessary. Many people tend to over perform this exercise and lift too high. Also, where you are placing pressure is important; you want to make sure that you put weight through the upper back and the heels. You do not want to have too much pressure on the neck or through the toes (the toes aren't wrong it is just harder to get the glutes to activate).

The Exercise:

1. Start with lying on the back with the knees bent to a comfortable amount.
2. Keeping the arms at your sides (or on your stomach), gently push the heels into the ground to help facilitate the gluteal activation while you lift your hips from the ground.
3. The maximum height is lifting until your hips are in alignment with the low back, just like the plank or push-up position, no arched backs. DO NOT try and lift past this point as we do not want the low back to join this exercise.
4. The motion can be held 0-5 seconds.

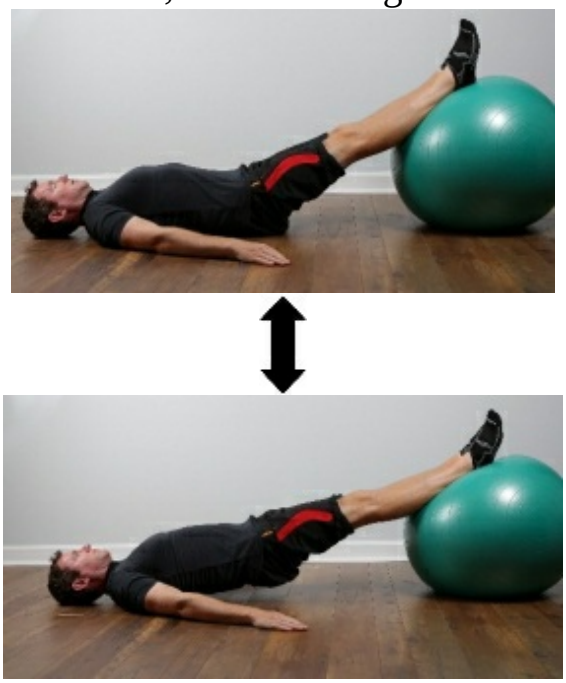
[Figure 193-195: Top two pictures show the transition for a basic bridge—lying on back with knees bent at about 90 degrees, then raising the hips up. If you are having trouble feeling the glutes activate, push more with the heels as seen in the bottom picture.]

Progression:
There are many variations to a bridge. I will discuss two variants here.

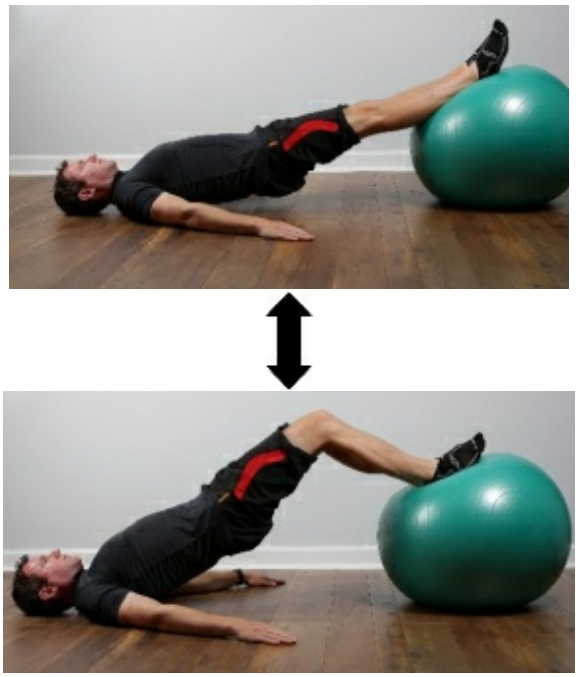
A) While in the bridged position, lift one of your legs from the ground. The goal is to make sure that you are keeping your pelvis level and not letting it drop to the side that has the lifted leg.

[Figure 196-197: For more of a challenge try lifting one leg while you are in the bridged position.]

B) The other option requires placing your feet on a ball instead of the ground. This creates an unstable surface, making the muscles work harder. When performing this variation, the hamstrings will also be more involved.



[Figure 198-199: Above shows the transition from rest to bridge with a ball.]



[Figure 200-201: Above shows an added hamstring curl while you are in the bridged position on the ball.]

Superman

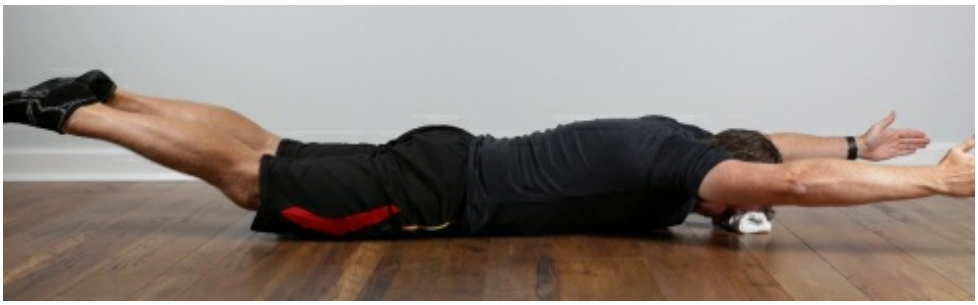
[Figure 202: Muscles worked. Picture adapted from: SciePro/Shutterstock.com]

Background:
This is a great exercise for the muscles along the spine, the glutes, and the shoulders--basically the whole backside of the trunk.

The Exercise:

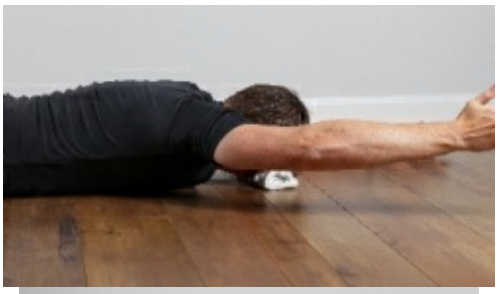
1. Lying on your stomach (on either your bed, bench, or a floor mat), lift both your arms and your legs at the same time.
2. Relax back down.
3. Hold each lift 0-30 seconds.

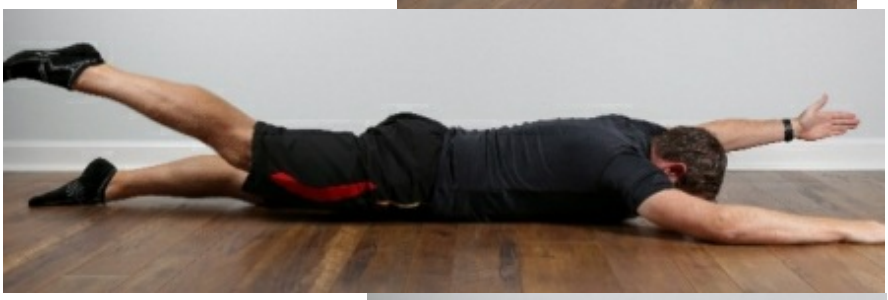
You should feel this exercise everywhere from the shoulders and upper back to the low back and hips. You want to make sure that you are not overarching and driving the exercise from the low back, which is a common compensation that occurs. As long as the entire back is working as one, how high you lift is not the important part about this exercise; depending on what limitations you may have you may not be able to go very high. The key here is that you feel this exercise working everything from the shoulders to the hips.

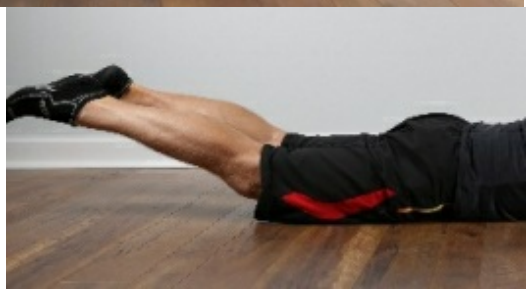


[Figure 203: Superman with lift all limbs. The towel is placed under the forehead for when you are at rest to prevent smashing your nose.]

Variation 1:
If the full superman seems too challenging to start with, start with lifting one leg or arm at a time. Progress towards lifting opposite arm and leg, both arms or legs, then to lifting all the limbs at the same time as shown on the previous page.







[Figure 204-208: For all variations above, start with lying flat on your stomach and lift to any of the above pictures. Top lifting a single arm. Second lifting a single leg. third opposite arm and leg. Fourth both legs. Bottom both arms. No arching in the low back.]

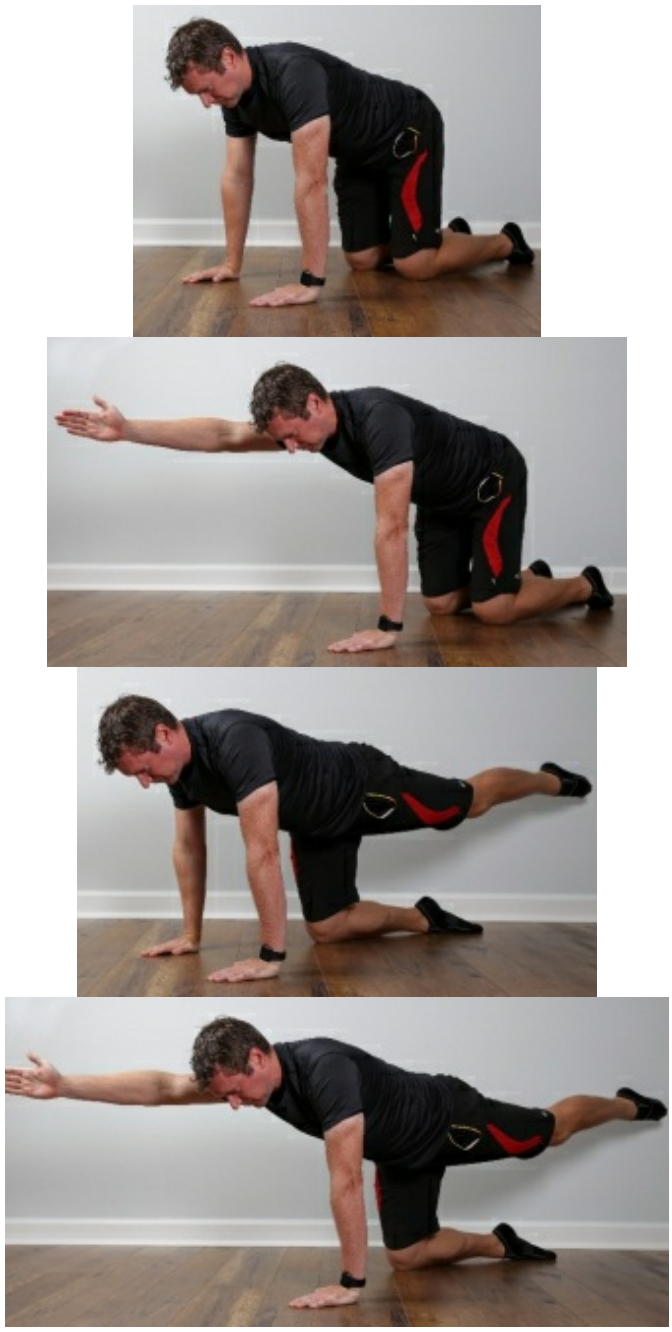
Variation 2:

A remarkably similar exercise can be done while on the hands and knees. Both the hips and the shoulders will be worked slightly differently since the limbs that remain on the ground have to stabilize the body. With being on the hands and knees you will have to balance the body as you lift limb(s) from the ground which will also allow you to work the abdominals a little more, but reduced the focus on the back musculature.

To perform this variation:

1. Start on the hands and the knees.
2. Lift either one arm or leg at a time.
3. Back onto hands and knees.

Progress towards lift the opposite arm/leg from the ground as seen in the pictures below.



[Figure 209-212: Start on the hands and knees (top), then transition to one of the other three pictures lifting one limb or opposites.]

Hip Abduction Lying Down

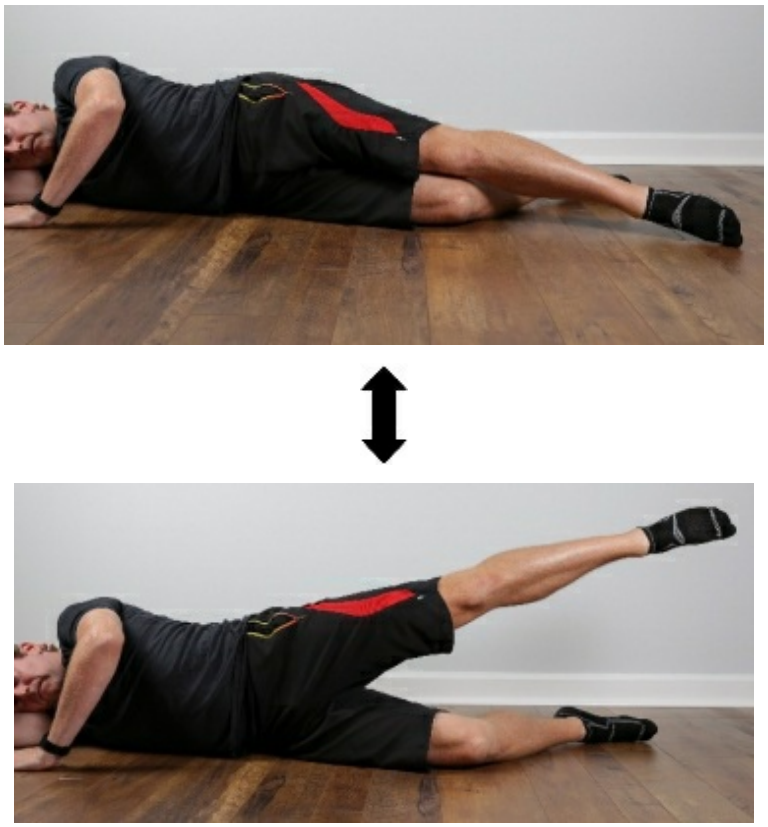
[Figure 213: Muscles worked. Picture adapted from SciePro/Shutterstock.com

Background:
Many people's hips tend to be weak. This exercise will create a great deal of activation of the gluteus medius, which is important for stabilization of the hip while standing. Although lying down exercises do not work the muscle in as functional a manner a standing based exercise, this is a great way to start on working to make the muscles stronger and prepare yourself for standing.

The Exercise:

1. Lying on your side, have the bottom leg gently bent to help stabilize the body.
2. Lift the top leg upward toward the ceiling to no more than 45 degrees.
3. Slowly lower back down to rest.

Note: Make sure that you do not let the leg drift forward; either go straight up or up/slightly backwards as seen in figures 216-218 on the next page.



[Figure 214-215: Transition from lying on the side to lifting the top leg straight out to the side.]

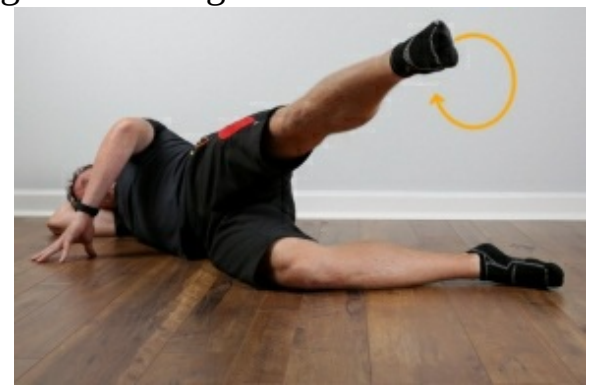
[Figure 216-218: The top two pictures show the correct movement of going either straight up or up and backwards, while the bottom pictures shows the incorrect motion of letting the leg drift forward.]

Advanced: Half circles

1. Lying on your side, have the leg that is on the bottom gently bend to

help stabilize the body. Take the top leg and lift upward toward the ceiling and arc behind you, making a half circle coming to rest the top thigh on the lower. Repeat the half circles in both directions, but do not let the leg drift in front of the body.

The full circle does not require as much control and people tend to cheat by letting the leg drift too far forward while not getting the leg back behind the body far enough. The goal of the half circles is to maximize the gluteus medius activity along with some glute max work.



[Figure 219: lying on the side lift the leg up and move backward, and back to start, do not let the leg come in front of the body as seen in figure 220 on the previous page.]

Farmer Carry

[Figure 220-221: Prime muscles worked. Picture adapted from: SciePro/Shutterstock.com]

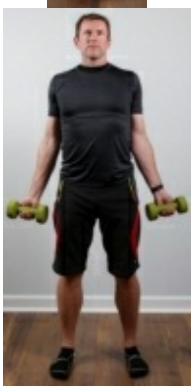
Background:
Combines the scapular retraction with a functional based activity. This is a great exercise to work the upper back and it can be progressed to work on core strengthening and balance as well.

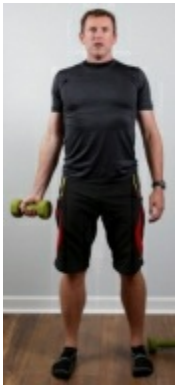
The Exercise:
You will need a weight for this exercise. If you do not have weights you can use a bag filled with heavy items; you do not have to be fancy with your equipment.

1. Start with holding a weight in each hand, arms relaxed at your sides.
2. Focus on gently squeezing the shoulder blades together.
3. Walk back and forth or around the room while maintaining the shoulder blade squeeze.
4. Perform for several laps or 30-90 seconds.

Note: For extra rotator cuff recruitment, you can focus on keeping the palms facing forward.

Variation:
You can carry the weight on just one side, which will work the core and hip on the opposite side more. However, this variation does lose some of the upper back work due to some of the focus being shifted to core and hip engagement. Consider performing the exercise using both variations.





[Figure 222-224: Top shows the correct posture—head up, shoulders back. Middle shows 2 hands while the bottom shows one handed variation.]

[Figure 225-226: The two pictures above show improper posture with a trunk lean towards or away from the weight, you must maintain an upright posture.]

Hip Hinge

[Figure 227: Muscles worked. Picture adapted from: SciePro/Shutterstock.com.]

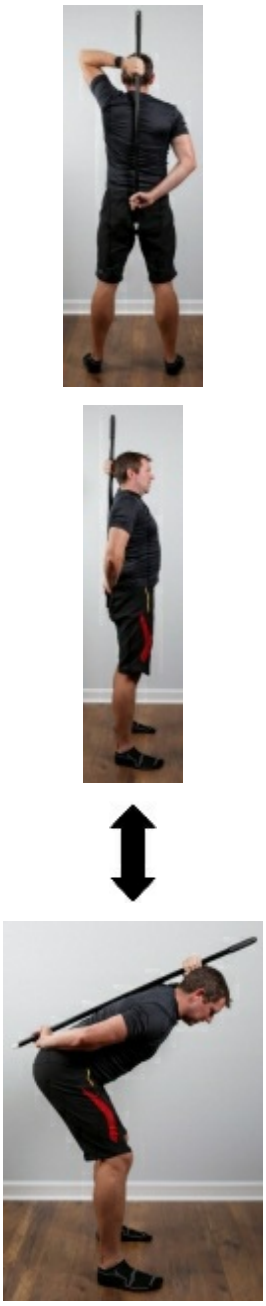
Background:
How many times have you bent down to pick up something from the ground and only used your knees and the hips? Most of us tend to overuse the low back which will wear out the discs and vertebrae quicker. The hip hinge will allow for reduced strain on the low back by driving the bending motion with the glutes and the hamstrings and stabilizing the low back rather than bending it. This exercise will lead into squats and single leg dead lift listed in this book, but it is an important exercise that should translate into our daily activities.

The Exercise:
To reduce the amount of compensation, start with a rod—the easiest device is a broom/mop handle—behind your back as seen in figure 228. The key here is that the rod, or your hand holding the rod, should touch the back of the head, the upper back, and the tailbone.

1. Bend forward while keeping the spine straight. To do so you will slowly relax the glutes and hamstrings to lower the trunk forward.
2. Keep the belly button gently pulled in to help stabilize the spine.
3. The hips must drift backward to maintain your balance and center of gravity, as seen in figure 230.
4. To rise back upward, engage the glutes and hamstrings, pulling yourself up—think of pushing your hips forward to help engage the

glutes.

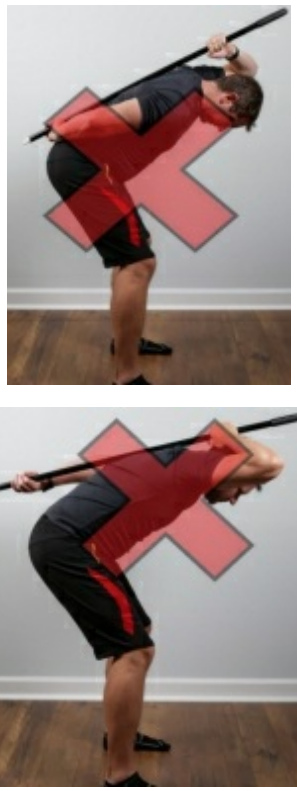
Note As the exercise becomes easier, you can perform it without the rod behind the back. There is not a specific distance that you need to lean, basically keep it comfortable and do not fall over. Control is key.



[Figure 228-230: The top picture shows the proper hand placement. The bottom two pictures show the transition from upright to the hip hinge position.]

The common errors that occur are seen in in the figures 231 and 232 on the following page. The first is bending the neck or upper body too much which causes the head to leave the rod, while the picture on the right shows bending

too much from the low back which causes the lower rod to leave tailbone.



[Figure 231-232: The pictures above show the common errors. On the top, the head leaving the bar; while on the bottom, the bar leaving the tailbone.]

Single leg Deadlift

[Figure 233: Muscles worked. Picture adapted from: SciePro/Shutterstock.com]

Background:
The deadlift is a challenging exercise to perform. Multiple muscles groups are used, multiple joints need to be able to move properly. Realistically, it is better to have someone watching your form to make sure that you are performing this exercise correctly. There is a high rate of injury when the exercise is done incorrectly. The idea of the hip hinge from the previous page is used here as well.

Due to these reasons, a regular deadlift will not be discussed in this book. A single leg deadlift, on the other hand is much easier to perform properly while getting to work on the balance at the same time. The focus of the exercise will be on the back, glutes, and the hamstrings. There are not many good hamstring exercises; this is one of the few that really do a great job while also lengthening the muscle at the same time.

The Exercise: (figure 234-235)

1. You will pretend that you have a rod running from the top of your head to the bottom of your left foot.
2. Have your belly button gently pulled in to help stabilize the spine
3. Shift your weight onto your left leg and pivot the upper body forward while right leg goes backwards at the same time. If you were to tilt forward to horizontal you would look like the letter T.
4. Using the hamstring and the glutes of the left leg pull yourself back to upright.

Note: Many people tend to not keep the body straight enough and instead of looking like the letter T they look like a banana stuck on a pencil. You must focus on using the glutes and the back musculature to keep the body straight. Based on your balance and tightness of your hamstrings, you may not be able to go very far forward; do not worry, this will improve over time as you keep performing the exercise.

Progression:

Work towards not holding on while performing the exercise. Progression can also be had by holding a weight in one hand as if you are reach towards the ground to set it down. Do not worry about trying to touch the ground.

[Figure 234-236: The top two pictures show the transition between upright and the single leg dead lift, while the bottom picture shows insufficient use of the glutes or low back causing the body to look curved like a banana.]

Squatting/Lunging

[Figure 237-238: Shows the muscles worked for both squats and lunges. Picture adapted from: SciePro/Shutterstock.com]

Background:
I have combined the squat and lunge together in one section due to their significant commonalties in instruction and functional use. In order to pick something up from the ground, you need to do some variation of a squat or a lunge in order to help reduce compensation from the back. I cannot say how many times I see people bend over to pick something up and use primarily the back to lift from the ground. I have had patients with low back injury from picking up something as simple as a tissue; to be fair, the underlying cause to the injury was building over time from poor techniques, weakness, and compensation. It is similar to the final straw that broke the camel's back. Just get those legs stronger and learn to use them properly to help lift items from the ground.

These are great basic exercises that can go horribly wrong quickly. The ability to perform a proper lunge or squat is reduced partially due to poor muscular control and because many people are too tight in the hips, hamstrings, and calves. If you find that you struggle with performance of the

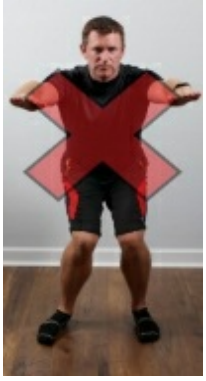
squat or lunge, refer to these stretches (piriformis, hamstring, and calf).

Squatting
The Exercise:

1. Start with feet about shoulder width apart. You want your feet in a comfortable position (either facing forward or slightly toes out).
2. Let your hips fall back as if you are sitting into a chair. The knees are allowed to gently go past the toes slightly (HOWEVER, the calves have to be loose enough for this to happen comfortably).
3. To stand back up, push through the heels and bring your hips forward (do not arch your back to bring the hips forward, use those glutes).
4. Feel free to hold your position at the bottom for 0-5 seconds, but make sure that it is controlled, the thighs and glutes should be working, and you should not feel stress on the knees themselves.

Note: You must make sure that the knee is tracking in line with where the feet are pointing. If you look down and see that your knees are dropping inward this puts extra negative stress on some structure, usually the knees. You can feel free to hold onto something while doing this exercise. I have found that holding on to the kitchen sink and having the toes close to the cabinet is a good way to have guidance and prevent improper squatting format.

[Figure 239-240: Transitioning between the upright starting position and squatted down position, let those hips drift back.]



[Figure 241-242: Do not let the knees drop inward. The yellow X is for caution, it is ok if the knees SLIGHTLY pass the toes, but the calves have to be loose enough and there should not be any pain in the knees; if there is any pain, do not let the knee pass the toes, stick the hips back further or hold onto something as you squat to allow for better control and take pressure off of the knees.]

Progression:

There are several ways to progress squats. You can hold weights on either side of the body or hold one weight out in front of you. Another way that will work on the balance as well as strength is to perform it on one leg at a time as seen in the figures on the following page. It does change the dynamics of the exercise by whether the leg is placed in front or behind the body, so practice both. At first you will not be able to go down as low as you can with both feet on the ground.

[Figure 243-244: Above photos shows the transition of one leg behind squats.]

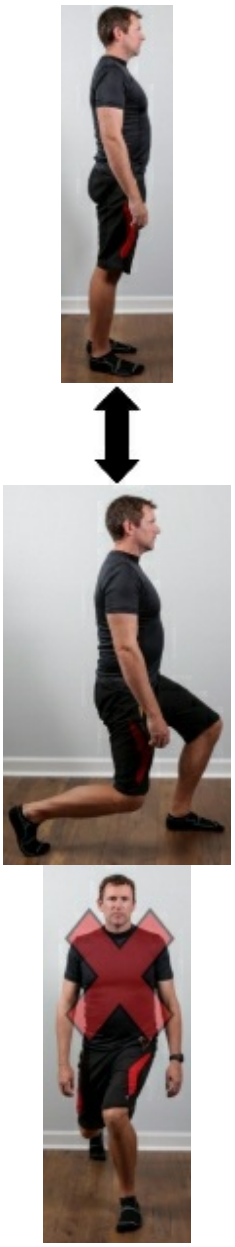
[Figure 245-246: The above photos show the transition with one leg out front squats.]

Lunging
The Exercise:

1. Starting with the feet staggered, one in front and one behind the body
2. Drop the back knee toward the ground, while letting the front knee gently bend. You do not have to touch the back knee to the ground but get as close as you can control and without pain.
3. Push yourself back to the starting position.

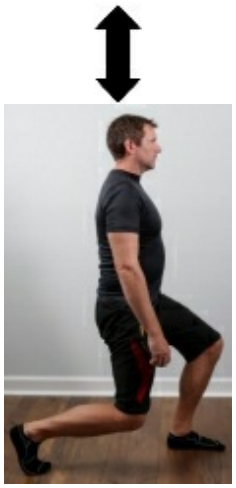
When this becomes too easy, you progress as the picture below shows, starting from an upright position with the feet together, then step forward into the lunge dropping the back knee towards the ground.

Note: The back heel will naturally raise up when performing this exercise correctly; the front heel will stay planted. The closer the feet are to each other the more strain is placed on the back foot's toes. Unlike the squat, I generally do not like the front knee to pass the toes. If you have having trouble determining if your knee is passing the toes, then you can perform the lunges with the front foot at a wall to provide you with feedback.



[Figure 247-249: The top two pictures above demonstrate the transition between a full upright position, stepping into a forward lunge, dropping the back knee towards the ground. The picture on the bottom shows the incorrect form of the knee drifting inward.]

Progression:
Instead of just keeping the feet in place and going up and down, start with the feet together, step a foot forward or backward as you sink into the lunge. As you come back up from the lunged position bring the feet back together. To further progress the lunge, you can perform walking lunges forward or backward, which requires even more balance. The last advancement of the lunge is that you can add a weight to one or both hands while performing the motion (not shown).



[Figure 250-252: Starting from the picture in the middle, step one foot backward into a back lunge (picture on the top), or step forward into a front lunge (picture on the bottom). As you probably notice the lunge itself looks the same regardless of which direction you are stepping, but the muscles will be worked differently with either a forward or backward step.]

3-Way Hip

[Figure 253: Prime muscles worked. Picture adapted from: SciePro/Shutterstock.com]

Background:
Balance is key and this exercise can allow you to work on both strength and balance at the same time. Many people think that the leg you are kicking is doing all the work, however, as you will soon find out, the standing leg actually works much harder; stabilization is more challenging than creating motion. Other muscles are worked in this exercise, similar to those seen in the single leg stance.

The Exercise:
The exercise can be performed either alternating between the different motions or performing one direction at a time.

1. Start by standing on both legs. Keeping a good posture and not letting the body sway.
2. Shift the weight onto one leg while keeping the pelvis level; gently kick one leg:

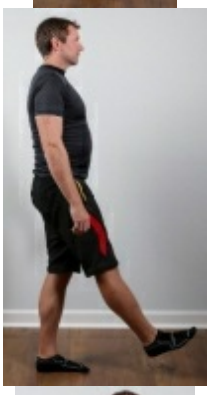
a:) Forward
b:) Sideways
c:) Backward

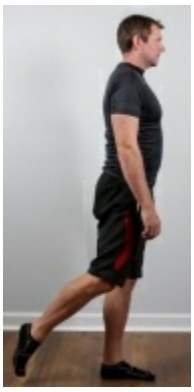
Note: Holding onto something makes the standing leg do less work on balance and stabilization, shifting a little more emphasis towards the kicking leg. In general, I recommend starting with holding on for kicking backwards to really focus on the glutes, especially if the gluteus maximus is not

responding appropriately. See the glute set exercise if you are having trouble.

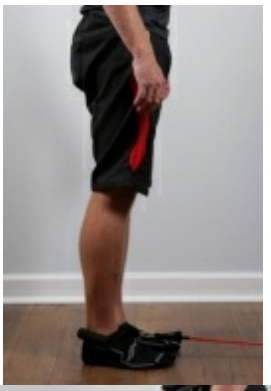
Variation:
Also if you find this exercise to be challenging you do not have to just kick the leg, you can tap the ground out in front, to the side, or back behind you which will give you a moment to re-stabilize the body. The speed at which you kick will change the balance dynamics of the exercise, so feel free to try both slower and faster kicks, just make sure that you are keeping good posture and do not let the body sway.

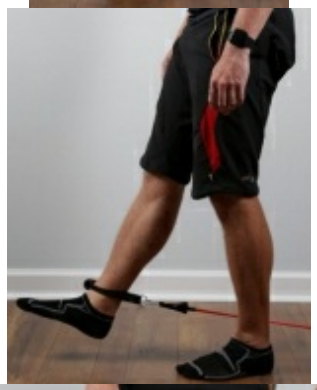
Progression:
To make this exercise more challenging, you can add ankle weights or resistance bands. The bands can either be anchored to an object away from the body or anchored around/under the other leg as seen in the following groupings of pictures.





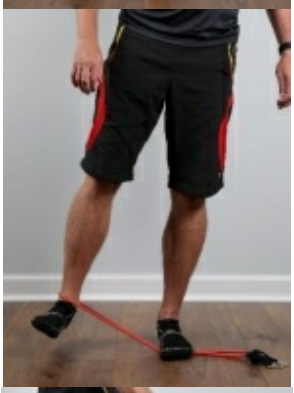
[Figure 254-257: Transition between standing (top), kick forward (second), sideways (third), and backward (bottom).]





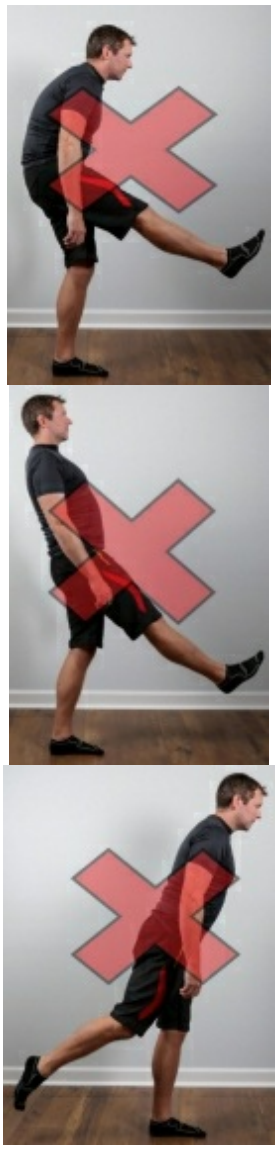
[Figure 258-261: The pictures above show the proper kicks with a band anchored properly to a door or other sturdy object.]

[Figure 262-263: The pictures above show the proper band placement while kicking out to the side, make sure that the band is behind the standing leg.]



[Figure 264-267: Kicking while having the band anchored under the standing foot. Transition between standing (top), kick sideways (second), forward (third), and backward (bottom).]

[Figures 268-270: demonstrate improper techniques as seen during the hip 3 way, however, the same concepts can be applied to any of the exercises in the book that require you to stand on one leg. The top shows a body lean while kicking out to the side. The second shows the foot turning outward while kicking to the side, the foot must stay facing forward to use the proper muscles. The bottom picture shows the pelvis dropping; if the pelvis drops you may need to hold onto something study for extra support.]



[Figures 271-273: demonstrate improper techniques as seen during the hip 3 way, however, the same concepts can be applied to any of the exercises in the book that require you to stand on one leg. The top shows a curling of the body while lifting the leg forward. The second shows the shows a backward lean, while the bottom picture shows a forward lean.]

Single Leg balance

[Figure 274: Prime muscles worked. Picture adapted from: SciePro/Shutterstock.com.]

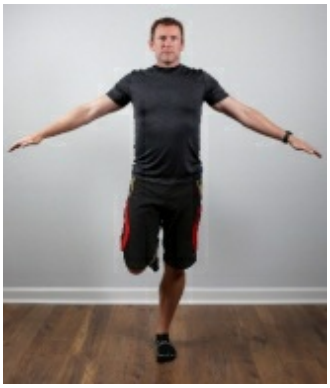
Background:
Balance is often neglected, especially as we get older. This is your basic balance exercise. Many people forget to include balance-based training in their programs.

The Exercise:
Even if you think your balance is perfect, it is best to start the balance exercises near a solid object for support.

1. Lift one foot off the ground and let go.
2. You can lift the leg either in front of you or behind you; each will work the body a little differently, so make sure you mix it up.
3. Try holding the leg up 30-60 seconds.

If you find this to be too much of a challenge, try either tapping the hands on your support object or tapping the foot on the ground; as your balance improves, you will be able to hold longer with less tapping. The slower the tapping the harder the exercise, the quicker the tapping the easier the exercise.

Also, you can practice balance exercise with both eyes open and eyes closed, HOWEVER, I would recommend only doing so when you have a partner to help make sure that you do not fall. Some people have undiagnosed balance issues when the eyes are closed, you may feel that you are still upright as you are falling down.



[Figure 275-278: The three topmost pictures show a progression of the single leg balance exercise, going from hands on object, to arms out to the side, finishing with arms at side. The bottom picture shows a hip drop which is usually due to weakness on the side of the hip, you may need to hold on in order to keep the hips level preventing the hip drop.]

Progression:
If standing on one foot is too easy for you, try reaching one arm forward and rotate reaching across the body (as seen in the pictures below). You can place sticky notes on the wall with numbers or letters to give yourself a target. On the following page you can find an even greater challenge by adding a band; this will allow you to perform an exercise similar to the anti-rotation exercise.

[Figure 279-280: Transition between standing on one foot while reaching forward and reaching across the body.]

[Figure 281-282: Standing on left foot with the band in towards the body. While maintaining your balance, press the hands away from the body. Repeat the process while standing on the right foot before turning and facing the other direction (away from the camera).]

Tandem Balance

[Figure 283: Area Stretch. Picture adapted from: SciePro/Shutterstock.com]

Background:
Here is another good balance exercise. With both legs underneath the body, it gives a slightly different sensation than standing only on one leg.

The Exercise:
Even if you think your balance is perfect it is best to start the balance exercises near a solid object for safety/support.

1. Place one foot in front of the other, trying to keep heel to toe (if you need to have the feet slighter wider that is ok, but it does not work the balance as much).
2. Let go of your support object.
3. Try holding the position for 30-60 seconds.

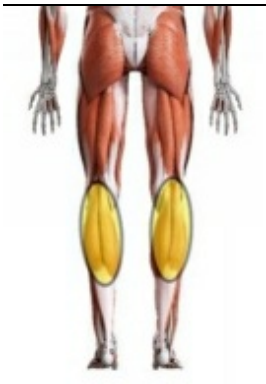
If you find this to be too much of a challenge, try either tapping the hands on your support object or put the feet wider apart; as you balance improves you will be able to hold longer with less tapping and feet closer together.

Note: As with single leg balance, the slower the tapping the harder the exercise, the quicker the tapping the easier the exercise. Also, you can practice balance exercises with both eyes open and eyes closed, HOWEVER, I would recommend only doing so when you have a partner to help make sure that you do not fall. Some people have undiagnosed balance issues when the eyes are closed, you may feel that you are still upright as you are actually falling.

Progression:
Walking heel to toe forward or backward. I would recommend doing this near a wall to catch yourself if needed.

[Figure 284-285: On the top shows a wide base of support while the picture on the bottom has a narrow base of support.]

Heel Raises



[Figure 286: Prime area worked. Picture adapted from: SciePro/Shutterstock.com]

Background:
This exercise seems like it should be easy, but it is done wrong by many people. Even though the calves tend to get worked quite a bit during a normal day, it does not mean that they get used properly. When performing a heel raise most people let the ankle fall inward or outward too far as you will soon see. Make sure that you stretch the calves after working them out.

The Exercise:

1. Start while standing.
2. Shift your weight forward as your raise up onto your forefoot/ball of the foot.
3. As you shift your body weight forward, the key is to make sure that the middle of the ankle is pointing over the 2nd or 3rd toe.
4. Lower back down.

Many people go too quickly while not being stable. You want to have a controlled motion the whole time. If you pause at the top, you do not want to waiver, so only go as high and/or as fast as you can control.

[Figure 287-288: Transition between standing flat and a raised position.]

[Figure 289-291: above are the feet isolated in order to see the proper alignment. The top shows proper raise over the 2nd/3rd toes, while the middle has the ankles rolling inward. The bottom has the ankles rolling too far outward]

Progression:

An easy progression is to switch from standing on both feet to performing the exercise while only on one. Be extra careful about making sure to go over the 2nd or 3rd toe while on one leg. If standing on one foot is too easy, progress to performing this exercise while on a step, with either one or two feet. Be careful to make sure that if you are using a step stool that it is wide

enough so that it does not flip over while standing on the edge of the step; some step stools are too narrow. An actual set of stairs may work better, but as with all exercises on stairs perform this one on the first step only, do not practice on the top step in case of slipping.

[Figure 292-294: The top two pictures show the double leg heel raise off a step, while the picture on the bottom is progressed to a single leg raise on the step.]

Stretches

Here we have a grouping of 19 stretches to help loosen your tight body. The purpose of stretching is to help loosen a muscle as well as to regain lost ranges of motion due to the daily grind. Our daily lives place us into positions that restrict the way the muscles and connective tissue in the body are supposed to move; stretching helps to stimulate the tissue to regain its previous position or gain slightly more mobility. Self-massage techniques can be very helpful in loosening the tissue prior to stretching, allowing for a better-quality stretch in the long run. If you are unsure of how to perform self-massage check out “The Art of Self-Massage” also on Amazon.

If you stretch and feel better, then you are doing the right thing. The stretches below will cover the most commonly restricted areas of the body:

- Rotation in Sitting and Supine
- Upper Trap Stretch/Levator Stretch
- Scalene Stretch
- Pec Stretch
- Horizontal Adduction Stretch
- Wrist flexor/extensor stretch
- Open Book
- Lat and QL Stretch
- Child’s Pose or Seated Trunk Flexion
- Hip Flexor
- Piriformis Stretch
- Hamstring Stretch
- Sciatic glides
- Quad Stretch (Standing and Lying)
- Calf Stretch
- Cat/Cow

Note about stretching

Make sure that you hold onto something sturdy while performing any of the standing- based stretches. I have seen many people hopping around while trying to stretch their quads. You CANNOT get a good stretching while balancing at the same time. Strengthening and balance do go nicely together but stretching is its own beast and needs to be performed alone. So please hold on.

The only exception to this is as you are warming up with dynamic stretches prior to sports as you are preparing your body for high level activity. This book does not cover dynamic stretching as it is a more advanced form of exercise and thus outside the purpose of this book.

Stretches are generally held for 10-30 seconds. About a minute of stretching total is what we are looking for. If you choose 10 seconds, a stretch will be performed six times, where 30 seconds will need to be performed twice. I do not generally recommend holding a stretch for more than 30 seconds as stiffness and soreness is generally felt upon release of the stretch. However, you know your body best, so if a longer stretch gives you better results have at it.

Some stretches may not be appropriate for everyone due to medical conditions such as laxity/hypermobility or post-surgical (especially after joint replacement). Please consult your medical provider if you are unsure if stretching is appropriate for you.

Last thing, please avoid what I call “chasing the stretch.” What is meant by this is do not force a stretched position. If you are having trouble feeling a pulling sensation while performing one of the following stretches, then the muscle may not need to be stretched. It could be that the muscle is already loose enough, but if you still have a feeling of being too tight then self-massage might be a better option. One day you may feel a good stretch, while another day you do not; if you end up “chasing the stretch,” it will put your joints at risk of damage.

Cervical rotation in sitting and supine

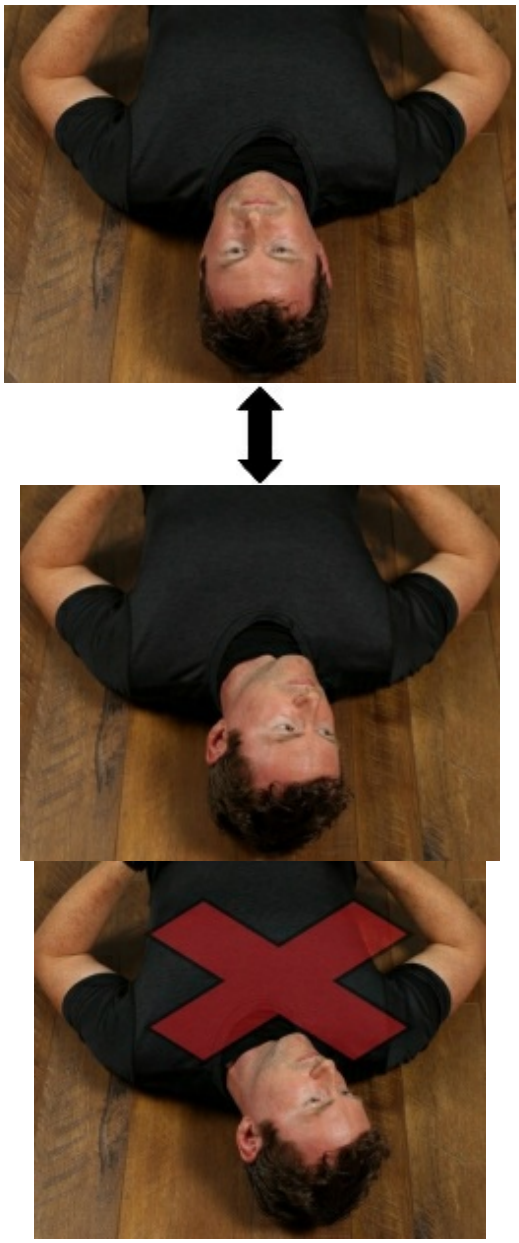
[Figure 295-296: Area Stretch. Picture adapted from: SciePro/Shutterstock.com]

Background:
As we tend to stare straight ahead most of our day and only look over our shoulders to see what traffic is in the next lane over, we need to work on stretching the neck more often. This exercise is a general stretch for the neck musculature.

The Exercise:

1. While sitting or lying down.
2. Gently turn the head to one side; make sure that you are not tilting your head.
3. Repeat to the other side.

Sitting and lying will each give you a slightly different stretching sensation as the pull of gravity on the body is dependent upon the position of the body. While sitting gravity will pull straight down on you, neither assisting nor inhibiting the stretch. Lying down on the other hand, when the head is turned, we will have gravity assisting the stretch slightly.



[Figure 297-299: The top shows lying on the back at rest, while the middle picture shows rotation to one side. The bottom picture shows the head incorrectly tilting towards the side.]

Upper Trap/ Levator Stretch

[Figure 300-301: Area stretched. The triangle in the bottom picture is the upper trap, while the levator is the one with the circle. Picture adapted from: SciePro/Shutterstock.com]

Background:
These two muscles are greatly overused due to stress or their work to stabilize the shoulder blade. We tend to sit with our shoulders hunched, and when the shoulders are weak, the upper trap tends to try and help even though it has no idea what it is doing.

Similar to the upper trap, the levator can get tight as it also acts to stabilize the shoulder blade. Along with over activation of the upper trapezius, we need to work on lowering the shoulders to allow these muscles to rest. After you have loosened these two muscles refer to the scapular retraction exercise to learn how to use the shoulder blades properly.

The Exercise:
Upper Trap

1. Slowly tilt the head to the left side, a gentle stretch should be felt on

the right side of the neck.
2. Repeat to the opposite side.

Note: For a stronger stretch use left hand to offer a gentle pull on the right side of the neck as seen in figure 303. Also, either sitting on your hand or holding onto the edge of a chair will slightly pull the shoulder down providing a pre-stretch to the upper trap muscle.

[Figure 302-303: The picture on the top shows the basic stretch, while the picture on the bottom has extra over pressure for a stronger stretch.]

[Figure 304-307: The picture on the top has the hand holding onto the leg of the chair, while the second shows the hand being sat on. The two pictures on

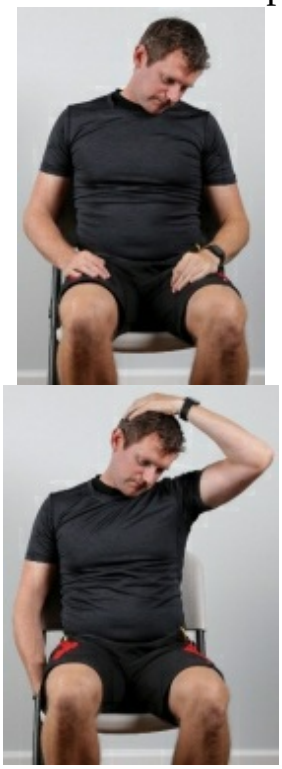
the bottom show the full view with the hand holding onto the chair or being sat on.]

Levator

1. Slowly tilt the head to the left side and turn the head slightly to the left as if you were to look at your left armpit.
2. Repeat to the other side.

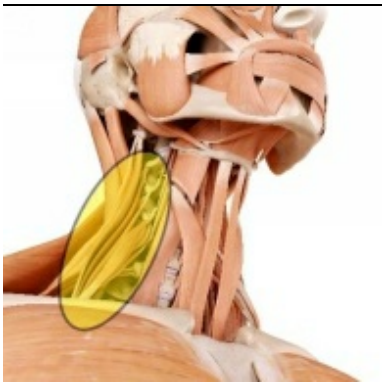
A gentle stretch should be felt anywhere on the right side of the neck to the top angle of the shoulder blade.

Note: Just as with the upper trapezius stretch, sitting on your hand or holding onto the edge of a chair can be performed to pull the shoulder down giving a pre-stretch to the levator muscle as seen in the picture on the previous page.



[Figure 308-309: The picture on the top shows the basic levator stretch, while the bottom picture has the hand for overpressure.]

Scalene stretch



[Figure 310: Area Stretch. Picture adapted from: SciePro/Shutterstock.com]

Background:
The scalene is a group of small muscles that attach at the front/side of the neck and serve several functions. As discussed before, having our head too far forward and in a bent down position much of our day causes shortening and tightness in certain muscles, especially the scalene. Because everything is connected in some manner, stretching this muscle group can allow for the neck to be in a better position. Even though they do not have a direct connection to the shoulder blade, there is a potential for allowing the shoulder blades to move back into a better position when the neck is looser and better aligned.

The Exercise:

1. Place the fingers of the left hand just above the right collar bone and gently press downward.
2. Gently tilt the head to the left and gently look upward; you should feel a stretch on the right side of the neck.
3. Repeat the process for the other side.

Note: If you have any pain or tingling/numbness while performing this stretch, especially on the side of the neck that you are bending towards, you should stop the exercise.

[Figure 311-312: With the fingers placed just beyond on the collar bone, look up to side. Transition between the two figures.]

Pec Stretch

[Figure 313; Area Stretch. Picture adapted from: SciePro/Shutterstock.com]

Background:
This is one of the more important stretches to perform. The pectoralis (pec) muscle tends to be much shorter than it is supposed to be due to poor posture, over training, and repetitive positioning. When people participate in an exercise program, the chest and arm exercises tend to be predominant. The chest tends to overpower the upper back causing the rolling forward of the shoulders. Working the upper back is important to helping correct the posture and reduce the retightening of the pec. The ITYW exercises, one of the best upper back sequences.

The Exercise:

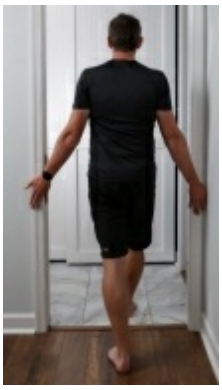
1. Start by standing in a doorway with a staggered stance.
2. The hands will be placed at varying heights as seen on the following page:

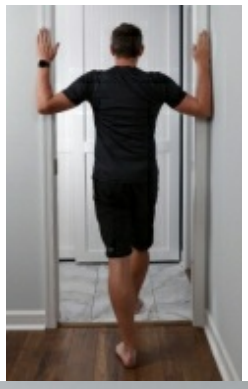
   a:) Low—around the waist level
   b:) Medium—around shoulder or head level
   c:) High—above the head

3. Step or lean forward through the doorway until a comfortable stretch is felt in the pecs.
4. Relax back and repeat in the other hand positions as needed.

Each position targets a slightly different portion of the pec.

Note: If the shoulders are drastically different in terms of tightness or range of motions, one arm can be performed at a time. Just listen to the body and try each position out and see which you respond better to. Make sure that the feet are staggered as the legs are supposed to control the motion. If the feet are together the pecs will be controlling the stretch which prevents them from fully relaxing and maximizing the stretch.





[Figure 314-317: While standing in the doorway, either place the hands low, medium, and high as seen by the top pictures. The bottom picture shows the feet incorrectly together, make sure you keep the feet staggered as seen in the top pictures.]

Horizontal Adduction Stretch

[Figure 318: Area Stretch. Picture adapted from: SciePro/Shutterstock.com]

Background:
The areas being stretched here tend to be over stretched with bad posture. But once you start working on improving that posture and strengthening the upper back and back side of the shoulder, you may need to try this stretch out.

The Exercise:

1. Gently pull the right arm across the body, using the left arm to pull. It is generally more comfortable to grab the right arm from underneath (almost as if you would be cradling a baby).
2. Relax and perform on the other side.

Note: You should only be feeling a stretch somewhere on the back side of the body, If you feel a pinching at the front of the shoulder then your body does not need the stretch yet. You might still have tightness or trigger points located on the back side, but self-massage will be more effective than trying to stretch the area out.

[Figure 319-320: While sitting or standing, gently pull the arm across the body. You can either pull the arm high or low as seen above.]

Wrist flexor/extensor stretch

[Figure 321-324: Areas stretched. The top two pictures are the wrist flexors, while the bottom two pictures are the wrist extensors. Picture adapted from: SciePro/Shutterstock.com]

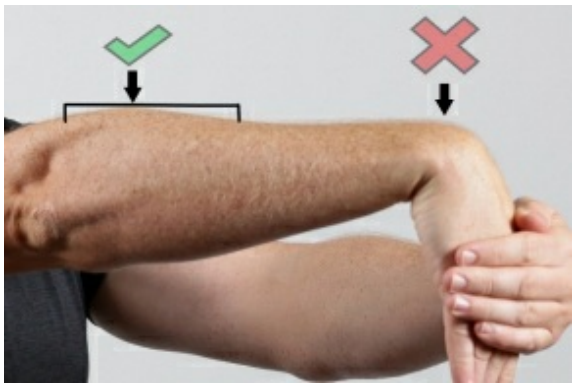
Background:
The forearm is punished all throughout the day with most activities. The repetitive motions of typing either on a keyboard or holding a smart device for extended periods of time cause tightness to occur. Loosening these muscles will reduce the risk for elbow and wrist related injuries.

The Exercise:
With the elbow straight bend the wrist downward as seen in figure 325; note that the fingers are not being pulled on, only the back of the hand. For a stronger stretch have the hand balled up as seen in figure 326.

To stretch the other side of the forearm, switch directions and pull the fingers upward as seen in figure 327, balling the hand will do nothing but reduce the

stretching sensation. If the stretch is too much, do not pull as hard on the fingers.

Note: the arm does not have to be held out in front of you, it can be held lower at the hips as long as the elbow remains straight. The key focus of the stretch is seen in figure 328, it should be felt in the forearm rather than in the wrist.



[Figure 325-328: The top two pictures stretch the wrist extensors (either with the hand opened or closed), while the third picture stretches the wrist flexors. The bottom picture shows the proper area of where the stretch should be felt for the wrist extensors. For the wrist flexors you are still not supposed to feel the stretch in the wrist, but you may have a slightly larger area of stretch than the extensors.]

Open Book

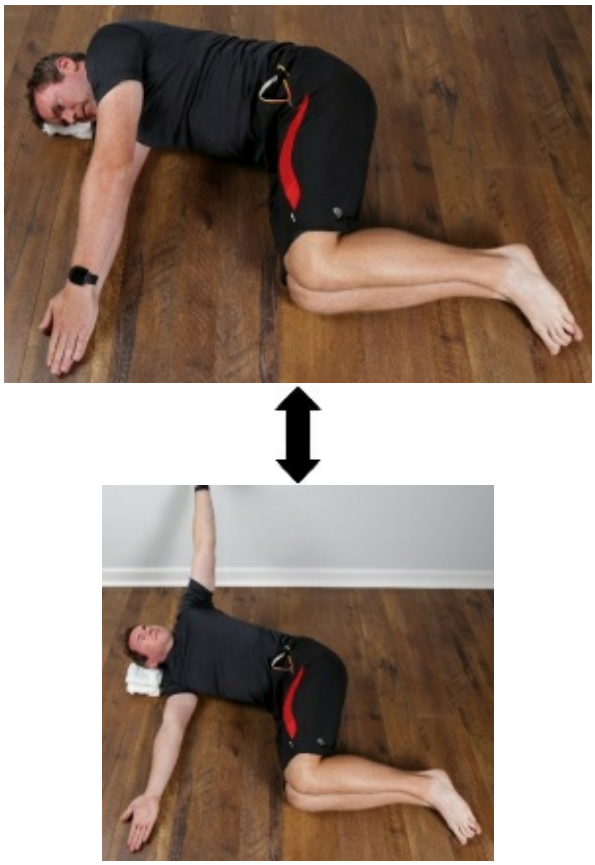
[Figure 329-330: Area Stretch. Picture adapted from: SciePro/Shutterstock.com]

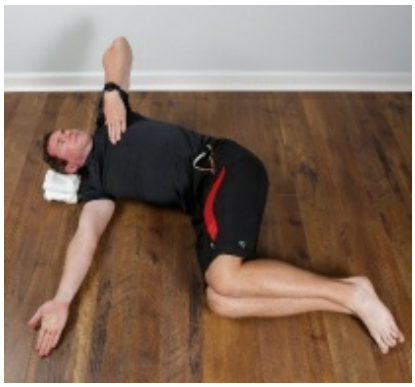
Background:
The upper back and chest tend to be tight due to our poor posture and this is a great stretch to be able to help work on loosening it.

The Exercise:

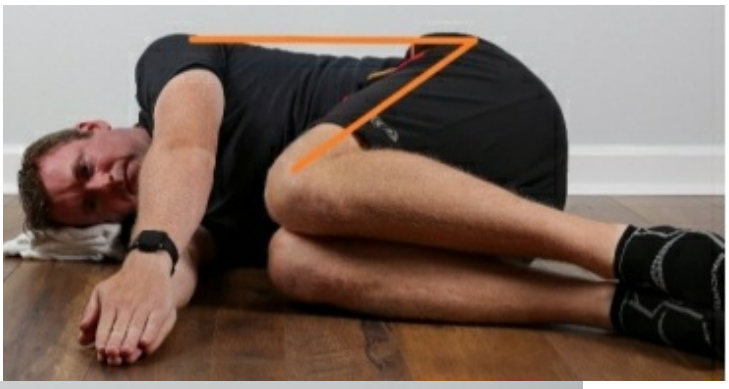
1. Lie on one side with the knees and hips bent to about 90 degrees and the arm both out in front of you around shoulder level.
2. Take the top arm and reach up to the ceiling and continue rotating to back to the floor behind you. Turning the head to track the arm.
3. Hold, then come back to the start position.
4. Repeat on the other side.

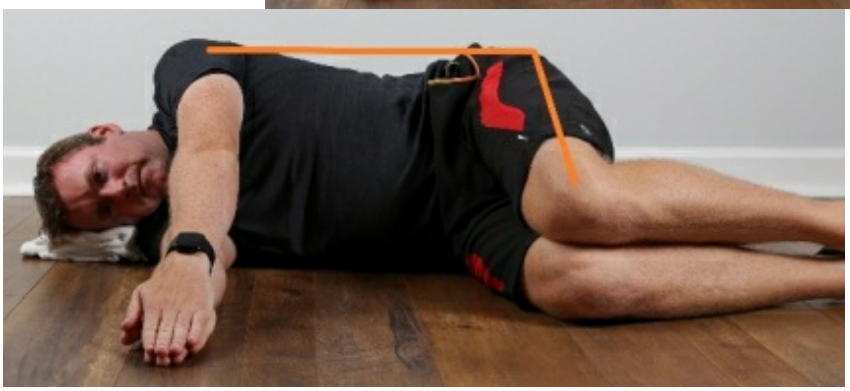
Note: You may not be able to reach the floor behind you. Over time, as you keep stretching, you will loosen up and be able to reach farther back. If you feel a stretch in the low back, bring the knees closer to the chest before you rotate. You may feel a stretch in the chest but I do not want it in the front of the shoulder itself. To redirect the stretch away from the shoulder, bending the elbow as seen in figure 333, this may also help to focus the stretch on the rib cage and upper back.





[Figure 331-333: Above, transition for the open book. Note the head turning with the upper body. Below, the bent elbow reduces the stress on the shoulder and refocuses the stretch in the upper back—to be used if there is shoulder pain]





[Figure 334-36: Above show various angles of the hips; in general, the closer the hips are to the chest the higher in the back that the stretch will be felt, while the lower the legs the lower in the back the stretch is felt.]

Latissimus Dorsi and Quadratus Lumborum Stretch

[Figure 337-340: Area Stretch. Top two pictures are of the lat. The bottom two pictures are of the QL location. Picture adapted from: SciePro/Shutterstock.com]

Background:

The latissimus dorsi (lats) and the quadratus lumborum (QL) have tendencies of tightness. Most people think of the lats as only working the shoulder, but as you can see in the figure to the above, there are fibers that blend all the way down into the low back. Tightness in this muscle can cause irritation in anything from the shoulder to the low back. The QL is a small deep muscle that connects the lower ribs to the pelvis and assists with side bending the trunk or lifting the pelvis depending on whether the leg is on or off the ground. There is also a strong connection with the QL and low back issues. The child pose with a side bend is the other stretch that may also target these muscles. When performing either of these stretches, whatever fibers are the tightest are the ones that you will feel more of a stretch in—you might even feel a stretch in the hip or thigh.

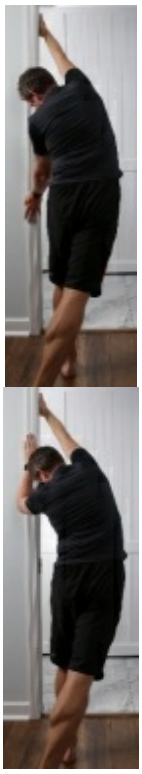
The Exercise:

Lats

1. Stand facing the non-hinged side of the doorway.
2. Place the right hand onto the far side of the frame as seen in figure 341-42.
3. Step the right foot back behind you and across the body to the left trying to get the foot as far from the right hand as possible elongating the body.
4. Repeat for the left side from the other side of the doorframe.

You are looking for a stretch anywhere from the shoulder to the low back on

the side with the higher hand.



[Figure 341-342: Stretching the right lat. The left arm, which is not being stretched, can either be low as in the picture on the top, or it can be high as in the picture on the bottom. Pick whichever is more comfortable to you and allows you to relax the most.]

QL

1. Stand facing the non-hinged side of the doorway.
2. Place the right hand onto the frame as seen below.
3. Step the left leg over the right and let the hips drop out to the right.
4. Repeat on the other side.

When stretching the right side, you MUST have the left leg in front of the right, otherwise you will not be able to get the stretch performed properly.

[Figure 343: QL stretch for the right side. Note the left leg crossed over the right.]

Child's Pose or Seated Trunk Flexion

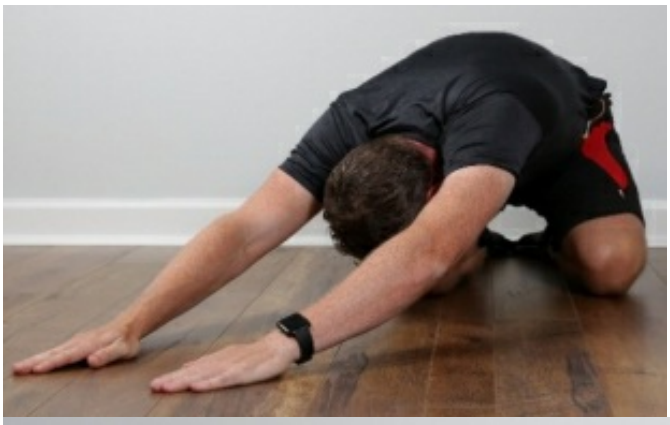
[Figure 344: Area Stretch. Picture adapted from: SciePro/Shutterstock.com]

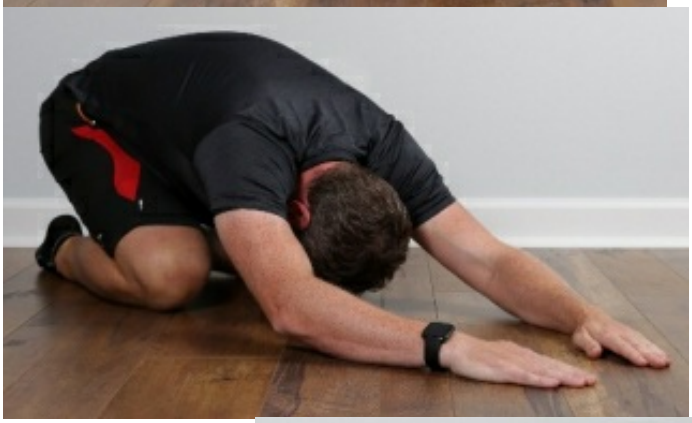
Background:
This is a great stretch to help loosen the back in general, the shoulders, and potentially a little bit of stretch in the hips. After standing for long periods of time the low back tends to get tight. Here are several variations of the exercise to try and loosen up the low back.

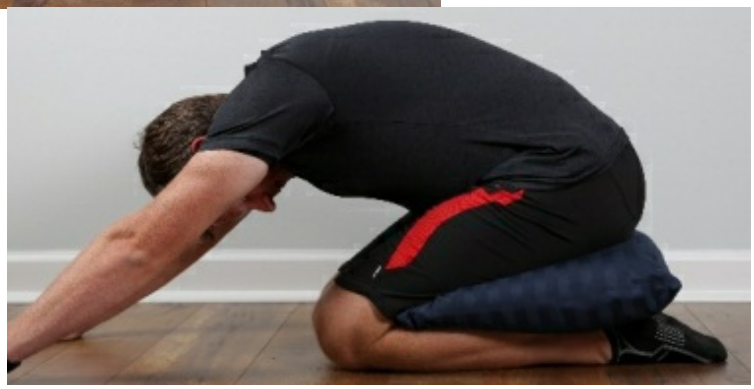
The Exercise: (as seen in figure 345)

1. Start on your hands and knees, rest the hips onto the feet.
2. Walk the hands forward allowing the upper body to lower to the thighs, keeping your buttocks resting on your feet while the head and neck stay relaxed as well.
3. When relaxing, walk the arms back to raise yourself up.

You can focus the stretch for one side by side bending away from that side as seen in figure 346. If you have knee pain while trying to sit on your feet, you can try placing a pillow on the calves as seen in figure 347; if this does not help the knees then proceed to the sitting version on the following page.







[Figure 345-347: Top, regular forward child pose; second has the body bending to one side; bottom shows a pillow between the hips and feet to take pressure off the knees.]

Variation:

1. While sitting, use your arms to lower your upper body down to the thighs, keep the head and neck relaxed as well.
2. Use your arms to push yourself back upright.

You MUST use your arms to get back up, as you just got a nice stretch to the low back and using the low back to get back upright would potentially retighten the muscles you just stretched.

[Figures 348-350: Seated trunk flexion. The top pictures show the transition between upright on the left and the stretched position on the right. In the bottom picture the arms are pulling the body farther forward for a stronger stretch, the arms may also dangle instead of pulling.]

Hip Flexor Stretch

[Figure 351-352: Area Stretch. Picture adapted from: SciePro/Shutterstock.com]

Background:
Sitting is our enemy and the hip flexor stretch is an important tool in our arsenal to combat it. As mentioned earlier in the book, excessive sitting causes the glutes to not work properly. Sitting also causes the hip flexors to become too tight. Hip flexors tightness happens to also reduce activation potential in the glute. That makes this stretch one of the most important stretches in this book. If you have a problem with tight hip flexors, I generally recommend performing at least one repetition of this stretch every time you sit 30 minutes or more.

The Exercise:
Standing

1. Hold onto something sturdy.
2. Have the feet staggered with the left one in front and right one behind.
3. Shifting your body weight forward by bending the front knee, while keeping the back knee straight. Go until you feel a stretch on the front of the thigh of the back leg.
4. Then relax back and repeat on the other side.

You will need to let the heel drift off the ground as seen on the next page, otherwise you will only get the stretch in the calf and not the hip flexor. You are looking for a stretch anywhere from the front of the right thigh to the

front of pelvis on the right side (the back leg). For a stronger stretch you may place the front foot on an elevated surface such as a step stool as seen on the next page.

Note: Pay attention to pelvic position as seen in figure 359-360, as it will have a large impact on the quality of the stretch and stress load placed on the low back.

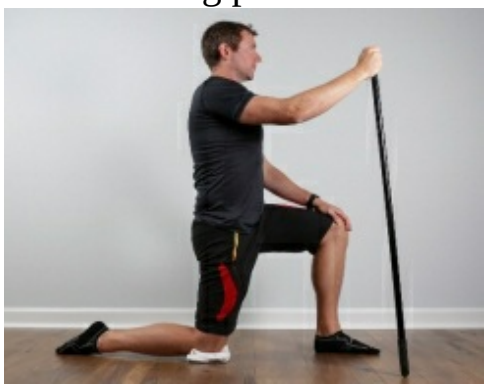
[Figures 353-354: Hip flexor stretch with a stool. Transition between the top at rest and the bottom which is shifted forward. Note the raised heel as I shifted forward.]

[Figures 355-356: top shows the heel relaxed from the ground. If you keep it down, as shown on the bottom, you will only get the stretch in the calf and not the hip flexor.]

Kneeling

1. Have the right knee on the ground and the left foot out in front of you.
2. Shift the body weight forward until you feel a gentle stretch anywhere from the front of the right pelvis to the right knee (the back leg).
3. Relax and repeat on the other side.

With the knee being on the ground, you may get more of a stretch in the thigh from this position. Since you are still upright, you still need to hold onto something to maximize the stretching potential.



[Figure 357-358: Kneeling hip flexor stretch. Push the hips forward as seen on the picture to the bottom to emphasis the stretch.]

Note: As seen in the picture below it is important to pay attention to your pelvic position as it will impact this stretch. If you are unsure of where your pelvis is located refer to the link here to review (pelvic tilts).

[Figure 359-360: Make sure to not let the pelvis drop forward (dumping the bucket forward), perform a pelvic tilt backward (dump the bucket behind you) to help emphasize the stretch.]

Lying

Lying down is an option, but it must be performed on a surface high enough for your foot not to touch the ground. Many people do not have a bed high enough to perform the stretch; you can be creative with what you use if you keep your situation safe. For purposes of taking picture, I was creative and used 2 chairs as seen below. HOWEVER, it is not easy to get onto the chairs and strain is potentially placed onto the neck as it is not supported.

If you find a convenient place to perform the lying down version:

1. Lie back with both legs supported.
2. Let the right leg drop down. You need to make sure that the right thigh is not supported to maximize the stretch.
3. Bring the leg back up and repeat on the other side.

You can start with either both feet resting on the surface that you are on, or knees pulled to the chest. Having the knee pulled to the chest should amplify the stretching sensation.

[Figure 361-362: The lying down hip flexor stretch. On the top the foot is propped, while on the bottom the knee is pulled to the chest. It should be noted that it was awkward getting down and up from the chairs while performing the stretch. A bed, table, or counter would be preferable just make sure they are supportive and sturdy enough.]

Piriformis Stretch

[Figure 363-364: Area Stretch. Picture adapted from: SciePro/Shutterstock.com]

Background:
The deep hip muscles tend to be tight. Even though this stretch is titled for the piriformis, there are several other rotators that will benefit from doing this stretch. The gluteus medius also gets a stretch with when the knee is pushed away as seen on the following pages.

The Exercise:
There are two main variations to be performed here lying and sitting.

Lying down

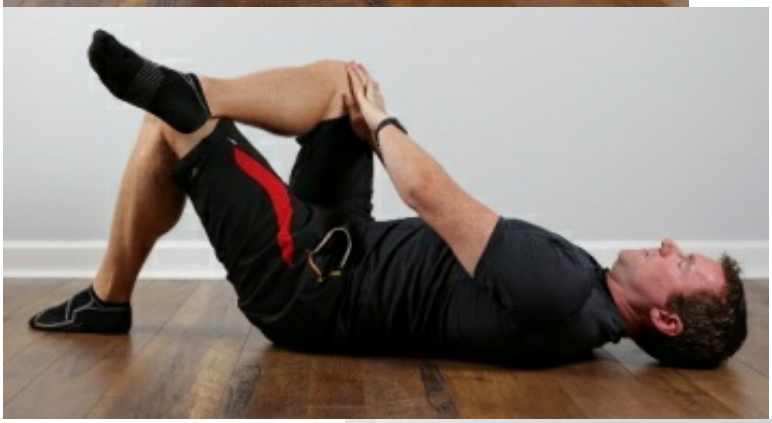
1. Lie on your back with your knees bent.
2. Take one ankle and cross it over the other thigh.
3. If you do not already feel enough of a stretch, then take the bent knee and either:

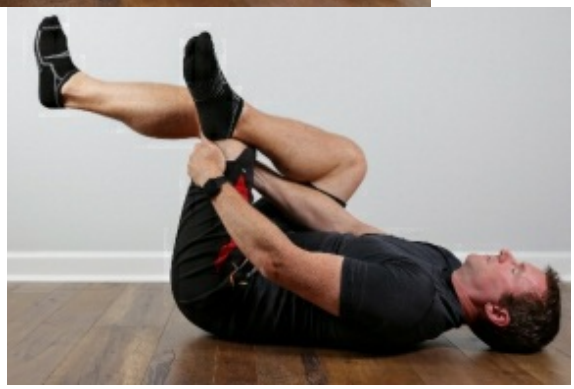
   a:) Push the knee away from you (figure 365).

b:) Pull the knee towards the chest (figure 366).
Or
c:) Lift the other leg and pull it and the bent knee towards the chest (figure 367).

4. Repeat on the other side.

Feel free to try each position to see which gives you the best stretch.





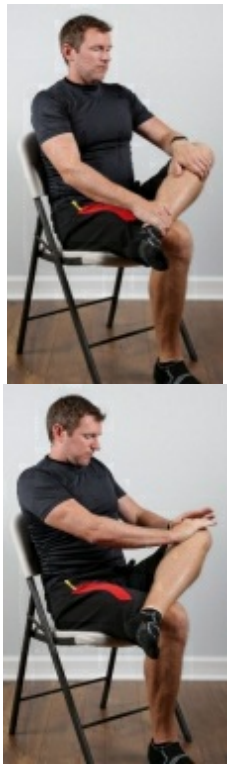
[Figure 365-367: Top picture is “a:)” pushing the knee away. Middle picture is “b:)” pulling knee towards chest. Bottom picture is “c:)” pulling both legs toward chest.]

Seated

1. Sit with the one ankle crossed over the other thigh.
2. If you do not already feel enough of a stretch, then take the bent knee and either:

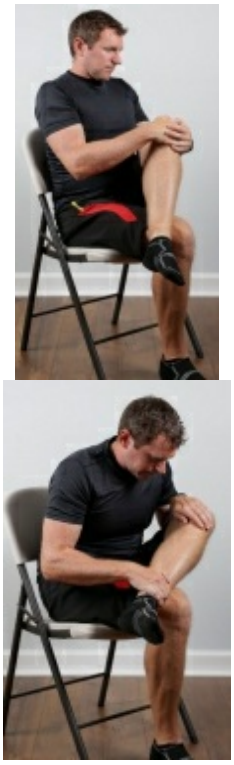
a:) Push the knee away from you (figure 369).
b:) Pull the knee towards the chest (figure 370).
or
c:) Lean gently forward without pushing or pulling on the knee (figure 371).

Feel free to try each position to see which gives you the best stretch. Repeat on the other side.



[Figure 368-369: The top is the starting position with leg crossed. The bottom picture is position “a:)” with knee being pushed away.]

Note: If you have trouble crossing the leg, you can sit closer to the edge of the chair allowing you to straighten out the non-stretching leg which will allow for an easier stretch. As you get looser, you can bend the down knee back farther and sit farther back in the chair.



[Figure 370-371: The top is position “b:)” pulling the knee towards you. The bottom picture is position “c:)” leaning forward.]

Hamstring Stretch

[Figure 372: Area Stretch. Picture adapted from: SciePro/Shutterstock.com]

Background:
Prolonged sitting with the knee bent causes increased tightness in the back of the thigh. Poor glute use and/or poor pelvic awareness can also cause overactive hamstrings. If poor glute and pelvic awareness is the potential cause, then you must be cautious about over stretching the hamstring as the hamstring is tight to try and protect you. The problem is that it is over tighten and the other muscles need to learn to do their job to reduce the underlying problem. Proceed cautiously with stretching the hamstrings and please do not over perform the stretch, work on the pelvic tilt instead.

The Exercise:
The stretch can be done while either lying down or standing.

Lying

1. Use a strap (dog leash, sheet, belt…) to gently pull the leg upward until you feel a gentle pull behind the thigh.

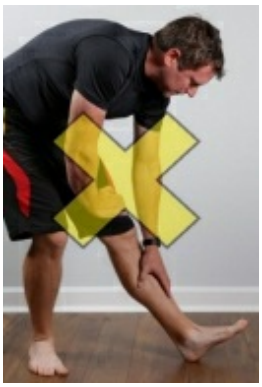
Keeping the foot relaxed or the strap closer to the heel helps to reduce the pulling on the sciatic nerve. Sciatic tension is common in most people and if a hamstring stretch is performed too aggressively, aggravation can occur to the sciatic nerve.

[Figure 373-374: lying down using a strap, the knee can be bent or straight as long as the stretch is comfortable. Note the strap is around the mid foot not around the forefoot/toes.]

Standing

1. Hold onto something sturdy.
2. Place the foot to be stretched out in front of you (the higher it starts the less you need to move to achieve a stretch).
3. Push the hips gently back as you lean forward as if you were going to be reaching for the foot (but one hand is still holding on for support instead of reaching).

Caution: Do not pull your foot towards you as you are trying to stretch the hamstring. Pulling the foot towards you to amplify a stretch on the back of the thigh will be discussed in the next section.



[Figure 375-378: Top two pictures are stretching using a chair, while the bottom two pictures keep the foot on the ground, be cautious with pulling the foot towards you as seen on the right.]

Sciatic nerve glides

[Figure 379-380: Pathway of the sciatic nerve. Picture adapted from: SciePro/Shutterstock.com]

Background:
Many people confuse the hamstring stretch and the sciatic glides. First and foremost, this is NOT technically a stretch. Muscles love to be stretched, while nerves do not. This MUST be kept gentle. Sometimes when there is discomfort behind the leg, we blame the calf or the hamstring when in fact it is the sciatic nerve that is caught somewhere behind the leg. This nerve glide or flossing exercise will help with allowing the nerve to either un-catch from where it is caught or will stimulate the nerve to grow longer (take your pick on which philosophy you wish to follow).

When performing a sciatic nerve glide, you will feel either a MILD, MEDIUM, or STRONG pulling sensation behind the leg. If you feel any pain or altered sensation (tingling or numbness) you MUST stop. The reason that I am over emphasizing is that many people tend to over perform exercises in general. Over performing this exercise can have more negative consequences than most of the exercises in this book. As you perform the nerve glide, I would like you to have no more than a MILD pulling sensation behind the leg.

The Exercise:
This exercise can be performed while lying down or seated, but the concept is the same either way.

1. With the leg that you are treating supported kick the knee partially straight.
2. Pull the toes towards the nose.
3. Do not hold the glide for more than 3 seconds and do not perform the glide for more than 10 repetitions. You may perform the set of 10 glides no more than once an hour if you keep it gentle/mild.

The straighter the knee the more intense that the pulling sensation will be. MAKE SURE TO KEEP IT MILD. The sitting option is generally easier to perform as there are more options to sit than options to lying down while performing your normal daily routine.

[Figure 381-384: The top two pictures are the transition between rest and the sciatic glide while lying on the back. The bottom two pictures are the transition during the seated variation. Either way gently kick the knee straight, then gently pull the foot towards you until you feel a mild pulling sensation. The straighter the knee the more intense the sensation. Do not be shy about having the knee more bent

Quad stretch (standing and lying)

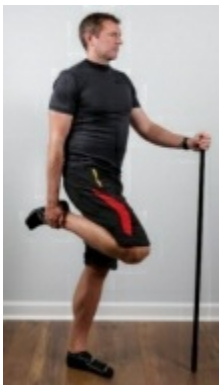
[Figure 385: Area Stretch. Picture adapted from: SciePro/Shutterstock.com]

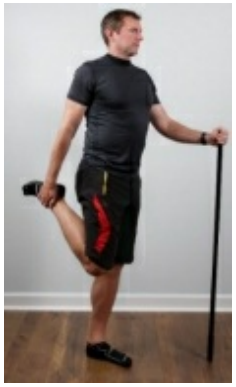
Background:
The thighs tend to be tight due to several reasons. One is weakness in the hips causes a compensated movement placing a strain in the quads. Another is extra weight than many people carry. Another reason is under use of the glutes causes extra work for the quads. And the last easy explanation is under use or weakness due to inactivity and too much sitting.

The Exercise:
Standing

1. Standing AND holding onto something sturdy.
2. Kick one leg back and gently grasp the front of the foot/ankle as shown in figure 386-87.

If you cannot comfortably reach the foot do not struggle or try and force the stretch, just switch to the lying down version. The mistake here is that people will let the thigh drift forward as they are straining to reach the foot which tends to place more of a stretch or place more pressure on the knee itself rather than stretching the quad effectively.



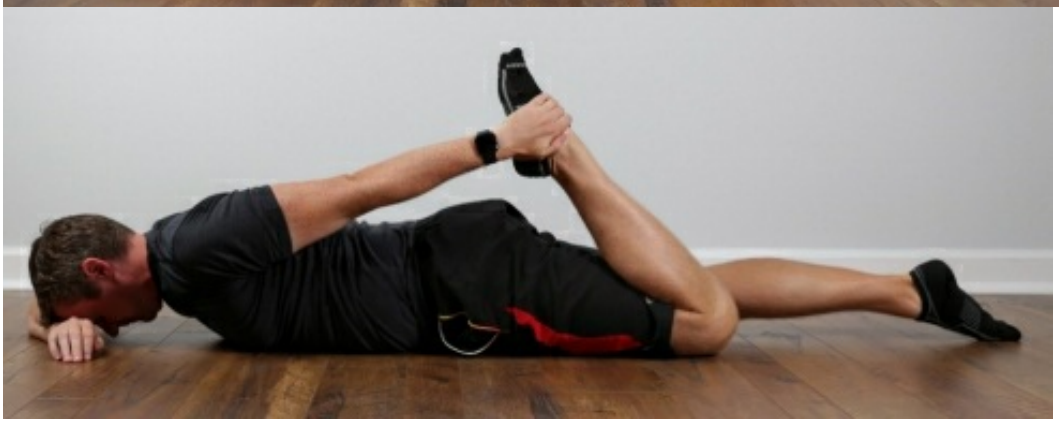


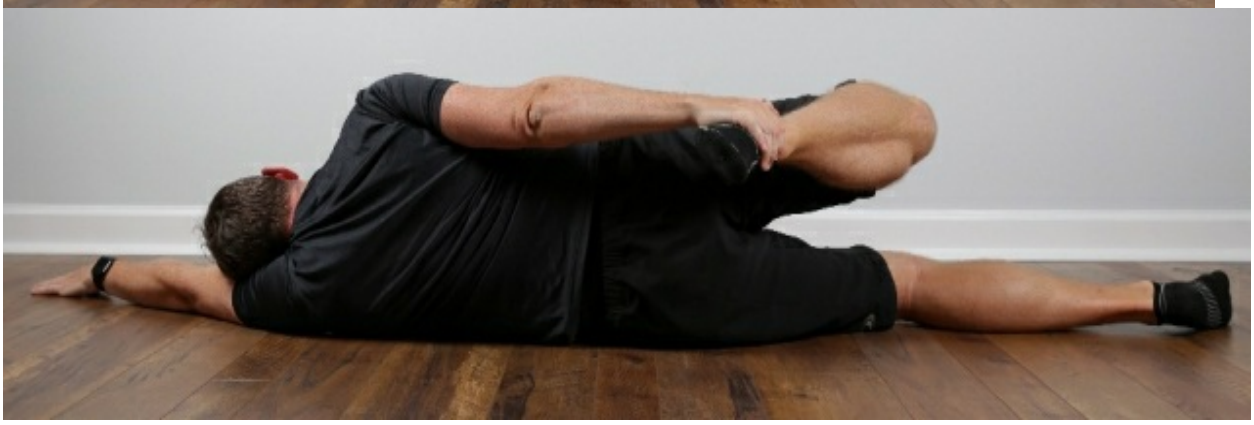
[Figure 386-388: top is not wrong, but you may be losing part of the stretch by not allowing the thigh back far enough, or you are too tight to perform a quality standing stretch. Middle shows good form. The bottom picture there is no hand hold which loses quality of the stretch.]

Lying

Lying down can be performed while on the stomach or on the side. My preference is on the stomach as it helps to reduce compensations, but side lying can be performed if pain is caused while lying on the stomach. Make sure to not let the hips shift as you stretch the quads as seen below in the

picture with an X through it; this can put potential strain on the back or other structure.





[Figure 389-392: Either the hand or the strap work well, just make sure you can relax as you stretch. When on your stomach if you feel like you are arching up, do not pull quite as hard, let the hips settle down.]

Calf Stretch

[Figure 393: Area Stretch. Picture adapted from: SciePro/Shutterstock.com]

Background:
Insufficient range of motion here results in extra stress being placed either on the ankle or the knee (higher issues can be caused as well, but generally the foot/ankle receive most of the abuse). Squatting and lunging in particular become much more challenging if the calves are tight. There are two main muscles to be stretched here: the gastrocnemius (gastroc) and the soleus. Both muscles perform the same basic function, but the gastroc attaches above the knee so positions change slightly when performing this stretch for each muscle.

The Exercise:
Gastroc:

1. The most common position for stretching the calf is standing with the hands holding on for support.
2. Place one foot forward while keeping the other back; you will be in a staggered stance.
3. Focus on keeping the back heel on the ground to maximize the stretch.

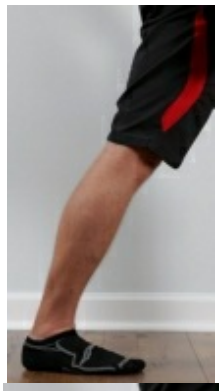
Note: If you take the front foot and cross the midline of the body you will potentially increase the stretch that you feel. This is due to reducing foot pronation (collapsing in of the foot). It should also be noted that the ankle is only supposed to bend forward so far; if you find that you need to place the foot REALLY far backward in order to get a stretch, you probably do not need to perform this stretch. If you have a feeling of tightness but just cannot

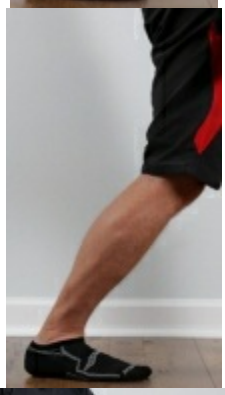
seem to get a stretch, I suggest focusing on massaging the calf instead.

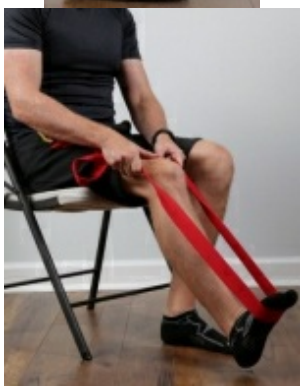
Soleus:

1. Same directions as gastroc except the back knee will be bent to get the access to the soleus. By gently bending the back knee you will put slack into the gastroc and place most of the stretch onto the soleus.

Note: My preference is to stretch one ankle at a time rather than trying to save time and get both at once. I feel that you can relax better with focusing on one leg at a time. If you are using a step stool, make sure it is wide enough so that it does not flip over while performing this exercise, it is almost always better to perform this exercise while using the first step of a set of stairs.

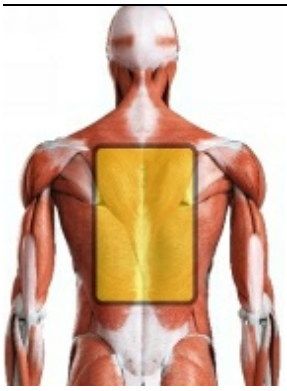






[Figure 394-398: The top and second pictures are of the gastroc and soleus stretch, respectively. The third shows a seated variety of a calf stretch. The forth stretch is of a calf stretch on a stool; make sure that you are holding on to allow for a maximal stretch. The bottom picture demonstrates how I prefer stretching one at a time rather than trying to get both legs at once, I could have made it yellow as a precaution, but I would rather you do one leg at a time.]

Cat/Cow



[Figure 399: Area Stretched. Picture adapted from SciePro/Shutterstock.com]

Background:
This is a relaxing stretch to help further loosen the mid back. With the excessive use of technology, the upper back tends to become stiff and weak. This exercise will help to put some relaxation in to the mid back.

The Exercise:

1. Start on the hands and knees.
2. Relax the back down letting it sag like a lazy cow, hold 5-10 seconds.
3. Next, pretend like a string is pulling from the middle of your back towards the sky or that you are an angry cat arching it's back, hold for 5-10 seconds.
4. Alternate between the two positions, do not strain. Breath in as you arch the back upward into the cat and exhale as you sink down into the cow.

[Figure 400-401: Alternating between the cow on the top and the cat on the bottom. Try to relax and arch the middle of the back the best you can. Because of posture compensations, the upper back is easier to move in the cat positions but try your best at getting the mid back to do the work.]

Conclusion

Thank you for reading “The Art of Exercise: A Guide to Building a Better You.” Now you are ready to build a solid base in order to more easily perform your normal daily routine or prepare to rocket yourself into a new you. If you wish to learn more about how to loosen up those tight and tired muscles, check out my other book, “The Art of Self Massage: The DIY Guide For Your Own Tension and Trigger Points.”

About the Author

Dr. Jason Cain has been a physical therapist practicing since 2006. He graduated from Armstrong Atlantic State University with a Master of Physical Therapy, then from the Medical College of Georgia with a Doctorate of Physical Therapy. His focus of treatment has been with outpatient orthopedics, covering all joints from head to foot. He has always had a passion for hands-on work but realized that the effects could be short lived and that if patients could have greater access to muscular release through massage, they would have better outcomes. Over the years, he has focused on educating patients on how to perform self-massage to various body parts and decided to condense that education down into a book. When not working he enjoys being physically active and spending time with family and friends.

Please feel free to contact me with any questions: cainscures@gmail.com (I check this email about 1-2 x a month)