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## Knee Ability Zero THE PICTURE BOOK

**{Author's Note: Go for it! Feel free to share this with anyone you know who could use it. My aim is for your ATG membership to be the best value you've ever received in fitness. The world kneeds these solutions, and those like you, who want full mastery and coaching, have been instrumental with your support. Rather than forcing you to remake all this on your own, think of my knowledge as your knowledge. Just as I've changed over a thousand lives, I hope you change a thousand more...}**

### INTRO

I can still remember being 4 years old and telling my best friend I was going to save up for a Michael Jordan rookie card. I worked odd jobs, saved every penny, and at age 6 I did it: I bought a Michael Jordan rookie card for one thousand dollars. I had no interest in toys: just Jordan.

First thing after waking up each day, I raced to the couch to turn on the TV, but not to watch cartoons...

(From the 1990 video "NBA Superstars")

An F-16 Fighting Falcon appears on the screen.

Michael Jordan enters the tunnel into the arena.

The F-16 approaches the runway, then Jordan steps onto the court.

The F-16 begins accelerating for takeoff, and Jordan begins dribbling down the court.

The F-16 gets faster. Jordan gets faster! F-16 - Jordan! Back and forth they go, till the F-16 lifts off and Jordan soars into the air for a dunk!

Berlin's "Take My Breath Away" begins to play, and slow motion highlights of Michael Jordan ensue.

Many hours a day I practiced these dunks on my Little Tike hoop in the garage. By age 9 I was waking up at 5am to do vertical jump programs before school. Thousands of nights I dreamed of dunking like Michael Jordan. Not once did I dream of lying half-naked on an operating table as doctors used markers to draw where they were going to cut me open.

Chronic knee pain secretly dominated my life starting at age 12. I remember during a fire drill at school, being worried that if a real fire broke out, I'd be the last one out,

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By 14 it was not so secret: my teammates and coaches nicknamed me "Old Man" because my knees were so stiff. I finished high school with scars on my knee, not even close to dunking a basketball, and with no college coaches interested in giving me a scholarship.

I recall the moment it hit home that my dream of being a basketball player had not succeeded. I had a real decision to make: What would I do with my life now? Would I choose a logical career and forget basketball, or would I devote my existence to figuring out how to bulletproof my knees?

I chose the latter, and began painting walls during the day to make money, while I studied and experimented with how to fix my knees.

A year went by with no results. In fact, I was certain I needed another surgery when a spark of truth finally presented itself...

"The athlete whose knees can go *farthest* and *strongest* over his or her toes is the most protected."

Everything I had been taught up to this point by dozens of trainers and physical therapists was very clear: NO KNEES OVER TOES - but when I read this statement, I immediately knew it was true.

I scrambled on the internet looking for examples of this, and the first video footage I found was from Australian Strength Coach Keegan Smith, a student of Charles Poliquin.

I became a student of Charles myself, and learned enough to get my knees to the point where I could play basketball with manageable pain. At age 21, I beat the odds and signed a college basketball scholarship with an up-and-coming coach named Jeremy Shulman. He was the only coach who gave me a shot, and I repaid him by becoming the starting point guard for his team and helping him win two straight conference championships. At age 23, I received a full-ride scholarship offer from Boston University. From unrecruited in high school, to Division 1 scholarship, local kids back home were reaching out to have me train them whenever I was in town: no one had ever heard of such a story, and people wanted to know how I had pulled it off.

Little did I know, the NCAA rule only allowed 5 years of eligibility to play sports after graduating high school, and my time was up. I assembled all my medical records, and Boston University appealed the ruling, but once again I was denied. It was suggested that I get a lawyer and fight the decision in time for the start of the season, but I knew it was meant to be: my purpose was to follow the clues I learned from Charles Poliquin, and see what I could achieve with knees over toes.

Fast forward to today, and at 29 years old I have the abilities I always dreamed of: I can DUNK, and not just a little bit: I've now trained many NBA players, and my style of on-court training involves playing against them one-on-one, followed by working on dunking ability.

It is still surreal for me, as a 6'1 guy who grew up unable to grab the rim, to teach 6'6"+ NBA players how to improve *their* dunks, and *physically demonstrating* the precise next dunk which would improve their game but which they cannot do yet, thanks to the system of knee training you are about to learn...

## KNEE ABILITY ZERO

Knee Ability "Zero" is a program which requires zero weights, zero equipment, and zero special abilities to start. You can read, study the pictures, and follow right along! I will teach you how to perform each exercise with written explanation and visual demonstration. You will do the exercise, then come back to your book and read the "Why" behind the exercise. I will even give you exact sets, reps, and *schedule*, every step of the way through this book...

### STEP 1: THE TIBIALIS RAISE

Your tibialis muscle is on the front of your lower leg. It acts both to flex your toes up, and to decelerate your foot when you walk, stop running, jump, etc., which you will see examples of when you get to the "Why" section for this exercise:





### HOW

Find a wall and make sure you have safe footing (no socks or slippery floor).

Put your butt against the wall, and stand out a comfortable distance, with your legs straight:



Now, without letting your knees bend, flex your toes up and hold the top position for 2 seconds before lowering back down:



To make the exercise easier, simply stand closer to the wall:



To make the exercise harder, stand farther from the wall:



Perform 25 consecutive reps, pausing 2 seconds at the top of each rep, and 2 seconds at the bottom of each rep, monitoring difficulty as you go. You may need to stand closer to the wall as your muscles burn out, or farther from the wall if you are feeling

## YOU JUST PUT MONEY IN THE BANK FOR YOUR BODY!

This is the beauty of Knee Ability: it is a program of pain-free ability, where our goal is never a win/lose situation, but rather degrees of *winning* only. Let's look at why that is...

### WHY

You use your tibialis with every step you take:



When you play sports and decelerate or jump, you may put *thousands* of pounds of force into this muscle, and whatever force is not handled by the tibialis, goes directly up to your knee:



Look familiar? Yet no study has ever been done on strengthening this muscle. It's no surprise, though, considering 669% more money is spent studying acceleration than deceleration, leaving us with the unfortunate situation of sports injuries rising to epidemic levels, since the overwhelming majority of injuries - both chronic and acute - happen during deceleration mechanisms.

The tibialis is the decelerator of your foot, and your foot is your first point of contact, thus:

**YOUR TIBIALIS IS YOUR *FIRST* LINE OF DEFENSE AGAINST BOTH CHRONIC AND ACUTE LOWER BODY INJURIES.**

So, why am I the first coach to bring the tibialis out of the shadows and into the spotlight in training? Well, I did not just go from "athlete" to "coach" - every step of the

I recall that at my worst, my foot and lower leg pains were so bad, I would wake up in the morning and wonder, "Will today be a walking to the bathroom morning, or a crawl to the bathroom morning?" Sometimes the pain was too great to bear the load on my feet.

You see, coming from such weak knees, and then jacking up my knee strength so greatly, I was capable of producing far more force than my lower leg muscles had handled throughout my life. By reverse engineering this situation, I soon realized the tibialis was the missing link in my regimen, and I was overjoyed when I found that transforming this muscle, took my knees themselves to the next level of ability!

For example, prior to the Tibialis Raise, I had achieved the ability to dunk, but only when I jumped off two feet. When I did a one foot jump, I got nowhere near as high, and was prone to debilitating foot, shin, and knee pains, which prevented me from trying. Not longer after making the Tibialis Raise a standard part of Knee Ability, I was dunking off one foot with ease. All these lower extremity pains have disappeared, and *never* come back.

If you look at your body logically, the Tibialis Raise would be the first place to start, regardless of what physical issues you may be having.

Last tip: make sure you realize your shoes' *heel height* affects the difficulty of the exercise: the higher the heel, the harder it is, and the lower the heel, the easier it is.



## STEP 2: THE FHL (FLEXOR HALLUCIS LONGUS) CALF RAISE

The flexor hallucis longus is a powerful muscle which runs all the way from your big toe to your mid-calf. It helps stabilize your ankle when weight is on the ball of your foot, and it is particularly important when force goes through your big toe. *Hallucis* is a Latin word meaning "of the big toe," so *flexor hallucis longus* simply means "a long muscle that flexes your big toe."





### HOW

As soon as you finish your 25 Tibialis Raises, turn around, put your hands against the wall, and back up until your ankles are under enough stretch that your heels come slightly off the ground:



Without bending your knees or hips, raise up until your weight is on your big toes:



If this is too difficult, you can stand closer to the wall, or even use assistance:



Perform 25 reps to the best of your ability, adjusting closer as necessary.

While the Tibialis Raise is likely to be very tough at first, the FHL Calf Raise is more likely to be easy, since the muscles involved are not quite as neglected as the tibialis. To perform one leg at a time, simply wrap the other leg around, which puts even more stretch into the ankle, and more difficulty into the flexor hallucis longus:



If 25 reps with two legs is easy, but with one leg is too difficult to perform without a break, simply stop at a number that challenges you, then match that number with your other leg, and return to your original leg, going back and forth until all 25 reps are complete. For example: 10 left leg, 10 right leg, 7 more left leg (total is at 17 now), 7 right leg, 5 left leg (total is at 22), 5 right leg, and finally 3 more each leg for a total of 25 each side.

#### WHY

In doing Knee Ability, you are going to be putting stimulus into your legs which may allow you to withstand more force at your knee joint. This is a great thing! However, this means you may unwittingly be putting more force into your feet, as a result. For example, let's say you can jump 20 inches high, and after a year of Knee Ability, you can jump 30 inches high. That is awesome, of course, but I do not want you to end up with foot pain, ankle pain, Achilles pain, or shin splints as a byproduct.

Additionally, your foot itself is the first line of defense for your knees when decelerating, as we saw with the tibialis raise, and in the case of the flexor hallucis longus, the same is true when landing:

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We know from research that whatever force is not absorbed by the ankle, goes into the knee:



Of course we are seeking to improve your KNEE ability, but it makes most sense to also improve the areas which prevent excess knee strain in the first place, and the tibialis and flexor hallucis longus are the first of these areas.

In a traditional calf raise - which I *am* a fan of, by the way - it is simply not practical to ensure the pressure goes through the big toe, and that is why I gravitated to this FHL Calf Raise. I am sure many coaches through history have used similar exercises to this, but I was never taught anything like it, and I wanted to use a name that would help you understand its purpose.

Also (and this is quite important relative to your *knees*): the FHL Calf Raise locks in more ankle stretch than a traditional calf raise. For your *knees'* sake, it is your ankle mobility itself which matters most, and the FHL Calf Raise is the better tool for this job. Just ahead, you'll see how the FHL Calf Raise smoothly progresses you into Step 3:

### **BUT FIRST: STEP 2B: THE TIBIALIS RAISE... AGAIN!**

The Tibialis Raise is so important, you are going to immediately switch back around from the FHL Calf Raise and perform another 25 reps, with the same protocol you did in Step 1.

That is the end of your second session, but please read the next Step before you end off today, because in your third Knee Ability Zero session, you are going to perform Step 1, then Step 2, then Step 2B, and finally Step 3, all in a row and *without break!*

### **STEP 3: THE KOT (KNEES OVER TOES) CALF RAISE:**

The knees over toes calf raise is the first exercise in Knee Ability Zero which directly improves the ability of your knees when they are over your toes. However, it is not actually your knees that will be in motion: it is still your ankles that will be doing the motion, while your knees simply hold your pain-free level.

By measurably addressing the ability of your *ankles* to handle whatever load your knees can, we complete a perfect foundation so that your knee gains not only result in improved knee function, but also in improved foot, ankle, Achilles, and lower leg



Let's look at this final progression before directly addressing your knee movements themselves:

### HOW

Stand about an arms length from the wall:



Now gradually reach your knees over your toes to a comfortable level. Ideally, this will be far enough that your heels actually lift slightly off the ground:



It is totally fine if you cannot bend your knees much at first, and you are still on the route to success no matter what level you start at, because strength "radiates" 15 degrees, meaning: if you get strong at one angle, you can recover back stronger not only at that angle, but also at another 15 degrees of bend! For example, a minimal bend such as this (below), would still be productive:





Do not criticize your current level, and realize that wherever you fall short now, only means you could feel *that much better* by patiently progressing!

From your pain-free level of knee bend, simply flex your ankles up, without any motion other than your ankles. Your knees, hips, and shoulders should stay in a straight line:



Just like Tibialis and FHL Calf Raises, once it is easy to perform 25 consecutive reps with full ankle bend (to the point your heels come slightly off the ground at the bottom), you can begin rebuilding one leg at a time! This puts even more load into your ankle mobility, and into the strength of your knee to hold the position:

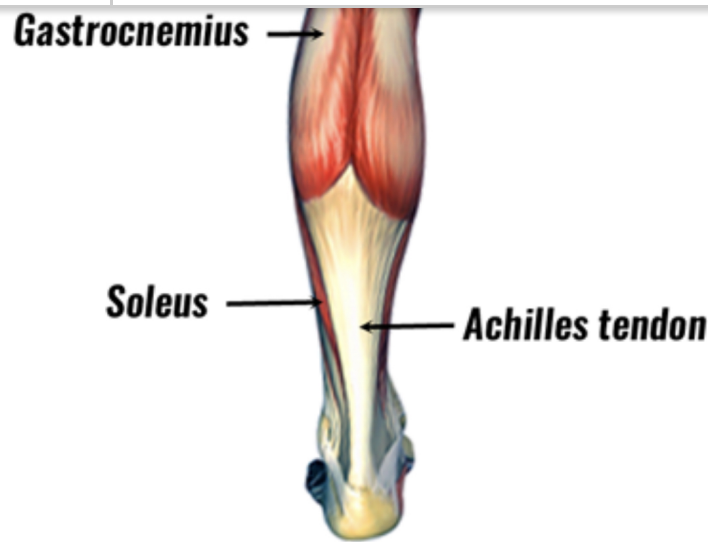


Like the Tibialis and FHL Calf Raises, if 25 in a row with two legs is easy, but with one leg is too difficult, simply count your reps on one leg until burnout, then match on the other leg, then switch back to the original leg, and so on, until you reach 25 on each side. 25 perfect single-leg reps is your long-term goal.

### WHY

I got lucky on this exercise, and unwittingly solved two problems at once:

Problem 1 was the need for a no-equipment solution for your *Achilles*. You have two calf muscles: a *gastroc* (think "belly" of the calf) and a *soleus*, which is lower and deeper:



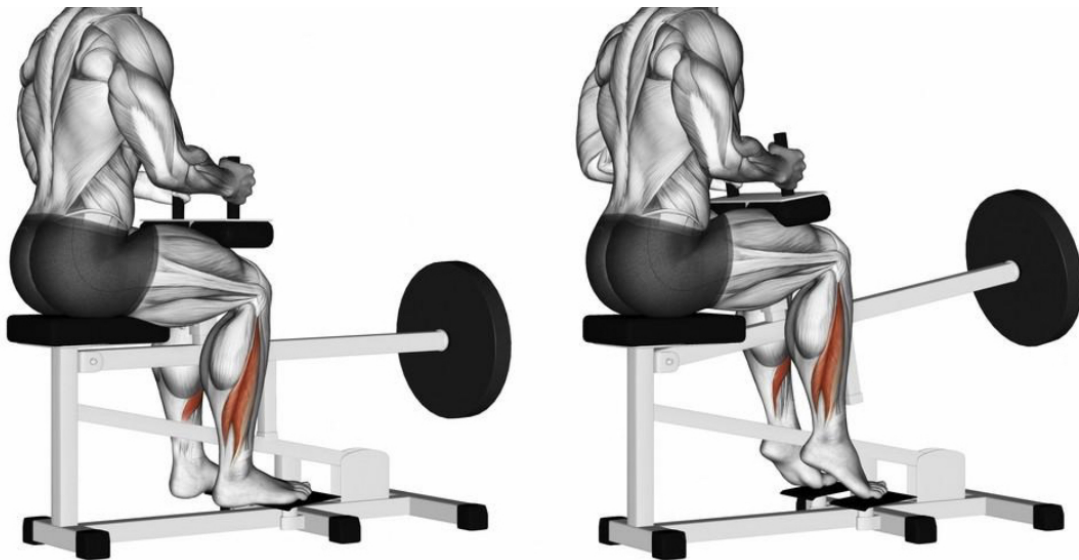
Your Achilles tendon looks pretty big, huh? Yep: it's the biggest tendon in your body! It is a very interesting phenomenon when you realize that as your muscles get smaller, your tendons get *bigger*. For example: your glutes are huge compared to your calves, but your gluteal tendons are small compared to your Achilles!

Thus: your hips are your biggest source of *power*, while your ankles are your biggest source of *springs*. The knees are left in the middle: a perfect balance of both springs and power (or PAIN, as they are subject to ramifications from both your ankles *and* your hips - ouch!).

It is proven that your soleus is more related to your Achilles health than your gastroc is, *but* your soleus is not worked as much as your gastroc in a traditional standing calf raise. Fortunately, a bent-knee calf raise prioritizes your soleus and handles this issue.

For this reason, my gym used to be *full* of seated calf machines. Your gym has a row of bench presses; mine had a row of seated calf machines!

(This is actually a photo of me in black and white. I used red paint for the soleus. Enjoy!)

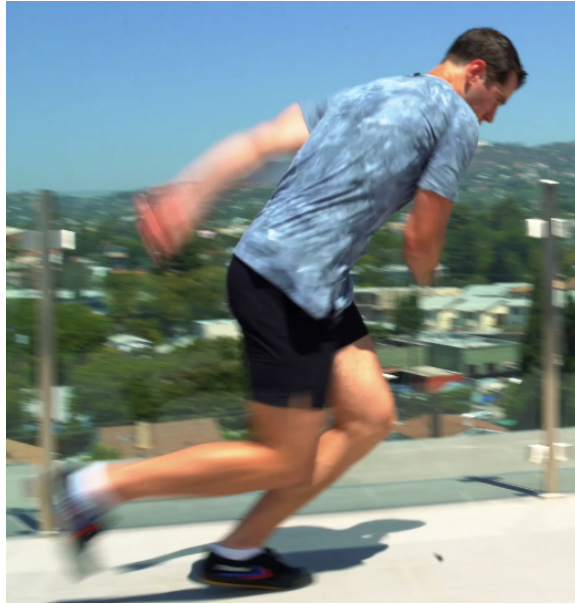


Before long my gym was overrun. I was working from 4am to midnight, seven days a week, with no days off for multiple years in a row. More people needed my help than I was capable of helping in person, so I decided to become an online coach and take more responsibility. I quickly ran into the problem of what to do if your gym does *not* have a seated calf machine, and through much trial and error (oh, lots of error!), the KOT Calf Raise was born.

Little did I know at the time, I had also solved the bridge between ankle exercises and knee exercises! In Step 4, you will directly address your knees, and in most cases this works just fine. However, the KOT Calf Raise already starts putting money in the bank towards your knee ability, so your progress will be smoother, and in very sensitive cases, we have an option that gets the knees strengthening without even risking any painful movement, since you can monitor exactly how far you reach your toes, and

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ability in the KOT Calf Raise when putting all your weight on your leg to push off in a sprint, as well as in the rear leg just before jump takeoff, and again upon landing:



Many Achilles and knee injuries happen in these actions, and the KOT Calf Raise scientifically works against these odds!

#### **STEP 4: THE PATRICK STEP**

We know for a fact that the farther and stronger your knees can go over your toes, the more protected you are - but how do you get there? The Patrick Step provides a safe and measurable route to put energy into this ability, without ever working through pain in the process!

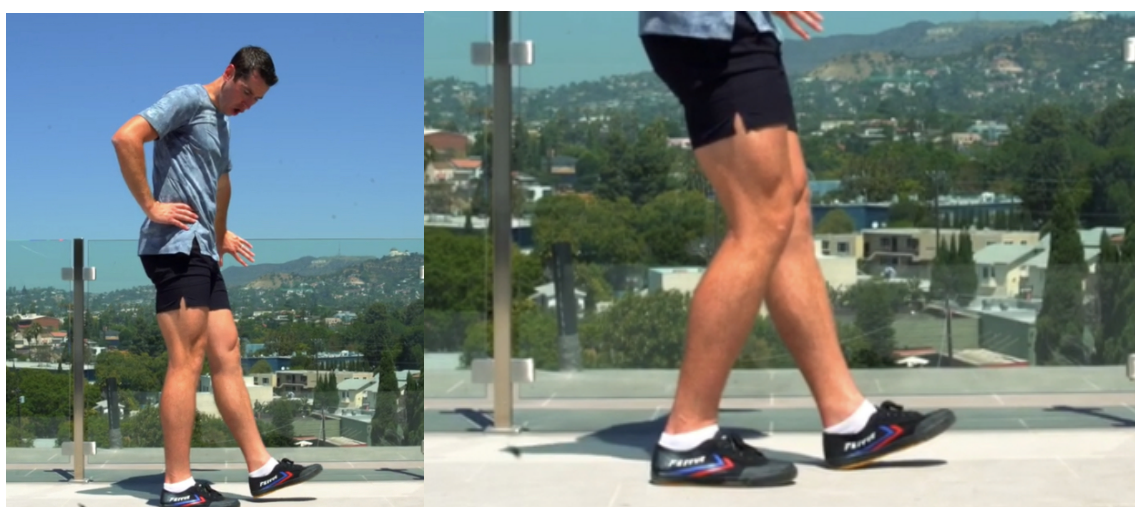
#### **HOW**

Using the wall for balance (or assistance if needed), stand sideways:





Now reach the inside foot forward, and *slowly* lower the heel to the floor:



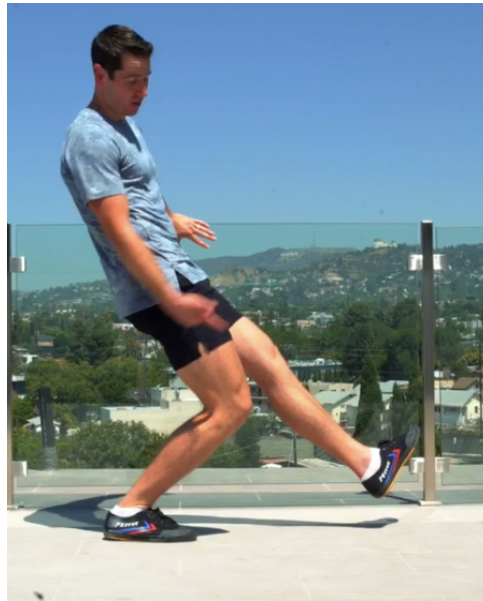
Pause fully to ensure you don't bounce in order to get momentum, and raise back up:



Understand you are *fully* in control of how much you work your knee over your toes, by how far you reach the inside heel:

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Notice how the farther you reach, the more your knee has to bend! Your end goal is actually to go until your ankle cannot bend anymore, *without* letting your inside heel touch the floor, thus requiring your knee to support your full weight, to full ankle bend:



Being able to perform 25 consecutive reps to full ankle bend, directly helps prepare for the fifth movement of Knee Ability Zero, but there is no rush to get to this level, and it is *very* important to never, ever work through pain. Use the following rule:

**PAIN = DESTRUCTION.**

Your body uses pain to communicate to you, and by acknowledging this two-way communication, you can actually handle the source of your pain, rather than just trying to "shut up" what your body is saying to you. We will go into more detail on this in a later section of the book which addresses the following things, but realize that ice, painkillers, etc., are examples of your knee trying to talk to you, and you saying, "Shut up, Knee!" If someone in real life has a problem with you, and you tell them to shut up, it may handle the problem temporarily, but has a higher likelihood of coming back to be an even bigger problem. Your knees are no different!

On the other hand, if you feel burning in your muscles on this exercise, rather than pain inside the joint, you are stimulating greater protection for your knee, giving us the following counter-rule:

**PAIN-FREE MUSCULAR BURN = CONSTRUCTION.**

### **WHY**

While long-term strengthening of a reverse stepping motion itself has never been tested, we do know that:

- a) The better you are in a step-down test, the less chance you have of both chronic and acute knee injuries. There is pressure on your knee joint when your knee goes over your toes, and whatever your muscles cannot handle, must go somewhere: your knee joint itself!
- b) The better your ankle can bend, the less chance you have of both chronic and acute knee injuries. The force has to go somewhere, and what your ankle cannot handle, must go up!

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My final usage tips are:

1A. Always start on the non-dominant side, if you have one. Over time you may become balanced to the point that each side feels the same, but if you are aware of one side being more difficult, it is important to start on this side, paying careful attention to its ability, and then only matching this ability on the dominant side. If you started on the dominant side, you might go further than you can with the non-dominant side, resulting in the imbalance continuing, or perhaps working through pain in an effort to keep up.

1B. While not mandatory, you may even perform an additional set of 25 reps on the weaker side, giving your body a 2:1 ratio of weaker to stronger. However, do not continue this long-term, as we do not want to create an imbalance the other way around. Keep in mind that the stronger side will only be going as far as the weaker side could, so while it will be stimulated compared to not training at all, it will not be stimulated as hard as the weaker side, so the *weaker* side will be able to catch up. This weaker-stronger-weaker approach may simply accelerate the process.

2. Film yourself from a side angle to ensure your reps look the same on each side. My entire business prior to this book is built on actually watching the user's form video, and ensuring perfect form. Since this delivery method is different than using an app to observe and coach your form, I have to encourage you to take extra observation yourself, and make sure it looks the same. Understand the lack of *balance* is every bit as linked with knee pain and injuries as lack of *strength* is. In testing both plants and landings, 70% higher injury rate occurs in those with significant imbalance from one side to the other!

Do not worry, though, if you have an imbalance. Rather: look at this situation optimistically. Whatever you feel like now, you will feel that much better once you are balanced, *and* you will be even more athletic as a result!

When long jumpers were given an "unorthodox" training program of working on jumping off *either* leg - rather than just their "competition leg" - they gained 70% more increase than their counterparts!

Interesting that balancing your body leads to both 70% reduction of injury, and 70% increase of performance gain! I do not believe this 1:1 ratio is a coincidence, and as absolutely downright COCKY as this will sound: I am the only known case of a fully-grown adult going from *less* than a 20-inch vertical jump, to *over* a 40-inch jump. As the only person to consistently apply all the research we have covered so far, how could I *not* be shouting this from the rooftops. Even the Grinch would be delivering these services - he just might charge more than me!

### STEP 5: THE ATG (ASS TO GRASS) SPLIT SQUAT

This is my personal favorite exercise, because I know if I only did this one exercise for the rest of my life, I would still live in the upper 1% of knee quality life.

Everything you have done to this point helps prepare your ankles and knees for the ATG Split Squat, but an added factor of *hip flexor length* enters the equation, so first understand that while I want you to eventually be able to perform this exercise on flat ground, you may have to initially use a step. Notice the difference in hip flexibility:

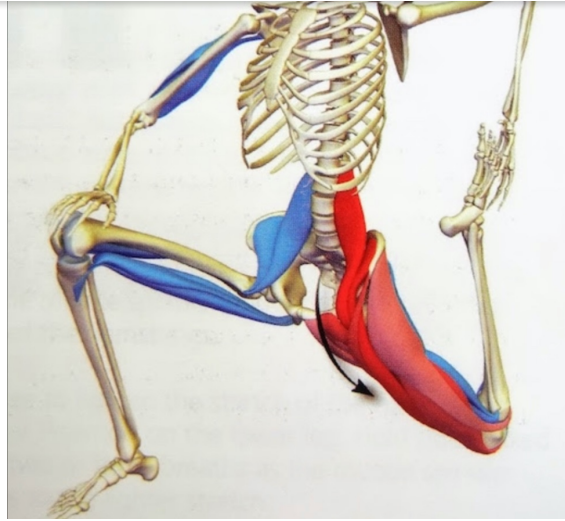
(more hip flexor length)

(less hip flexor length)



(the hip flexors are in bright red)





With continued Patrick Step to be able to handle your full weight, plus front foot elevation to compensate for flexibility limitation, the majority of people I have coached have successfully gotten into this exercise without pain. However, there is still one final option for regression, which is using something for assistance:



If front foot elevation plus assistance still do not allow you to get into this exercise pain-free, it is simply too much, too soon, and continued work on the previous four exercises, plus the accessory exercises (after Step 6) have gotten such trainees there in relatively short time.

### HOW

The first step - no pun intended - is establishing how long your step is. People have varying leg lengths, and varying degrees of flexibility - fortunately, this is not something I have ever found the need to measure. You simply play with your foot distance until you have perfect form, and eventually it won't take any thinking about.

Too close of a step does not allow enough depth, and thus prevents full coverage:



While too long of a step does not allow enough knee over toes, and thus prevents full coverage:



The right step distance allows the front hamstring to fully cover the calf, with perfectly upright torso,



with back toes still pressed - NOT rolling over,



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and with back knee NOT touching the floor.



Lower down slowly, fully pause in the bottom position, rise back up without altering posture, and repeat!

Perform 5 sets of 5 reps per side, back and forth, taking up to 30 seconds between sides if you feel you need a break.

### WHY

Contrary to popular opinion, when doctors analyzed 168 studies on full knee bend, they determined that gradual progression of this ability leads to *more* stable knees, *thicker* knee tendons, *better* range of motion, and ultimately *less* chance of knee pain and injury.



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and thus receive negative ramifications from bilateral (two legs) squats: any difference between sides manifests when you squat with two legs, leaving the weaker knee vulnerable, or worse: causing you to favor the stronger knee, and thus make the imbalance even *worse*! Enter: the ATG Split Squat.



In addition to the studies on bilateral full-bend, there have also been studies on *half-bend* unilateral squats, which have proven to work just as well as half-rep bilateral squats for leg strength!

By combining these two well-researched areas, we realize the value of the ATG Split Squat, even though no studies have been done upon it!

The tighter the hip flexors, the more pulled forward we get. The modern lifestyle of excessive sitting does not help, and bilateral squats do not fix this, whereas ATG Split Squats do:



In fact, I maintain my splits from this exercise alone for the hip flexors, plus one stretch for the hamstrings (Elephant Walk: one of the Knee Ability accessory movements):

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Once you can get into good, flat ground ATG Split Squats, you are ahead of the game and have a chance to stay out of the trap forever! I advise getting this ability and never losing it! My mother is 66 years young and she has patiently worked her way to flat ground ATG Split Squats. She recently ran a half marathon and I was waiting there at the finish line, hoping she would be okay... "That was easy!" were the first words out of her mouth!

(Even Momma better have perfect form)



I've personally done over 10,000 ATG Split Squats, and I've now coached over 10,000 ATG Split Squat form videos in-person and online. It is the gift that keeps on giving, but *forcing* them too much too soon is not the answer, and this rule becomes of *extreme* importance in the next and final direct knee exercise, which should *only* be worked on once the ATG Split Squat is easy...

### STEP 6: THE KOT SQUAT

This exercise is not mandatory. This exercise is not mandatory. This exercise is not mandatory. That was not a typo. For safety reasons, I really need to get that point home to you.

For quality of life, I do not believe you need any exercises beyond the first five we have covered, but some sports and lifestyles exceed the norm, and in such cases, the KOT Squat can make an otherwise-impossible career: POSSIBLE.

Some athletes naturally have world-class knees over toes ability, but what if you don't? The KOT Squat provides a route to transforming your leg muscles and getting that truly elite knee ability!

One of Michael Jordan's advantages was the ability to put greater pressure on his knee over his toes in order to get lower than his defender:





Even Jordan's last shot with the Chicago Bulls - "The Shot" to win the 1998 NBA Championship - was set up by using his world-class knees over toes in order to get lower than his defender:



On some legendary, scary falls, Jordan popped right back up! Unfortunately, many other players throughout NBA history tore knee ligaments when in the exact same situation:

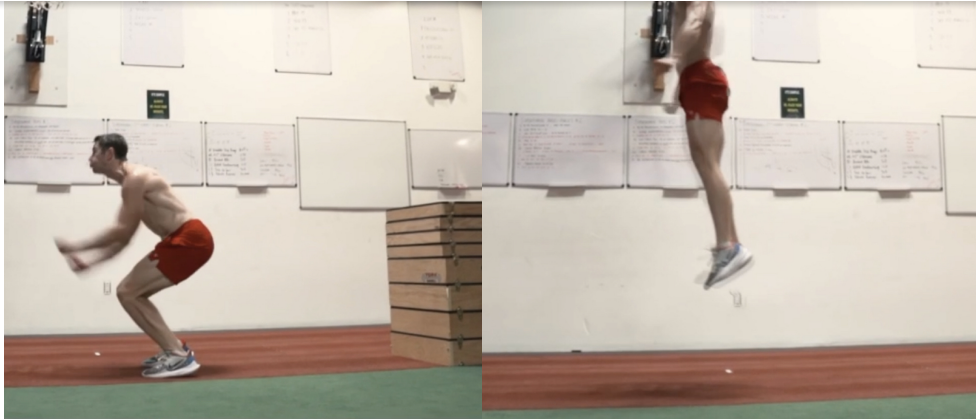




For my own body, it was the KOT Squat that shot my vertical jump up over the 40 inch mark, and allowed me to experience no ill effects no matter how hard I jump:







Let's break down exactly how to do it...

**HOW**

Begin facing away from a sturdy chair or other similar object:



Slowly lower down until your hands reach the surface:



Keep your glutes contracted, in order to prevent the hips from assisting. This will result in your knees, hips, and shoulders in a straight line:



Use a slight elbow to ease a little deeper, and then push to assist in getting back up:



Over time, you can use a lower and lower surface until you can reach all the way to the floor, with *full* control on the way down *always*:



This level of full eccentric (on the way down) control already puts you in the upper 1% of knee ability.

There are also two other ways of progressing. If you have a good stairwell, some prefer working on it like this:

(One advantage here is that you can get even more range of motion at the bottom.)





And if you have padding, you can remove your arms and use your knees as an exact barometer of your ability:



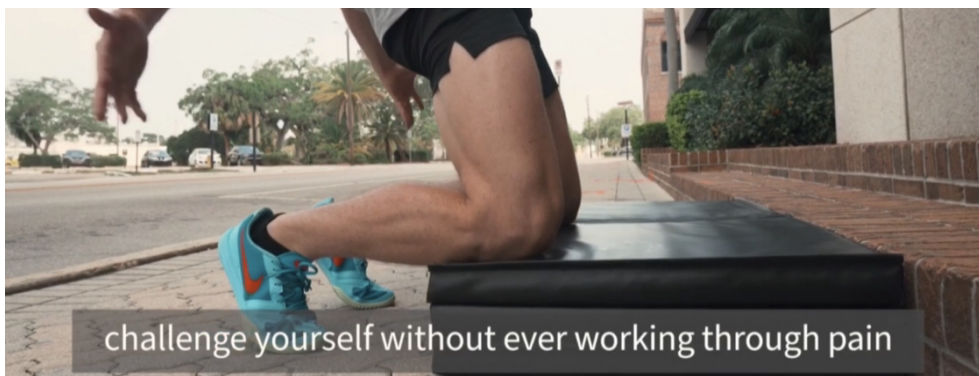
Start with a surface that you know you can go to easily

And when that gets easy...

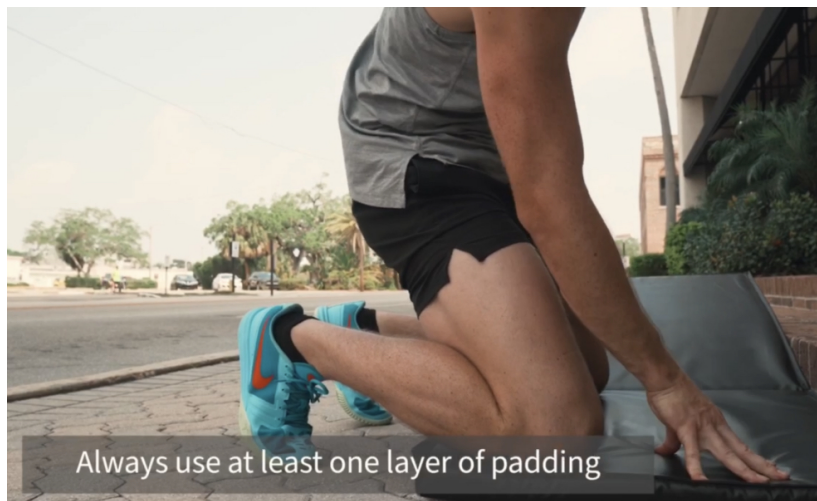




You can go lower to increase difficulty, and higher to reduce difficulty, without ever having to work at a level which causes pain...



As you get to the floor, you would still use one layer of padding, thick enough to prevent any impact-related knee pain:



At the most elite levels, myself and many world-class athletes can go to a *deficit*:



As the absolute strictest test, you can use a stair for full range, remove any momentum from the arms, and go to a deficit!



Perform 5 sets of 5 reps with short breaks - no more than 30 seconds. If a set feels easy, you may try lower. If a set feels too difficult, you may go back higher. Your most important intentions are always:

1. Keep your glutes contracted!
2. *Control* down slowly!

By doing these two things, you put the most emphasis on your knees over toes ability of any exercise physically possible.

### WHY

This is a good opportunity to give you my thoughts on the relation of all six movements we have covered so far, in order of importance.

1. I believe the ATG Split Squat is the one exercise I could do the rest of my life, and maintain a super high quality of life in relation to my knees and athleticism.
2. I believe the Patrick Step is the most likely necessary accessory exercise to the ATG Split Squat, which can be used as a regression for beginners, and still as an effective warm-up for even the most advanced.
3. If I could only do ATG Split Squat and Patrick Step, I would! However, the ankle is an unavoidable part of the equation and I believe not only knee tweaks, but also foot pain, shin splints, Achilles issues, will all have higher prevalence if the Tibialis Raise, FHL Calf Raise, and KOT Calf Raise are neglected. Additionally, these may be necessary entrance-points for many who wish to get the benefits of the ATG Split Squat and Patrick Step, but do not yet have enough ability to do so.
4. If I could achieve my bulletproofing and anti-gravity potentials with only the ATG Split Squat and Patrick Step, I would! However, the KOT Squat simply targets your muscles in ways the previous two do not. At first, it may appear that the Patrick Step and ATG Split Squat cover your full knee range from top to bottom:





For most lifestyles this is enough, but what happens when you go *outside* that range?



This "outer range" strength philosophy has been used successfully decades before I was born. Most notably was Tom Platz:



Did Tom's "knees explode" as so many critics said? Well, here is he is now at age 65, with mobility and knee health far beyond the norm for his age:

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The more the myth of "no knees over your toes" has grown, the more knee injury statistics have risen. Tom and others called this one-arm-assisted version the "Sissy Squat" - but don't let the name fool you!

"Sissy" was actually short for "Sisyphus" - a character from Greek mythology who had the strongest legs in the universe due to being sentenced to rolling a boulder up a mountain for eternity.



I *did* try to get this exercise more popularity as the "Sissy Squat," and then the "Sisyphus Squat." It led to more confusion than clarity, so I began calling my modified version the "KOT Squat" in order to keep it simple. In essence, it is merely a knees over toes squat. What happens if you try to squat without your hips bending? A KOT Squat is what happens!

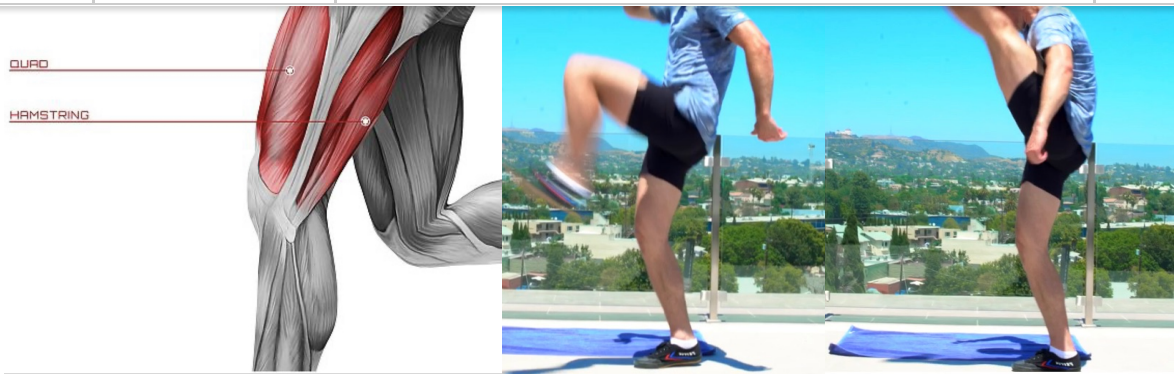
I may have changed the name in order to simplify the coaching process, but I will always credit where the inspiration came from to scale a solution for it.

The final four steps of Knee Ability Zero are now *accessory* steps, meaning they are necessary in order to balance out the actions we have done so far. They are intended to be applied at any level, and most trainees can begin working on all four of them from the very first session...

### STEP 7: ELEPHANT WALK

This is the first of the "accessory" exercises in the Knee Ability Zero formula. Everything we have done to this point directly contributes to you being able to handle more force through your leg muscles, but you can only *use* the muscles that extend your knee (the quads) to the degree that the muscles which flex the knee (the hamstrings) can stretch:





**HOW**

The test of adequately flexible hamstrings is the ability to have your palms on the floor without bending your knees:



If this position looks tough, remember that my nickname used to be "Old Man," and at the worst of my knee problems, even my toes looked like they were a mile away from me!

By starting with your hands farther out (you can even lift up on your fingertips, or use a box or step to elevate), with knees bent, and then extending one leg at a time, you can get twice the load of a regular hamstring stretch:

(Farther out, on fingertips)

(You could even lift up with a box, step, etc.)



(Extend one leg)

(Bend again)  
leg)

(Extend the other

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When you can comfortably extend each leg, you can back up farther. Over time, this will continue all the way until your palms are on the floor, in front of your toes:



Perform 30 reps per side, being sure to keep breathing throughout the set.

### WHY

In addition to ensuring your hamstring flexibility does not limit your quad strength, there is another factor at play. This happens to be my favorite fundamental movement for the lower back.

Contrary to popular belief, evidence shows that those who *can* round the back have less lower back pain and injury than those whose backs are stiffer. This is proven safe at light loads, and I believe your own bodyweight alone is sufficient load, so while we are working on our hamstrings, we are also doing quite possibly the best lower back movement in terms of long-term prevention of pain and injury.

Just as force unhandled by the ankle must go up to the knee, force unhandled by the knee must go up to the hips and back. While the ATG Split Squat is a great start for your hips, the Elephant Walk gives your back some direct attention, and I have personally found this stretch to give me a back that never hurts.

After my knee injuries, I soon found myself with debilitating back pain, and I spent thousands of dollars on chiropractors and other means in an attempt to handle it. "Nothing worked" - but my hamstrings were tight and my lower back was stiff!

My intention is not to attack chiropractors in any way, but rather to assist the overall scene by ensuring people at least have a measurable baseline of back *ability*. For myself and now thousands of others, we have found this gentle progression of back ability to be better than any means of treatment we had tried. I've now been years without so much as a tweak to my lower back, and I maintain this exercise 3 times



unsubstantiated myth - with indications of *causing* higher chances of knee pain and surgery, consider that we are all up against *proven lies* regarding the lower back: an actual study was done in which 75% of physiotherapists were found to be *unaware of modern research* and/or lying to their clients about back rounding!

You do not need to be a doctor to observe the truth: if you dropped a pencil, how would you get it if you could not round your back, or bend your knees over your toes:

Hm...



Nope: back rounding!



Back rounding *and* knees over toes? No, no, no, no, NO!



Ah, yes, now we're getting closer...



Nailed it!



Bottom Line: we need to become a nation of Feetpeople, with backrests readily available at all turns. Do *not* let your knees over your toes, do *not* round your back, do *not* get your heart rate up, do *not* make direct eye contact with your mother-in-law,



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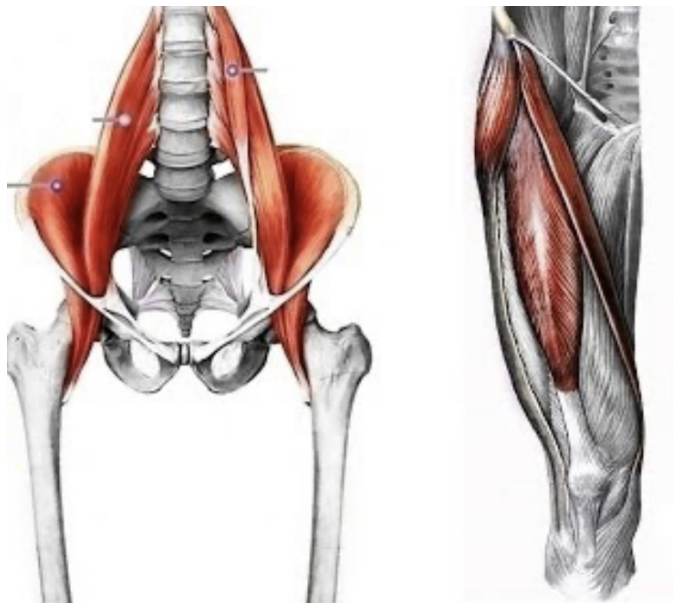
Or maybe, just *maybe*: *confront* your life and body with a gradual and patient approach?

### STEP 8: L-SIT

With greater leg power, comes greater responsibility! No matter how strong your legs are, you still have to pick them back *up* when you walk, run, etc:

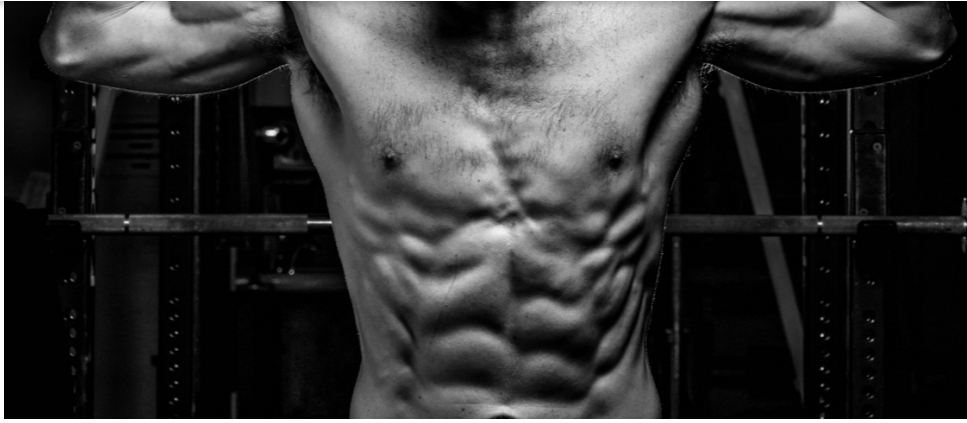


Your hip flexors aren't prominent "mirror-muscles," so have lost much of the attention to the "6-pack:"



As you can see, the hip flexors are made up of a number of smaller muscles, attached from the spine itself (your hip flexors are linked closely to lower back pain!), and extending all the way down your mid-thigh.

Interestingly, the hip flexors have more strength potential than your abs, and since they work along with your abs, they might just be the weak link that is holding back your core potential! I do not do *any* traditional "core" exercises, and my abs are getting by alright...



In my style of training, the goal is not to "neglect" the abs, but rather to resist them *from the feet*, ensuring your hip flexors never lag behind!

### HOW

The measure of your hip flexors being up to par is simple: can you hold your body off the ground?



There are three levels of progression to this point:

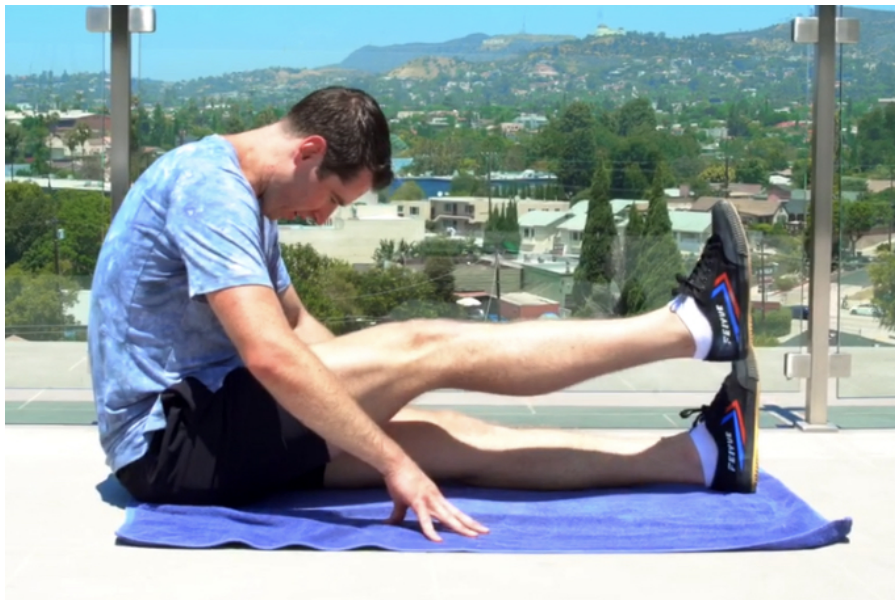
Level 1 is just holding one leg off the ground at a time, for a two-count:







Leaning forward progresses difficulty:



Set a timer and go back and forth for 60 seconds.

Level 2 is the same drill, but holding your butt off the floor as well! Also for 60 seconds:



When you go back and forth for 60 seconds with your butt off the floor, you can probably do Level 3: a full L-Sit!



At this point you are in the upper 1% of humans, but you could go even further by setting a timer and seeing how long you can hold. Holding for 30 seconds straight is getting closer to world-class, but I would not stop you from holding even longer!

Like most exercises of Knee Ability Zero, I suggest doing one set every *other* day, to ensure fullest recovery. However, as you build up tolerance there is no reason why you could not increase to two or even three sets in a session. (After the final two exercises of this program, we will cover exact programming and scheduling)

### WHY

Let us break this down into 3 reasons, since each is quite different:

1. In relation to your knees, we know there is success waiting for us by addressing the muscles which function to withstand force at your ankle and knee joints, but we also know that in doing so, we may experience some degree of muscle growth in these areas. I have never observed this to be excessively heavy, but this *is* weight that must be accounted for. If I am going to make your ankles and knees stronger, I *must* make your hip flexors stronger so that your legs feel just as light, if not lighter, and are not subject to hip flexor strains due to imbalance. This brings us to point number 2:

2. The hip flexors have been found to be the single biggest biological difference between regular humans and elite sprinters, and there is no doubt that many of my clients want to *run* faster: from competitive distance runners, to NFL players with millions of dollars on the line based on their speed, to dads who just want to be able to enjoy sports with their kids without tweaking something. For me personally, even after I had the leg power to dunk, I still lacked *top-end* speed, meaning: I had powerful explosion, but once I built up to my fastest, I could not hold onto it for very long, and I lacked the last gear needed to be as fast as the pro basketball and football players I



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again. After a second 6-second time, he made me take off my shoes to prove I didn't have weights in them. For the record, I really like this coach, but I think he really was in shock and did not know how to handle a 6-second 40. My speed tormented me for years, and one of my worst fears in life was a footrace, but not anymore! Now, my speed on the basketball court is one of my greatest strengths, and I look back just amazed that out of the dozens of trainers I went to, no one ever made me confront my weak hip flexors.

3. Lastly, from a *direct* knee standpoint, evidence indicates stronger hip flexors = less wear and tear over the course of seasons, years, and *life*. When your hip flexors are weak, you have to *push* harder into the ground to get from point A to B, than your body was naturally designed to. Squats, deadlifts, etc., train the ability of your hips to *extend*, and in modern exercise science: for every ten studies on hip extension, there is less than *one* for hip *flexion*. Usain Bolt is not the most seasoned squatter or deadlifter, but he has a perfectly proportioned body for *speed*, and that includes hip flexors three times larger than the normal human! It is time that the decision-makers in exercise science wake up and start *observing* the best athletes on earth and investing money to duplicate *what is really occurring*, rather than just following the popularity of bodybuilding and powerlifting, which are sports of their own and *not* representative of what occurs in sports and life. As a result of this disproportioned focus on hip extension over hip flexion, you should not be surprised that I also find less than a one to ten ratio for hip flexor vs. extensor *strengthening* in modern strength programs from trainers with certifications and degrees. This leads to athletes with more plodding strides, putting excess strain on your ankles and knees compared to what God, the universe - or whatever you believe in - intended for us. When we train our bodies, we have a responsibility because we know that training is not just about getting a sweat: exercise has the power to adapt our bodies and alter our muscular structures. Adapting our bodies *differently* than we are naturally designed has only led to worldwide problems of pain, injury, surgery, and drugs - *with all statistics soaring*, and which myself and others are now having to battle against by spreading truth, after being chewed up and spit out by a biologically-flawed system ourselves.

Conclusion: hip extensors are *sexy* and *powerful*, and later in this book: you will learn how to make *yours* World-Class with mathematical accuracy, but hip *flexors* are almost always the reason that hard-working athletes remain slow, and you are adding unnecessary pain and injury to your feet, ankles, Achilles, shins, and knees to the degree that your hip flexor-to-extensor ratio is busted.

This ain't rocket science, but it IS science, and you must confront the *biology* of your knees and the rest of your body if you want to maximize not only your genetic potential for anti-gravity and bulletproofing, but also your quality of life for the long haul.

If you rely on where exercise science has put its money, you are subject to its errors. It does not matter what the *findings* are, if it is not looking fairly and accurately to begin with!

Now you can see exactly what has happened on this planet that creates excess *billions* of dollars spent handling the consequences. In some cases I think it is by accident due to the allure of "performance" without confronting the consequences (for example almost 700% more money spent studying acceleration than deceleration, even though most PAIN AND INJURIES occur in deceleration). In other cases, investigations have proven doctors to intentionally do the wrong thing because it is so profitable for them and their hospitals. In *any* case: YOU have the solutions for yourself and others to train according to the body's natural design, and live in the upper 1% of pain-free and capable bodies.

We are still humans. We are still fragile. Every day, though, we are seeing "superhuman" become the norm, just by training according to physics and biology through the methods in this book. Something *can* be done about soaring pain and injury statistics, and they can and *will* come back down to more manageable levels.

### STEP 9: COUCH STRETCH

For knee tendon freedom, I highly advise achieving and maintaining the ability to have your shin and shoulders against wall:



### HOW

For some, the ankle itself may be too tight to start against wall, but a chair lower seat allows you to begin. This appears to be the reason for the name: "Couch" Stretch:



Always use thick padding under the knee. You may be more comfortable with even more than I am using in the picture.

When this gets easy, you can gradually work against the wall as follows:

- 1) Start sideways in order to easily have your knee close to the wall:



2) Then spin around and lean forward so that you can easily slide your back foot up the wall:



3) From here, you can work your hands up your front thigh and then to your hips, thus increasing the stretch (as you are able to comfortably):



4) Your long-term goal is shoulders to wall, and from there, I want you to get

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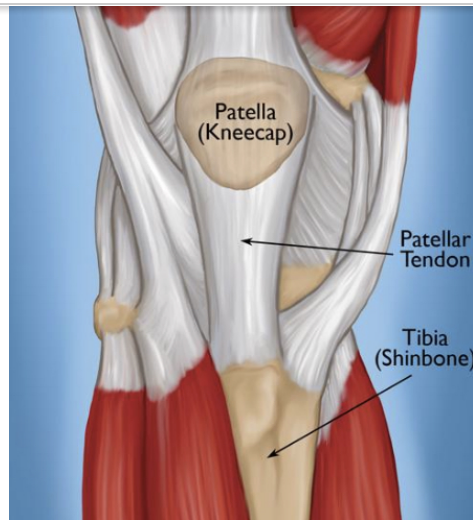
Perform 60 seconds per side, being sure to only work at a level you can relax and breathe without pain.

### WHY

When the quads and hip flexors are tight, they pull the kneecap upward, making you more likely to experience pain in the patellar tendon below:







Additionally, your quads and hip-flexors are the direct opposing muscles to your glutes and hamstrings, which you rely on most heavily when you sprint...

(Usain Bolt, world's fastest man ever, and not surprisingly: largest stride in track history)



..when you jump for distance off one foot...



...and even when you jump for distance off two feet.

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The late, great Kobe Bryant was arguably best at this:



But if your quads and hip-flexors are tight, you may not be able to achieve these positions, or if you do: it may tug on your knee cap and cause you pain.

So be gentle, never work through pain, and gradually work your way to the target for this exercise:



It is also worth reminding you that your ATG Split Squats both: a) improve your hip flexor length, and b) improve your quad strength - so the better you get at the ATG Split Squat, the more comfortable you will find this stretch to become.

Strength and flexibility adaptation take time, so acknowledge yourself for every 1% you get better, and you will soon find yourself waking up to a different reality, without ever working through pain in the process.

Final stretch...

### STEP 10: PIRIFORMIS STRETCH

The piriformis is an outer glute muscle which happens to do a lot of stabilizing work in your previous exercises. This stabilizing is great, but it is important to stretch at the end of a session, because long-term neglect of piriformis flexibility can result in the outside of your knee being too tight, and thus the inside of your knee (the VMO) being too weak due to difficulty contracting:



In people with knee pain, I find this muscle to be tight much more often than in someone without knee pain. Unfortunately, no direct study has been done on their relationship, but a simple Google search will yield many quotes from doctors giving this same advice.

I think your Knee Ability journey will be smooth either way, but the added boost of adequate flexibility in this muscle makes it worth noting, as your final move.

### HOW

There are actually a few stretches which I like for your piriformis. The one I personally do most often involves using a surface about hip high, getting your foot up onto it like so:





The first step is merely letting the knee rest down, with the posture upright, until you no longer feel much of a stretch in this position...



...at which point you can gradually lean forward with one elbow to each side of your thigh. I particularly like this stretch because it allows me to relax and catch up on work from my phone:



I perform 2 sets of 90 seconds per side, but before I leave the stretch and end off the session, I ensure that I am easily - without pain or strain - maintaining head to ankle flexibility. This is a basic test to ensure my piriformis is not too tight for my knee to have ideal function.



If you don't have an ideal surface for the standing version, you can use a stretch mat or soft flooring surface and perform the exact same stretch on the ground, also with texting capabilities:

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However, just getting into either the standing or floor positions may be too uncomfortable for your current level of flexibility, and in such a case, you can perform a seated version, getting into position like this:



Then work your posture upright and you will feel the stretch:



Before we close off on this stretch, it is worth mentioning that piriformis tightness could also be straining your lower back, and achieving the targets for piriformis, elephant walk, and ATG Split Squat, provide an incredible base for creating superhuman lower back health compared to the norm.

That is the end of the Knee Ability Zero session, which I recommend performing 3 days per week, for 12 weeks.

But let's re-cap and look at the exact list with all suggested sets, reps, rest intervals, etc.

Step 1: Tibialis Raise: 25 reps  
-no break-



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-no break-

Step 3: KOT Calf Raise: 25 reps

-no break-

Step 4: Patrick Step: 25 reps - 1 set minimum but you can perform up to 3 sets per side - no breaks needed - if this is a weak point for you.

Step 5: ATG Split Squat: 5 sets of 5 reps per side with 30 second breaks between each.

Step 6: KOT Squat (OPTIONAL!): 5 sets of 5 reps with short breaks, no more than 30 seconds per set.

Step 7: Elephant Walk: 36 reps per side

Step 8: L-Sit: 60 seconds - 1 set minimum but you can perform up to 3 sets, with 1-2 minute breaks, if this is a weak point for you.

Step 9: Couch Stretch: 60 seconds per side - 1 set minimum but you can perform up to 3 sets if this is a weak point for you.

Step 10: Piriformis Stretch: 2 sets of 90 seconds per side.

While this would be a full workout, keep in mind these are solutions for life: you do not have to do the entire routine to get real results. Even while waiting to pick up a friend from the airport, you can bust out a set of Tibialis Raises. The longer the flight delay, the greater the gains...

Yours in Bulletproofing,  
Ben



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