

Fundamentals: Footwork

How to increase range of motion

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RECORDING COMMENCES:

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Hello and welcome to the range of motion segment of this footwork course. Now you will probably need a belt. Any old belt will do. It is not for administering savage floggings. It is instead to help you get into various positions and apply pressure in various ways. Before we do any of that, let's have a little think about what we are trying to accomplish. Fundamentally what we're trying to do is to train your body to allow a greater range of motion in a joint. The things that restrict range of motion in joints are muscular tension which means the muscle itself is refusing to get any longer and that is preventing the joint from opening any further, the passive support of the joint itself so the ligaments that hold it together primarily which generally speaking we leave alone, and lastly the actual bone structure of the joint itself. Not everybody's hips are made equal. If your hip joint is of a particular shape, it may be that you will never get into a full rapier guard position because the bones of your hips will stop you from getting there. That's okay. You can still murder people with big shiny swords. It's against the law, but your hips won't be stopping you, it'll be the police. It's important that you can distinguish between these restrictions and you go gently against any of them and if you wind up bone-on-bone, there's no sense in trying to get any further because it's just never going to happen.

Range of motion is not a virtue in and of itself. The range of motion that you need for any given action is necessary because it allows you to make that action. Range of motion for lunge for example is necessary because it allows you get into a lunge. If my hips aren't flexible enough to do that, my lunge might get stuck here but I want it to be here and I need it to extend my range of motion to get that. But there is no virtue in expanding a range of motion significantly past the range you're actually going to need. If I had to put a number on it, I would say you want the range that you want plus about 15% or 20%. That's it. There's no need to go into the splits or anything like that because there are negative consequences to range of motion in a joint. The bigger the range of motion, the more likely the joint is to wear out which is why so many dancers and yoga people and what have you get hip replacements rather young. So be gentle with yourself and be sensible about what you're trying to achieve. Range of motion is not a virtue. It is a tool to allow you to do other things.

With that said, let's have a look at how to expand your range of motion and we'll take a simple stretch as our starting point. This is useful for most people particularly if you have difficulty getting your hip to open for you to get into guard positions or lunges or what have you. What you do is you start with your feet 90 degrees apart, flat on the ground like so, you push your knees out over your feet, and you squat down. Elbows come inside the knees and then you can just use your hands to press the knees apart. What this does is it sets up a stretch in here. Now if it's a muscle that's restricting the motion, you'll feel it in the muscle and it will feel like a kind of burning, muscle-ly

thing. That's fine. That means the stretch reflex in the muscle had activated and there are two ways of getting the stretch reflex to relax. One is to simply wait. About thirty seconds should do it. Thirty seconds is the minimum. I would recommend more like a minute. It's gets a bit dull. Talk amongst yourselves.

Once the stretch reflex has let go, you find that you can expand the range until the stretch reflex catches you again because it resets slightly further along the muscle. In theory you can keep resetting it many times. I would not recommend unless you're a high expert at this to reset it more than once in any given session. Twice as an absolute maximum and once it's reset once and you've gotten a few millimeters further in, just hold it there for a little bit to persuade the muscle that it's actually going to need this range of motion and to come out of this, these muscles are now quite weak so you want to ease your way out of it rather than jump your way out of it. So the first method is just get yourself into the stretch whatever stretch it is and just hold it for at least 30 seconds, better a minute. The problem with holding a stretch for 30 seconds is you're not in a very comfortable position and your brain wants to get out of it so it tends to shorten your seconds so I would recommend a stopwatch.

We can do the same thing for example for this chain -- it's generally thought of as like a hamstring stretch because it does stretch the hamstring but it does other things as well and if you can grab your foot do because it's a good idea to get this motion in there. If you can't reach your foot because you're not that flexible yet, that's where the belt comes in because the thing is you need to focus the stretch on whichever bit you're trying to stretch. If I want to stretch the back of my extended leg but instead I'm stretching my thoracic spine, then I'm not getting the stretch I think I'm getting and it won't give me the results that I'm trying to get. You can hook a belt round there or grab it with a hand and again in this stretch because we want it in the back of the leg, that's the only place you should feel the stretch, not in the shoulder, not in the back. Just focus it where you want it to go. Start your stopwatch, 30 seconds and what you're trying to do is establish that stretch reflex, get the stretch reflex active, and then just wait it out and if the strain doesn't get taken off the muscle, the stretch reflex will tend to relax by itself. That's 30 seconds. We should be able to go a little deeper and sure enough we can.

Now if we start the same stretch on the other leg, there is a way of resetting the stretch reflex more quickly. All you do is you establish the stretch -- again use the belt if you need to. This is a general principle. You can apply it to any muscle that's restricting your range of motion. You establish the stretch and then you pull back using the muscle that's being stretched and hold that pull back for about ten seconds and that muscular tension that doesn't shorten the muscle resets the stretch reflex. Then you can relax and go even deeper. Remember not more than one possibly two if you're really in a hurry stretch reflex resettings in any given session but for best results, you should do your range of motion stretching every day. That way it really persuades your body that you need the extra range of motion. Your body is conservative and it will take away any range of motion that you don't need and it knows that you need it because you actually use it. You use it or you lose it especially when you're my age. Relax. Now then, this rotation in the hip, it's one of the critical ranges of motion for us so I'm going to go through a couple of different stretches to get there.

This is not supposed to be a comprehensive stretching program. I don't really believe in them. This is simply this is how you expand the range of motion of a joint. Go apply this to whatever joint is restricting the range of motion that you want to get. Feet together, heels in as far as they'll go, knees

as close to the floor as they will go. I have many students who started out this exercise in this position. Don't worry. With a little bit of strength and discipline and practice and repetition and waiting patiently for stretch reflexes to reset, you'll get closer to this. I also have some very annoying students who just stick their heels right into their crotch, slap their knees onto the ground, and go "stretch? What stretch?" This is useful and you can use the muscles on the outside of the leg to pull the knees down and you can use your elbows to push the knees down and that places the stretch where you want it. I'm just going to do a passive stretch on this one. I'll just set the stopwatch 30 seconds from now. It's going to be about 40-45 in total.

So passive stretching very useful for expanding range of motion. Remember though once the stretch reflex has been reset, the muscle is weaker than it was before and it takes time for that muscle to recover. You do this kind of passive stretching and active isometric stretching where you push back against the tension after you've done your training, not before. Range of motion extension after exercise not before. Relax. Another very important consideration is as your range of motion increases, the passive support of the joint is having to do more work. It's having to support the joint through a greater range of motion. Those tissues, ligaments primarily but also the tendons that wrap around the joint where the muscle connects to the bone, those tendons often go round the joint and that acts like a strap to hold the joints in place. The tendons and the ligaments have a very low metabolic demand so they have a very poor blood supply. This means the changes to the tissue take months not days. You should allow at least nine months, better over a year to get into that full range of motion before you start putting any serious strain on it and it's a very good idea to emphasize stretching in unsupported positions so that you're simultaneously training the muscular strength around the joint so you're not just doing everything in kind of just a seating position.

For example, this is a useful stretch but when I'm not supported, this stretches pretty much the same things, the position is basically the same but my muscles and joints are having to support my weight. So looking back at the inside of the thigh, the feet are parallel, sinking the weight with a knee going in the direction of the foot is a really good way of stretching here because you're also having to support your weight which means that you're not going to get the range of motion so quickly but you are going to make sure that the range of motion is supported all the way. Again, give yourself months for this. If you tear a muscle, you can fix it in about four to six weeks. If you tear a ligament, it will take you at least nine months to a year which is why breaking an arm is a lot better -- let's go to the other side -- you heal a lot faster for a broken arm than you do from a dislocated one because the dislocation wrenches and strains and tears those ligaments and those are going to take months and months and months and months to heal, nine months minimum because of the poor blood supply.

Into a lunge position. Now the difference between a lunge where you're training range of motion and a lunge where you're trying to stab people is basically how you get into it. Here the feet can go further apart, sink, sink, sink, sink, sink and what you're looking for is whatever is restricting that range of motion. For me it's the hips as it is for most people and notice that my legs are having to support my weight at the same time as I'm expanding my range of motion. They're developing the necessary strength at the same time with the range of motion so you're not getting either so quickly. You don't get stronger so quickly and you don't get flexible so quickly but you don't end up with a range of motion that you can't physically support and therefore you're much less likely to injure yourself. Let's go to the other side. I'm keeping an eye on the time with my trusty stopwatch.

Now for the breathing. A lot of this range of motion stuff is neurological. The easiest way to get control of your nervous system is through your breath because it's the one autonomic process that's easily brought under conscious control. So breathe in, hold your breath, focus on the bit that's stiff and breathe out and you should get a bit more range. Breathe in, hold, get a bit more range. And relax. You can come out of it gently because again you just increased range of motion, the muscles are a little weaker, don't try leaping out of it like you would in a fencing match. You don't want to hurt yourself, zero injuries. I would be remiss given that I'd say 90% of my students have insufficiently flexible hamstrings not to spend more time on them. I'll demonstrate another hamstring stretch which will give me an opportunity to show you basically the principles behind focusing the stretch where you want it to go. This exercise is basically a way of preventing your body from cheating. Think of it like this.

Let's say I had really stiff hamstrings so I can't reach the ground without bending other things. If I just try and pick up the belt, I won't do the thing I can't do. I'm not going to go eh, eh, eh. My body will naturally let the back go, let the knees go to give me the range that I'm asking for. So when stretching, you need to make sure that your body isn't cheating. It will do it for you naturally and it actually takes quite a lot of discipline and focus to prevent it from happening which is also why you need to set up your stretches quite precisely and you need to pay attention. This is not something to do necessarily when just watching TV. I do my maintenance stretching while watching TV and do things with my wife usually but I don't do my serious I'm-trying-to-get-this-range-of-motion-in-the-joint stretching in any other circumstance other than a proper training session. It requires too much precision for that.

What we're trying to do is extend the hamstring. The hamstring goes from the top of your ass down below the back of your knee. Because it goes through two joints, it's quite difficult to get at it. What this does is it -- you need a belt unless you are unbelievably flexible. If you're that flexible, you don't need this video so what are you doing here? This leg stays flat on the ground. What that does is it keeps my pelvis flat on the ground so I can't cheat and get my hips off the ground. Pelvis stays flat, back leg stays flat, this arm is flat, back is flat, everything is flat on the ground except my extended leg. I'm going to try and get my foot that way. What my body will then do is bend my knee to allow that range of motion so what I have to do is focus on keeping that knee straight and then use the strength of my arm or even both arms if necessary to gently pull the ball of my foot towards my shoulder and my heel is going up and that way and it hurts. As long as it hurts in a oh, this is a good and healthy way, that's fine. As always if you find that you're experiencing pain that doesn't feel like it belongs or pain in the joint capsule in any of your joints, then you should stop. I'm going to give myself 30 seconds. My knee wants to soften so I won't let it. That's thirty. Let's pull back a little bit more. Lord. I would say that my hamstring range of motion is pathetic. That because these days I'm at least as much a writer as I am a swordsman and I seemed to have lost something between with 30s and 40s and this is me getting it back.

Again I would say that for a human being I think a 90 degree motion in the hamstring should be, from floor to 90 degrees should be a base minimum. A lot of my students, I would say even most of them start out this exercise with the knee bending -- I'm just going to come out of the stretch -- with the knee bending at about that point. They can get to there and then it goes boink. So that's the place where they should focus and gradually, gently pull it up. You're looking to make sure that those hips stay flat on the ground all the time. All right. Let's do the other side. I'll stay facing this way so you can see what it looks like from the other side but I'll just take that out. Belt, leg flat, roll back, hips

stay flat, shoulders flat at least to start with, get that leg straight, aggressively straight in the knee, point the heel at the ceiling, then use the arm to pull that hamstring out a little bit, to get the stretch reflex. Stopwatch, I need at least 30 seconds in this position. Again when you come out of it, just gentle relax. For an extended stretch position, you should never snap out of the position because everything is in a slightly delicate state. It's all kind of resetting and you don't want to put it under any sudden strain when that happens. Thank you for watching and I'll see you at our next class. Bye bye.

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