

## **Ankle Rocker Training**

### Importance of Foot Stability

An athlete's foot quickness is often correlated with their ability to get off the ground. As their foot hits the ground, their weight displaces on the foot. The foot responds by absorbing the force and then tightening to push the weight forward again. The amount the foot changes shape will often dictate how quickly the foot gets off the ground. So, if an athlete has poor foot structure, when their foot hits the ground, an arch may collapse or a heel may spin. But as soon as the foot finds stability and rigidity, it will give impulse to push off the ground. Watch a really good sprinter. Notice how when their foot hits the ground, it looks like the foot just bounces off the ground. That would not happen if it were not for the rigidity of the foot.

The best way to strengthen the rigidity of the foot is by getting the foot stronger in extension. The more the foot can extend, the more rigid the foot becomes or to put another way, the more the arches of the foot tighten. To see how this works, stand on one foot and pull your toes as far back as possible. Notice how the arches of the foot tighten and the foot becomes more rigid. In fact, in some cases, less foot is on the ground. This rigid foot is what bounces off the ground, almost like the difference between bouncing an iron rod on its end compared to trying to bounce a sand bag.

How can we strengthen our feet? It is really quite simple. Stand on one foot, barefooted and pull your toes as high as you can and do shallow, single leg squat. The goal isn't really for depth of the squat, yet, but to work on extension of the toes. When the extension range improves, then it is time to move on to ankle rocker.

## **Ankle Rocker**

One of the fastest ways to improve movement is through ankle range of motion or more specifically ankle rocker.

In the gait cycle, a person is on one leg. While on that leg, the body has to find out a way to move the body's mass forward. So, how can the body move the mass forward in the most efficient way and create momentum forward. The most efficient way to do so is to go through the "rocker" cycle. There is heel rocker, ankle rocker, and forefoot rocker. The heel rocker is the contact phase and begins to move the weight forward. Most people don't have a problem here because it is a contact response. The ankle rocker is the big one. That movement is the ability of the ankle or body to get the center of mass through the mid-stance phase and create forward movement. Notice that I said ankle or body. If the ankle is locked, for whatever reason at 90 degrees or less, the body has to find a way for the center of mass to move forward. The ankle rocker is, by far, the most efficient manner, but if something has happened at some point that your ankle doesn't want to bend, your body will compensate or find some other way to move forward. The most common "cheat" is for the hip to rotate outward and swing around the leg that is on the ground. It is even easier to place the foot centrally, and the hip doesn't need to swing around. This is very common for people who have wide hips or weak gluteus medius. An athlete's knee may knock inward, almost buckle, to move the body mass forward. Someone may throw their arm far forward and jut out their jaw to get momentum going in a forward manner, almost a tilt of the body, in an extreme stumble pattern. Or, they may flatten their arch on their foot and collapse over the top to stumble forward once again. Or, the bouncy athlete who seems to walk on their toes with the incredible calf development, turns their feet out and bounces over the top. This athlete is a good sprinter for a while until they blow their hamstring.

All of these movements can be seen from watching a runner from the front. Stop the film when an athlete seems to be at mid-stance phase, and draw a line up from the outside of their heel, and see how straight the line is. From here, the coach should notice what is in line and what is not, considering the shoulder and hip points are parallel. Picture your best sprinters should have their foot directly under the appropriate hip. The only way that happens is if the ankle is bending properly.

How does a coach go about developing Ankle Rocker? Similar to the other elements of speed development this is a progression, which takes lots of reps and time. It starts with the ability to pull your foot into dorsiflexion. If you are sitting on the floor with your legs out, you should be able to pull your legs back to 110-120 degrees. Now, try it with your knees slightly bent. You should be able to do it about the same either way. Try rotating your feet side to side, like a windshield wiper. Do you notice that your range of motion may change as you rotate through your range of motion? An athlete can progress to sitting in a chair. With their feet on the ground, have the athlete practice pulling the forefoot up while keeping their heels on the ground. Again, shoot for that range of motion. To challenge the athlete, slowly bring the heels under the athletes' butt while sitting. Notice how the range of motion shortens. So the goal is to get your feet as far under your butt while maintaining the range of motion. The next progression is to get off your butt and get to a single leg. A supported single leg squat is a great way to develop the rocker, but now comes a twist. To help strengthen the rigidity of the foot, we will pull our toes back and just allow the balls of our foot to be on the ground. We are trying to teach a proper tripod. The importance of a good tripod is that when your body feels a stable platform to push on, it will push. If not, it will roll or spin until it feels strength, and will then push. This is how you develop foot quickness. It is more of an ankle squat on a tripod. Think as if your knee were getting pulled forward, and when you start the hip bend, go into it a tiny bit and drive your shin straight. Notice how much glute is getting involved in the squat. Some people believe the more ankle rocker, the more glute gets involved. Also, use your glute med to support your hip. The opposite hand can help stabilize your body. The final skill to learn is the ankle rocker shuffle. This should take the athlete the first three weeks of the block to work.