Maximal Speed Training

THE best way to get faster is to run fast. There is no substitute for speed development than to run fast. Squatting, Olympic lifting, plyometrics are not nearly as effective as sprinting. Too many people spend their off-season in the weight room and expect to emerge in the summer a faster athlete because their squat has increased. There is no correlation between the two, only coincidences and illusions. Speed development can happen in many places. Warm weather and a track or a field are ideal but hallways will also work. The key to speed is developing a 10m fly. Most athletes never know how to reach top end speed. And because their neurological system never functions in that world, their speed potential is never met. We will spend a considerable amount of time working on our flying 10. If monitored electronically, you will be amazed at how quickly and how much athlete's improve in this category. Ideally, an athlete will get about 20-30m run up to build speed, but we have used much shorter. I know it becomes an acceleration exercise at this point but baseball is a game of acceleration and neurologically, they are getting to top speed.

The same holds true for acceleration work. This is a skill based movement that needs to be trained neurologically. The only way to truly work on acceleration is to practice. A considerable amount of time will be spent working on very short distances. If the first steps are off, it is difficult to recover in such a short distance.

Speed Drills

Speed drills are designed to help improve a runners form or technique. I have found that by jumping into more complex drills, we actually create worse patterns or patterns that have little impact on our running. The infamous Speed Dynamics/Gerald Mach B Skip. It is a very popular drill used in warm ups but there really isn't ever a pure pull through. Even the originators of the exercise have left that one behind while those outside their circle continue on with the drill. This program will start very basic and progress to the point of not needing drills. Why continue to a do drill once you have mastered it? If it looks like the team needs more time on the drill, keep it around until they have mastered the drill. Each block will have a drill that develops three aspects of sprinting, knee drive, lateral stability and hamstring recruitment.

Knee drive is important to sprinting speed. The higher the knee drives, the longer the body is in the air so the foot strike will land more underneath the center of mass. With a low knee drive, an athlete's foot will strike in front of the center of mass which will result in the deceleration of the athlete. This will cause the foot to be on the ground a longer period of time and force the athlete to try to reaccelerate which forces them to have to use the quads to push, hence a push runner. At the same time, an exaggerated knee drive will not allow for proper force application on the ground. There needs to be a balance.

The picture shown above displays the running form typically seen in a high school athlete that does not support top speed development. Notice the foot placement is ahead of the hips in the landing phase. When this occurs a breakdown of running for takes place starting at the foot and then working through the hips and into the upper body. Drills implemented throughout this manual will develop proper technique to achieve maximal speed improvements.

Hamstring function will help prevent the early contact on the ground. If we can strengthen our hamstrings to give the body confidence to strike underneath the center of mass, we can help lessen the early contact. It will also strengthen the stiffness in the entire chain when the foot is under the body so the hamstring can fire properly and in a timely manner.

The development of timing and lateral stability also helps prevent the early contact with the ground. Timing is important because at midstance phase, (Figure above) we are looking for the swing leg knee to be in front of the plant leg knee. In this scenario, we know the knee is in position to lift high enough to allow the body to be in position for a mid-stance contact.

The simplicity and complexity of sprinting is that all of these attributes are dependent on each other. One may cause the other but we really never know where the cycle starts. The philosophy we will employ is to try to work on those three aspects to try to eliminate the heel strike/ early contact in gait. And with no deceleration, the athlete has no choice but to run faster.