

Focus on the Feet

Dave McGovern, M.S.S., World Class Racewalking© 2009

Although the hips, thighs, arms and torso are important in racewalking, the feet initiate the knee drive that provides most of the forward drive, and sets the body up for an efficient transfer of energy from the body to the ground, providing forward propulsion.

Fitness walkers tend to not use the feet very much, using the hips, and a simple pendulum motion of the leg, to bring it forward. Racewalkers speed up the forward drive of the thigh by bending the knee to shorten the pendulum—a shorter pendulum being a faster pendulum. Although using the hip-flexors to drive the thigh forward will unlock the knee behind the body, using the feet to unlock the knee results in a much faster forward drive of the thigh. The effect is similar to what happens when someone knocks an unsuspecting person behind the knee, causing the knee to unlock and the “victim” to collapse to the ground (if done properly!) In both cases, the knee unlocks and the thigh moves forward quite suddenly. Not such a good thing when you’re the one getting the legs knocked out from under you, but a very good thing for the racewalker looking for a source of speed and power.

In addition to initiating a strong knee drive, using the feet effectively behind the body also helps to push the whole body forward at the end of the stride. Biomechanists describe the walking motion as that of an “inverted pendulum” as the body pivots over the ankle. As the body pivots over the ankle it falls forward. Many walkers instinctively catch themselves with the advancing foot to keep from falling on their faces. Doing so halts the stride prematurely, limiting stride length and forward speed. Allowing the body to fall further forward by rolling all the way to the tips of the toes and pointing the toes behind the body by plantar-flexing the foot, allows for a much longer and more powerful stride without limiting stride frequency. So using the feet provides quickness by unhinging the knee more quickly, and adds to stride length. Since forward speed is a product of stride length x stride frequency, speed is greatly enhanced by using the feet.

For exercises to strengthen the feet and lower legs, and drills to work on foot speed, head to an article I wrote in the now-defunct “Walk!” Magazine at: <http://www.racewalking.org/walkwinter2005.pdf> .



The walker on the left is over-striding—the stride in front of the body is as long as the stride behind the body. The long leg in front provides a braking force that impedes forward motion. By using the feet, the racewalker on the right pushes the body forward, closer to the front foot—and more to the point, closer to the finish line!