Use poles, stretch, slow down to save knees

Training to be balanced

Augie Hernandez

Last month, I provided information regarding energy system development, or cardio, for hiking. Energy system development focused on quality, not quantity, to train the lactate (high-intensity work for up to three minutes), alactate (high-level work for periods of up to 12 seconds), and aerobic systems (the ability to work beyond three minutes). Snow King was used as an example to help develop cardio training in hiking.

This month, I would like to introduce three ways to potentially create knee pain during hiking.

In my training experience with a large variety of people, I have discovered that if you explain the best ways to "injure yourself," your client listens and performs more intently.

First, run straight downhill after hiking. This puts tremendous pressure on the knee joint.

Many times when running down a steep slope, the foot has to dorsiflex (toes back) excessively, which straightens the leg to help with deceleration. The force that is created can place large amounts of pressure on the knee, for the muscles cannot sustain the force during the plant phase of running. (This is like having the wind knocked out of you when being punched in the stomach; the overpowering force is too much for the abdominal muscles to bear.) One creates more force when essentially jumping down a steep angle; that is what running down a hill is like. The pressure has to go somewhere to stop the forward force, and the knee is usually the guy who pays the price.

Now, of course, I will have those who e-mail me and say they have been running downhill for years with never a problem. Well, there are those who are genetically gifted, and I always say, "The mind is 90 percent stronger than the body, but in the end the body always wins."

Second on the list to potentially hurting your knees? Going hiking without trekking poles. So many people don't use poles that could help them in so many ways, especially the descent of a mountain. Trekking poles extend a hiker's useful life. Much of the absorption within the legs and knees can be transferred to the muscles of the upper body by way of trekking poles. For me, a $100 to $200 trekking pole investment is a no-brainer compared with a $20,000 to $35,000 knee replacement.

A study out of Virginia describes the physiological responses to hiking with trekking poles. The following is a brief synopsis of the study:

Trekking poles have been used by hikers for a variety of benefits, including increased stability, decreased muscular strain on the lower extremities, increased climbing potential during rugged hikes, and aid for orthopedic problems. More recently, fitness practitioners have suggested using poles to increase arm activity and caloric expenditure during walking.

The use of trekking poles increased physiological responses to hiking without altering the rate of perceived exertion, regardless of the grade of terrain. This finding suggests that trekking poles may be effective at increasing caloric expenditure in those walking at self-selected paces over varied terrain. These findings were observed in moderately active, novice hikers walking at low to moderate intensities over well-groomed, moderate-grade trails without a load. It remains to be shown whether these findings can be generalized to conditions such as intense paces, steep slopes, load-carrying conditions and experienced hikers.

Third and foremost, don't stretch. I can probably write and be safe that those who hike mostly don't stretch anyway. How does not stretching hurt the knees? It is not always directly but indirectly. Lots of hiking leads to tight hips, tight hips can lead to reduction of normal range of motion, reduction of range of motion creates compensation, compensation leads to breakdown of muscles that are supposed to support the structures that hinge, hence the knee joint.

Janet Hamilton, assistant professor in the School of Health Sciences at Clayton College and author of the book *Running Strong & Injury-Free,* writes "the muscle with limited flexibility may provide additional load to the joints it crosses as well as the muscles that oppose it."

Stretching can be the single best way to allow the muscle to work properly and to overcome potential injuries. The increase range of motion allows muscles to work in their full capacity instead of being limited, which creates energy leaks to other areas of the body.

If you would like specific guidelines as to options for descents during hiking, e-mail me at augie@t2bb.net. I will be more than happy to answer any questions.

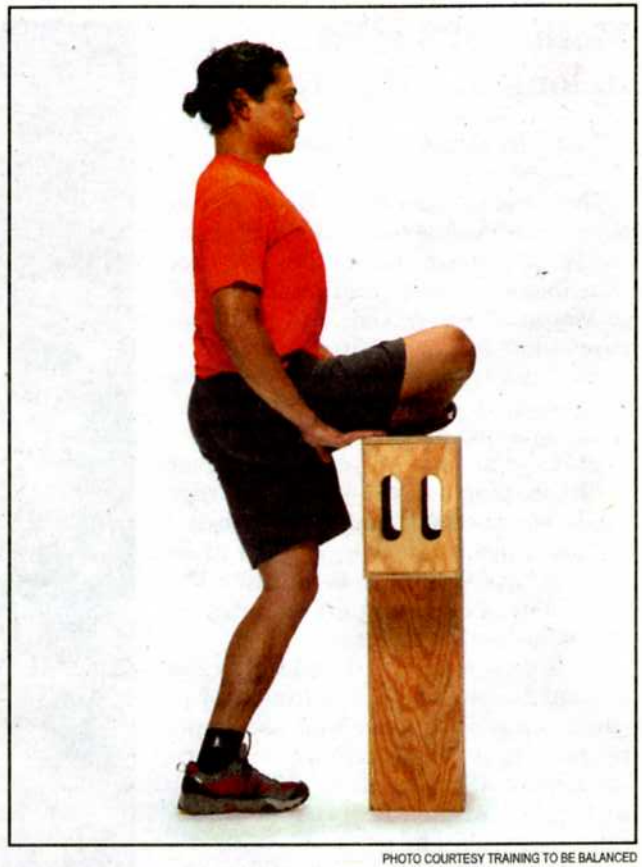

PHOTO COURTESY TRAINING TO BE BALANCED

Standing Pigeon is a great stretch for glutes. Stand next to a table that is mid-thigh height, bend and raise one leg, crossing it over your body. Keep the bent knee in line with your hips, and bend the standing leg until you feel a deep stretch in the glute. Hold for two seconds, repeat and switch legs.

Augustine (Augie) Hernandez Jr. owns Training to Be Balanced LLC. He is a movement specialist in most sports. Reach him at augie@t2bb.net or www.trainingtobebalanced.net.