Walk Backward To Help Focus your Thinking!

For years as a referee I always walked/ran backwards in a soccer match. The most obvious reason was that I wanted to keep my angle of view on a situation that I felt I should not turn my back to, for example: on a goal punt/kick; after a serious challenge for the ball; after issuing a card or any confrontation between players/officials. I did not realize some of the other benefits of walking/running backwards until recently when I read an article in the August 2010 Issue of Prevention Magazine, entitled “Good Health Habits Made Better : Walk Backwards.”

The article describes benefits of walking/running backwards that I had not realized – it helps focus our thinking!

People performed difficult tasks faster after walking backward than they did after walking forward or even sideways in a recent study. The scientists believe that the “avoidance” mode of walking backward, similar to how you might retreat from a dangerous situation, helps focus your thinking.

This led me to do a search on the subject. The results are so positive that I want to share them with you.

According to an article written by Barry T. Bates, Ph.D., “backward running has been the focus of several investigations in our laboratory. In the Biomechanics/Sports Medicine Laboratory at the University of Oregon over the past twenty-five years, we have examined lower extremity function and injury mechanisms, and have developed a broad knowledge base relative to both forward and backward running. To this end, we can speak confidently to differences and similarities between the two forms of locomotion and can furthermore identify potential training and rehabilitation benefits that can be achieved by incorporating backward running into a total fitness program”.

Their laboratory investigations have suggested that runners perceive equal efforts during backward running at speeds of about 80% or so of forward running. This is due predominantly to the evolution of our musculo-skeletal structure. They have also ascertained specific kinematic and kinetic differences between forward and backward running. When comparing these measured differences among modes of locomotion, backward running results in:

- A more erect posture during performance
- Reduced range of motion at the hip joint with greater flexion and lesser extension
- Increased active / functional range of motion at the knee joint
- A combination of maximum knee extension with hip flexion
- Elimination of eccentric knee joint flexion, i.e., the knee joint exhibits greater flexion at touchdown followed by a nearly isometric / fixed position during initial stance
- Toe-heel foot contact patterning
- Modification of lower extremity muscular activity
Given these performance differences and other observations, we can identify potential benefits from backward locomotion. From a training perspective, benefits of backward running may include:

- Facilitation of balance and proprioception (A sense of the movements and position of the body and especially the limbs independent of vision)
- Improvement of muscle balance (agonist / antagonist relationships)
- Development of a stronger foundation upon which to improve performance (due to improved muscle balance)
- Facilitation of neuro-muscular function
- Assistance in prevention of injuries

Another area of potential benefit from backward running is in the area of injury rehabilitation. Through our understanding of functional differences between these modes of locomotion, we can speculate as to the benefits of retro-running. Rehabilitation benefits can include:

- Back rehabilitation (due to differences in trunk posture)
- Recovery and strengthening from hip joint injuries
- Recovery from groin injuries
- Recovery from hamstring injuries
- Knee joint surgical rehabilitation
- Alleviation of shin splint syndrome
- Recovery from Achilles' tendon injuries
- Recovery from ankle sprain injuries

Such benefits can be realized from backward running as a result of the previously identified differences between forward and backward running. While incorporating backward running into the training / activity program, cardiovascular health can be maintained (or perhaps enhanced) while reducing the stress upon specific anatomical structures.

In summary, research has lead to the identification of several benefits of backward running from biomechanical, social and psychological perspectives. Therefore, it can be beneficial for you to "go backward" during your training and physical activity sessions.
Expert tip: Practice backward walking on a treadmill, where the rails can be used for support, advises Janet S. Dufek, PhD, an associate professor at the University of Nevada Las Vegas. Try walking forward for 5 minutes and backward for 2 minutes, then repeat the pattern throughout your workout. Caution: Walking in reverse is much harder, so slow your pace by at least 50%. For athletes wanting to increase their backward running velocity, it appears that stride length, not stride frequency is the factor in the velocity equation that needs to be addressed since stride frequency is already significantly greater for backward running than front running.

As with any new technique, I would encourage you to start slowly, walking backward first and eventually working on this technique so that you can run backwards and not lose sight of the situations in the match that you need to see while maintaining your focus.

References


