

The Foundation of Injury Prevention, Optimum Health and Superior Performance for the Endurance Athlete

Part 2 - Introduction to the Six Steps

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Over the years there has been ample discussion on the topics of “core stability”, running technique, and “functional” training for the endurance athlete. Running groups are riddled with short talks on each of these topics in order to prevent injuries and improve performance. Cyclists spend thousands of dollars on leading equipment and bicycle fitting. Swimmers discuss and practice proper swim stroke and perform drill after drill to master their technique. Yet the frequency of injuries continues to be high. It is my belief that the reductionist and non-specific approach advocated by many leads to average results and the continued trend towards high injury rates in endurance athletes. In this article I will discuss the need for systematic injury prevention and performance training. I will outline a six step plan to reduce injury rates and promote superior performance.

A few months ago I was discussing our project, *The Foundation of Injury Prevention and Superior Performance in the Endurance Athlete*, with an athlete who provided the following advice, “You have to keep it simple, like one or two exercises”. Indeed, the number one reason for failure is failure to act, and if a program reaches a state of complexity beyond the user’s motivation or ability, compliance will suffer and failure will be imminent. However, it is important to understand that there is no magic bullet. There is no single exercise or even a pair of exercises that can solve every athlete’s injury problem. It is this reductionist approach that has led so many people to focus primarily on core strength and stability despite having major deficits in tissue integrity and mobility. Or for a person to focus primarily on stretching exercises for enhanced flexibility despite having significant issues related to joint specific stability and functional strength. This is one reason why a comprehensive functional assessment performed by a

trained professional is so imperative. It allows an athlete to focus on the skills and attributes most essential to injury prevention and enhanced performance. It allows you to choose the most effective exercises to make the biggest difference in your current training program. Although effective, this too is a reductionist approach and relates only to the current flaw in training program design, biomechanical or postural imbalance. The human body is constantly adapting, changing in response to training, work ergonomics, lifestyle, and various stressors. As the saying goes, “when you peel away one layer of the onion you will find another layer”. This deeper layer will have its own unique structural and biomechanical properties, often properties corresponding to the more superficial layer. Remember, it takes more than a few repetitions, likely thousands, to develop a cumulative trauma disorder or repetitive strain injury. And through those thousands of repetitions your body fought to maintain equilibrium as best it could, through

various adjustments in muscle activation and movement patterns, to prevent the impending injury. Unfortunately, these compensations are always deviations from the ideal and are made as last ditch efforts to maintain stability in an unstable system. Therefore, it stands to reason that to fully and properly address a current injury we must address all the compensations and adjustments your body has made in order to avoid recurrent or chronic injury. Likewise, in order to prevent injury we must ensure optimal function and optimal function can only be achieved with an optimal foundation for functional movement.

The Foundation of Functional Movement

- 1. Optimal Tissue Integrity**
- 2. Optimal Mobility**
- 3. Joint Specific Stability and Balance**

Building on a functional foundation through integration and optimization of functional strength, speed and power is essential in preventing injury and promoting injury free performance. In addition, addressing factors known to promote or maintain dysfunction is essential, and with that, you have the six steps. In the following segments I will discuss each of the six steps including recommendations and illustrations of exercises.

The Six Steps of Injury Prevention and Superior Performance

Step 1: *Optimize Training and Avoid Offending Activities*

Step 2: *Address and Maintain Optimal Tissue Integrity*

Step 3: *Ensure Balanced and Optimal Mobility*

Step 4: *Optimize Joint Specific Stability and Balance*

Step 5: *Integrate and Ensure Optimal Function, Strength & Endurance*

Step 6: *Optimize Strength, Speed and Power*