

## Running Injuries - Part 3

Contributed by Allan Besselink, PT, Dip.MDT  
Monday, 01 October 2007  
Last Updated Friday, 29 February 2008

The best option with regards to running injuries is to simply not get one in the first place. Unfortunately, if you take the data compiled by Runner's World magazine, 60% of runners will sustain an injury within a given year that will cause them to alter their training. I can only imagine the statistics for any given marathon training program.

I would always go back to a simple caveat - if you're training, you're getting more "fit" (faster, stronger, etc) ... and if you're not, you're not. If you're injured, you're not training. If you're not training, you're not getting "fit". Simple. Running injuries can be traumatic or training-related. The former are the ones you don't have much control over - the twisted ankle while running on the trail, the fall onto your knee as you stumbled on the curb, etc. We won't factor those into the discussion.

As for the latter - I've previously discussed the causes of running injuries - the primary of which is a training-related variable - typically "too much too soon". But is it just "too much too soon" or is it an inability to recover from and adapt to the current demands?

I would suggest that in order to build an optimal and formidable injury prevention strategy, we need to alter our perspective a bit - to consider not only "over-training" but also "under-recovery". Let me explain this more fully.

If training volume unto it's own was the simple predictor of injury, then it would be impossible to train for an ultramarathon of any type. If miles themselves related solely to injury, then there would be a "break point" in which injury would occur regardless of the training variables. We know this isn't the case - so purely looking at "over-training" isn't a fair option. There are many runners that can log in countless miles without getting injured - so how do they do it?

One piece of data that is often overlooked is the "bell curve", the statistics related to a normal population. There will always be people on the far left of the curve - that no matter what they do, they get injured. They look at their running shoes and develop shin splints! And there will always be people on the far right of the curve - that no matter what they do, they won't get injured. They could log in 150 miles per week and still be as fresh as a daisy!

And then there are the vast majority of people - in the middle of the curve. Statistically, it would account for at least 65-70% of the population. That's a lot of runners.

When looking at optimizing training methods and injury prevention strategies - we have to use the rules that apply to the majority of the population, and not the minority. The rules of human physiology and the sports sciences, those that are well-documented in the scientific literature, will guide us safely. Let's use training volume as a perfect example. Some get away with it, most won't. So instead of applying the rule of the few ("run more miles") and watching a large majority fall by the wayside, we should use the "rule of the curve". In order to do this, we need to look at those aspects of training that are critical to success. Fortunately, those that optimize human performance (across the bell curve) also provide an ideal environment for effective injury prevention.

Simply put, we must balance the rate of application of training stimulus and the rate of recovery. It requires a delicate balancing act and learning to listen to the body's inherent feedback mechanisms, otherwise injury will occur. "Balance" will invariably involve two key factors - building the capacity to run (or "building your power") ... and facilitating training adaptations and recovery.

Strength training provides the athlete with a very good tool to address both sides of this equation. It's the one key element of a runner's program that is oftentimes lacking. Even if it is a part of the training plan in the first place, it's usually the first thing dropped from the plan as the training volume increases. I certainly hear it regularly ... "I am too tired to go to the gym to strength train" or "I don't have enough time now that I am running more" are the most common phrases heard!

Historically, we have thought of "strength training" as a means to simply "bulk up" or "get stronger". I would propose that a small volume of high-quality strength training (high load, low repetition) will not only make you stronger (and faster!) but it will also foster the recovery process. By lifting, you gain a greater ability to recover from your training. Of course, this can't be a large volume of work - otherwise, it just becomes another workout from which to recover, and this isn't the intent. The goal is to provide the body with a stimulus that will cause it to adapt, and will cause it to remodel the "architecture" of the tissues involved (be that muscle, tendon, bone, ligament, etc). It will also allow you to develop better neuromuscular pathways - the ability to recruit more muscle fibers in effective functional patterns.

I've written two previous articles - "Prelude To A Marathon" and "Limiters of Performance" - that further explain the rationale and process of strength and power training for runners. These can be found on the home page under "Most Popular"!

Let us not forget that there are two other aspects to "recovery" - nutrition and cognition. If you don't have the nutritional elements to allow your body to repair (carbohydrate to fuel the process, and protein to provide building blocks for repair), then you won't be able to adapt to the demands of training. I can't emphasize enough the importance of this aspect. It's a topic that could take up a full article on it's own.

The other under-utilized aspect is cognition. Any stressors on the central nervous system utilize immune system resources ... and cognitive stress simply adds to this dilemma. Work and life stress can prevent you from recovering adequately as they force the immune system to respond in a way that is not going to allow training adaptations to occur readily. Anything that can be done to decrease the overall cognitive stress (including relaxation, meditation, yoga and the like) will assist the recovery process.

In these ways, you've built in the key elements of good recovery - and now your body can go about adapting to the training demands. With a methodical training plan that emphasizes good quality work and time for recovery, a successful event is just around the corner.

And remember the original caveat - if you're training, you're getting more fit. And if you're getting more fit, you're getting closer to your goal of a successful \_\_\_\_\_ (insert event here)!

{mos\_smf\_discuss}