

Movement as the Foundation of Training

By Brock Leggins

At the root of all sport skill is movement. When looking at any acyclic sport, devoid of the sport-specific techniques (such as ball or stick handling), it should be obvious to the observer that movement, or locomotion, forms the basis of all land-based sport. The athlete must navigate the playing surface (court, field, pitch, etc.) by combining various movement skills and properties in order to (ideally) execute the proper maneuver to accomplish the task. As stated in Supertraining:

“Athletic performance may be described in terms of a complex interaction of many movements, so that the fundamental phenomenon underlying all sports tasks is movement. *Sport then becomes a problem-solving activity in which movements are used to produce the necessary solutions.* These movements are controlled by the neuromuscular system, whose performance is the result of innate characteristics and the long-term acquisition of skills through training.” (3)

However, due to a misguided training dictum in which these proper movement skills are rarely taught, the athlete does not possess the requisite movement abilities to produce fluid, efficient movement, thus wasting valuable time, and increasing risk of injury (both acute and overuse) due to stress applied to the wrong structures.

Upon inspection of nearly all physical preparation programs and/or sport practices, rarely, if ever, are proper movement skills taught, particularly at the developmental level. While the infatuation with sport-specific training begins at an early age, the most sport-specific of movements – appropriate sprint, deceleration, and change of direction technique – are almost never taught. As a result, these general movement skills must be taught later, when they have already been ingrained (usually poorly). Efficient movement, it should be obvious by now, becomes important for many reasons. One of the ways that movement becomes efficient is a decrease in the number of motor units fired in order to produce the movement – as the body becomes more efficient, it uses only those neural pathways necessary to complete the movement, thus reducing the “noise,” or extra contractions taking place elsewhere. This leads to a decrease in bioenergetic substrates necessary, thus reducing the need for ATP replenishment. Which, as you may have guessed, leads to less energy expended at any given time, and more left over for later in the contest.

A phrase that is often repeated is that the shortest distance between two points is a straight line. In much the same vein, the best way to improve performance is to create more biomechanically efficient movement – i.e. a “straight line.” Many coaches will note that simply increasing weight room numbers will make athletes faster. This is absolutely true – to a point. Unfortunately, it is generally because the athlete is so weak to begin with. Thus, by increasing the force output capability of the muscles, movement speed may be improved. However, if the same incorrect movement patterns exist, this force is still being transmitted through faulty patterns, thus predisposing the athlete to an increased risk of injury. Additionally, the amount of work and effort necessary to increase strength, particularly in younger athletes, is quite low. This means that, rather than overloading the athletes with weight room volume, it is likely a far better use of time to teach proper movement mechanics. This also points to a need for a high quality of training. Movement training, just as any other training, is a skill. Thus, it must be practiced as such. The order of learning for any skill must be slow to perfection → fast to perfection, however, in our short-term, rush to get things done view, it’s generally fast to mediocrity.

In addition, due to the fragmented nature of the training process, the sport coach spends little, if any, time addressing movement ability (aside from possible position-specific work), and the strength and conditioning coach largely focuses on increasing weight room numbers, while loading volumes of poor movement in an effort to “condition.”

The general order of training for sports mastery, or the Long Term Athlete Development model, dictates general training early, with specificity coming later (1). However, as James Smith has noted, too often kids specialize early, and generalize later.

At its most basic, training can be boiled down, quite simply, to this – determine what needs to be trained for, and train for it. However, this simple concept is completely overlooked in the training of team sport athletes in the form of a complete negligence of training the skill of movement.

It likely appears (both to the layperson and many coaches) as though, while movement is at the root of sport, clearly it is *different* from sport to sport. Unfortunately (or fortunately, as the case may be), this is not entirely true. Linear speed/acceleration, and lateral change of direction are necessary in nearly all sports – what likely changes is the duration of each, the surface upon which it is carried out, and what stimulus it is in response to.

Utilizing the part-whole approach, a coach can break movements down into segments, utilizing drills to perfect different aspects before bringing them together as a whole. This can be seen in nearly any sport practice, in which players practice various skills or parts of skills, before bringing them together in any competitive setting. However, for whatever reason, this is not practiced in the general (or specific) training of proper movement.

[This article](#) about Chris Davis illustrates the issue perfectly – rather than more practice, more *focused* practice is generally the better alternative (2).

At its most basic level, movement IS training; thus, it behooves the coach and athlete to become as efficient as possible in all aspects.

References

1. Balyi, I. & Hamilton, A. (2004). *Long Term Athlete Development: Trainability in Childhood & Adolescence. Windows of Opportunity. Optimal Trainability*. Victoria: National Coaching Institute British Columbia & Advanced Training and Performance Ltd.
2. Keri, J. (2013, June 7). Watch Out for Crush Davis. Retrieved from http://www.grantland.com/story/_/id/9350672/jonah-keri-baltimore-heavy-hitting-chris-davis
3. Siff, M. & Verkhoshansky, Y. (2009). *Supertraining* (6th Ed.). Rome: Verkhoshansky.