Starting Strength

Diversity is *Not* Our Strength

by

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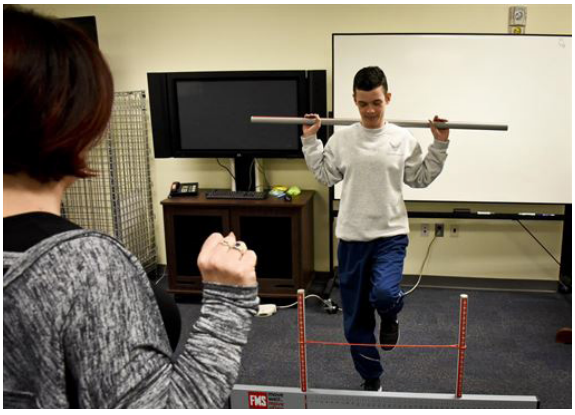
In late 2014 I wrote an essay about "Functional Training" for T-Nation, the unedited version of which appears on our website. The basis of the argument is an analysis of the nature of *training*, the process by which a specific *quantifiable* physiological adaptation – strength, endurance, aerobic capacity, etc. – is accumulated over time, and the need for *practice*, by which the physical *skills* – the ability to execute the movement patterns dependent on accuracy and precision necessary for effective performance – are developed. *Performance* day depends on both training and practice. I revisit the topic here.

"Functional Training" has been defined by its leading proponents in several different ways, most of which are self-referential, i.e. they include the term "function" in the definition. Most refer to the preparation for movements which occur in a normal day's activities or for a sport being "trained" for. Most "Functional Training" programs involve the use of light weights, unstable bases of support, unilateral movement patterns, muscle group isolation, and a wide variety of exercises, with exercise variation usually being the primary manipulated variable in program design.



An examination of the "Functional Training" literature reveals a large selection of exercises, a menu of photographs devoid of any advice on how to do anything but *perform* them, as if their execution is the only point. The sample workouts consist of lists of exercises, sets, and reps, with no mention of any suggested loading and no logical way to increase any aspect of the stress except possibly an increase in the instability of the base of support – just lists of exercises for 3 sets of 10-12.

Approached in this manner, "Functional Training" is not capable of improving performance, despite the fact that tens of thousands of already-gifted athletes have wasted their time with it, and appear to have benefited from doing so because of their *genetic endowment*. Millions of precious hours and hundreds of millions of dollars have been wasted chasing that which "Functional Training" cannot logically provide, while its providers hide behind the successes of athletes who would have been successful anyway because of *who they are*, not what they have done in training.

Update: "Functional Training" has beaten the hell out of Starting Strength in the fitness industry marketplace. For every team using the Starting Strength Method, there are at least 1000 using "Functional Training." Makes sense, because it's very easy to coach, very easy to do, it looks very sports-like, and requires no record-keeping, just a cheery attitude, a minimum of equipment, and a lot of floor space.

And for the majority of the population, for whom the distinction between correlation and cause-and-effect is an impenetrable mystery, the fact that the Boston Bruins Strength and Conditioning program produces neither strength nor conditioning is an irrelevant aside from the fact that the team uses "Functional Training." Lots of other professional sports teams do too. The Pros use it, so it must be the best approach, and "Functional Training" therefore outsells Starting Strength. And this is fine – we're not greedy. But we are sometimes frustrated by the pigheadedness of the people involved.

So, let's discuss this again.

An improvement in physical performance is dependent upon two separate processes with which the athlete must engage. The first is the *training* process – the metabolic and architectural changes that are the result of a carefully designed and programmed series of workouts that, over a period of time, yields a specific type of *accumulated physiological adaptation* the athlete must have for an improved performance.

One of the most important aspects of effective training is that this accumulated physiological adaptation can be *quantified* – measured with an objective metric and compared to the pre-adapted baseline and evaluated for effectiveness and efficiency. The physiological adaptation can be endurance, strength, or a combination of the two. Quantification of these adaptations is an inherent part of any training program, with subsequent workouts assigned on the basis of the objective results of previous workouts.

The basis of training is the stress/recovery/adaptation cycle, the basic biology that underpins all organisms' relationship to their environments. If the training stress of a series of workouts does not increase progressively, either in exposure to the weight being lifted, the distance being covered, or the time spent under the stress load, then adaptation cannot take place, the activity cannot yield a quantifiable physiological adaptation, and the program is not *training*.

The second is *practice*, the repetitive execution of movement patterns used in a performance that are dependent on *accuracy*, the ability to execute a movement pattern as close to the ideal model of the movement as possible, and *precision*, the ability to execute repeated attempts at the movement pattern with as little deviation between each attempt as possible. Practice yields *skill*, necessary for all sports in which accuracy and precision are components of the performance. Throwing a baseball at the catcher's mitt is a *skill* that must be practiced, many thousands of times over many years. Accuracy in this context would be hitting the point on the mitt the catcher wants the ball, and precision is doing this 35 times in an inning.

Training and practice differ in obvious ways. *Training* seeks to improve physical parameters that are not dependent on the specific movement patterns in which they will be applied. The endurance adaptation necessary for the successful performance of a 10K can also be applied to a 3-mile run, or, to some extent, to a century ride. The strength adaptation produced by a progressive barbell strength program is applicable in every circumstance in which force production is a factor, independent of the specific nature of any one performance. A 500-pound deadlifter/200-pound overhead presser can clean more than a 200-pound deadlifter/75-pound presser, he can hit you harder on the field, and he can throw both the shot and the baseball harder, and for more repetitions.

Skill is exquisitely dependent on the specific nature of the performance being practiced for. A MLB-regulation Rawlings baseball weighs between 5 and 5.25 ounces (141.75 – 148.83 g) and is between 9.00 and 9.25 inches in circumference. A bat is no more than 2.75 inches (70 mm) in diameter and no more than 42 inches (1.100 m) long, the weight thus being dependent on its composition. (Specs are extremely important. Remember DeflateGate from the 2015 NFL playoffs? The evil Tom Brady?)

Pitching practice therefore means thousands of reps with a regulation baseball of this weight and size, and batting practice is the same. Throwing a heavy ball or swinging a heavy bat in "training" is a different mechanical task from a performance. Taken to excess, it screws up performance, because it is not *practice* – it is not specific to the performance. And in fact, when it is used it is applied sparingly for short periods of time at limited volumes, in an attempt to substitute for strength training.

This approach to baseball preparation is perfectly analogous to "Functional Training." It is not heavy enough to make you stronger, it cannot be programmed in a way that constitutes *training*, and it is not sufficiently identical to any performance in sports to constitute *practice*.

More importantly, "Functional Training" is not *training* at all, since it emphasizes exercise variety, isolateral exercises, cable machines, small muscle group isolation, and positions of instability to the extent that it cannot drive a long-term *quantifiable* accumulating physiological adaptation, either endurance or strength. Any program that emphasizes exercise variety – workouts that consist of many different exercises that vary each time – cannot demonstrate anything except the ability to perform each of that day's exercises for 3 sets of 10-12. If these exercises are balance problems, agility problems, or

explosion problems, they are merely demonstrations of the talent already possessed by the athletes – the talent that got them recruited in the first place.

The primary problem with "Functional Training" is that it attempts to improve physical characteristics which are unresponsive to submaximal stimulation, like 5-pound dumbbells and medicine ball cleans. The explosive ability of high-level athletes is a neuromuscular characteristic that is part of their genetic endowment. It's like red hair – you either have it or you don't, and all the dye in the world cannot change this fact, even though you may fool the people at Walmart.

"Functional Training" confuses the *display* of athletic ability with its development. All the agility drills in the world cannot create an athletic freak, and this is why the NFL Combine uses these as tests to *identify* a few talented guys who may have slipped through the cracks. If it was possible to train an athlete's 18-inch Standing Vertical Jump up to a 36", we wouldn't need recruiters, there would be no shortage of elite athletes, and the average salary in the NFL wouldn't be $1.9 million.

And it completely ignores the most trainable physical characteristic, the most predictive attribute of athletic success: Strength, the only physical parameter than can be increased far longer than the typical athlete's career will last. The simple process of taking a talented athlete's deadlift from 200 to 500 is neither complicated nor requisite of a strength specialization, and S&C coaches who don't know this are not qualified for their jobs.

Merely getting hot, sweaty, and tired does not indicate that anything productive has been accomplished. If it did, any outdoor job in Houston would qualify as training. And field *practice* of the athlete's sport produces the desirable hot/sweaty/tired effect under the conditions in which hot/sweaty/tired will be experienced in the performance, so it's actually useful. Hopping around between rubber balls, performing rotational exercises with 20 pounds on a cable machine. And doing one-legged exercises with a 10-pound dumbbell cannot make a talented athlete stronger. Hell, it can't even make his mother stronger for more than about 6 weeks. Yet this is what passes for the State Of The Art in Strength and Conditioning in 2017.

The best way to improve performance is to 1.) specifically address the aspects of accumulated physiological adaptation that best improve an athletes performance, and then *train* them effectively, and 2.) devote the optimum amount of time necessary for performance-specific *practice*, using this time to hone the skills that are critical to a winning performance. All sports benefit from strength training, and the most effective approach is a simple barbell program that advances force production requirements at the most rapid pace commensurate with the level of training advancement of the athlete. Stronger is better, and the most efficient program increases this vital capacity as fast as possible.

Amazingly enough, athletes already know this. And in the presence of a potentially lucrative or otherwise rewarding sports career, and the absence of an effective way to get stronger in the weight room, it should not be surprising to anyone that some athletes decide to take steroids to make up for their "Functional Training" – which does not work. I am not being hyperbolic or intentionally provocative. Serious question: if you need to be strong and your strength coach won't help you get stronger, who's fault is it that "Plan B" gets implemented?

It's no surprise that people in the military – where the performance just might mean your ass – have been eager to adopt a more effective strength training approach to improving their combat

readiness, even while a version of "Functional Training" known as "Tactical Strength and Conditioning" has been cooked up by the NSCA to try to penetrate this rather large market. But as long as strength coaches, athletes, parents, Athletic Directors, head coaches, sportscasters, and sports fans refuse to think past *correlation*, wasted potential and "Plan B" will continue to be a problem for our athletes. I'd like to think we're making a difference, but I remain unconvinced.

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