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THE PAST, PRESENT, AND FUTURE OF STRENGTH TRAINING

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In the early part of this century, weightlifting was done almost exclusively by professional weightlifters and circus strongmen. Prior to the early 1960s, athletes rarely participated in weight training because their coaches feared that lifting weights would reduce flexibility, dull reactions and ruin skills. Needless to say, it was even more unusual for a female to lift weights. As some athletes began to experiment with weight training, those fears slowly but gradually subsided. With the realization that lifting weights could be beneficial, individuals were soon hired to develop and administer programs for the development of strength. These individuals became known as strength coaches.

When university athletic programs began to seek advice about strength training in the early 1970s, they quickly solicited those individuals who appeared to know something about that subject. The perceived "experts" of that era were the competitive weightlifters. Since Olympic-style weightlifting was more popular in those days than the sport of powerlifting, many of the first strength coaches had a background as Olympic-style weightlifters.

Unfortunately, the initial practice of hiring competitive weightlifters as strength coaches soon spawned a multitude of growing pains. In most cases, competitive weightlifters knew absolutely nothing about the actual physical demands of sports such as basketball. A greater problem than that, however, pertained to their weightlifter-inspired methods and mentality. In their new role as strength coaches, competitive weightlifters advocated programs and routines that were most familiar to them — programs and routines that they themselves used to train for the sport of competitive weightlifting. Olympic-style weightlifters knew how to get strong in order to perform several specific movements: the overhead press, the snatch, and the clean and jerk; with powerlifters, it was the squat, the bench press, and the deadlift. In most cases, the protocols that were advocated weren't anywhere near being practical. In addition, the movements themselves required a great deal of time, effort, and patience simply to learn and perfect the complex, highly specialized skills to the point where they could be performed with any degree of proficiency and safety. To make matters worse, a national organization was formed that glorified, hyped, and encouraged methods used by the Eastern European weightlifters — particularly the Soviets, Bulgarians, and East Germans. As a result, most athletes have actually been using modified weightlifting programs under the guise of strength training programs.

Over the past 20 years, the popularity of weight training has increased tremendously. Today, strength training has been accepted by female basketball players as a vital ingredient for achieving athletic success.

EXPOSING THE MYTHS

The belief that females who lift weights will become less flexible and develop large, unsightly muscles has proven to be a misconception. Nevertheless, the early utilization of competitive weightlifting techniques ushered in many other myths and misconceptions about proper strength training. In fact, practically every "myth-conception" was due to the applica-

tion of the training information that was inherited from competitive weightlifters. However, the romantic and emotional attachments to many of these beliefs has been force-fed to the coaching community with a religious zeal by the "Old Guard." Fortunately, these notions have since been discredited by logic and legitimate, unbiased research that has no emotional stake in the results. Moreover, the strength coaching fraternity now endorses much safer and more time-efficient methods of training that are based upon scientific investigation and common sense — not anecdotal evidence and wild speculation. These are some of the traditional practices that have been debunked by the academic community and the new generation of strength coach:

Explosive Lifting. Because the Olympic-style lifts are performed in a rapid or explosive manner, it was assumed that doing these lifts and related movements done in preparation for them — like the power clean and the push press — would develop explosiveness. There are two reasons why your players should not be permitted to lift weights in a rapid, explosive fashion. First of all, explosive lifting introduces momentum into the movement, which makes the exercise less productive and less efficient. When weights are lifted explosively, there's tension on your muscles for the initial part of the movement . . . but not for the last part. In effect, the requirement for muscular force is lessened and your potential strength gains are reduced accordingly. Secondly, explosive lifting can also be dangerous. Using momentum to lift a weight increases the internal forces encountered by a given joint; the faster a weight is lifted, the greater these forces are amplified — especially at the point of explosion. An athlete will incur an injury when the forces exceed the limits of her joint structure(s).

Specificity. Another well-intended but misguided practice handed down from competitive weightlifters involves the use of weighted objects — like barbells and medicine balls — to mimic basketball skills. The Principle of Specificity states that an activity must be specific to an intended skill in order for maximal improvement — or "carryover" — to occur. Specific means exact or identical, not similar or just like. So, performing power cleans may be similar to jumping for a rebound, and doing lunges may be just like driving toward the basket, but the truth of the matter is that power cleans will only help an athlete get better at doing power cleans and lunges will only help her get better at doing lunges. Likewise, heaving medicine balls around is great for improving an athlete's skill at heaving medicine balls around, and nothing else. Furthermore, there is no exercise your athletes can do in the weight room — with barbells or machines — that will expedite their learning of basketball skills. Remember, skill training and conditioning are specific to basketball, but strength training is general.

One-Repetition Maximum Attempts. Success in the sport of competitive weightlifting is determined by the ability to lift as much weight as possible for one repetition. However, athletes who don't participate in weightlifting competitions have no business performing a one-repetition maximum (1-RM). It's dangerous for a player to try to see how much she can lift for a 1-RM. Attempting a 1-RM with heavy weights places an inordinate and unreasonable amount of stress on her muscles, bones, and connective tissue. Once again, an injury occurs when this stress exceeds the structural integrity of those components. A 1-RM attempt will also increase her blood pressure beyond that which is normally encountered when using submaximal weights. Finally, a 1-RM lift is a highly specialized skill that requires a great deal of technique and practice. This valuable time can be better used by an athlete to perfect specific skills like her passing, dribbling and shooting.

Periodization. Also referred to as "cycling," periodization is a theoretical training schedule popularized by weightlifters to peak for their competition. The idea is to change or "cycle" the number of sets, reps, and workload of the exercises your athletes perform in the weight room. For example, in Week #1 an athlete might do 3 sets of 10 reps in each exercise with 75 percent of her 1-RM; in Week #2 she might do 4 sets of 8 reps with 80 percent of her 1-RM and so on

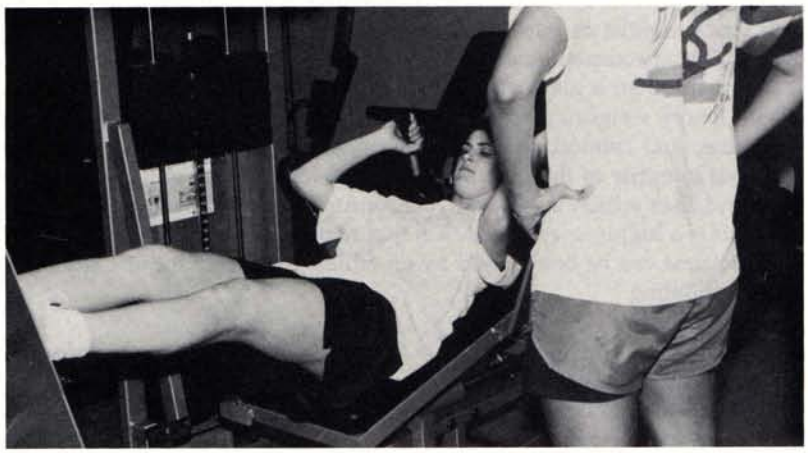
until she is performing a 1-RM. The concept of periodization is based upon the fact that highly competitive weightlifters peak for only several meets a year. Such a protocol doesn't do much good for an athlete who might have to peak two or three times a week for several months. Indeed, what competitions does she peak for? Aren't they all important? Imagine one of your players saying, "Sorry about my performance tonight, coach, but I'm not scheduled to peak for 10 more days." Trying to implement periodization with athletes other than competitive weightlifters is not only confusing but also unnecessary.

Free Weight Superiority. Yet another mistaken notion advanced by the competitive weightlifters is that free weights — barbells and dumbbells — are superior to machines. Keep in mind that the implement used in competitive weightlifting is a barbell. The first generation of strength coaches — being competitive weightlifters — brought their impassioned devotion to that specific training modality to the strength training arena. The fact is, a player won't develop one way with machines and another way with barbells — assuming that her levels of intensity are similar with both modalities. A muscle must be fatigued with a workload in order to increase in strength. Since your muscles don't have a brain, eyeballs or cognitive ability, they can't possibly "know" the source of the workload. So, it doesn't really matter whether an athlete fatigues her muscles with a resistance that comes from a machine, a barbell, a cinder block, or a teammate. The sole factors in determining her response from strength training is her inherited characteristics and her level of intensity — not the equipment that she uses.

Orthopaedically-Unsafe Exercises. For years, scientific, athletic, and rehabilitative professionals have questioned certain exercises and drills — such as power cleans, snatches, and plyometrics — in terms of being safe. Indeed, the potential for injury from most of the movements practiced by competitive weightlifters is positively enormous. When performing such exercises, the musculoskeletal system is exposed to repetitive trauma and extreme biomechanical loading. Young athletes are especially vulnerable. The sport of competitive weightlifting carries a certain degree of risk. Competitive weightlifters accept those risks as being part of the sport. However, your basketball players shouldn't have to assume such an unreasonable risk of injury. Therefore, for reasons of safety, movements done by competitive weightlifters should only be performed by competitive weightlifters — and only because it relates to their sport.

OUT OF THE DARK AGES

Strength training for basketball has come a long way from the days of the weightlifting-inspired programming. As time goes on, the traditional weightlifting programs will evolve into legitimate strength training programs where athletes are not trained like competitive weightlifters. The new breed of strength coach, armed with scientifically supported, research-based information and common sense, will propel basketball strength training out of the Dark Ages and into the twenty-first century. • • •



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