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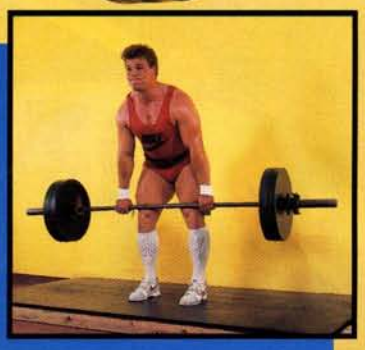

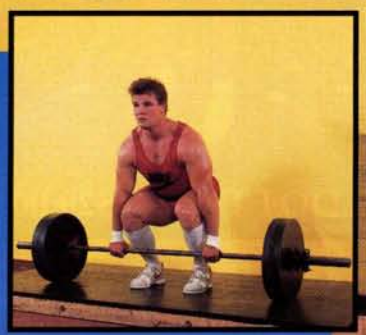

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Another Perspective

On

Explosive Lifting

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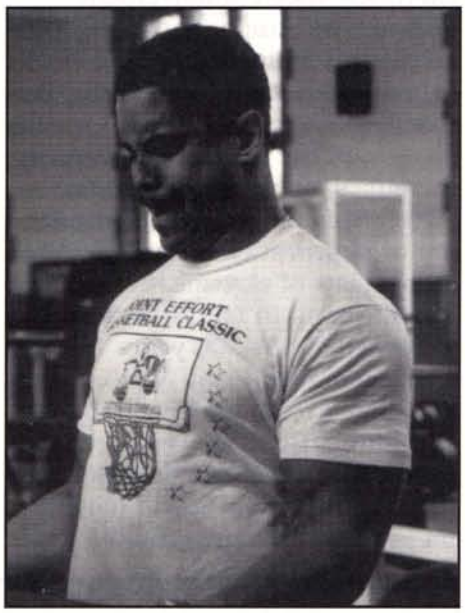
The association and individuals that promote explosive lifting would have you believe that their philosophy represents the only approach and that anyone who believes otherwise is misinformed, misguided or just plain stupid. Those with different views are quickly and feverishly attacked for their nonacceptance of the traditional "party line" thinking. In reality, there are rather large numbers of highly qualified and completely competent strength coaches who do not recommend explosive movements or techniques to their athletes.

To ignore, discredit or criticize the opinions of anyone who suggests that there might be a safer and more practical method of training represents a rather narrow-minded, self-centered view that smacks of state-controlled thought. Such condemnation also creates an enormous injustice for the thousands of coaches and athletes who are searching for the appropriate answers to their difficult questions.

The romantic, emotional attachment to certain explosive movements has been force-fed to the coaching community with a religious zeal through various articles, research studies and position papers supported by biased, sketchy protocols and other design flaws that make their results scientifically- unacceptable. So, the conclusions of this "research" might "suggest" something, but they certainly don't indicate anything.

Proponents of high speed movements argue that in order to become "explosive" you must train "explosive". Their assumption is that by lifting explosively in the weight room, the fast speed of movement will somehow "carryover" to the athletic arena. Unfortunately, there's been absolutely no definitive, unbiased research to indicate that this is true.



Tony Alexander, a 6'1" 225 pound physical education consultant at Princeton University, performs all his repetitions with a controlled speed of movement to minimize the effects of momen-

Those who favor explosive training are quick to offer "specificity" as a justification for their methods. For example, power cleans have long been touted as being specific to an incredibly wide variety of skills from the breast stroke to the golf swing to the shot put. How is it possible for this one movement to be specific to such a broad range of differing skills? Answer: It can't.

The Principle of Specificity continues to be frequently misinterpreted and misused. The principle states that your activities 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 driving off the line of scrimmage and doing lunges may be just like driving toward the basket but the truth is that power cleans will only help you get better at doing power cleans and lunges will only help you get better at doing lunges. Likewise, heaving medicine balls around is great for improving your skill at heaving medicine calls around and nothing else.

In addition, a movement like a power clean is an extremely complex motor skill. Like any other motor skill, it takes a lot of time and patience to master its specific neuromuscular pattern. This valuable time and energy could be used more effectively elsewhere - - such as perfecting dribbling or wrestling techniques.

Lifting a weight in a rapid, explosive fashion is ill-advised for two reasons. First of all, explosive lifting introduces momentum

"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"

-Dr. Fred Allman

into the movement which makes the exercise less productive and less efficient. To illustrate the effects of momentum on muscular tension, imagine that you pushed a 100 pound cart a distance of 50 yards at a steady, deliberate pace. In this instance, you maintained a constant tension on your muscles for the entire 50 yards. Now, suppose that you were to push the same cart another 50 yards. This time, however, you accelerated your pace to the point where you were running as fast as possible. If you were to stop pushing the cart after 35 yards, the cart would continue to move by itself because you gave it momentum. So, your muscles had resistance for the first 35 yards . . . but not for the final 15 yards. The same effect occurs in the weight room. When weights are lifted explosively, there is tension on the muscles for the initial part of the movement . . . but not for the last part. In effect, the requirement for muscular force is lessened and the potential strength gains are reduced accordingly.

Secondly, explosive lifting can also be dangerous. Dr. Fred Allman, a past president of the American College of Sports Medicines states, "Many injuries may be the result of weakened connective tissue caused by explosive training in the weight room." Here's why: 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. When the forces exceed the structural limits of a joint, an injury occurs in the muscles, bones or connective tissue. No one knows what the exact tensile strength of ligaments and tendons at any given moment. The only way to ascertain tensile strength is when the structural limits are surpassed. Then, of course, it's too late. Therefore, we must be concerned with an exercises speed of movement because we simply don't know the structural limitations of the human body's various connective tissues.

As the speed of movement increases, so does its potential force. This isn't merely an opinion or observation - - it's a fundamental law of physics. Something new? Nope. In fact, it was first proposed about 300 years ago by a fellow named Isaac Newton and is referred to as his Second Law of Motion. So, if slower speeds of movement are safer, doesn't it follow that faster speeds of movement are more dangerous?

Proponents of explosive training sometimes counter these facts by saying, "so what? Sports are dangerous - - just look at football and wrestling. Maybe we should stop playing sports." Arguments like this miss the point entirely. It is true that sports are inherently dangerous. However, using potentially dangerous techniques in the weight room to prepare for potentially dangerous activities is like banging your head against the wall to prepare for a concussion.

When someone is described as being "explosive" on an athletic field, essentially what we are saying is that the athlete performs, moves or reacts quickly and forcefully. This is primarily due to the fact the athletes movement patterns for a particular skill are so firmly ingrained in his or her "motor memory" that there is little or no wasted effort. In other words, it's because the athlete is highly efficient at performing the intended sports skill - - not because the athlete practiced explosive movements with barbells, medicine balls or other stage props in search of nebulous concept like "speed-strength."...❑

The Author and his associates express their thanks to Dr. Greg Shepard for having the willingness and courage to publish a viewpoint that contrasts sharply with that of this magazine.

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