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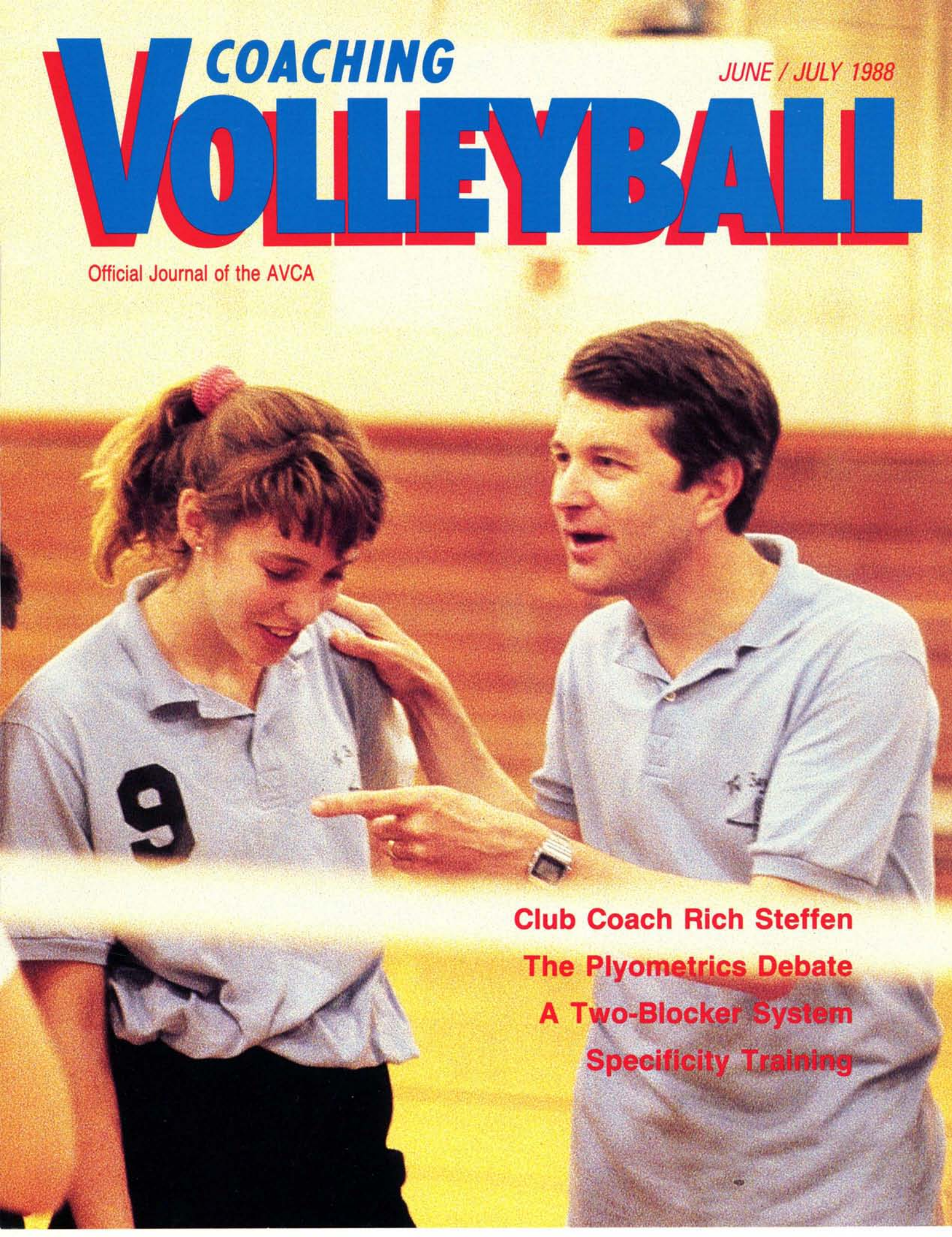


Club Coach Rich Steffen

The Plyometrics Debate

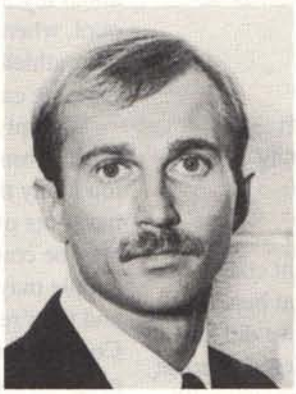
A Two-Blocker System

Specificity Training

Point: Plyometrics are unsafe

By Matt Brzycki, CSCS

At first glance, plyometric training appears to be a rather innovative idea based on scientifically documented principles. Unfortunately, it is not without its share of controversy. It seems as if a great deal of misleading information, half-truths, and confusing rhetoric surround plyometrics.



The belief that you can train the elastic properties of tendons and muscle tissue to become more efficient at storing energy is scientifically unfounded. No conclusive evidence exists to suggest that plyometrics are a productive method of training. Quite simply, there's no definitive proof. However, even if plyometrics training were a productive method of stimulating gains in explosive strength, it exposes athletes to an unreasonably high risk of injury.

Because of the repetitive, ballistic nature of plyometric exercises, the potential for traumatic injury is extremely high. In fact, many prominent sports medicine doctors, physical therapists, and athletic trainers view plyometrics as "an injury waiting to happen." When performing plyometrics, the musculoskeletal system is exposed to extreme biomechanical loading. The muscles, bones, and connective tissue act as natural shock absorbers to dissipate the imposed stress. An injury occurs when these stresses exceed the structural integrity of a joint. If you stretch a rubber band with too much force it will snap. The same is true of your muscles and connective tissue.

Potential injuries include (but are by no means limited to) heel bruises, shin splints, meniscal damage, patellar tendinitis, and vertebral compression as well as various sprains, strains, and stress-related fractures. One sports medicine doctor feels that sciatic conditions and even a loss of motor ability may result from plyometric training.

Remember when aerobic dancing was introduced? Most fitness enthusiasts eagerly accepted this form of conditioning with few reservations. Within the past few years, however, it's become commonplace to hear about overuse injuries directly related to the pounding absorbed by the body while jumping up and down. Today, the concerns for these inherent dangers are reflected by the advent of so-called "low impact" aerobics.

If people have suffered traumatic injuries from jumping up and down a distance of several *inches,* imagine how dangerous it is to jump up and down several *feet!* Obviously, the body's framework absorbs tremendous force on impact from a jump of even the shortest of suggested heights. This force is magnified as the height of the jump increases. Incredible as it may seem, one internationally known plyometrics guru advocates "altitude jumps," which he describes as stepping off a box or a platform from a height of 5 to 9 feet, landing on the ground, and jumping up as high as possible! (I wonder if the survivors are awarded jump wings?)

Young athletes are especially prone to trauma because their musculoskeletal systems are relatively immature. The epiphyseal plates of their long bones haven't fused yet, making the head and neck of the femur especially vulnerable. Plyometric training may also aggravate Osgood-Schlatter disease in adolescents.

Proponents of plyometrics rarely, if ever, report that any of their athletes sustained an injury while training. Yet virtually every athlete I've talked with has a horror story of personal injury caused by performing plyometrics. Most of these athletes suffered sprains, strains, and various overuse injuries. One athlete required ankle surgery. As a matter of fact, as I was preparing my notes to write this article, one of our athletes noticed the word "plyometrics." He commented, "Wow, that's some good stuff. I really hurt my ankle doing those things."

Oddly enough, most authorities on plyometrics recommend that you should stretch under control without any bouncing or ballistic movements in order to avoid injury. While this is indeed highly advisable, isn't it contradictory then to advocate plyometrics, the most violent form of stretching?

All this talk about potential injuries and concern for individual safety naturally raises the issue of negligence. In simple terms, negligence occurs when a coach fails to act as a reasonable and prudent coach would act in a similar situation. If a coach is sued and brought to trial, a judge or jury determines the appropriateness of the coach's actions.

According to the law, coaches are responsible to provide athletes with programs that are safe. Any coach who recommends potentially dangerous activities such as plyometrics is violating a legal duty and could be found negligent if an athlete is injured in the process. In short, don't recommend plyometrics if you're a coach, and don't use them if you're an athlete. It's not worth the risk of being a human shock absorber.

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