ONE OF THE MAIN GOALS OF prescribing an exercise program is to ensure the safety and quality of the exercise. Injuries can occur with any type of exercise even when performed properly. However, choosing the right exercise can be the difference between injury and maximal benefit.

WHICH EXERCISE SHOULD BE done to produce the best gains in strength and athletic ability in a safe manner? Working in a middle/high school I often hear concerns that the squat is a move for older more advanced athletes and that the leg press is a much more safe alternative to develop hip/leg strength. I believe quite the contrary.

First, the squat is a much more sport-specific move. It requires the body to be in a good athletic stance at the bottom of the move and produces complete hip extension at the top, both positions that are reproduced incessantly on the court or field. The leg press does get good hip flexion at the bottom, but at the top the hips are incompletely extended. The leg press machine in our weightroom left the hips flexed at 120–100° (depending on seat adjustment) when the weight was pressed to the top. I believe it is in those last 60—80° of hip extension, not covered by the leg press, that an athlete’s power/speed strength is produced. The squat trains this portion of the hips’ range of motion.

Second, the squat is a much safer move for the athlete. Propponents of the leg press may say that it is a much safer move than the squat; that leg strength can be developed without “putting the low back at risk.” The leg press requires no balance, and the force the body produces is transferred from the seat to a moving sled above the level of a nearly supine athlete. With the upper body being completely supported by the seat of the leg press machine the core of the body is not recruited to stabilize the hips and low back. The legs become stronger and can exert forces much greater than those that can be safely transferred through the body during athletic movements. I believe that the leg press will predispose the low back, hips, and knees to injury because of the lack of involvement of the body’s stabilizing core. On the other hand, the squat requires the athlete to balance on his/her own 2 feet and transfer a force from the ground through the body into a resistance at the top of the body, exactly that which is required on the court/field. The squat will allow the athlete to develop sport-specific strength and the ability to transfer it into efficient movement with injury preventing stability. Squatting is safer for the athlete.

The squat can first be learned with body weight and a broom stick and then progressed through variations up to big weights on the bar. Properly taught and implemented into a sound program, the squat is an invaluable tool that can be used to develop strong, injury-free athletes.

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Regarding lower body exercise the most controversial is the decision between the leg press and the squat. There have been arguments made for both. I agree that both exercises enhance leg strength.
and athletic performance. Further, both exercises are commonly used in rehabilitation programs to improve knee stability. However for the general population, the squat is not as safe as the leg press.

Safety enhances the quality of the workout. Manufacturers design leg press machines so that all shapes and sizes can perform the leg press. When performing the squat, it is easy to adopt improper mechanics, thereby altering one's balance during the execution of the squat. Improper balance during the execution of the squat can result in severe injury. Research has indicated that tall people with short torsos have difficulty in keeping complete foot contact on the ground when performing the squat. This is also true with the novice trainees. I see improper technique in the gym. And I am sure that I am not alone. Why take a chance at getting hurt, when research has indicated that the leg press can yield the same benefits as the squat.

The leg press is a safe exercise yielding positive effects for strength or rehabilitation. Further, it is easy to perform correctly. When choosing a lower body exercise, choose something that is safe and effective. Choose the leg press. ▲

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