



Figure 1. In the full squat, the anterior surface of the thigh at the hip (A) must be lower than the top of the knees (B).

The squat has been the most important yet most poorly understood exercise in the training arsenal for as long as there have been motivated athletes with barbells and orthopedic surgeons that didn't themselves do squats. The full range of motion exercise known as the squat is the single most useful exercise in the weight room. It would be interesting to see an orthopedic surgeon tell a kid not to play football, basketball, or soccer, the sports that result in the bulk of his knee practice, and leave full squats alone. It would also be interesting to know what percentage of the same surgeon's practice is the result of full squats. Orthopedic surgeons are not exercise professionals. They are surgeons. They study surgery, and some are even good at it. But they are not trained in exercise theory or technique, most of them have never trained correctly, many have never been in a gym. The same thing is true for physical therapists and other quasi-medical types, whose training and expertise is in returning the

physically dysfunctional to function. Exercise for healthy individuals is not the same thing as therapy, and a good working knowledge of anatomy and kinesiology, while important and necessary, is not the only requisite for expertise in exercise prescription and programming. Medical professionals used to dealing with injured patients may tend to apply the wrong set of principles to healthy populations, being conservative to the point of being silly. As strength and conditioning professionals, we deal with healthy athletes, and we must learn the most effective ways to make their bodies and minds adapt to the rigors of sport. The squat is our most valuable tool.

The squat is so effective an exercise because of the way it uses the muscles around the core of the body. Much is made of core strength, and fortunes have been made selling new ways to train the core muscles. A correct squat perfectly balances all the forces around the knees and the hips, using these muscles in exactly the way the skeletal biomechanics are designed for them to be used, over their anatomically full range of motion (figure 1). The postural muscles of the lower back, the upper back, the abdominals and lateral trunk muscles, the costal (ribcage) muscles, and even the shoulders and arms are used isometrically. Their static contraction supports the trunk and transfers kinetic power from the prime movers to the bar. The trunk muscles function as the transmission while the hips and legs are the engine. Notice that the core of the body is at the center of the squat, that the muscles get smaller the farther away from the core they are, and that the squat works them in exactly this priority