THE SQUAT: FUNCTIONAL AND EFFECTIVE

Dave Mansfield MA, MSPT, CSCS

First, let's all agree that the squat may be the single most effective strength training exercise ever invented. This movement, properly executed, is capable of working almost every muscle group in the body and in a functional way. Squatting actively uses all the muscles from the core to the feet. When performed using a bar or dumb bells it also works the muscles of the upper trunk, neck, arms and shoulders. In addition, because the spine is axially loaded during the squat it can be beneficial in mitigating or preventing the effects of osteoporosis. Talk about getting the most "bang for the buck"!

If this exercise is so wonderful, you might ask, then why do we so seldom see patients or clients doing squats? Sure, we all use wall squats and mini squats for our knee patients but the squats that I'm referring to are good, old fashioned, "deep knee bends" with resistance. Real squats. I suspect that a lot of us are concerned about the potential for injury and the difficulty of teaching safe technique to clients who have a fear of squatting. To this I say, squats properly taught and properly executed are safe, effective and functional! To be sure, it is important to assess and address flexibility issues that may impact the patient's ability to squat. This is particularly true for the hips, low back and ankles as decreased flexibility in these areas can compromise form. Tightness in the hips and hamstrings can make it difficult to maintain a neutral spine. Decreased range of motion at the ankles may force the heels off the floor thus increasing stress on the knees. Tightness in the anterior shoulders and a kyphotic posture can increase stress on the spine, cause balance problems and make it difficult to squat using a barbell. However, the technique can be modified to address these areas and other range of motion activities can be incorporated into the treatment plan. In the end, in spite of limitations all of our patients use this movement to some degree every day.

TECHNIQUE

The feet should always be flat on the floor with the weight in the center of the foot or toward the heel. (Do not weight shift to the ball of the foot). Foot placement should be somewhere between hip and shoulder width. The feet may point straight ahead or may turn out somewhat but should never be turned in. Balance and hip range of motion will impact the width of the foot placement so it should feel comfortable and secure.

The knees must always track in line with the toes throughout the movement and should not move in or out. The knees should also not move out past the toes. These are the two areas that many have the most difficulty with in learning to squat properly so it is important that the patient/client get this right in the beginning.

The lumber spine should be held in a normal lordosis throughout the movement.

The shoulders should be back in a somewhat protracted position and the chest should be kept up and out.

The depth of the squat will be determined by the client's ability to maintain the postures described above.

Some instructors find it useful to have their patient's practice in front of a mirror. It is my experience, however, that a mirror can be distracting and tends to pull the patient out of alignment. I believe that the squat is best learned be practicing the movement until it feels natural before adding resistance or increasing repetitions.

The breathing pattern is similar to that of any resistance exercise. That is "exhale with the effort". More precisely: take a deep breath just before starting the descent (eccentric phase) hold then start to exhale at just past the sticking point on the ascent (concentric phase). Note that if the client is hypertensive this pattern may require some modification.

TEACHING THE SQUAT

Teaching the squat to someone who has never performed the exercise is best started by having them sit on a bench or chair. The key is to cue them to think of sitting back and not down. This will encourage them to bend from the hips first instead of from the knees. Most people who have difficulty will bend at the knees first which throws them immediately out of position. The height of the bench can easily be adjusted to accommodate range of motion deficits or fear and then gradually lowered as technique improves. This initial training requires patience and may require many repetitions before the patient is comfortable with the movement. In the end it is worth the time to let them get it right. Once they can successfully and confidently squat to the bench with body weight you may add a closet pole or light barbell across the shoulders or have them hold light dumb bells and practice some more. Once they have perfected their technique it is time to remove the bench and have them do free squats!

The most common cues required for safe squatting technique are "chest up", "sit back" "heels down" and "knees out" (this last for those who tend to let their knees adduct on the ascent). My philosophy is to discourage the use of a lifting belt as they do nothing to enhance functional squatting or strength training at weights less than 90% of one rep max.

The squat is one of the most functional exercises that you can give to your patients or clients. It will improve core strength and stability. It will strengthen the back, legs, hips and ankles and will increase functional range of motion for ADLs, transfers and work ability.

REFERENCES

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