

5 Reasons to Full Squat



The full squat is one of the most basic and fundamental human postures. Due to industrialized society's heavy reliance on chairs and modern footwear however, it has become a position that many people have difficulty achieving.

Born to Squat

The **full or deep squat** refers to a position where the knees are flexed to the point that the back of the thighs rest against the calves with the heels remaining flat on the floor. Young children under the age of four will instinctively go into a deep squat when they want to reach for something low, and often hold themselves in a stable squatting position to engage in play.

Among Asian adults, squatting often replaces sitting.¹ So what happens to Westerners, as we grow into adults, that causes us to lose this ability? This is primarily a case of use it or lose it. Many cultures throughout history would rely on the squatting posture as a means of performing work, eating meals, or resting. Modern society has all but eliminated the need to squat in our daily lives.

A second reason relates to the design of modern footwear that often features an elevated or raised heel. Habitual shoe wearing causes a shortening of the calf muscles and Achilles tendon, and a gradual loss of the ankle mobility required to properly do a squat. This often leads people to perform a variation called the Western squat, where the heels remain propped up in the air.

Fortunately, many of the adverse effects brought on from frequent sitting, improper footwear, and squat avoidance are reversible. When performed correctly, the full squat carries many benefits for physical health. Squatting can be performed as a body weight exercise, to reach something on the ground, or simply as a rest position.

5 Health Benefits of the Full Squat

1. Ankle Mobility

Limited ankle dorsiflexion range of motion is a common problem linked to a number of other issues in the body, including overpronation, bad posture, and runner's knee. A loss of ankle mobility is caused by both inflexibility in the calf muscles and Achilles tendon, and stiffness in the joint. A proper squat, with the heels flat on the floor, requires good flexibility at the ankle. Getting into and maintaining a full squat is a great way to improve ankle mobility and restore full range of motion.

2. Back Pain Relief

Many people have an excessive curvature in their low back likely related to the pelvis being pulled down in the front by tight hip flexor muscles. During a full depth squat the pelvis rotates backward, allowing the spine to elongate. This stretches the tight or shortened muscles in the low back. The body's position in a deep squat also produces a traction effect that decompresses the spine by creating space between the individual segments of the back. Note that this applies to body weight squats only, and a neutral spine position is generally considered preferable when squatting with weight.²

3. Hip Strengthening

In a person whose hip muscles are weak, you'll often see their legs move inward (adduct) and internally rotate when they perform closed-chain movements, like jumping or going down stairs. This adducted, internally rotated position puts the knee at an awkward angle and can lead to injuries. A full squat moves the hips in the opposite position, abduction and external rotation. The squat strengthens the muscle groups responsible for performing these actions, allowing them to better control the position of the entire leg.

4. Glute Strengthening

The gluteus maximus is one of the largest muscles in the body, and with good reason. The muscle comprises the bulk of the buttock region and is integral to performing many activities we do on a daily basis like walking, lifting, and running. The glute max is also an important stabilizer muscle of the trunk and leg. EMG studies have shown that during a squat the glute muscles become targeted only after descending past the half way point.³ This means the same strengthening benefit cannot be achieved from only squatting in a partial range of motion. Coming in and out of a deep squat is by far one of the most effective ways to strengthen the glutes. Not many people are going to complain about having a firmer backside.

5. Posture Correction

The cumulative effect of working on the areas listed above is an overall improvement in both static and dynamic posture. When joint mobility and lower body strength are improved the entire musculo-skeletal system will naturally be able to assume better alignment, which can have a tremendous impact on the way we look, feel, and move. The full squat is a way to reverse some of the bad habits the body has assembled from our modern lifestyle.

The Modern Squat

When a person not used to performing a full squat attempts to squat down, often times their heels will lift off the floor, or they will fall backwards. These are two signs of a loss of ankle flexibility.

Full Squat



Western Squat



Western squat is the ankle remains at about a 90 degree angle. Without adequate ankle mobility, attempting to go any lower would move the center of gravity behind the base of support, and the person would lose their balance and tip over backward. The disadvantages of remaining up on the toes include:

- a higher center of gravity and smaller base of support (the toes), making this a less stable position.
- an overuse of the calf muscles to stay in the position, making it unsuitable for resting
- increased compression of the soft tissue between the upper and lower leg

Many adults instinctively go into the Western squat because it has become physically impossible for them to get their heels down. Correctly performing a full depth squat is a sign of good mobility and strength and can be a reasonable goal for anyone looking to improve their fitness.

Preparing to Squat

Since the squat is such a basic and functional movement, simply practicing getting into the position is often all that is needed to achieve proper form. For anyone unfamiliar with the squatting movement it would be wise to work on the smaller components first, to build up the necessary strength and motor control needed to get in and out of the position.

For someone who finds they have the strength to squat down but then have difficulty getting their heels flat without losing their balance it might be necessary to do some extra calf and ankle stretching to gain flexibility. Here is an article that goes over some helpful ways to increase ankle dorsiflexion.

Are Squats Bad for Your Knees?

Some people may have heard advice that performing a full squat is dangerous or bad for the knees. Squatting like most exercises carries a certain degree of risk, but the notion that squats hurt the knees is largely a myth.

When performed properly the risks are greatly reduced and usually outweighed by the benefits that can be gained from regular squatting.

Based on current evidence, full range of motion squatting using your own body weight is not only a safe activity, but one that can have a great influence on overall physical health. Still, it is important to be aware of the risks to lower any potential for injury before performing any movement the body is not accustomed to doing. The two major concerns usually voiced over squatting are the potential for joint wear leading to arthritis and ligament injuries.

Squats may actually decrease the risk of arthritis

During a squat there are increased compressive forces on the joints of the knee. Very few studies however have shown that squatting can cause damage to the joint. One retrospective study on a group of elderly subjects in Beijing found that those who reported squatting several hours a day in their youth were more likely to demonstrate osteoarthritis of the tibiofemoral (TF) joint.⁴ A later study however found that squatting actually decreased the risk of TF arthritis when performed at least 30 minutes a day.⁵

The reason for these contradictory findings is not clear. The important thing to remember is that, as is true for most activities, moderation is key. The body is certainly capable of adapting to a natural squatting position, and almost all of us were able to do it at some point in our lives.

Full squat

The other joint in the knee subject to increased loads during squatting is the patellofemoral (PF) articulation, between the underside of the knee cap and the femur. The compressive forces at the PF joint increase as the knee moves into flexion (depth of squat). However, during that time the contact surface of the joint also increases.⁶ The increase in contact area distributes the joint forces over a larger surface area, which maintains, or even reduces, joint stress as you get deeper in your squat. Patellofemoral compression force should still be a consideration though for anyone with a history of anterior knee problems or cartilage damage of the patellofemoral joint.

In regards to ligament injuries, the idea the deep squatting when performed as a weightlifting exercise causes ligament laxity in the knee can be traced back to an older study performed in the 1960s. Later studies have refuted these results and actually found that squatting enhances knee stability.^{7,8}

The same principles that apply to other forms of exercise also apply for squats. Squatting too often, holding the position for hours on end, or not allowing your body to recover between squatting sessions can place you at increased risk for injury.

Summary

The full squat is a natural human posture often used as an alternative to sitting in Asian cultures and among young children, but rarely performed by adults in Westernized countries. Spending time in a squat position offers many health benefits and can serve as a way to correct postural imbalances. Squatting is a safe activity when performed properly. Someone who is healthy and in relatively good physical shape without a history of knee injuries should be able to squat safely with minimal risk. Individuals with a history of knee injury need to give consideration to the increased forces placed on the structures of the knee when squatting. A lack of ankle mobility is usually the limiting factor that would prevent an individual from reaching full depth. The ability to do a full depth squat is a sign of good physical health.

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