Is locking the knee in standing (hyperextension) a bad thing?

Know Your Joints

Muscle and Joint Care Suggestions

SUMMARY: With the advent of more people standing at work through the use of stand to seat stations we should suggest ways to stand better. I have suggested in the past to stand about half the time but never all the time. I also suggest changing positions and shifting your weight from side to side. One issue with standing is not locking the knees (see video) where many movement specialists and physical therapists suggest not locking your knees when standing. I myself suggest this for a variety of reasons. Why is that the case? Read on for more details.

Standing with lock knees has been suggested to decrease blood flow to the knee. Most joints have a limited blood flow so they require motion for nourishment. In an unlocked knee the body is continually moving a small amount, which aids in nourishment to the knee (study). Another important issue is one of compression. Compression forces at the knee are highest when the knee is locked. If the knee is forced into a completely locked position while standing or when doing an exercise like the leg press or squat, the end of the tibia and the head of the femur actually come into full contact; this is known as the“screwing home mechanism.” In this closed pack position, where the most bone-to-bone contact occurs, the femur is forced to rotate internally. For flexion to occur as the leg returns to rest, the bones must “unscrew.” Over time this can lead to irritation of the joint or pinching of cartilage in the knee. When the leg(s) are not locked more muscles are continually engaged and not relaxed as when locked. In a locked knee position the quadriceps are engaged while when the knees are bent the glutes, hamstrings, and quadriceps are engaged. If you are training this gives a greater effect, if you are doing normal standing it will create better metabolism (article).

Locking the knees also places direct pressure on other body parts and may even lead to back, neck, and shoulder pain in some instances. Test yourself by locking out your knees when standing and see how it feel. Locked knees may exaggerate the curvature of the spine and back, thereby adding excessive stress to the area. As I always say Protect the Spinal Curves as well as there is no best posture, the next posture is the best. I want you not to be static but dynamic by moving. That being said a standing posture that Protects the Curves places the least stress/strain on your body. This is where the head sits over the shoulder and there is a slight neck curve, trunk, low back, and knee curve. In other words the k**nees should be “soft” and not locked**. Locking your knees forces the pelvis and chest to be pushed out, which causes undo stress on the lower back.