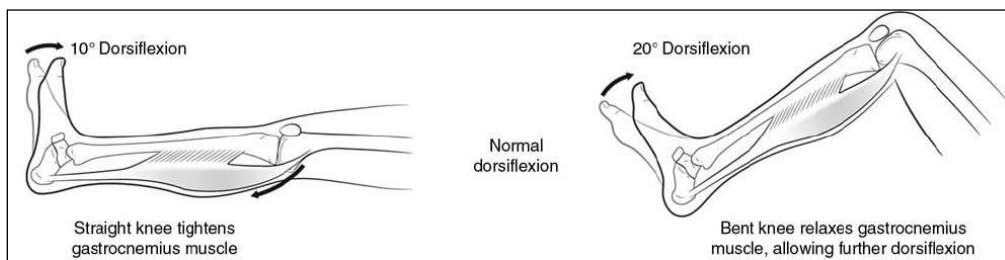


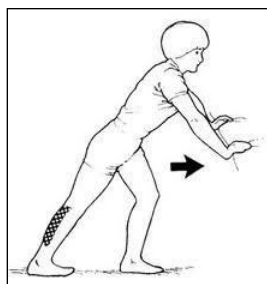
"Achilles" Stretching

The Achilles tendon inserts on the Calcaneus (the "Heel Bone") and is actually made up of two muscles. The Soleus muscle begins on the Tibia (the "Leg Bone") and the Gastrocnemius muscle begins above the knee. Because both muscles come together as the Achilles tendon and, therefore, both cross the ankle joint, we look to the position of the knee to determine if one or both of these muscles is responsible for a tight Achilles tendon.

The "Silverskiold test" can differentiate the Soleus from the Gastrocnemius based on relaxing the Gastrocnemius by bending (or flexing) the knee, as the Gastrocnemius is under maximal tension when the knee is straight. If ankle motion is poor with the knee straight, but improves with flexing the knee, the Gastrocnemius is the sole muscle responsible for the tight Achilles. If, however, ankle motion does not improve regardless of the knee's position, then both muscles are responsible for the tight Achilles. This is relevant because stretching of a tight Achilles needs to address the appropriate tight muscle group(s).



More commonly in growing children, the Gastrocnemius is the culprit of a tight Achilles because muscle groups that cross two joints become tighter as the bone becomes longer. As such, bending of the knee during Achilles stretching is considered "cheating" and will not effectively benefit the patient. The knee must remain straight to properly stretch the Achilles (see bottom left image). Because people sleep with their ankles pointed down (called "plantarflexion"), some patients will benefit from a brace used at nighttime to maintain the ankle in a neutral position to passively stretch the Achilles (see bottom right).




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