

## How To Tell If Neutral Talar Position Is Pathomechanical

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Many of us know the reasons for examining and casting the feet in the neutral position. The ability to see the foot in the true horizontal plane is important for determining the congenital or developmental anomalies of the foot.

### Subtalar Neutral Position

The position where the S.T.J. is neither pronated nor supinated. When the S.T.J. is in neutral position, there is a congruency of the talonavicular joint. This can be palpated at the joint articulation between the head of the talus and the navicular.

Few of us realize however that the neutral position itself can be pathomechanical. The position that is the standard for examination and casting of the feet has a common glitch that, if overlooked, ends up with a maldiagnosis and a prescription for a pathomechanical foot orthotic. That's pretty scary, isn't it?

Just what can happen to the neutral position that can change the findings? -- a subluxation of the talus? -- That's right, the talus can create a false forefoot valgus or varus condition by being fixated anteriorly in the ankle mortise. How does this occur? -- usually from an ankle sprain that goes untreated or that is considered too mild to be much of a problem. How do we diagnose a talus subluxation? -- by firmly forcing both feet into complete dorsiflexion.

### Adjustments of the Talus (14,p.60-61)

The talus typically moves anterior during an ankle sprain which results in limited dorsiflexion of the ankle due to jamming of the condyle against the anterior tibial ridge.

### Signs:

1. Limited dorsiflexion of involved foot.
2. Anterior fossa is shallow, being filled by the talus.
3. While holding the foot in the neutral position, it will be evident that the head of the talus is either medial or lateral, because the foot is definitely not centered.
4. Limited movement of fibular head at the knee upon ankle dorsiflexion.
5. Pain on side of injury when palpated if acute.

### Muscle Affected:

The only bone in the foot with no muscles attaching to it

### Differential diagnosis:

1. Short Achilles Tendon
2. Tight Gastrocnemius and or Soleus
3. Congenital Anomalies

#### 4. Can You Attain Neutral Position?

This positioning of the feet is typically taken too lightly by most doctors and frequently passed off as a short Achilles tendon, a tight gastrocnemius, a tight soleus or some other mysterious congenital anomaly. In truth, this is a very common malady that deserves serious attention. The correction for this subluxation is as follows:

Adjustments of the talus:

Stabilization:

1. Anterolateral: Inversion ankle sprains Stand facing the knees of a prone patient on the opposite side of the involved leg. Flex the involved leg to 90 degrees and place your knee closest to the head across the lower hamstrings of both legs with equal pressure. The hand toward the feet is your stabilization, and is used to support the contact finger and thumb while lifting the inside of the foot during the thrust.

Contact & thrust:

1. Anterolateral: Using the hand closest to the head, grasp the lateral ankle like a pistol grip, with your middle finger on the mid talar fossa as the trigger finger, and your thumb around the Achilles tendon. Apply the stabilization hand and lift the ankle toward the ceiling until you feel distraction. Thrust the talus straight back toward the heel.

Stabilization:

1. Anteromedial: Eversion Ankle Sprains

Stand facing the knees of a prone patient on the same side of the involved leg. Flex the involved leg to 90 degrees and place your knee closest to the head across the lower hamstring of the closest leg, with gentle but firm pressure.

Contact & thrust:

1. Anteromedial: Using the hand closest to the head, grasp the medial ankle like a pistol grip, with your middle finger on the mid talar fossa as the trigger finger, and your thumb around the Achilles tendon. Apply the stabilization hand and lift the ankle toward the ceiling until you feel distraction. Thrust the talus straight back toward the heel.

Once the correction has been made, retest forced dorsiflexion of both feet and notice that they are now even, unless a true anomaly exists. Now when you attain the neutral position of the foot, it will be the true neutral instead of false neutral position. You may now cast the feet with confidence that a functional foot orthotic can be made.

#### *References*

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