

No Cast “Correction” Getting it Right in the Cast



The above plaster casts were taken in MASS position of the same foot. The same positives were sent out to some of the more prominent orthotics labs with the request to make the orthotics to the positives “at their discretion”. Here are pictures of orthotics we got back from two of the labs -a representative sample. Huge gaps are in the potential arch support area after the lab’s discretionary arch fill was added.

If you are used to slipper casting, no doubt you are also familiar with orders to the lab specifying the amount of “arch fill” you desire. This is a typical lab standard routine -so routine that many of us forget to question why it is even necessary. You have made your best professional effort to capture the foot in the cast and now the lab wants to know how much you want *them* to modify it? How does this make sense?

It actually only makes sense within the limitations of Neutral STJ Position methodology and theory. Since most foot practitioners still use this approach, most labs use a default amount of arch fill -even if you specify *no* arch fill. This is because labs have found out through experience that, when they don’t do any arch fill, patients are liable to complain of discomfort and return the orthoses. They have learned to have little faith in what the incoming neutral cast tells them since that casting procedure is fraught with subjective inaccuracies. Why is this?

If you cast your patient’s feet in neutral, the arch is only half as high as its fully supinated, closed-chain position at heel strike. That means, during midstance pronation, the arch has fairly long distance to fall until it finally impacts the orthotic -which can hurt. If the arch is lowered substantially with arch fill, however, the foot is decelerated by its own ligaments and muscles prior to hitting the support and impact force on the foot is dampened. In other words, the tacitly understood trade-off in the mainstream orthotics industry is to exchange better support for better comfort.

Ironically, though, the problem is that we do not make the arches *higher*. When the foot is cast in MASS position and the orthotic made without “correction”, the arch will match the plantar shape of the foot at heel strike. There will be no “dive bombing” into the support because the support is already against the foot, ready to flex enough for functional pronation and dampen the downward momentum.

The reason neutral position practitioners fear to go above the full neutral height of the arch is that they have no guideline for how *much* to go above it. So they would be guessing and risking even more patient discomfort. MASS position technique eliminates

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What is your target postural zone for foot correction? The Pathological Zone (red), Dysfunctional Zone (yellow), Functional Zone (green) or the Supination Instability Zone (purple).

the guesswork of how high the arch should be. So practitioners now have the following choices for corrective paradigms:

- 1) Correct to within the **Pathological Zone**. This is typical arch-filled neutral position orthotics. Support completely compromised in favor of comfort; the foot continues to absorb the brunt of over-pronatory forces.
- 2) Correct to within the **Dysfunctional Zone**. This would be a no-arch-fill, neutral position orthotic. The full neutral arch will likely not be tolerated due to accelerated impact of the foot, though the foot will be spared some of the deranging forces.
- 3) Correct to within the **Functional Zone**. This is a Sole Support made from a MASS Position casting. Comfort comes from decreased force per unit area of the foot and insignificant arch impact forces. Full posture restoration assures normal biomechanics, pain relief, protection from deformity and even deformity reversal (assuming a timely intervention).