



A.C.T.® Impression Pillow Manual



Concept:

Inconsistencies of casting techniques provide the greatest challenge in any fabrication lab. Modifying the casts to estimate the arch height, arch length and width of the weight bearing foot is subjective at best. Extensive discussion and debate has been ongoing over the years with no ultimate solution on how to make foot casting consistent whether using a plaster slipper cast, wax or foam impression tray. Simply “loading” the lateral column during casting does not effectively create a functional or comfortable foot model. Foam impression boxes, while allowing a load to be placed manually on the midfoot; do not overcome the problem of inconsistency due to practitioner techniques. Common complaints of foot orthotics being intolerable or ineffective due to improper “interpretation” of the plaster model are essentially eliminated by creating a weightbearing foot impression. Utilizing a The A.C.T.® impression pillow provides an accurate, reproducible and consistent plantar foot topography regardless of technician technique.





Design Features:

The A.C.T.® Casting Pillow is designed to create an accurate and reproducible model of the foot. The unique pillow shape and density allows the uncompensated foot to be suspended while maintaining neutral subtalar joint alignment as it bears load. This produces a foot model that requires little if any modification in the lab.

The pillow contours and slow-recovery foam allow the rear-foot and mid-foot to be suspended, effectively enveloping the foot without the potential for ground reactive forces to cause distortion. The memory foam material gently compresses the soft tissue at the heel and mid-foot while the forefoot is allowed to splay naturally, as it does under normal load. With the subtalar joint in neutral the thinner memory foam layer under the ball of the foot and toe area will capture the forefoot plane as neutral unless there is a rigid forefoot varus or valgus present.

The A.C.T.® pillows are designed as a single component slow-recovery foam with a smooth durable exterior surface. The pillow surface can be cleaned with soap and water, disinfectant spray or simply brushed. Plaster, STS® socks and thermal moldable mediums will not stick to the surface.

Physiology:

It is generally accepted that during the contact phase of the gait cycle, the subtalar joint passes through neutral alignment twice. It occurs first just after heel strike as the ball of the foot comes into contact with the ground and as the mid-tarsal joint begins to pronate in order to absorb shock. The second time the subtalar joint passes through neutral is just before toe off as the mid-tarsal joint everts and the foot becomes a rigid lever for propulsion.

In casting with the A.C.T.® Casting Pillow, the plantar foot shape is captured in the latter subtalar neutral position. The ankle is dorsiflexed approximately 17 to 22 degrees while the subtalar joint is maintained in a neutral position and load is placed on the foot. Depending on practitioner requirements, the foot can be in partial weight bearing while seated, or a full or semi-weight bearing position while standing.



Methodology:

1. Full and semi-weight bearing casting methods are achieved with the patient standing and bearing load on the foot to be cast. The most common technique is to have the patient stand on the A.C.T.® Casting Pillow with even weight on both feet (considered semi-weight bearing) during the curing or cooling period. This is the most accurate and reproducible casting technique. Assuming there is consistency in the distribution of patient weight, subtalar alignment and pillow density, the resultant impressions will be the same regardless of the practitioner or casting medium (material). Impressions are taken one foot at a time so as to not fully load the foot during the curing/cooling process.



2. The seated or partial weight bearing casting method is best used when a compromise of weight bearing and non-weight bearing impressions is desired. This will produce a slightly “higher” arch profile. This is sometimes indicated for cases of extreme pes planus or for use with obese patients when patient weight makes subtalar alignment difficult to maintain. This technique is also advisable when working with patients who are unsteady while standing.

Using Thermal moldable A.C.T® Impression Cores

Step 1: Preheat oven to 300° F.

Step 2: Select appropriate core size. Medium: up to Women's size 9 or Men's size 8.
Large: Women's size 9.5 or Men's size 8.5 and larger.

Step 3: Place one impression core in oven and heat for 60 to 70 seconds or until soft and pliable.

Step 4: Locate heated core under patient's foot on the A.C.T.® pillow and manipulation to subtalar neutral.



Step 5: Allow cork to cool at least 60 seconds under the foot or until firm.

Care:

The A.C.T.® pillows are designed as a single component of slow-recovery memory foam with a durable outer skin which allows for easy material release and cleaning. The surface should be disinfected with spray after each use. The surface can be cleaned with mild soap and water. **Do not use solvents of any kind on the pillows.**

The pillow is designed for use with heated materials, however, excessive heat may damage the surface. **Do not place materials heated to over 300° F directly onto the pillow.** The pillows can be used with materials heated to over 300° F only with an insulating layer of heat dissipating material underneath.



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