

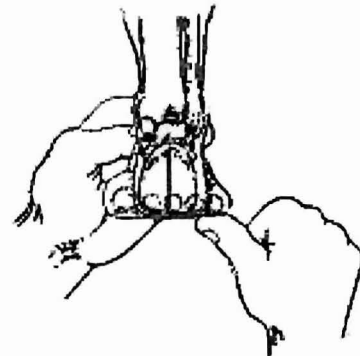
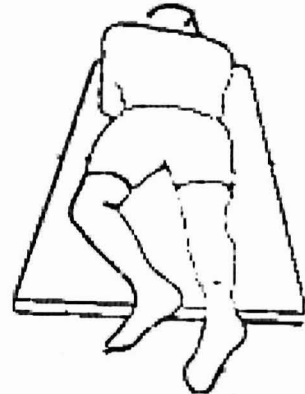
Mary Pack Arthritis Program Occupational Therapy Non-Weight Bearing Foot Casting

Supplies

- 1 roll 6" plaster bandage
- 1 large bowl
- 1 plaster scissors
- 1 felt pen
- 1 indelible pencil
- Body lotion
- Plinth / pillows

Instructions

- Palpate the metatarsal- phalangeal (MTP) joints and mark the metatarsal heads with a felt pen. These marks will transfer to the plaster foot cast.
- Position the patient in prone lying, with their feet hanging inches over the edge of the plinth. Insure that the legs are in neutral rotation (the posterior plane of the calcaneus should be parallel to the floor). If hip tends to externally rotate, the opposite hip is abducted, externally rotated and flexed by bringing the knee out to the side of the body (fig.1). Make the patient comfortable with pillows under chest, as required.
- Draw a line on the back of the heel to bisect the calcaneus from proximal to distal.
- Determine the **subtalar neutral** position by palpating the head of the talus between the thumb and the index finger. With the other hand holding on to the heads of the 4th and 5th metatarsals, move the foot through a full range of inversion and eversion. When the foot is fully inverted the talus protrudes on the lateral side, into the index finger. With eversion, the talus is more prominent medially, against the thumb. Position the subtalar joint in its mid-position, where no bony prominence can be felt by the thumb or index finger of the palpating hand. When the head of the talus is centred in the talo-navicular joint, the pressure on the thumb and the index finger is even and the subtalar joint is neutral.



Definition: Subtalar neutral is that position in which the foot is neither pronated nor supinated. From this position, full supination of a normal sub-talar joint inverts the calcaneus twice as many degrees as full pronation everts it.

- While holding the subtalar joint in neutral, lock the forefoot against the hindfoot by applying a force to the 4th and 5th metatarsals that dorsiflexes the ankle to resistance and distracts the foot toward the floor.
- By looking down the plantar surface of the foot, determine the position of the forefoot as it relates to the hindfoot and note whether it is in a neutral, varus or valgus position.
- If the forefoot is in varus or valgus, determine if this position is flexible or rigid, by applying a plantarflexion or dorsiflexion force to the first ray . The foot should be cast with the forefoot in neutral if possible. If not, then the forefoot malalignment will be captured in the cast.
- Apply lotion to the foot to ease cast removal. Fill bowl with tepid water. (A paper towel in the bottom of the bowl will collect the excess plaster.)
- Cut a double- layer of 6" plaster bandage, equal to the circumference of the foot. Fold over ½" along the length of the bandage to strengthen the upper border of the cast. Dip plaster bandage into the water and gently squeeze out the excess.
- With the midpoint of the plaster draped over the heel, wrap it around foot overlapping the plaster on the dorsum of the foot at the level of the toes.
- Hold heel flap away from foot while moulding the medial flap and then the lateral flap to the plantar surface. Mould the plaster accurately into the arch. The heel area should be well formed, with any excess plaster placed on the dorsal aspect of the heel, not on the plantar surface.
- Position the foot carefully in **subtalar neutral** or an adjusted position if required. If a flexible varus or valgus forefoot is present, correct the forefoot position to neutral, using a dorsiflexion or plantar flexion force against the 1st ray. A flexible forefoot varus (supinatus) can also be corrected by dorsiflexing the great toe. Hold position until the plaster is set. (3-5 min.)
- To remove cast, release the skin from the plaster by gently pulling the skin on both sides of the foot toward the instep. Draw the cast over the heel carefully. Ensure that the patient does not assist, and that the cast is not twisted or flexed.
- Using an indelible pencil, draw over the felt pen markings on the inside of the cast. These lines will transfer to the plaster positive mould.
- Coat inside of cast with a thin layer of liquid soap. Fill cast with a mixture of Plaster of Paris and water (approx. 3cups water to 5 cups plaster). Leave to set a minimum of 1 hour. Strip the casts and prepare them for fabrication of custom orthoses. See OT 11B – 3A