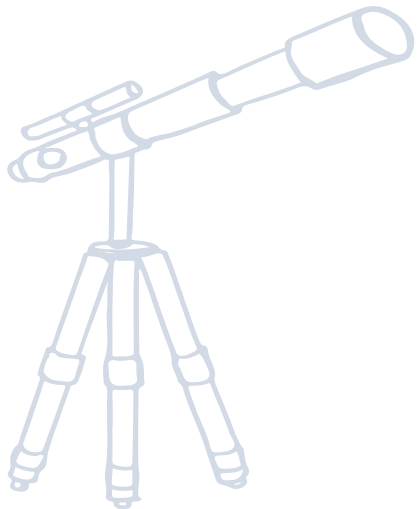


# Cast Rectification



Chapter 10

PO UMTY 2019

Date: 10 September 2019

# Procedure

A good cast will make modification easier

Cast modification involve six steps:

1. Evaluation of positive mold
2. Heel and forefoot
3. Medial and lateral longitudinal arches
4. Addition of a metatarsal bar/ dome/ relief area
5. Addition of plaster build-ups
6. Smoothing and evaluation of cast

# 1

## Evaluation of the positive mold

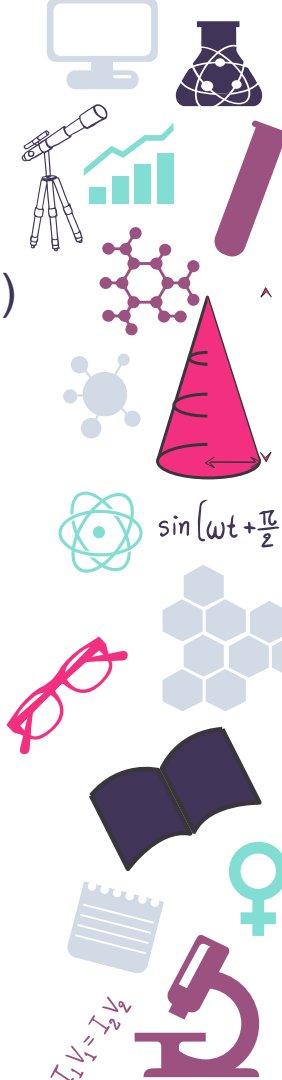
Heel and forefoot parallel

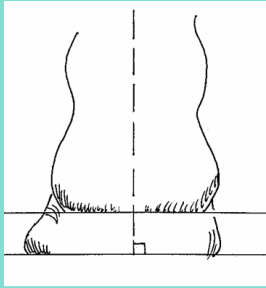
Calcaneus perpendicular to base (vertical)

Medial border of foot straight (not pronated)

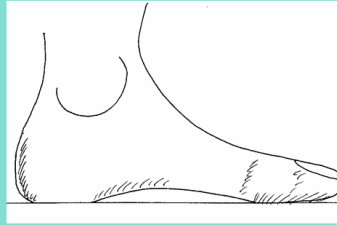
Lateral forefoot in neutral alignment (not bulging)

If bilateral casts, both casts are similar in shape and alignment (right and left foot)

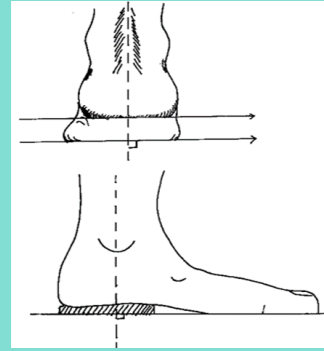




The calcaneus should be vertical



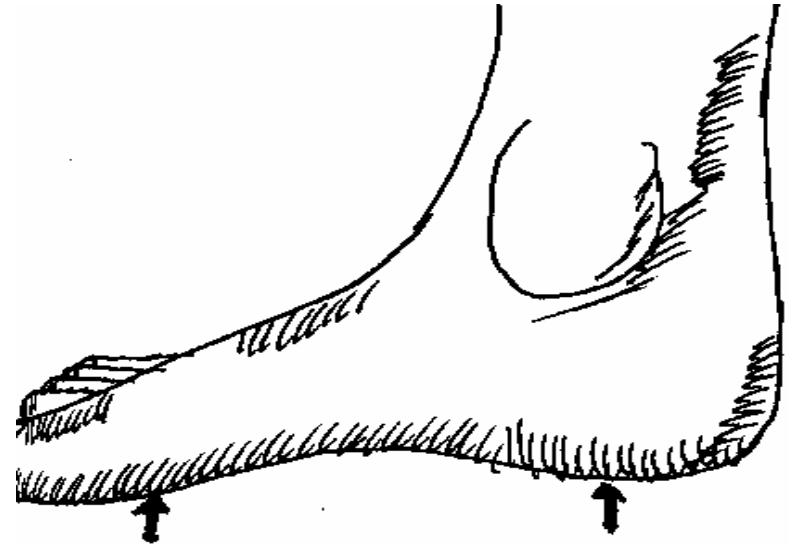
Flatten heel and forefoot



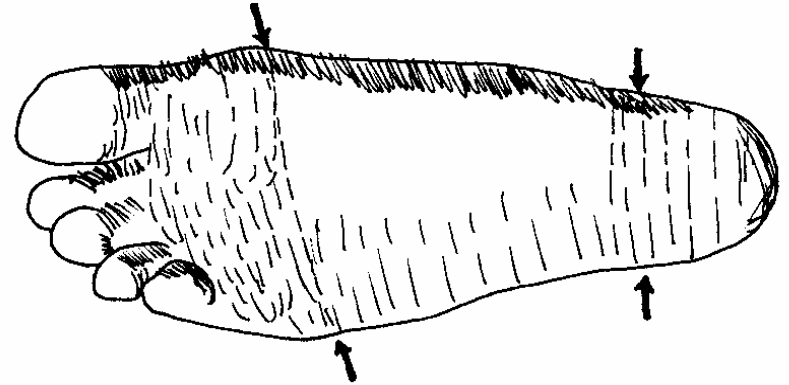
Metatarsal head and heel base are parallel in both coronal and sagittal planes

# Medial and Lateral Arch

- Medial arch blend its shape into medial border of foot follow shape formed while casting
- Medial arch defined distance from distal 1/3 of heel to 1<sup>st</sup> metatarsal head



- Lateral arch not very high but is needed to properly support the foot
- Lateral arch defined distant from distal 1/3 of heel to 5<sup>th</sup> metatarsal head
- *Over modification can be done if a lateral ground reaction force is needed to assist in correcting the foot/ankle alignment*
- *Be careful not to remove plaster from the base of 5<sup>th</sup> metatarsal*



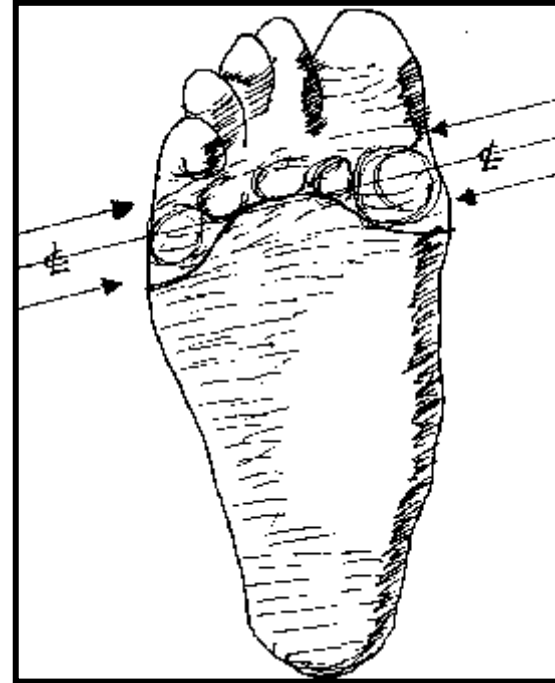
# 4

## Additional of Metatarsal Arch

Mark position of 1<sup>st</sup> and 5<sup>th</sup> metatarsal head in half (1/2)

Draw the heads of 2<sup>nd</sup>, 3<sup>rd</sup>, and 4<sup>th</sup> heads

Drawing a curved line from the 1<sup>st</sup> metatarsal head to the 5<sup>th</sup>



The position of the arch is between the 2<sup>nd</sup> and 4<sup>th</sup> heads

Draw a teardrop shape.

The length of the arch ends just distally of base of metatarsal heads.

***Dome is to relieve pressure from heads 2-4***



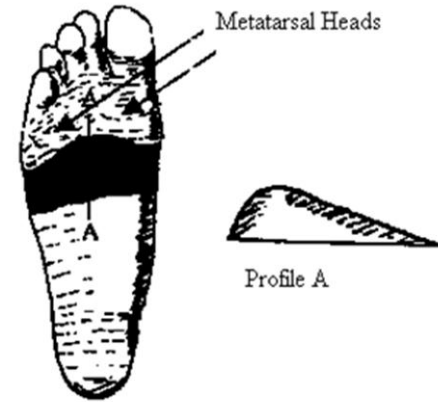
'dome' to relieve pressure  
from met heads 2-4

# Additional of Metatarsal Bar

Using scarpas knife to remove plaster from that marked area.

The depth of the arch is **approx. 1cm.**

The arch should be deeper on the side of the big toe, then blend proximally into the medial and lateral longitudinal arches.



Pad to relieve pressure from all met heads



- ❖ (Rectification are determined by the individual patient)
- ❖ If too much support can reduced by sanding (grind)



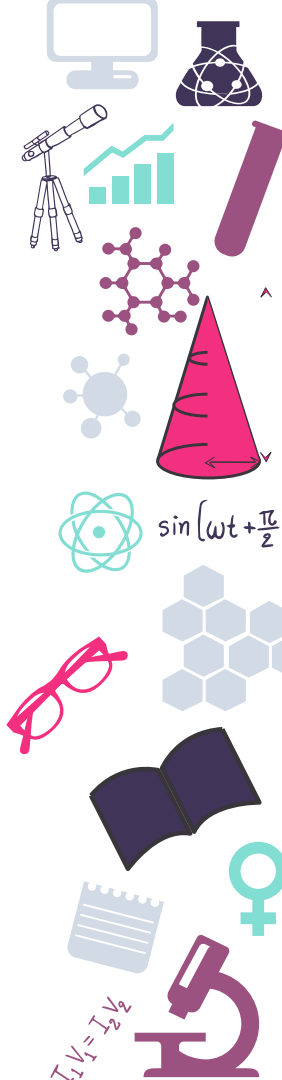
**Another way to find the metatarsal arch is by making it before casting.**

- Mark the 1<sup>st</sup> and 5<sup>th</sup> metatarsal heads
- Use your thump to feel the proximal border of the arch with an indelible pencil
- Draw a curved line that follows the metatarsal heads
- Use your thumb to push into arch should be when you rectify the cast
- During casting you can also shape the metatarsal arch after correcting the alignment.

# 5

## Additional Plaster Built UP

- Requires build ups to bony prominence
- No pressure apply on sensitive area
- Add small amount of plaster to base of 5<sup>th</sup> metatarsal head (MTH) and the navicular
- Medial and lateral border (1<sup>st</sup> and 5<sup>th</sup> MTH )
  - Dorsum (top) side towards plantar surface
  - Work proximally to level of malleoli
  - Create box shape at toes by adding nails (approximately 2.5cm)



If supra-malleoli type of foot orthosis  
(plastic) add plaster to malleoli

Add 4mm on the medial side

Add 3mm on the lateral side

If forefoot *abduction* or *adduction*  
stop is required build up height over  
MTH for final plastic trim line



# Smooth and evaluation of the cast

6

Compare alignment between two feet

- Plantar surface
- Depth arch

Desired alignment is in subtalar neutral





Hind foot is parallel to  
forefoot

If different shape, change should be  
made to produce symmetry, both look  
same (right and left feet)

Smooth and keep dry before  
draping/ molding

Any questions?  
**Thanks!**

