

# ARTIFICIAL LIMBS & FOOT WEARS IN LEPROSY



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# INTRODUCTION



# ORTHOSIS

- It is a artificial external device.
- Used to support the limb.
- Maintain the anatomical position.
- Prevent and correction of deformity.
- To releve pain.
- For example – A. F. O. , K. A. F. O., H. K. A. F. O., F. A. B. Walker, P. T. B. Walker.



# PROSTHESIS

- Prosthesis is an artificial device that replace a missing part of the body.
  - For example – B. K. Prosthesis, A. K. Prosthesis,  
A. E. Prosthesis, B. E. Prosthesis.





# MCR ( MICRO CELLULAR RUBBER)

- Micro cellular rubber contains many closed cells with nitrogen gas in each. Not only it acts as a shock absorber but also as a cushion by recoiling
- Micro cellular rubber has 15° shore.
- Shore is degree of softness.
- Higher degree that means harder.



# DIFFERENT TYPE OF MCR FOOT WEAR

# BATA MODEL

- INDICATION

Sensory loss with no deformity or scar.





# SIMPLE SANDLE

- INDICATION – Sensory (partially) loss with no deformity.





# CUP MODEL

- INDICATION – Sensory loss with foot inverted/everted.



# TOUNGE MODEL

- INDICATION – Sensory loss with claw toe and scar for foot.





# TAIN MODEL

- INDICATION – Sensory loss with claw toe or damaged skin.





# SPLIT MODEL (VELCRO)

- INDICATION – Sensory loss with scar, loss of finger or claw hand.



# Y MODEL (BUCKLE)

- INDICATIONS –  
Sensory loss with scar.





# FOOT DROP SANDLE

- INDICATIONS –  
Sensory loss with  
peroneal nerve  
paralysis/Dorsiflexion  
muscle weak.







# DIFFERENT TYPE OF ORTHOSIS PREPARATION

# ANKLE FOOT ORTHOSIS

- INDICATIONS – Foot Drop.



# KNEE ANKLE FOOT ORTHOSIS

- INDICATION –  
Quadriceps muscle  
weak.





# HIP KNEE ANKLE FOOT ORTHOSIS

- INDICATIONS –  
Paraplegia.



# FIXED ANKLE BRACE WALKER

- INDICATIONS –  
Sensory loss with  
neuropathic joint.



# PATELLA TANDON WEIGHT BEARING BRACE

- INDICATIONS –  
Sensory loss with 2/3  
part of planter surface  
lost.





# MOLDED SHOE

- INDICATIONS –  
Sensory loss with bad  
fore foot scaring or  
lateral border scaring or  
heel scaring.



# MOLDED INSHOLE

- INDICATIONS –  
Sensory loss with lateral  
/ medial border scar.





# DIFFERENT TYPE OF PROSTHESIS PREPARATION



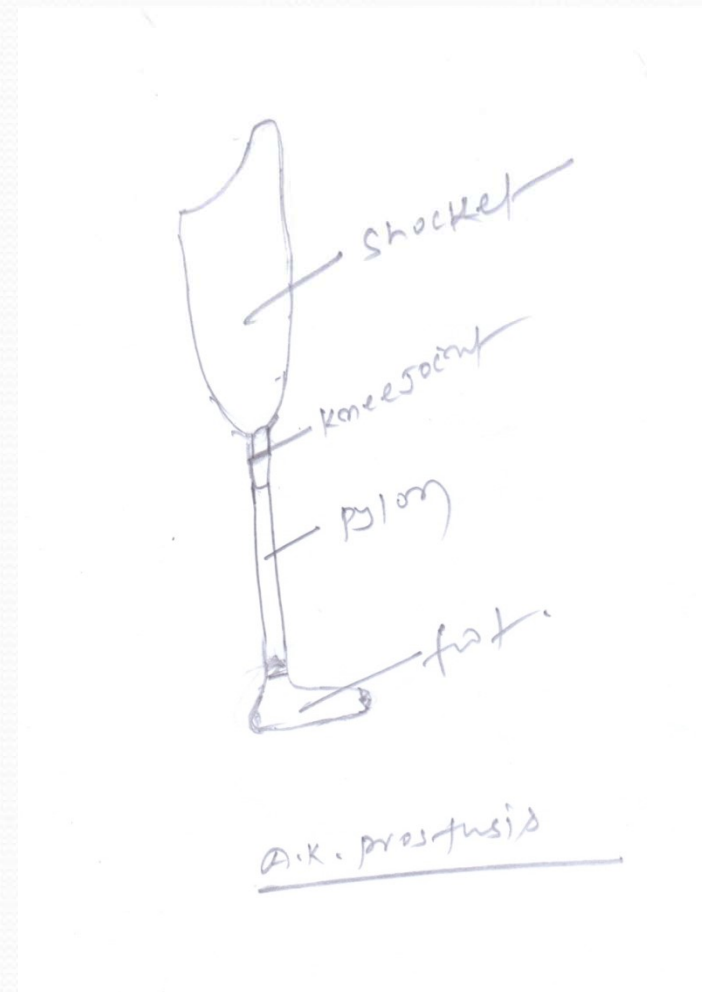
# BELOW KNEE PROSTHESIS

- Below Knee Amputation also called B. K. Prosthesis.
- Its Ideal Stump length is 4 to 6 Inches.



# ABOVE KNEE PROSTHESIS

- Above Knee amputation also called A. K. Prosthesis.
- Its Ideal Stump length is 10 to 12 Inches.



# SYM'S PROSTHESIS

- Through below Maliolus amputation also called SYS'S Prosthesis.





# BELOW ELBOW PROSTHESIS

- Below Elbow amputation also called B. E. Prosthesis.



# ABOVE ELBOW PROSTHESIS

- Above Elbow amputation also called A. E. Prosthesis.





# DIFFERENT TYPE OF FOOTWEAR MODIFICATION



# METATARSAL BAR

- Indications – Fore foot ulcer.

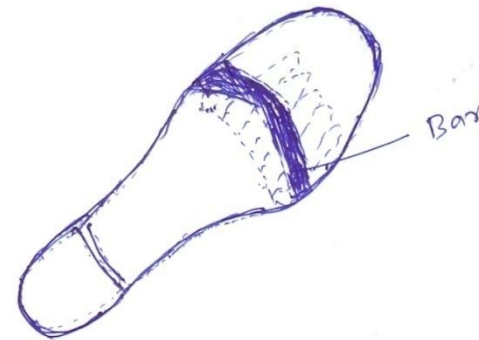


Fig - Metatarsal Bar

# ARCH SUPPORT

- Indications – Flat foot.



# LATERAL MALIOLUS CUP

- Indication – Lateral Maliolus Ulcer.





# SCOOPING

- Indications – Heel Ulcer (mid foot/hind foot).



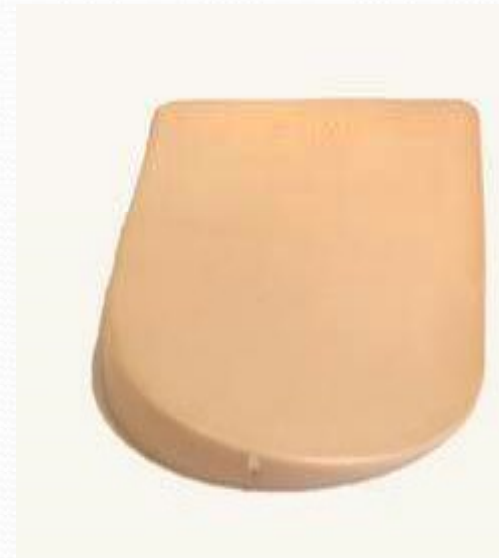
# HEEL RAISE

- Indications – Leg limb length shortening.



# MEDIAL RAISE

- Indications – Knock knee.





# LATERAL RAISE

- Indications – Bow leg.



# HIGH LONGITUDINAL ARCH

- Indications – Pes cavus.



Fig - Longitudinal arch support

# MEDIAL AND LONGITUDINAL ARCH SUPPORT

- Indications – CTEV (CONGINITAL TELIPES EQUINO VARUS) Deformity/Club foot.





# MEDIAL LONGITUDINAL ARCH SUPPORT

- Indication – Hallus valgus.

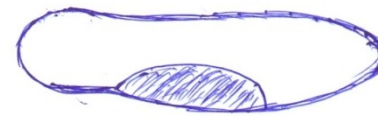


Fig - Longitudinal arch support

# SPLAY FOOT

- Metatarsal pad.



# HALLUS VARUS

- Indications – Toe is inverted.





# PARTS OF SHOE

- 1) TOE CAP
- 2) THROAT LINE
- 3) EYELET
- 4) OUTSOLE
- 5) VAMP
- 6) HEEL
- 7) QUARTER
- 8) INSOLE
- 9) TONGUE
- 10) SHOE LACE
- 11) COLLAR

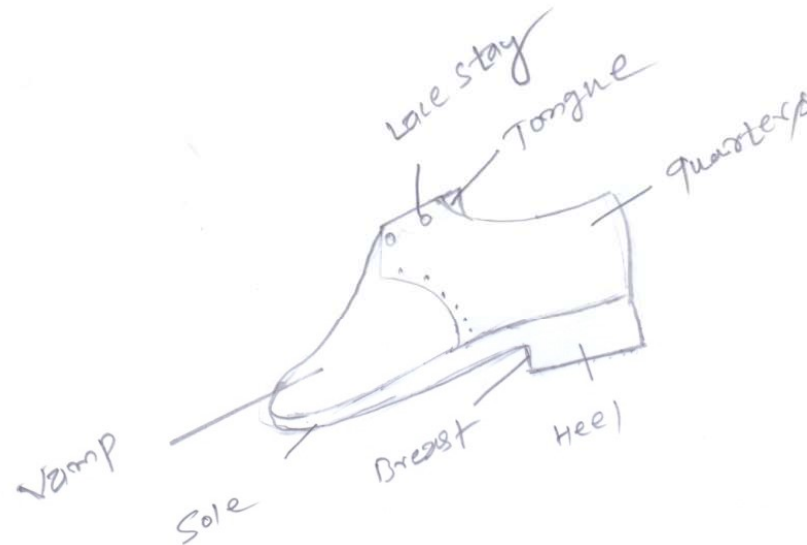


Fig - Parts of Shoe



# CORRECT HEEL SIZE

- 1) MAN – 20 mm
- 2) WOMAN – 50 mm
- 3) CHILD NORMAL – 15-20 mm
- 4) ADOLESCENT GIRL – 30-40 mm
- 5) ADOLESCENT BOY – 22-50 mm



# FOOTWEAR PRESCRIPTION

## CONDITION OF FOOT

- 1) Sensory loss with no deformity or scar.
- 2) Sensory loss with claw toe one or two scar over the forefoot.
- 3) Sensory loss with bad forefoot scaring or lateral border scaring or heel scaring.
- 4) Neuropathic foot with sensory loss.
- 5) Sensory loss with 2/3 part of planter surface area lost.

## TYPE OF FOOTWEAR

- 1) MCR Sandle with back strap.
- 2) MCR footwear with backstrap, arch support, and M. T. pad.
- 3) Moulded shoe.
- 4) F. A. B. walker.
- 5) P. T. B. walker with moulded shoe.



# COMMON PLACE OF LEPROSY ULCER

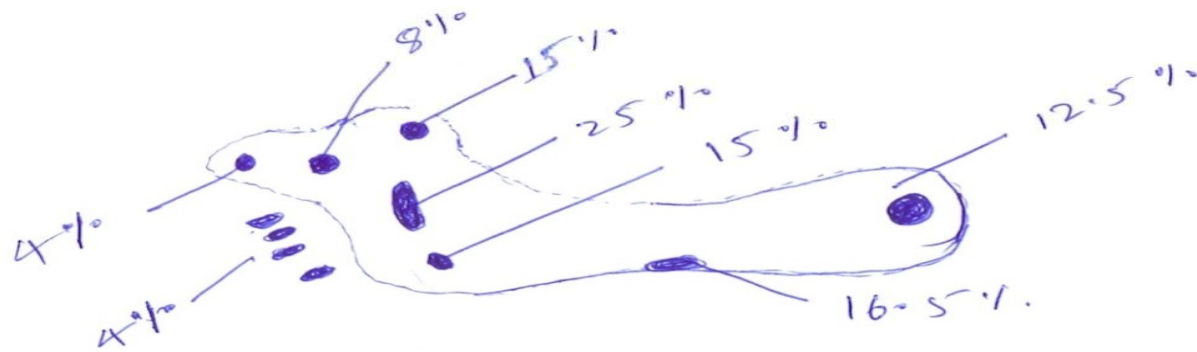
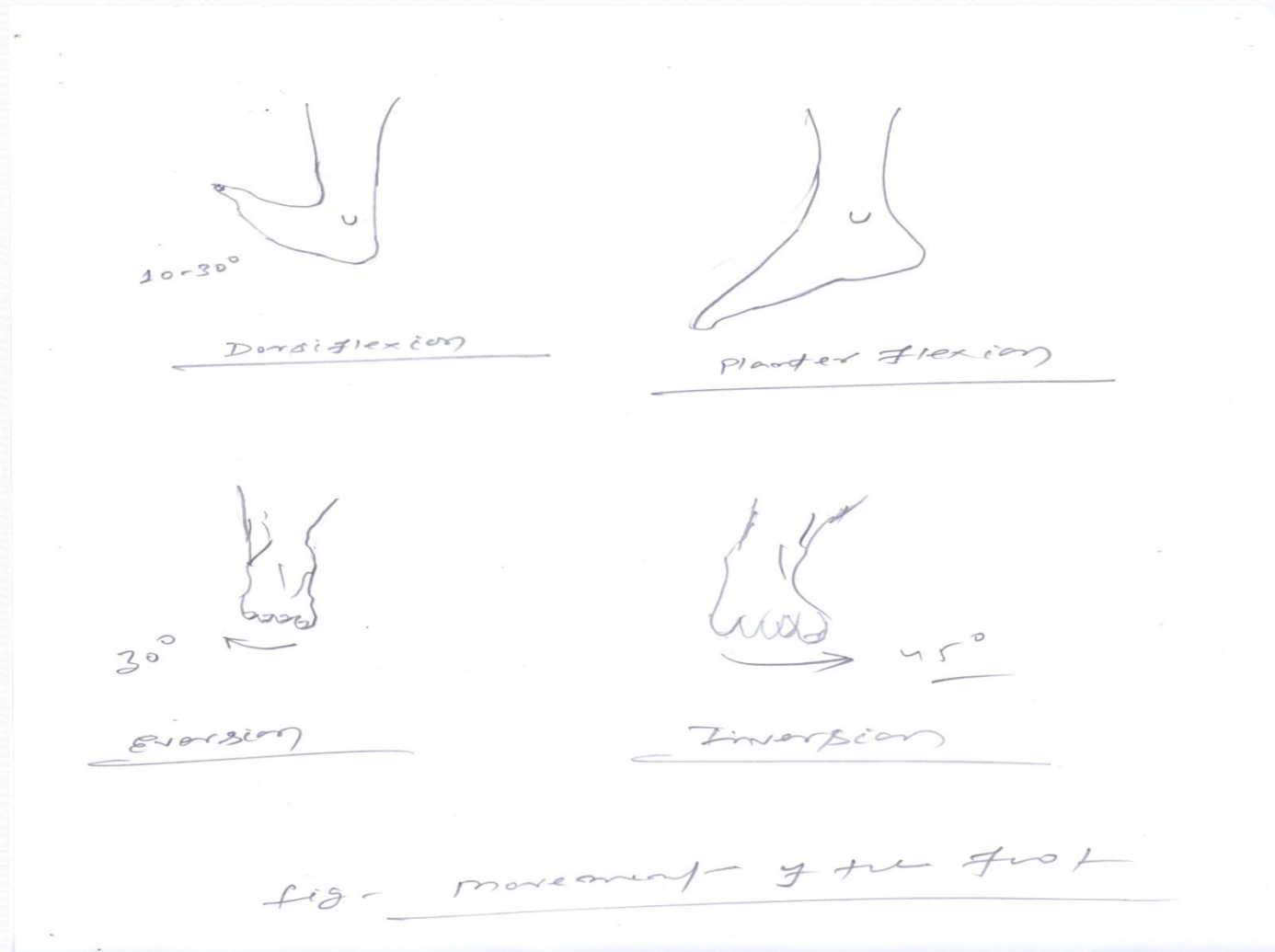


Fig:- Common site of trophic ulcers.

# MOVEMENT OF THE FOOT





# CHECKLIST OF THE FOOTWEAR

- 1) Placement of M. T. bar and pad.
- 2) Location of arch support.
- 3) Check the leg length.
- 4) Check the heel height.
- 5) Check the heel shape and cushion.
- 6) Correct size and position.
- 7) Check the cosmetic look.
- 8) Check the pressure point.
- 9) Check the gait.





# MATERIALS NEEDED

- 1) Printed upper leather.
- 2) Goat lining leather.
- 3) MCR sheet.
- 4) E. V. A. rubber sheet.
- 5) Tyre sole.
- 6) Rivet button.
- 7) Buckle
- 8) Dendrite solution.
- 9) Thread.
- 10) Nail.
- 11) Eyelet.
- 12) Split pin.
- 13) Resin.
- 14) Catalyst.
- 15) Hardener.
- 16) Pigment.
- 17) POP bandage.
- 18) POP powder.
- 19) Fiber glass.
- 20) Copying pencil.
- 21) D ring.
- 22) Velcro.
- 23) Tan leather.
- 24) Iron bar.
- 25) Aluminium bar.
- 26) Stockinet.



# MACHINES AND TOOLS

- 1) Tailor machine
- 2) Grinder
- 3) Oven
- 4) Drill machine
- 5) Shoe hanger
- 6) Shoe anvil
- 7) Bench vice
- 8) Hammer
- 9) Plier
- 10) File



Thanking you