



Podiatrists' guide to  
**Hapla Padding  
& Strapping**



## Palliative Padding

### Why use Padding?

During the gait cycle the foot has two main functions - it must become a mobile adaptor capable of being placed on any type of surface - flat, angled, irregular or smooth - and be able to maintain the equilibrium of the whole body and leg functions. It must be able to become a rigid lever in order to stabilise and lift the body weight and thus propel the body forward.

However, if the foot fails to become a mobile adaptor or a rigid lever at the correct time in the gait cycle, mechanical problems may arise.

## What is Stress?

### Compressional Stress

This arises from two converging forces. The plantar tissues of the heel and forefoot undergo compression between superimposed body weight and the resistance of the ground beneath.

### Tensile Stress

The plantar ligaments and fascia are subjected to tensile stress during weight bearing particularly around the heel, forefoot and interdigitally. These areas may show signs of fissures. This type of stress results in stretching (pulling apart) of the tissues.

### Shearing Stress

This type of stress is produced when two surfaces are being forced laterally over each other. It occurs due to movements within the foot and between the foot and shoe when they are in contact.

### Torsional Stress

This is stress caused by a combination of shearing and twisting. It occurs within the plantar tissues when the foot makes any pivoting motion.

## Padding in Podiatry

In Podiatry, padding is used for the following reasons:

### 1. Palliative Padding

This type of padding treats the symptoms and not the underlying cause. It is used to provide the following properties.

- Cushioning and shock absorption
- Redistribution of load
- Prevention of friction
- Protection

### 2. Corrective Padding

This padding is designed to promote the proper function of the foot. It is used to treat the cause of the problem not the symptoms.

### 3. Functional Padding

In the case of a rigid deformity, the loss of function of part of the foot can be addressed by careful padding.





## General Rules of Padding

1. The pad should always be adapted in accordance with the alignment of the foot. This is achieved by bevelling the edges of the pad. When the edge of the pad is at an angle of approximately  $45^\circ$  it is described as a 'single' bevel. The bevel may be reduced further to approximately  $20^\circ$  when it is known as a 'double' bevel. The bevel should be cut flat or slightly concave.
2. Bevelling underneath the pad, for example for the 'U' part cut out of a plantar cover, is known as a 'reverse' bevel.
3. The bulk of the pad should usually be posterior/distal to the prominences which are to be protected.
4. When adding a cavity to a pad it should be half the thickness of the pad.
5. Apertures are complete holes in the pad and are used for suppurating lesions or very bony prominences.
6. The full thickness of the pad should be under the metatarsal shafts which are to be supported.

7. Plantar metatarsal padding ends two thirds of the way down to the styloid process.
8. Pads should not be placed immediately proximal to the MTPJs as this would plantarflex the proximal phalanges (unless this is the intention, e.g. a metatarsal bar can be used to straighten flexible toe deformities).



Before deciding on which type of padding to use for a particular patient the following should be considered:

1. Is the diagnosis correct?
2. The severity of the condition
3. Allergies the patient may suffer
4. The age of the patient
5. Weight of the patient
6. Footwear worn by the patient
7. Occupation of the patient

## Points to consider when padding

A pad made for the plantar surface of the foot should be no more than  $2/3$  of the length of the fifth metatarsal. This measurement can be obtained by feeling for the styloid process and measuring either  $1/3$  up from the process or  $2/3$  down from the metatarsal head.



The anterior border should follow the line of the metatarsal formula. Generally, this is the second metatarsal being the longest, with the first and third being shorter than the second but the same length as each other, followed by the fourth with the fifth being the shortest. Some patients show a metatarsal formula of 1, 2, 3, 4 & 5.

The pad should be made wide enough to cover the width of the metatarsal shafts with the full thickness of the pad lying under the shafts to be supported. The pad should be narrowed towards its base to avoid the pad extending onto the lateral weight bearing area.

# Plantar Cover

## Step 1

Using Hapla Fleecy web and Hapla Chirofix 2.5cm wide retention tape.



## Step 2

Using Hapla Fleecy web, a plantar cover 'D' shape is cut. This pad completely covers all the metatarsal heads.



## Step 3

All corners of the pad are rounded and the pad is cut to descend 2/3rds of the way down the 5th metatarsal.



## Step 4

All edges of the pad are bevelled with the posterior edge (furthest away from the metatarsals) receiving a double bevel.



## Step 5

The pad is applied directly over the metatarsal heads and secured down over the rest of the area.



## Step 6

All edges of the pad are covered with 2.5cm Hapla Chirofix retention tape. The tape is cut to size with edges rounded before application.



# Replaceable Plantar Cover

## Step 1

Using Hapla 5mm Swanfoam, Zopla strapping CVT, Haplagauz 01 and 12 and Tofoam BX.



## Step 2

A plantar cover is cut exactly as previously shown except that the adhesive side is facing away from the skin.



## Step 3

A toe prop is measured and cut from Haplagauz with a cut of Tofoam BX inserted in the middle, making sure the loop is not too tight (as in Replaceable Toe Prop example). It is positioned around two or three toes and adhered to the adhesive side of the Hapla Swanfoam pad.



## Step 4

A foot strap is measured and cut from Haplagauz 12 and attached to the exposed adhesive surface.



## Step 5

The pad is then covered with Zopla strapping CVT. Applied with a mild transverse stretch, the padding will adopt the natural contours of the plantar surface of the foot.



## Step 6

The pad functions in the same way as a plantar cover adhered to the skin but is removable for longer use.





# Plantar Cover with U

## Step 1

Using Hapla 7mm felt and Hapla band 5cm.



## Step 2

Using Hapla felt a plantar cover shape is cut out and a 45° bevel applied to all edges with a double bevel on the posterior edge. A 'U' shape is cut out over the lesion area.



## Step 3

The pad is turned over (paper side up) and a reverse bevel applied to the 'U' area.



## Step 4

The pad is applied to the foot so that the 'U' removes stress from the selected metatarsal. In this example the 3rd.



## Step 5

Three Hapla band strips are cut, the corners rounded and applied over the pad.



# Plantar Cover Winged

## Step 1

Using Hapla 7mm felt and Hapla band 5cm.



## Step 2

Using Hapla felt a plantar cover shape is cut. A 45° bevel is applied around the whole pad with the posterior edge (furthest away from the metatarsals) receiving a double bevel.



## Step 3

A winged area is removed from the pad to protect either or both the 1st and 5th metatarsal heads from overloading.



## Step 4

The size of the wing is determined by the size of the lesion. The full thickness of the pad encircles the lesion. The pad is turned over (paper side up) and a reverse bevel applied to the winged area.



## Step 5

Backing paper is removed and the pad is placed into position.



## Step 6

Three Hapla band strips are cut, the corners rounded and applied over the pad.



## Step 7

The effect of the wing is to exert pressure onto the metatarsal shafts on weight bearing, thereby redistributing and relieving the pressure from the head of the first ray in this example.



# Plantar Metatarsal Pad

## Step 1

Using Hapla 5mm felt and Chirofix 10cm.



## Step 2

Using Hapla 5mm felt a metatarsal pad is cut. The full thickness of the pad covers both the heads and the shafts of the metatarsals 2, 3 & 4.



## Step 3

The edges of the pad descend between metatarsals 1 & 2 and 4 & 5. The pad is 45° bevelled in these areas as well as the anterior. The proximal border of the pad is double bevelled.



## Step 4

10cm Chirofix is cut and rounded.



## Step 5

The pad protects the middle three metatarsal heads from stress, or it can be used as an alternative to a double winged plantar cover to redistribute load from the 1st and 5th metatarsal phalangeal joints (MTPJ).



# Heel Pad

## Step 1

Using Hapla Swanfoam 5mm and Hapla band 5cm.



## Step 2

Using Hapla Swanfoam a heel shaped pad is cut for cushioning purposes. A temporary heel pad may be used to raise the heel from the ground for conditions such as ankle equinus and limb length discrepancy.



## Step 3

The anterior border of the pad should overlie the anterior border of the calcaneus with the posterior, medial and lateral borders following the borders of the heel. A 45° bevel is added to all borders.



## Step 4

The pad is applied to the heel and Hapla band used to secure.



## Step 5

Hapla band is shaped to fit the posterior heel contour and applied.



## Step 6

A cavity can be introduced into the pad to redistribute pressure away from a particular site if required, e.g. heel spur.



# Hallux Valgus Cavity Pad

## Step 1

Using Hapla 7mm felt and 2.5cm Hapla band.



## Step 2

Using Hapla felt an oval pad is cut out appropriate to cover the Hallux Valgus and surrounding area. The pad is bevelled at 45°.



## Step 3

A cavity is cut out of the centre to accommodate the bony prominence and bursa that may be present.



## Step 4

Hapla band is cut, rounded and applied to secure the padding. The Hallux Valgus cavity pad helps to relieve the pressure by redirecting it onto the surrounding area of the pad. A replaceable pad can be made as follows.



# Replaceable Hallux Valgus Pad

## Step 1

Using 7mm felt, Tofoam DX and 2.5cm Hapla band.



## Step 2

Using Tofoam DX a piece is cut to the appropriate length. An insertion slit is made so that the tube area is left complete to cover the Hallux.



## Step 3

The felt pad is cut as previously shown with a cavity and placed carefully so that the cavity lies over the bony prominence.



## Step 4

Hapla band is cut, rounded and used to secure the pad in place.



## Step 5

The pad functions in the same way as a Hallux Valgus Pad adhered to the skin but is removable for longer use.





# Shaft Pad

## Step 1

Using Hapla 5mm felt and 5cm Hapla band.



## Step 2

Using Hapla felt a strip is cut to the width of the Hallux and  $\frac{3}{4}$  down the length of the metatarsal. The anterior border is crescent shaped and reverse bevelled.



## Step 3

The medial and lateral borders overlap the adjacent metatarsals to accommodate the single bevel. The posterior is double bevelled.



## Step 4

The pad is applied to the foot and held in place with 3 rounded strips of Hapla band.



## Step 5

Shaft pads immobilise painful joints e.g. Hallux limitus/rigidus. The shaft pad shown immobilises the 1st MTPJ preventing dorsiflexion at the joint reducing pain.



# Valgus Pad - D Filler

## Step 1

Using Hapla 7mm felt and 5cm Hapla band.



## Step 2

Using Hapla felt a 'D' shape is cut appropriate to fill the longitudinal arch. The pad follows the line between the 2nd and 3rd metatarsal and is bevelled to 45°.



## Step 3

The pad extends towards but does not cover the 1st and 2nd metatarsal heads.



## Step 4

Hapla band strapping is applied to maximise the binding effect of the pad.



## Step 5

The pad helps maintain the arch and reduces the effects of stress on the soft tissues.





# Replaceable Dorsal Crescent Pad

## Step 1

Using Hapla 5mm felt, Hapla Fleecy web and Haplagauz 01.



## Step 2

Using Hapla felt a 'U' shaped pad is cut, the legs of which extend to but do not cover the nails.



## Step 3

The 'U' shape is reverse bevelled.



## Step 4

Haplagauz is adhered to the felt around the toes and adhered to the self adhesive pad.



## Step 5

The pad is covered with Hapla Fleecy web for comfort.



## Step 6

The pad deflects pressure away from a hammered toe joint.



# Replaceable Toe Prop

Dedicated to the memory of Keith Duncan Hawes who developed this technique.

## Step 1

Using Hapla 7mm felt, Haplagauz 01 and Tofoam BX.



## Step 2

Using Tofoam BX a piece around 25mm is cut from the overlapped part of the material.



## Step 3

Haplagauz is measured and cut to form a loop around the toes. The Tofoam piece is then loaded into an applicator and deposited centrally within the Haplagauz.



## Step 4

Hapla felt is cut and bevelled to the web space of the 2nd and 4th toes and double the distance to the posterior of the toes.



## Step 5

Two holes are pierced in the felt.



## Step 6

Each end of the Haplagauz strap is pushed through the holes and secured on the adhesive surface. The felt is then folded in half and loose edges of Haplagauz trimmed away.



## Step 7

The middle three toes tend to act as one functional unit and it is possible for all three to claw. The pad is used to maintain mobile clawed toes in a straight position.



# Cobra Pad

## Step 1

Using Hapla 7mm felt and Chirofix 5cm.



## Step 2

Using Hapla felt a Cobra pad shape is cut starting posterior to MTPJ 1-4, covering the longitudinal arch area and following the contours of the heel.



## Step 3

The pad is bevelled around the inner border with a reverse bevel on the outside to aid fit into the shoe. The felt is bevelled so that the highest point (unbevelled) is in the position of the navicular.



## Step 4

The pad can be applied to an insole base or directly to the foot and secured with Chirofix.



## Step 5

A strip of Chirofix is applied around the side of the 1st MTPJ around the heel to the 5th MTPJ.



## Step 6

If more support is required an additional 'D' shaped arch filler can be added. A rear foot wedge can also be added if required by extending the arch filler.



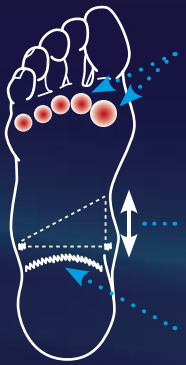
# Temporary Cobra Pad

## Step 1

Palpate the metatarsal heads by gently dorsiflexing each toe to make it easier to find the heads. Gently release each toe keeping the other finger in the position of each head being found, marking each area (with something like lipstick) so that it will transfer to the insole.

Locate the navicular tuberosity which indicates the highest point of the arch and then transfer this mark to the lateral weight bearing area of the foot.

Draw a line on the heel at the junction between weight and non weight bearing shown by a colour difference between the two areas.

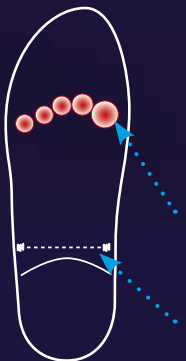


## Step 2

Cut out an insole base to fit the shoe. Put the base into the shoe and ask the patient to stand with their shoe on so that the marks can be transferred.

Remove the insole and use a pen to define the marks more clearly.

Transfer the navicular mark back to the medial side.



## Step 3

Cut out the below shape by marking the outline on a piece of felt. This enables the shape that is required to be cut more accurately. Allow extra material for the outside borders of the pad.

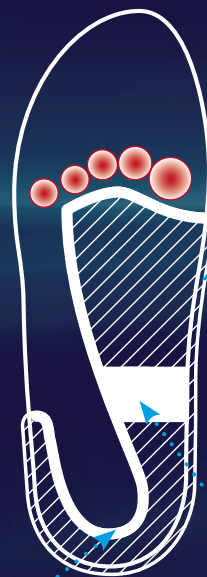
Trim the felt around the outside border by cutting the felt at an angle. This can be demonstrated more easily by looking at the inset diagram showing the pad in the transverse plane.

By cutting the felt at this angle, the pad will fit more snugly into the shoe (as below).



Bevel the felt so that the highest point of the pad (unbevelled region) is in the position of the navicular in order to fill the medial arch.

Material all around heel is bevelled to provide a 'seat' for the heel.



# Low Dye

## Step 1

Using Zopla strapping CVT and Chirofix 5cm.



## Step 2

Apply Chirofix to the plantar area of the foot and centrally across the dorsal of the foot.



## Step 3

With the foot at 90° to the leg and slightly twisted in.



## Step 4

Apply strips of Zopla plaster CVT under the foot. Start at the heel pulling from the outside of the foot to the inside. Overlap each plaster by half its width.



## Step 5

From under the ball of the first MTPJ of the Hallux apply the Zopla Plaster CVT and pull diagonally across the foot.



## Step 6

Pull round the heel and up onto the outer side of the foot under the 5th MTPJ in the style of a figure of eight.



## Step 7

Repeat Zopla strapping across the foot.



## Step 8

Finish with a strip of Zopla Plaster CVT around the side of the foot from the base of the big toe and the little toe.



## Step 9

Low Dye is an anti-pronatory taping method and is used for the management of lower limb musculoskeletal pain and injury.







Hapla, Zopla and Chirofix are the secure bond between you and your patient. Twenty five years of scientific and clinical research have helped develop a unique medically proven adhesive system which delivers the best products and treatment techniques to the Healthcare profession.

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