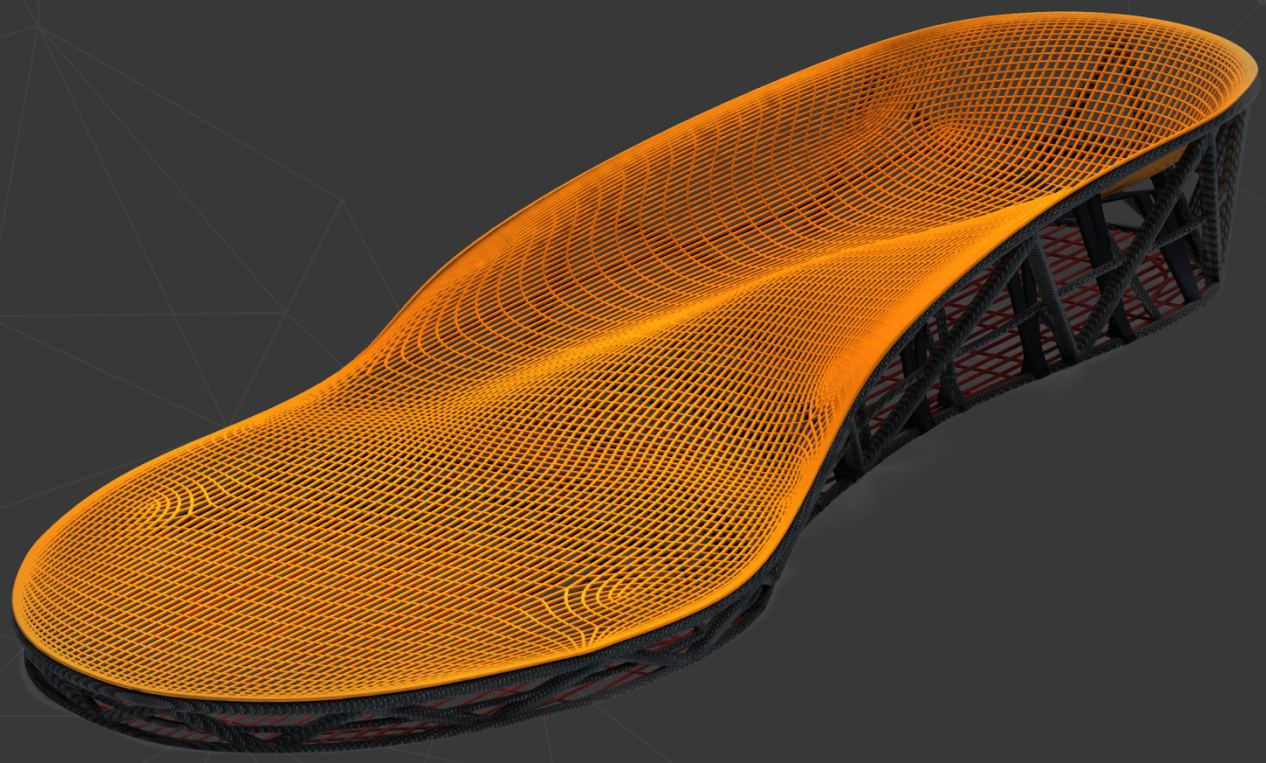
Epione
orthotics

RX Basicx

Orthoses Prescription Guide



RX Basicx Orthoses Prescription Guide

This guide has been created to inform, educate and assist you in selecting an appropriate device/prescription for your patient. Please make sure you study the information in this guide prior to completing the prescription form and submitting an order.

Patient and Clinic details:

Please ensure that all fields in this section are completed in full. Patient weight, shoe size and shoe style are essential requirements to ensure design parameters are accurate.

Shell Section

We offer 2 types of orthotic shell material in the Rx Basicx range: 3D Printed Nylon (Plastic) and EVA.

3D PRINTED NYLON

Our 3D printed devices are manufactured from a reusable and renewable powder using best in class 3D printing technology. With this fabrication process, material waste is kept to an absolute minimum unlike traditional orthotic manufacturing processes (CNC Milling).

Our 3D printed devices share similar material properties with polypropylene.

The product is strong, lightweight and durable.

It can be used to fabricate devices of any rigidity from flexible to rigid and produce any shell geometry (shape of device) that you require.

It is suitable for use in any application.

EVA

EVA is a closed cell foam commonly used in the shoe and orthotic / insole manufacturing industry.

An EVA shell is classically selected when shock absorption or a softer, more forgiving device is required.

Our EVA device features a thin thermoplastic layer at its core and a Plantar EVA wrap (the entire base of the devices is EVA).

With the thin thermoplastic layer at the core of the product, this gives us the ability to modify or refurbish the devices. Previously with EVA devices it was not possible to successfully change coverings / additions or refurbish the devices without damaging the shell.

EVA is easy to modify; with a basic grinding wheel you can modify the shape, profile and stiffness of the device. This can be done in-house and prevent returning the devices to the lab.

Our EVA offering comes in semi flexible (soft) or semi rigid (firm) density.

Shoe choice should be considered when selecting an EVA shell as the added thickness of the device will require more space within the footwear. Ideally the device should only be used in footwear which has a removable footbed and a deep heel counter i.e. sports shoes / trainers.

SHELL PROFILE (width of the device)

Dress

For narrow, neat fitting dress shoes and / or a slender / narrow foot type. The forefoot width of the device will be reduced by 4mm to allow for improved shoe fit.

Standard

For most sensible lacing shoes, sports shoes and footwear with a reasonable width in the forefoot. The standard width profile transverses from the bisection of the 1st metatarsal to the bisection of the 5th metatarsal.

Wide

Offers improved control through increased surface contact. The forefoot width of the device and arch width of the device will be 4mm wider than standard. Suitable only for use in wide, deep footwear.

SHELL RIGIDITY

The shell rigidity dictates the degree of flexibility of the orthotic shell.

A stiffer device will offer less deformation on load (will collapse less when pressure is applied) and therefore it will generate a greater orthotic reaction force (apply more force / push to the plantar surface of the foot).

A device with increased flexibility / reduced stiffness will therefore apply less orthotic reaction force (apply less force / push to the plantar surface of the foot).

As a rough guide:

- A **semi flexible** shell will bend / flex relatively easily in the hands of the practitioner when force is applied.
- A **semi rigid** device will have only a small degree of bend / flex when force is applied.
- A **rigid** device will have no bend / flex when force is applied.

Please note: shell geometry (shape of the shell) and modifications to the shell will alter the stiffness of the device. This includes:

- A deeper heel cup or flanged device
- Extrinsic posting
- A plantar fascial groove

It is important to consider these prescriptive variables when selecting the desired flexibility of the device.

SHELL MODIFICATIONS

Heel Cup Depth

The height of the heel cup of the device.

Select a lower heel cup depth for use in a shoe with a lower heel counter (dress shoe).

Select a higher heel cup depth when greater rearfoot stability is required and shoe heel counter depth allows.

1st Met Cut Out

A cross section of material is removed from the medial aspect of the distal edge of the device.

This modification allows the 1st ray to plantarflex and thus reduces the force required to engage hallux dorsiflexion.

Indications for use: Functional hallux limitus.

Contraindications: Structural hallux rigidus.

Plantar Fascial Groove

A channel is created into the medial longitudinal arch of the shell.

Indications for use: This modification can reduce irritation to a tight / prominent medial band of fascia.

The groove classically measures 6mm in width and 5mm in depth.

Medial Flange

An increase in the height and width of the medial longitudinal arch of the shell.

Indications for use: Increased transverse plane support for a medially deviated STJ axis / excessively pronated foot type with navicular drift.

Contraindications: Footwear which cannot accommodate the extra width profile of the modification i.e. dress shoes.

Lateral Flange

An increase in the height and width of the lateral longitudinal arch of the shell.

Indications for use:

- Supinated foot type
- Chronic lateral ankle instability

Contraindications: Footwear which cannot accommodate the extra width profile of the modification. i.e. dress shoes.

Postings / Corrections

INTRINSIC REARFOOT CORRECTION (INT)

Intrinsic rearfoot correction is a change in the angulation of the heel region of the device. This changes the geometry (shape) of the shell and how the shell applies force to the plantar surface of the foot.

This is not a post (no block of material is added to the plantar surface of the shell in the heel region).

This type of rearfoot shell correction reduces the volume in the heel area of the device and is therefore well suited for shallow heel counter footwear.

The exclusion of a post will however reduce the corrective function of the device. A post will increase the stiffness of the shell and provide a greater force to the plantar surface of the calcaneus.

Consideration must be made regarding shoe fit / shoe selection and the ability of the device to offer a sufficient corrective force.

EXTRINSIC REARFOOT POST (EXT)

Extrinsic rearfoot posting is the addition of a block of material added to the plantar surface of the heel cup.

The inclusion of a rearfoot post acts to stabilise the change in angulation created by the corrections applied.

It will increase the stiffness of the rearfoot of the orthotic shell and generate a greater orthotic force than an intrinsically corrected shell.

The extrinsic rearfoot post is unitised: this means that it is built into the shell and not laminated on. It is therefore more durable and will not compress and lose function over time.

The abbreviation VR stands for varus and the abbreviation VALG stands for valgus.

The application of rearfoot varus posting will generate a supinatory force (reduce foot pronation).

The application of rearfoot valgus posting will generate a pronatory force (reduce foot supination).

As a rough guide:

- For a patient exhibiting symptoms associated with excessive pronation, apply 2-6 degrees of rearfoot varus correction / posting
- For a patient exhibiting symptoms associated with excessive supination, apply 2-6 degrees of rearfoot valgus correction / posting

Please ensure that the tissue / structure in question (the presenting problem) is considered when you apply corrective changes to the orthotic.

The maximum degree of rearfoot correction / posting in the Basicx range is 6 degrees.

FOREFOOT POSTING / CORRECTION

There are 3 types of forefoot correction / posting.

Intrinsic forefoot correction (Int)

When forefoot correction is applied it has the effect of changing the angulation and shape of the distal portion of the orthotic shell.

A varus forefoot correction will lower the distal medial tip of the shell and thus increase the height of the medial distal portion of the orthotic shell (the distal portion of the medial arch will apply a greater force under the 1st ray).

A valgus forefoot correction will lower the distal lateral tip of the shell and thus increase the height of the lateral distal portion of the orthotic shell (the distal portion of the lateral longitudinal arch will apply a greater force under the 5th ray).

The resultant change in the shell geometry (shape) will result in a greater amount of force being applied to the plantar surface of the foot.

Intrinsic forefoot correction does not feature a post, only an angular change to the front portion of the orthotic shell.

The maximum amount of forefoot correction is 6 degrees

Extrinsic forefoot posting (Ext)

Extrinsic forefoot posting describes the application of a block of material to the plantar surface of the forefoot region of the orthotic shell.

Extrinsic varus forefoot posting will have a greater thickness of material underneath the medial plantar aspect of the device.

Extrinsic valgus forefoot posting will have a greater thickness of material underneath the lateral plantar aspect of the device.

The posting is unitised, this means that the posting is built into the shell and not laminated on. The application of extrinsic posting increases the stiffness of the orthotic shell in the forefoot region and therefore will generate more orthotic forces.

Extrinsic forefoot posting is not recommended for use in dress / low volume footwear.

Extrinsic forefoot posting to sulcus. (Ext to Sulc)

Extrinsic forefoot posting / extension to sulcus describes the application of EVA from the distal region of plantar aspect of the device to the sulcus.

Extrinsic varus forefoot posting to sulcus will be thicker on the medial aspect of the post, tapering down to the lateral aspect of the post.

Extrinsic valgus forefoot posting to sulcus will be thicker on the lateral aspect of the post, tapering down to the medial aspect of the post.

Classically used to prolong / increase orthotic reaction forces into the propulsive phase of gait.

The maximum degree of forefoot posting to sulcus is 6 degrees.

Most often used as a 'runners wedge' for runners experiencing medial tibial stress syndrome.

This type of posting is not suitable for dress shoes, only running / sports shoes with removable footbeds.

SKIVING

Skiving describes an angulation or slope on the internal aspect of the heel cup. It can be either on the medial aspect of the heel cup (medial skive) or lateral aspect of the heel cup (lateral skive).

The intended purpose of the medial heel skive modification is to apply a supinatory force to the hindfoot (reduce STJ pronation).

The intended purpose of the lateral heel skive modification is to apply a pronatory force to the hindfoot (reduce STJ supination).

It can be combined with varus or valgus rearfoot posting to apply a greater orthotic reaction force / achieve greater correction.

Skiving is prescribed in 2mm increments to a maximum of 6mm.

As a rough guide:

- Select 2mm of heel skive when moderate orthotic force / rearfoot correction is required.
- Select 4-6mm of heel skive when maximum orthotic force / rearfoot correction is required.

Medial heel skiving is not advised when the patient presents with plantar fasciopathy as the skive will apply increased orthotic reaction forces at the insertional of the plantar fascia.

Heel skiving is not advised when the patient has symptoms consistent with bone bruising or fat pad contusion.

MLA FILL

Medial longitudinal arch (MLA) fill describes the amount of reduction applied to the arch of the device based on the arch height captured in the negative cast or digital foot scan.

Min arch fill is 5% (resulting in a close fit to the patients' foot).

Std arch fill is 15% (resulting in a good contour but not a tight fit to MLA of the patient's foot).

Max arch fill is 50% (resulting in no contact with the MLA of the patient's foot).

For example, if the scan of the patient's foot is analysed and the MLA is 30mm in height and 5% MLA fill is selected, the resultant arch height of the device will be 28.5mm high.

If the scan of the patient's foot is analysed and the MLA is 20mm in height and 15% MLA fill is selected, the resultant arch height of the device will be 17mm high.

If you wish the device to apply a supinatory force (in combination with varus posting, medial skiving, varus correction) to the midfoot and hindfoot, minimum cast dressing is recommended. This can assist in reducing pronation.

If you wish the device to apply a pronatory force (in combination with valgus posting, skiving, correction) maximum MLA fill is recommended. This can assist in reducing supination.

Additions and coverings

Metatarsal Pad

A metatarsal pad is a dome shaped pad made from polyurethane foam. It is placed 4mm over the distal edge of the orthotic shell and transverses from the 2nd MPJ to the 4th MPJ.

Indications for use: MTPJ capsulitis, Plantar plate tear, Neuroma, Bursitis, Fat pad atrophy, MTPJ synovitis, heavy callus over metatarsals 2-4.

Metatarsal Bar

A metatarsal bar is a fan shaped pad made from polyurethane foam. It is placed 4mm over the distal edge of the orthotic shell and transverses from the 1st MPJ to the 5Th MPJ.

Indications for use: MTPJ synovitis, MTPJ bursitis, fat pad atrophy, heavy callus over metatarsals 1-5.

Heel Raise

A heel raise is the inclusion of extra thickness of material added to the rearfoot post of the orthoses.

The raise is unitised (build into the shell).

Indications for use: Bilaterally for achilles tendinitis, unilaterally for structural LLD.

Considerations: Must have a deep heel counter in shoe to accommodate the increased thickness of the device.

Note: Can only be applied to an extrinsic rearfoot post.

Reverse Mortons' Extension

A reverse Morton's extension is a 3mm cork pad that extends from the distal edge of the orthotic plate to the sulcus of metatarsals 2-5.

Indications for use: Plantar fasciitis, Plantarflexed 1st ray, Sesamoiditis, Functional hallux limitus, Mild Hallux limitus, 1st MPJ bursitis, Heloma durum / callus present on 1st MPJ.

Considerations: Not to be used in patients with Hallux rigidus.

Mortons' Extension

A Morton's extension is a 3mm cork pad that extends from the medial aspect of the distal portion of the orthotic shell to the sulcus of the 1st MPJ.

Indications for use: short 1st MPJ, dorsiflexed 1st ray, hallux rigidus, 2nd MTPJ pathology secondary to poor loading / function of the 1st MPJ.

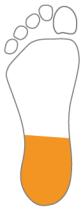
Considerations: In the absence of 1st MPJ pathology, this addition should be used with caution as it can reduce / restrict normal motion at the 1st MPJ.

Lesion Accommodation

A lesion accommodation is a 3mm cork pad that extends from the distal edge of the orthotic shell to the sulcus. A 'U' shaped cut out is made to relief pressure on the affected site.

Indications for use: MPJ heloma durum, MPJ ulceration, MPJ capsulitis, plantarflexed MPJs.

Heel Cushion



A heel cushion is a 3mm Poron pad which lines the heel cup region of the orthotic shell.

Indications for use: Calcaneal bruising, heel fat pad atrophy, calcaneal oedema, heel spur, plantar fasciitis.

Heel Aperture

A heel aperture is a circular cut out of the heel portion of the orthotic shell. It is back filled with Poron to create a soft central calcaneal region.

Indications for use: Heel spur, calcaneal bursitis, insertional plantar fasciitis, reduced fat pad in central calcaneal region.

Forefoot Cushioning

A 3mm Poron extension from the distal edge of the orthotic shell to the sulcus.

Indications for use: To provide cushioning to metatarsal heads 1-5, MPJ capsulitis, MPJ bursitis, fat pad atrophy, excessive forefoot callus.

TOP COVERINGS

Durafit

A premium microfibre material similar in feel to leather.

Durable, moisture absorbent and fast drying.

Available in Pink, Purple, Orange and Black.

Suitable for all applications.

EVA

A closed call rubber / foam material.

Durable and easy to clean.

Available in Black, Orange Swirl and Blue Swirl.

Not advised for patients who experience blistering or suffer from hyperidrosis due to the high friction component of the material.

Neolon

A closed cell rubber material coated in a black nylon skim.

Durable and provides cushioning / shock absorption.

Available in 1.5mm and 3mm thicknesses.

Great top cover for sporting applications.

BOTTOM COVERING MATERIAL

All sulcus length and full length top covers have a Cambrelle bottom cover as standard.

Cambrelle is a thin woven fabric material with excellent abrasion resistance and moisture wicking properties. It is therefore an ideal material for bottom coverings.

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