Formthotics™
Foot Science

SuperShoes and Foot Orthoses: Compatible or Conflicted?

What Makes a SuperShoe “Super”?

SuperShoes combine several innovations:

- Carbon fibre plates (CFP): Used as rigid levers to stiffen the shoe and influence load transfer.
- Highly responsive midsoles: Lightweight, hyper-compressive foams that absorb impact and return energy.
- Forefoot rocker geometry: Designed to aid propulsion and reduce muscular demand in late stance.

Importantly, it’s not the plate alone that delivers performance – it’s the synergy between plate and foam. In fact, the Nike Vaporfly 4% was so named after lab findings showed a 4% improvement in running efficiency compared to traditional racing flats.

World Athletics and Regulation

By 2020, World Athletics intervened to regulate shoe design, setting limits of:

- 40 mm maximum midsole stack height
- One embedded plate per shoe

These rules aimed to prevent unfair advantage while allowing innovation. Today, every major brand has entered the SuperShoe arena, and they are no longer elite-only tools – they're seen at mass-start races, local parkruns, and training grounds alike.

Orthoses in SuperShoes: A Clinical Assessment

Fit Constraints

SuperShoes typically feature:

- Low-volume interiors
- Knit or elastic uppers
- Curved, rigid soles with forefoot emphasis

As such, traditional orthoses – especially rearfoot-controlling models – are often incompatible. Devices that control rearfoot motion may be redundant or counterproductive, adding unnecessary bulk and compromising fit.

Prescription Strategy

If orthoses are indicated for a runner using CFP footwear, prescription must be rethought. Consider:

- Minimising rearfoot material
- Focusing correction to the medial forefoot
- Trimming or flattening the arch profile
- Using low-profile or low-volume devices

Formthotics® can be adapted successfully for use in SuperShoes. With extensive rearfoot reduction and judicious forefoot wedging, they can deliver meaningful correction without compromising the shoe's engineered function.

Tip: Where possible, recommend patients trial shoes with their orthoses in-hand at purchase. Fit and compatibility vary significantly between brands.

Clinical Caveats and Considerations

MTPJ Function

The rigid rocker design reduces first MTPJ dorsiflexion:

- Pro: May help patients with hallux rigidus or joint pain
- Con: Reduces windlass effect in those who benefit from normal toe-off mechanics

Achilles Tendon Load

Midfoot/forefoot striking – encouraged by SuperShoe geometry – can increase eccentric demand on the Achilles:

- Patients with tendinopathy may experience flare-ups.
- A model with a higher heel offset may reduce strain.

Who Actually Benefits?

Not all runners see the same return on investment:

- Fast-paced runners (> midfoot strike) gain the most
- Rearfoot strikers or recreational runners may see limited improvement
- Shoe cost often exceeds USD $500 – not justifiable for casual runners

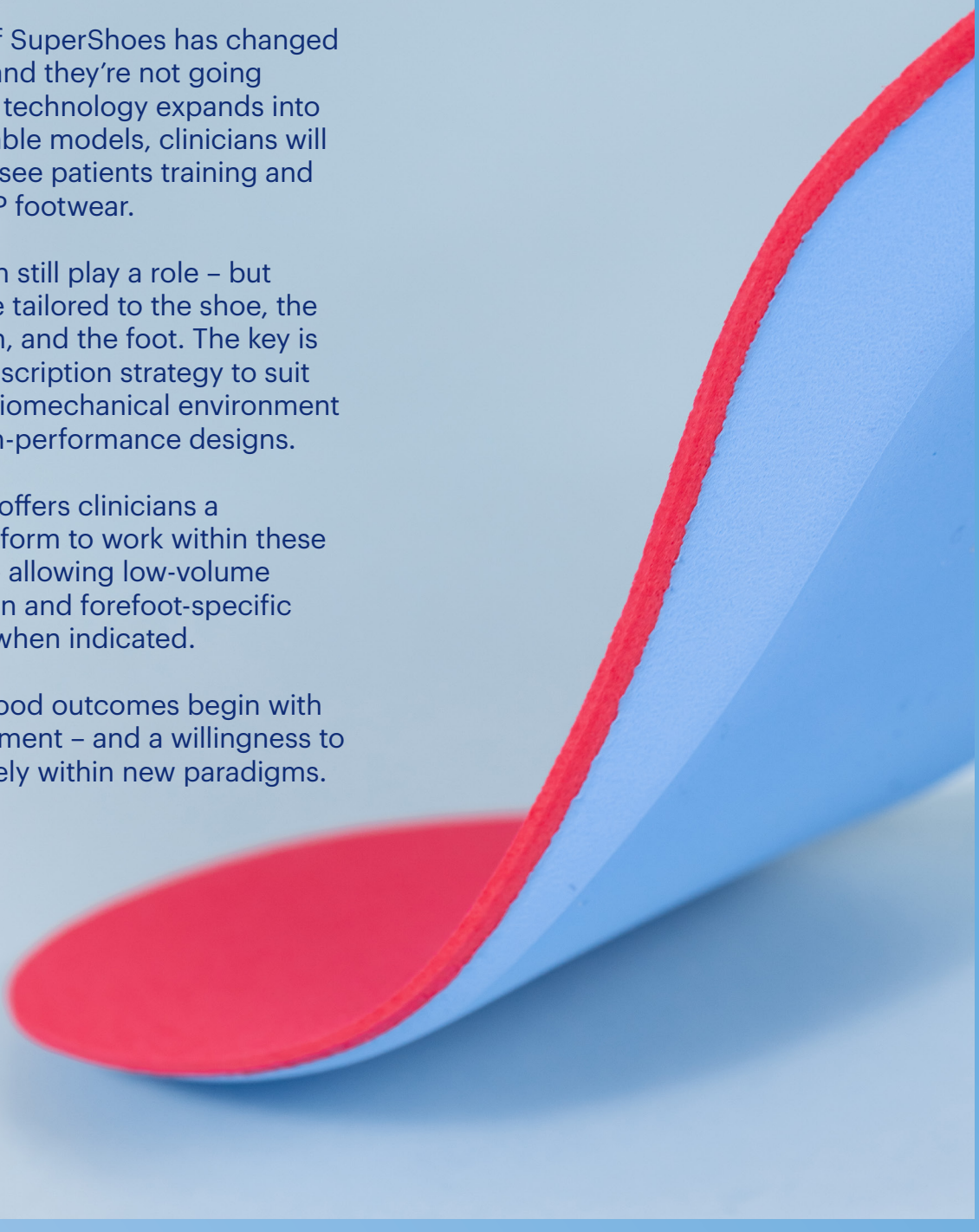
Conclusion: Technology is Here to Stay – So Let's Adapt

The arrival of SuperShoes has changed the game – and they're not going away. As the technology expands into more affordable models, clinicians will increasingly see patients training and racing in CFP footwear.

Orthoses can still play a role – but they must be tailored to the shoe, the strike pattern, and the foot. The key is adapting prescription strategy to suit the unique biomechanical environment of these high-performance designs.

Formthotics offers clinicians a versatile platform to work within these constraints – allowing low-volume customisation and forefoot-specific corrections when indicated.

As always, good outcomes begin with good assessment – and a willingness to work creatively within new paradigms.



Formthotics™
Foot Science

26 Dakota Crescent, Wigram,
Christchurch, 8042, New Zealand

www.formthotics.com