

The Problem

The average person will walk the equivalent of **five times** around the Earth in their lifetime.

75%

of Americans will experience foot pain in their lifetime

30 min.

of standing is enough to trigger measurable foot and back pain

1 in 10

runners will develop plantar fasciitis

Athletes and active individuals need a **convenient** way to prevent foot injury and enhance their recovery.

Research and Requirements

Vibrational massage

improves circulation and reduces muscle stiffness and soreness* (Fig 1).

- Targeted arch vibration enhances blood flow and supports recovery (Fig 2).

Key Requirements

- Shoes fit **AA-EE** widths
- Battery life \geq **1 hour**
- Supports weight of up to **300 lbs**
- Noise \leq **40 dB**



Figure 1: Plantar fascia region.

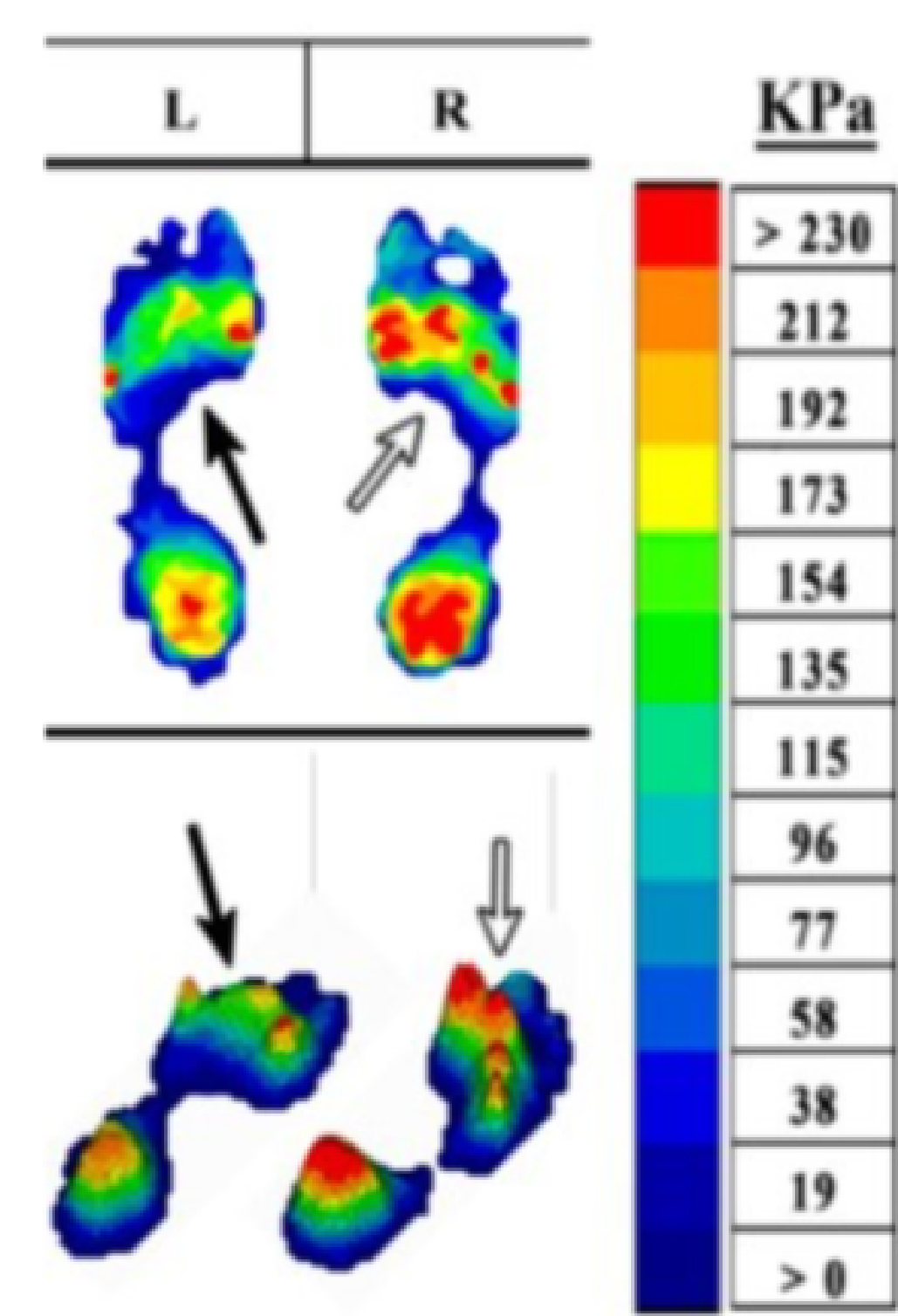


Figure 2: Plantar pressure distribution.

Our Solution

Thermoplastic Polyurethane Midsole:

- High elasticity and durability
- Tunable stiffness via additive manufacturing
- Reflexology-based node geometry
- Injection molding for mass production

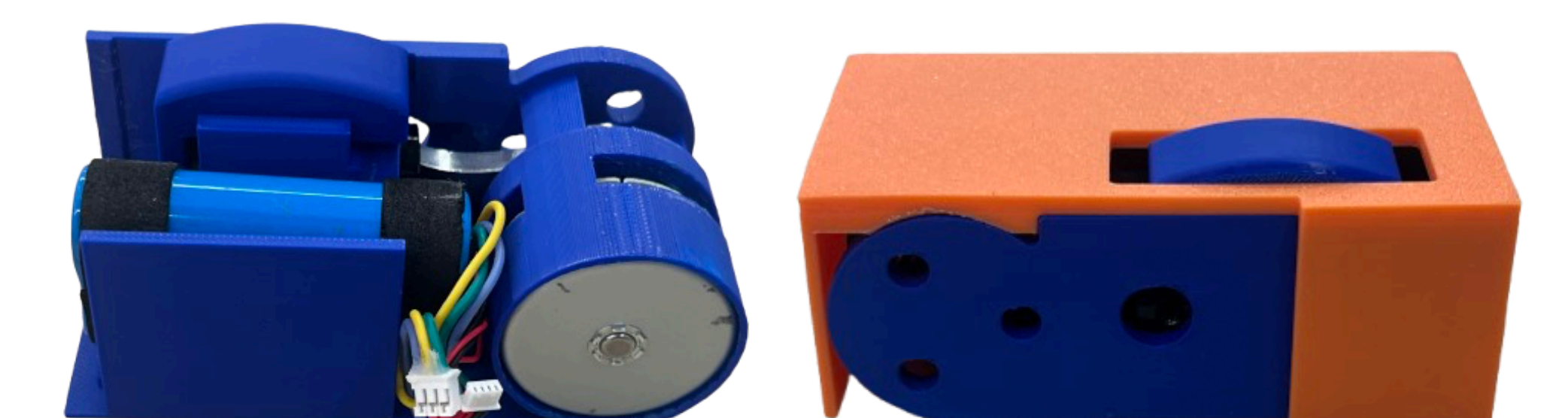
Polyurethane foam insole

- Castable & adjustable softness
- Mass manufacturing via injection or compression molding



Mechanical Motion:

- DC motor driven piston
- Cap attachment massages directly along the plantar fascia



Prototyping Journey

