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PopSole™: A customizable insole for rehabilitation of foot injuries

ID: 4463

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People's feet are hidden in shoes. Foot injury is therefore not transparent. Pin-point foot pain is common and caused by conditions such as calluses, warts, foreign bodies, ulcers, foot procedures and surgery impacting over 80M US patients/year. Patient compliance is poor with current devices such as surgical shoes, walking casts, crutches and roll-a-bouts. They are inconvenient and obvious. Noncompliance may make the foot injury worse, encourage a limp that will ultimately introduce a new injury like knee, hip or back pain and one's return to work and/or quality of life will ultimately suffer. PopSole™ is immediately customizable, can reduce time off work, and allow patients to wear normal shoes.

Technology Description

PopSole™ is a cost effective, fully customizable off-the shelf insole that can easily fit in sensible shoes or in currently available surgical shoes and/or walking casts. This is not an orthotic. It is waterproof and can be placed in a slide for use in the shower. The device allows the provider to mark the area of pain, select the areas of the insole to "pocket-out" while still providing support to the rest of the foot in a highly customizable fashion. This device is intended to improve compliance with off-loading, reduce post-operative pain, maximize healing and encourage early ambulation and return to function.

Advantages

- Customizable form, allowing for pressure relief in selective areas
- Insole design fits in standard footwear
- Waterproof design allows for use in the shower
- Cost-effective solution for patients who cannot afford custom diabetic shoes ($100/pair)
- Modifiable arch design for patients with high-arched feet
- Immediately available at site of service
- Improve patient compliance

Applications

- Off-loading of the foot during recovery from foot and ankle procedures
- Off-loading of foot ulcers for wound management

Stage of Development

Prototyping Stage; Development of an initial functional prototype for benchmark testing and identification of necessary adjustments. Based on the results of the initial prototype, the next step is small batch production to cover a pilot study

IP Status

US Provisional Patent 62/734,295

Notable Mentions

Pitt Ventures First Gear NSF I-Corps Site Award (IIP1734751, $3,000)

First Gear Final Presentation Runner-up Award, Chancellor's Early Stage Commercialization Fund ($5,000)

CMI's Early Stage Medical Technological Research and Development 2018 PILOT FUNDING PROGRAM ($22,500)

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