

RecoveryOne

Automatic Intelligent Trigger Point Therapy

PENNVENTION 2015

The Problem

WHAT IS A TRIGGER POINT?

Trigger points are discrete, focal, hyperirritable spots located in a taut band of skeletal muscle. They produce **pain locally and in a referred pattern** and often accompany chronic musculoskeletal disorders. **In many ways they can be viewed as muscle knots.**

WHO CARES?

Trigger points are extremely common in **athletes, recreational fitness enthusiasts, and individuals with chronic pain** / musculoskeletal disorders such as fibromyalgia, low back pain, and sciatica. **They can lead to widespread pain, discomfort, and biomechanical deficiencies.**

WHAT IS THE PROBLEM?

Trigger points are extremely **difficult to identify and treat due to their chronic and subjective nature.** The most effective methods to treat trigger points are deep massage, specifically applying **consistent pressure to a point for 30 – 60 seconds in multiple waves.** This is extremely difficult to do by oneself and consistent visits to chiropractors and massage therapists can prove to be expensive. Furthermore, there is **no quantifiable measure** to determine whether a trigger point has been effectively treated. Current trigger point devices take the form of foam rollers, the theracane, massage sticks, golf balls, and other manual devices that have not advanced in years.

RecoveryOne is device that automatically treats trigger points that develop over time in muscle tissue. The device treats trigger points by applying consistent pressure to a small area and also utilizes EMG technology to measure muscle tension before and after treatment for quantifiable results. Potential target markets include athletes with acute or chronic sports injuries, general injury rehabilitation, and individuals suffering from musculoskeletal disorders such as fibromyalgia, sciatica, and low back pain.

Recovery One Overview

The RecoveryOne will strap on to various parts of the body and apply a pre-determined amount of pressure (level 1 – 10) for a specified amount of time.

There will be no work required by the individual beyond strapping on the device and pressing an activation switch.

The device will also employ existing surface EMG technology to measure muscle activity / tension before and after treatment giving the individual or caregiver quantifiable results

WHERE IS THE INNOVATION?

Treatment for muscle disorders has not improved in years due to the subjective nature of symptoms and inability to effectively measure outcomes

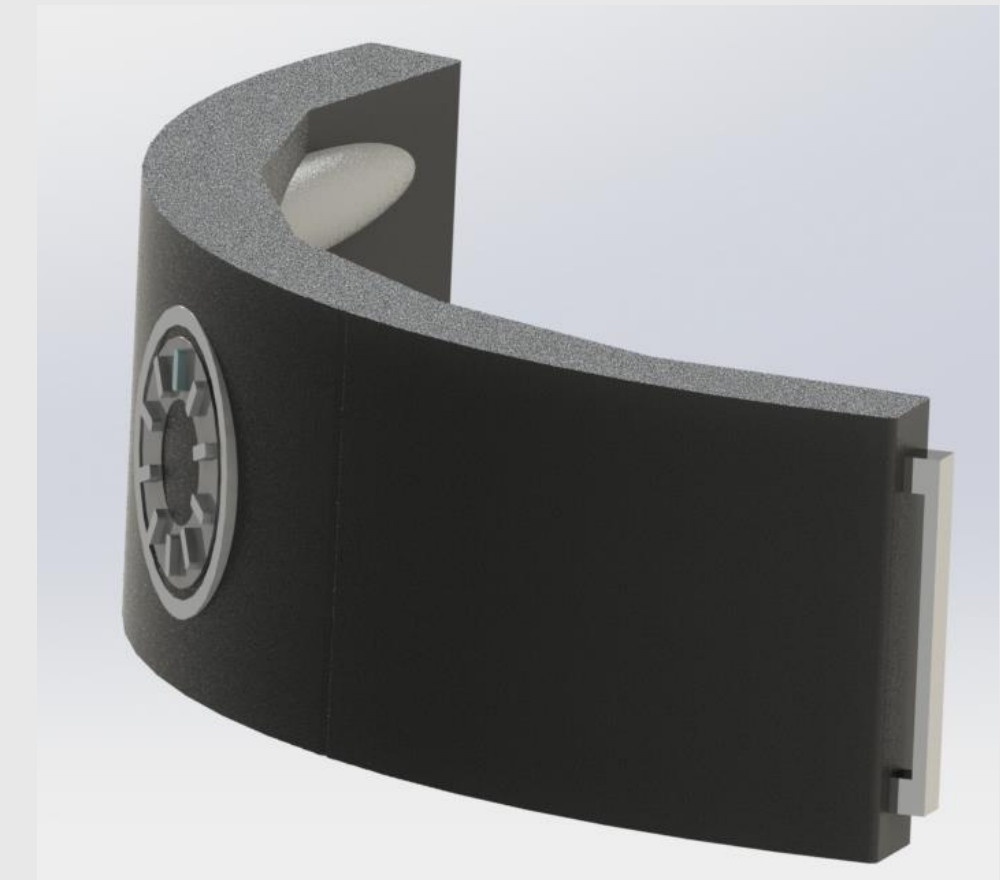
However, chronic pain and sports injury is a tremendous problem in the United States and beyond

Introducing an automated element to treatment can improve treatment adherence and efficacy

Combining this with quantifiable measurements will be a large leap in the treatment of muscle disorders

- Automatic pressure application
- Custom settings
- EMG tech to measure tension
- Treats all areas w/ adjustable band attachment

RECOVERYONE (initial rendering)



CURRENT DEVICES

- Require user effort
- Highly Manual
- No Quantification
- Need for multiple products



Market



50+ million gym memberships in the US

Assume 5 - 10 million are weekend warriors / cross-fit enthusiasts

Constantly looking for rehab / recovery measures

Currently use foam rollers and other trigger point devices

Demand for more sophisticated effective treatment methods

60,000+ chiropractors in the US

Patient population skewed towards individuals with chronic conditions

Familiar with trigger point treatments

Require in-office visits to treat

Could utilize device in-office and prescribe to patients for at home use

Currently use hands to treat

7,500 sports rehab facilities in the US

Patient population often fitness enthusiasts committed to returning back to physical activity

Utilize foam rollers and other manual devices to treat trigger points

Adherence often an issue due to current labor intensive nature of trigger point treatment

100M Americans suffer from chronic pain

Accounting for close to 600B annually in treatments and lost productivity

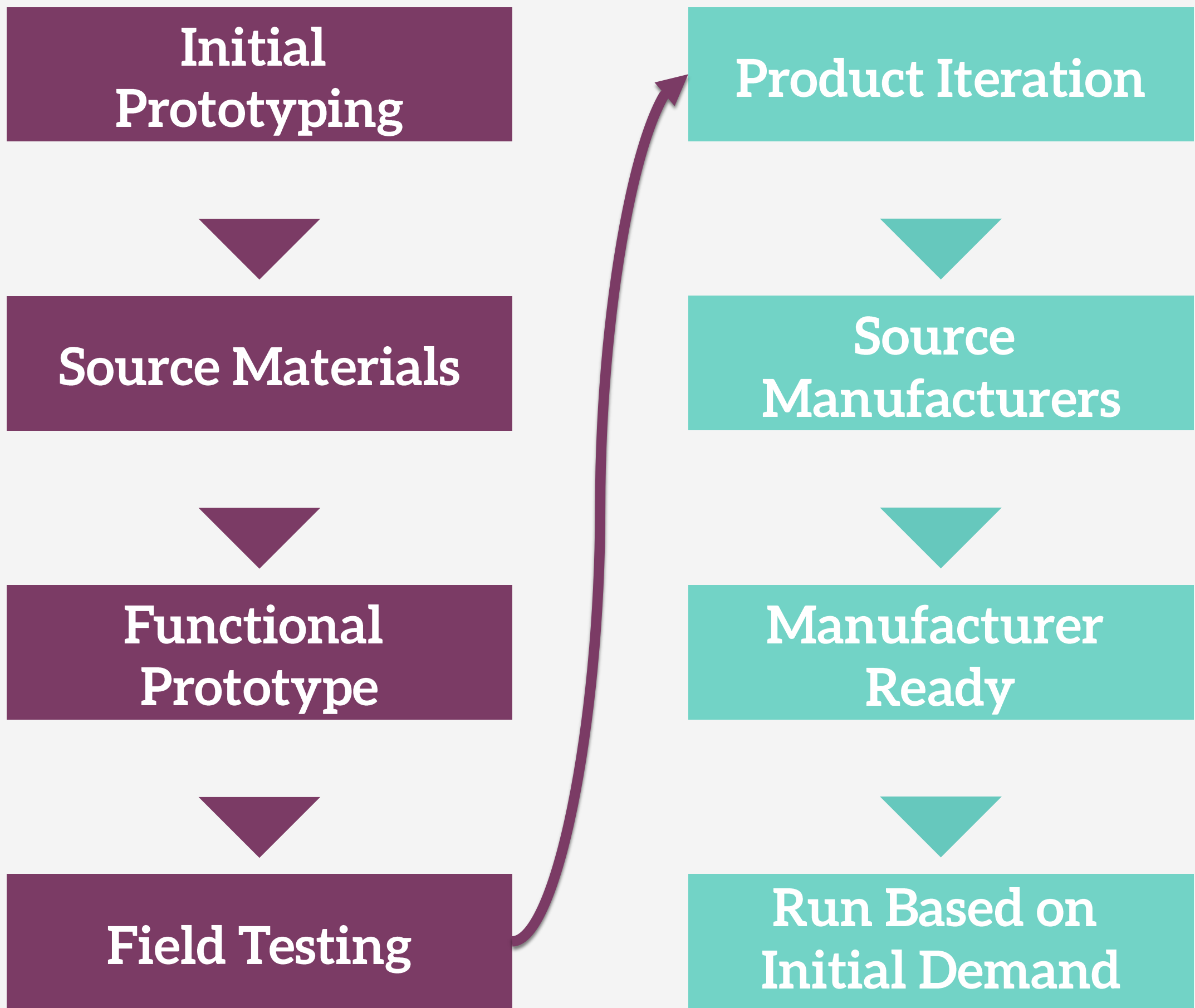
RecoveryOne can help with certain conditions in this category such as sciatica and low back pain

In Phase II of development providers can also monitor adherence through remote monitoring of usage

We have spoken to stakeholders in each of these markets to validate the need for RecoveryOne

Status and Next Steps

Costing Estimates (6 Month Period)



Initial Prototyping \$5,000

Materials \$3,000

Functional Prototyping \$15,000

Field Testing \$2,000

Per Unit Est.: \$35

Total Costs: \$25K

◆ 6 Month Period

◆ Beyond 6 Months

Our team



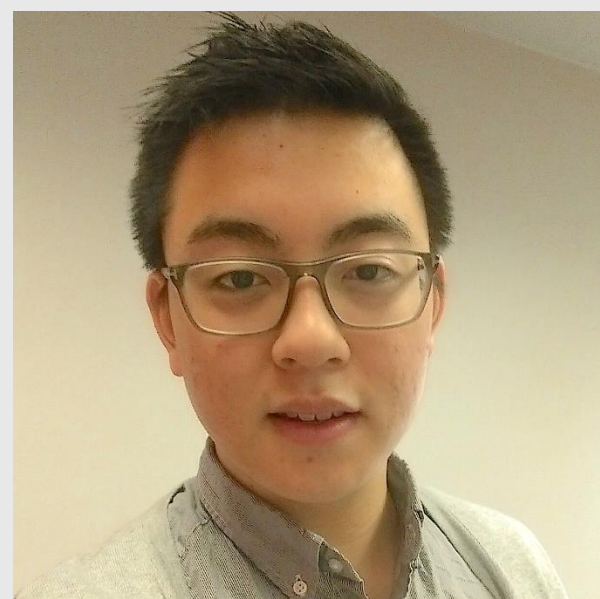
Rishi N. Reddy – Wharton HCM MBA '16

**Founded and Exited DigiPath Solutions
(digital diagnostics company)**

**Interim CEO Patient Updater (mobile HIPAA
compliant messaging)**

Technology M&A Investment Banking

**Focus: Product vision, marketing and
distribution, consumer applications**



Thomas Eng– Mechanical Engineering SEAS '17

**Summer Research Assistant (University of
Pennsylvania) – Energy Design Impact**

**Hovercraft Engineer – Efficient engineering
design of hovercraft technologies**

**Focus: Product design, prototyping, material
analysis**



**Nicholas Demes – Mechanical Engineering SEAS
'17**

**Summer Mechanical Engineering Intern- Power
Solutions International (Industrial Engines
company)**

**Student-Athlete (Football) – First hand
experience with trigger point therapy in
athletic setting**

Focus: Prototyping, sourcing materials, testing