Compliance Monitoring Foot Mirror

Overview

Diabetic patients are affected by a condition known as peripheral neuropathy. This condition causes them to lose sensation in their extremities, especially their feet. Due to this loss of sensation, they may have a cut or other injury on their foot that could develop into a foot sore that causes the need for leg amputation. In order to prevent this situation, patients are advised to check their feet twice daily; however, they often times neglect this advice.

Objectives

In order to remedy this problem within the diabetic population, a design of a foot mirror that encouraged compliance needed to be constructed.

Approach

- Initially, we gathered customer needs by consulting with our sponsor and the American Diabetes Association
- Next, we generated possible ways to tack compliance with the advice of our advisor
- Before selecting the final concept, we did a patent search looking for other compliance enforcing foot mirrors and found none.
- One we selected our design, we did a preliminary CAD drawing showing what our design would look like
- Next, we built a prototype, and made another prototype afterwards with a few tweaks
- Finally, we validated our design by running it through performance tests
- These performance tests were evaluated on a test fail basis

Outcomes

- The sponsor will receives a unique approach to tracking patient compliance
- The design allows a patient to interact with their doctor in a more effective manner
- The device allows a patient to care for themselves and maintain a normal lifestyle