

# Tongue Trainer

Final Report

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## **Abstract:**

*The purpose of our project is to improve upon another group's previous work in creating a therapeutic device for people with swallowing disorders. This device will allow patients to improve and extend their lives by strengthening their tongue through proper exercise.*

*Last semester, we started making a working prototype with a boil and bite mouth guard as our mouthpiece and a two project boards. A pressure sensor was connected to one of the boards and communicated wirelessly via a IR signal the pressure exerted on the sensor to the other project board that provided audio and visual feedback to the user. This feedback was made to provide the user information in a simple manner as to how well they are doing. This semester we have improved on this working prototype having the characteristics described in our proposed solution.*

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## ***Problem Statement***

The purpose of our project for the senior design class is to make a device to facilitate tongue strengthening exercises to help people who suffer from dysphagia. Dysphagia is the impairment or inability to swallow properly creating a decrease in the quality of life. Millions of elderly are affected by this problem, making dysphagia a very significant disorder. Our design is a modification of a previous device that is currently used in clinical settings to give feedback to patients during their tongue exercises. The device needs to be usable by the patients in their homes. Our final design is a two part, wireless system, including an oral apparatus that senses the pressure exerted by the tongue on the palate of the mouth, and a second apparatus that displays the information in a simple, comprehensible manner.