

# Mechanical Design and Development of Therapy Tools for Migraines

## Introduction

The Therapy Tools For Migraines aims at using such materials that will lessen the effects of migraine and other stress factors. Migraines are an illness that deal with the brain. The innovation will palliate the headache by first using methods that will massage the back of the head. In addition, green LED lights have been put into the innovation to add on to the innovation. Green light was specifically used in the innovation because the green light, according to Health.com, has proved to help lessen the effects of migraines.

## Materials & Methods

In order to build the prototype of the Therapy Tools, materials were needed. The basic layout of the innovation depended on the head piece found inside the helmet. Then, a blue pad was incorporated, which would be placed at the back of the head piece. This blue pad will have grey metal balls, which will play a role in lessening the effect of the migraine. The metal balls will be especially helpful because of the three servos that will be attached to these three metal balls. The servos have a mounted rack on them to hold them in place. These pink pieces were constructed with the help of 3D printing. Then, these pieces were glued onto the servos. The wires that are connected to servos and the light visor will be effectively tied up using cable ties, in order to prevent tangling of wires. It is important to take caution because motors and electronics were implemented.

Furthermore, the second component of the innovation is the green LED Lights. The purpose of the lights are to calm the brain. These lights will be located within a visor.

## Results

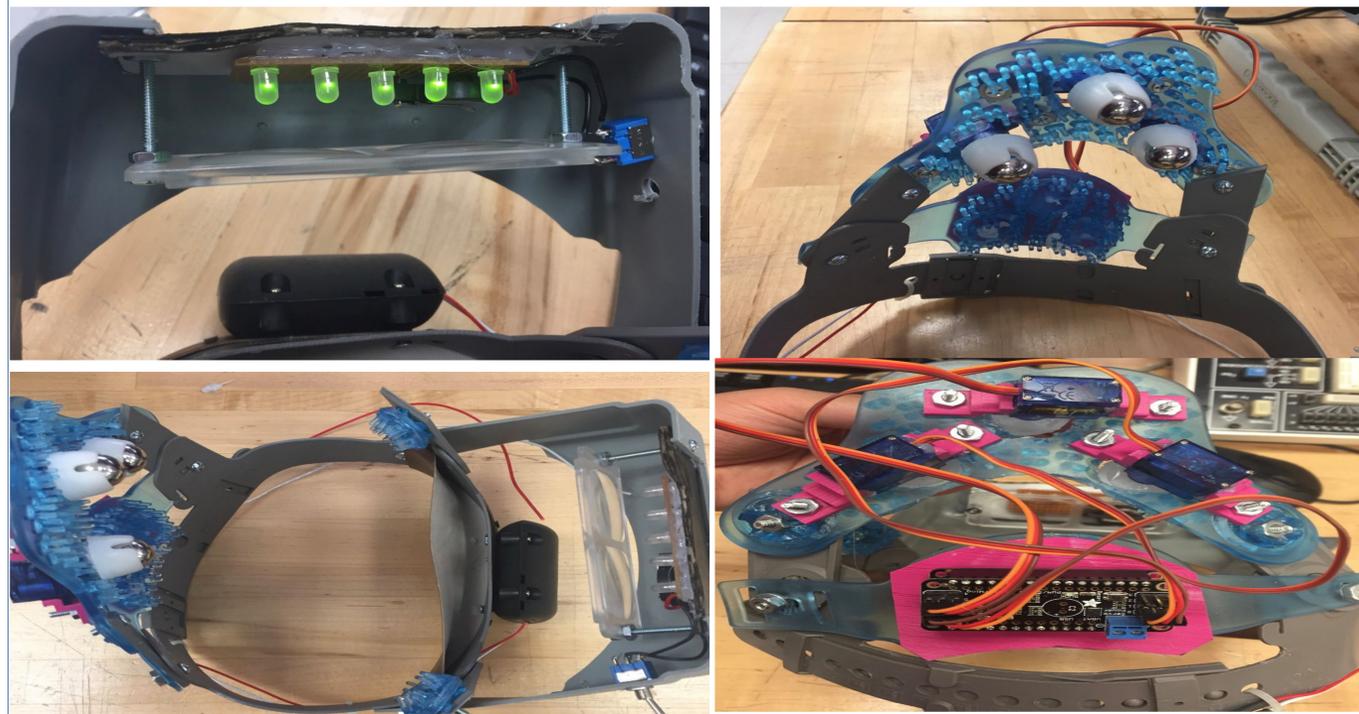
Due to the fact that the innovation is a work in progress, experiments have not been fully achieved with people giving their opinions on the Therapy Tools for Migraines. However, outside resources and research will be used to learn more about the effects of green LED Lights on migraines.

In a research done by Harvard University, the use of green light is effective in alleviating the pain associated to the migraines. Keeping this in mind, in the future, perhaps, other light colors that lessen the effects of migraines could also be researched. Experiments could be organized in which one person is assigned different colors. After being exposed to different colors, the person (who was assigned the colors) will be asked about their opinion on which light they believe would be the most effective in lessening the pain of a migraine. After repeating this experiment with multiple people, results will be gathered regarding the best light, along with green light, that works to palliate pain from migraines.

## Conclusion

Whether it be from experience or from listening other people's experiences, it can be generalized that migraines are a painful illness. Therapy Tools for Migraines should be used for lessening the symptoms of migraines because of various components. These various components are grey metal balls and servos attached to a blue pad, along with green LED Lights and a Visor. However, since the innovation is a work in progress, a definite conclusion cannot be formulated.

## Design Prototype



The prototype (bottom left) of the Therapy Tools for Migraines has two components that have been designed for the palliation of migraine effects. As seen, the blue pad has grey metal balls and servos (right), are used to physically reduce the pain of the migraine. The second part used in the Therapy for Migraines is LED Light (top left). The color green has been specifically used for the innovation. There is also a visor attached to the innovation.

## Future Modifications

As of now, the prototype has not been paired with a bluetooth system. The purpose of the bluetooth system is to allow the user of the therapy tool to effectively operate it. The difference in the innovation among other market items is that the user can simply control the tool from their phone, as opposed to manually operating their tool with their hands.

One of the purposes of technology, on a general basis, is to ease and reduce challenges of people performing daily tasks. Therefore, technology is an ever changing field because along with people, people's needs also change. In order to accommodate with people's changing needs, technology also alters. Thus, in order to modify the Therapy Tool for easy use, bluetooth system will be used. Due to the use of electronics and bluetooth. the user of the innovation will not have to manually maneuver their innovation, and can simply lessen the effects of their migraines with a touch.

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