

# Research Ideas for One Armed People

MECHENG 5682.02 | SP 2018 | Design Project Research Presentation  
Team 3: Matt, Evan, Kenny, Logan, Andrew

## SHADOWING

- From our shadowing we learned that tasks could be broken down into two categories:

### 1. Impossible with one arm:



- Trying to put on a necklace with a clasp and trim fingernails are examples of things that could not be done with only one hand. Oftentimes, a different body part (mouth or feet) would be used as a substitute for the missing limb, but to no avail. These tasks are perfect for a new product or innovation.



### 2. Difficult/inefficient with one arm:

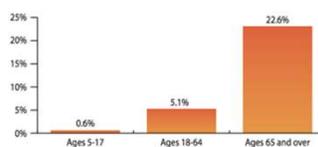
- The second category of tasks, including using an Xbox controller and opening a water bottle, were possible but took a long time or were very ineffective. These tasks are still prime candidates for a new product or innovation.



## BACKGROUND RESEARCH

- Our background research consisted of attempting to understand the demographics of individuals missing an arm. Additionally it included finding current products for individuals without an arm and attempting to do everyday tasks ourselves, without using an arm.
- From the research we found that a small percentage (8.99%) are born missing an arm. Additionally, the main cause of missing an arm is trauma (77%) which leads to an amputation.
- We researched examples of products that can be used in everyday life tasks. Some of these include a pepper shaker, bottle opener, and even a device to help zip clothing.

FIG 13. People with Ambulatory Disability, by Age Group, 2015



- This graph portrays that as age increase, so does ambulatory disabilities.



- These are three examples of products designed to help individuals that are missing an arm. The first is a pepper shaker, then a bottle opener, then a product designed to help zip clothing.

## DAILY TASKS

- Our team researched products that are associated with daily routine activities. These include everyday tasks such as getting dressed to taking medication to playing video games.

## AREAS OF OPPORTUNITY

- We had problems with the majority of daily activities that we tried and researched.
- The situations that were completely impossible without current solutions are:
  - Tying shoe laces
  - Putting on a watch
  - Clipping nails
  - Putting on a necklace
  - Clapping
- Based on the market there are plenty of products that do not have a sufficient solution, or have a solution that could be further improved upon.

## REFERENCES

[https://disabilitycompendium.org/sites/default/files/user-uploads/2016\\_AnnualReport.pdf](https://disabilitycompendium.org/sites/default/files/user-uploads/2016_AnnualReport.pdf)  
<http://www.livingonehanded.com/about/>  
[http://www.livingonehanded.com/wp-content/uploads/2013/12/414vxGhcmtL\\_SY450.jpg](http://www.livingonehanded.com/wp-content/uploads/2013/12/414vxGhcmtL_SY450.jpg)  
[http://www.livingonehanded.com/wp-content/uploads/2013/12/41eChroeMtl\\_SX425.jpg](http://www.livingonehanded.com/wp-content/uploads/2013/12/41eChroeMtl_SX425.jpg)  
<http://www.livingonehanded.com/wp-content/uploads/2013/12/21r-VahSvIL.jpg>