

# What if

we applied **game concepts** to engage patients?

The world demographics are changing, leaving fewer younger people to take care of a growing elderly population.

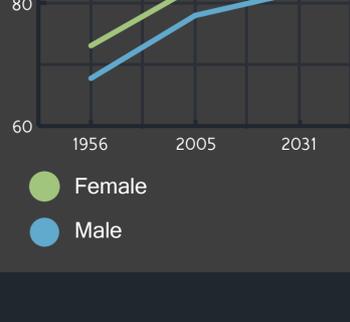
It is projected that by 2031, 1 in 5 people will be a senior (over 65)



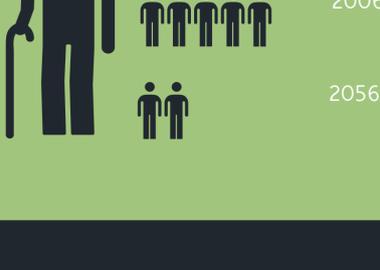
Demographics are shifting to an older population



Life expectancy is increasing...



While the number of working age people (20 - 64) for every senior is decreasing



In our clinic, we treat patients with

## Dysphagia,

(Difficulty Swallowing)

present in **22%** of those over the age of 50



in Canada

between **33,000** and **67,000**

individuals are affected by Dysphagia related to Stroke, Parkinsons Disease, Multiple Sclerosis, and ALS each year

Some of the **consequences** of swallowing impairments

Aspiration  
Starvation  
Dehydration  
Airway Obstruction  
Depression  
Pneumonia  
Social Isolation

Dysphagia is **present** in

**61%** of adults admitted to acute trauma centers

**41%** of individuals admitted to rehab settings

**30%-75%** of patients in nursing homes

**25%-30%** of patients admitted to hospitals

But, when the demand for services in rehabilitation and management of chronic conditions is increasing...

How do we continue to provide quality, **cost effective** services to our patients with such devastating circumstances?

**Games for Health** provide an innovative solution to **engage** and **motivate** patients in their own health, while offering an avenue for **social connectivity**.

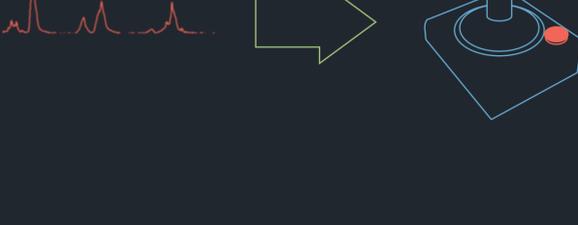
Paired with mobile health devices, games for health can help us **meet the projected gap** in services, improve access to high quality, **cost-effective** health services, and capture **back-end analytics** to drive decisions regarding the effectiveness of certain therapies

When patients are **engaged** in their own **healthcare** they have been shown to have better health outcomes and incur **lower costs**

## sEMG

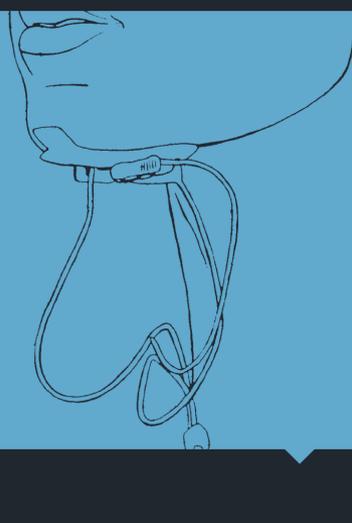
(surface electromyography)

sEMG is used as a therapy tool in swallow rehabilitation by offering patients a visual feedback of their precision and effort while exercising



## Portable Swallowing Therapy Game

So let's apply game concepts to swallowing therapy! sEMG can be used to collect precise and standardized information about patient progress. The signal is translated into a game, motivating patients to complete their rehabilitation exercises, while engaging them to achieve maximal effort



It might just lead to...



Patients Engaged in their own **health**



Clinicians with better **clinical outcomes**



Academics with better **conclusions** on treatment effectiveness and dose

## References

Statistics Canada: <http://www.statcan.gc.ca/pub/82-229-x/2009001/demo/int1-eng.htm>

ASHA: <http://www.asha.org/research/reports/dysphagia/>

CASLPA: [http://www.caslpa.ca/system/files/resources/swallowing-disorders\\_five-reasons.pdf](http://www.caslpa.ca/system/files/resources/swallowing-disorders_five-reasons.pdf)