I’m One of The Lucky Ones!

My Exoskeleton Resume

- SCI Injury July 26, 2011
- Inpatient/Outpatient Kessler 2011 & 2012
- First walk in exoskeleton walk February 14, 2012
- Took part in 7 month study at Kessler walking 3 times per week
- Became of Ekso Bionics Ambassador December 2012
- Became Ekso Bionics employee March 2013
  - Director of Investor Relations 2014
- Purchased my own exoskeleton September 2013
  - I was allowed to walk at home under an IRB study
- Have tried ReWalk and Indego exoskeleton
- Have taken over 1 million steps in an exoskeleton

The Problem With Sitting and/or Not Walking

- The Human Body was not designed to be sitting for extended periods
- Prolonged sitting/immobilization can result in costly secondary complications
  - Muscle Atrophy, Diminished Cardio and Pulmonary Function
  - Skin Breakdown, Spasticity, Bowel & Bladder Issues
- Weight bearing, over-ground ambulation has been shown to potentially mitigate many of these problems
- Additionally there are many psycho-social benefits to standing
  - Nothing beats speaking at eye level
- It is estimated that costs to address conditions from pro-longed immobilization amount to $40,000 to $180,000 per year

Exoskeletons Present One Possible Solution

THE PROBLEM

Each year, an estimated 12-14K people suffer a spinal cord injury and 795K people suffer a stroke in the US.

THE IMPACT

CLINICAL

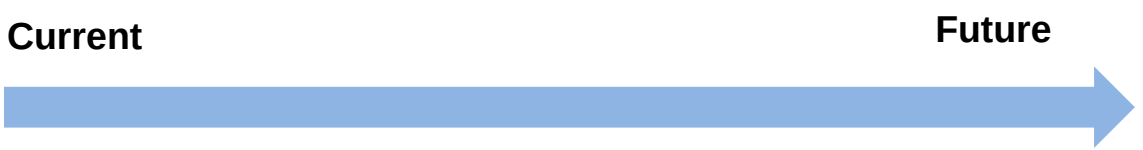
- 50% of stroke victims experience hemiparesis or reduced mobility
- 1/3 are unable to walk without assistance
- Victims of SCI are 2-3 times more likely to die prematurely

ECONOMIC

$1.5 – $4.6M

Average lifetime cost per SCI individual

ONE SOLUTION



Rehabilitation robotic exoskeleton for the clinic

Robotic exoskeleton technology across the continuum of care from inpatient to home mobility & wellness

Exoskeleton Benefits As A User

- I experience lower spasticity levels
  - Usually lasts 4-6 hours following a walking session
- I feel less neuropathic pain
  - Usually lasts 4-6 hours following a walking session
- My walking speeds improved dramatically in the first 4-6 months
  - Learning curve went from 300 steps to 3,000 steps in an hour
- I feel stronger in my upper body & notice better tone in my legs
- I experience fewer UTI's relative to time without consistent exoskeleton walking
- I can break a sweat
- I feel more positive about a future with my SCI injury
- I'm the coolest guy in the gym

Where is Exoskeleton Technology Today?

- Great Tool For Inpatient and Outpatient Gym
- Great Tool to Treat Secondary Complications
- Great Tool for Early Mobilization
- They Are Not Personal Mobility Devices YET (PMD's)
- They Are Not 100% Safe Without a Spotter
- They Are Far Too Expensive For Most Hospitals
- They Are Far Too Expensive For Most People
- Very Few Have Been Reimbursed By Insurance Companies
- The Technology Needs More Time to Develop
  - Gait speeds, stairs, curbs, user interface, safety
  - Think 1985 Cell Phone

How Do Exoskeletons Become Ubiquitous?

- Prices Have To Come Down
- Technology Has To Improve
  - Smarts (software)
  - Hardware (move to lighten the load)
- Make Them Safe To Fall (Not From Falls)
- More Clinical Studies
  - Larger Studies, Broader Studies
- Get These out of The Clinic and Into The Home and Community
- Capital
  - Smaller Companies are Having Tough Time Economically
  - Likely That Larger Companies Come in and Buy Small Companies, or Internally Develop

Exoskeleton Companies From Around The World

- Parker Hannifen
- ReWalk
- B-Temia
- Bionik Laboratories
- Ekso Bionics
- Cyberdyne
- Honda
- Samsung
- Rex Bionics
- Lockheed Martin
- Alter G
- AXO Suits
- 20 Knots Plus
- Againer
- Bama Teknoloji
- Bionic Power
- Bioservo
- Daiya
- Exhaus
- Exoatlet
- Focal Meditech
- Gobio Robot
- Gogoa Mobility
- GoXtudio
- Hocoma
- Hyundai
- Innophys
- Japel
- Kinnetek
- Marsi-Bionics
- MedEXO Robotics
- MediTouch
- Mitsubishi
- Ottobock
- Walkbot
- US Bionics

Thank You