



Mobility For The Aged

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1. Progress

Agenda

2. Desired Direction

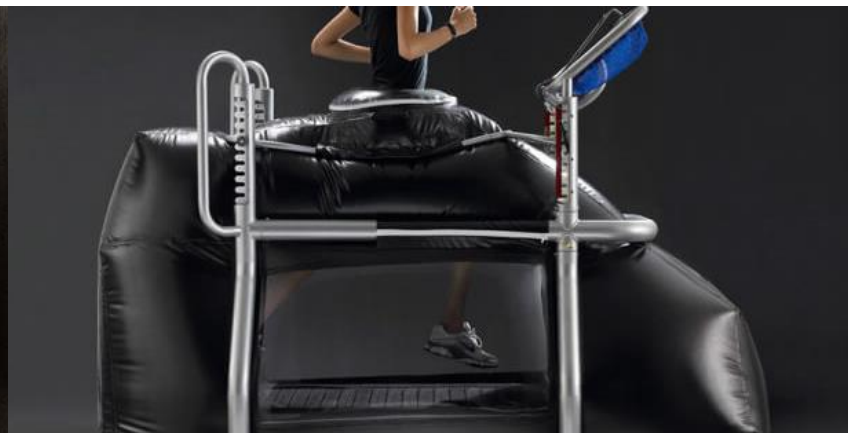


Still Working on it.
Collating Data

Water



Air



Robotic



Market Research
Function



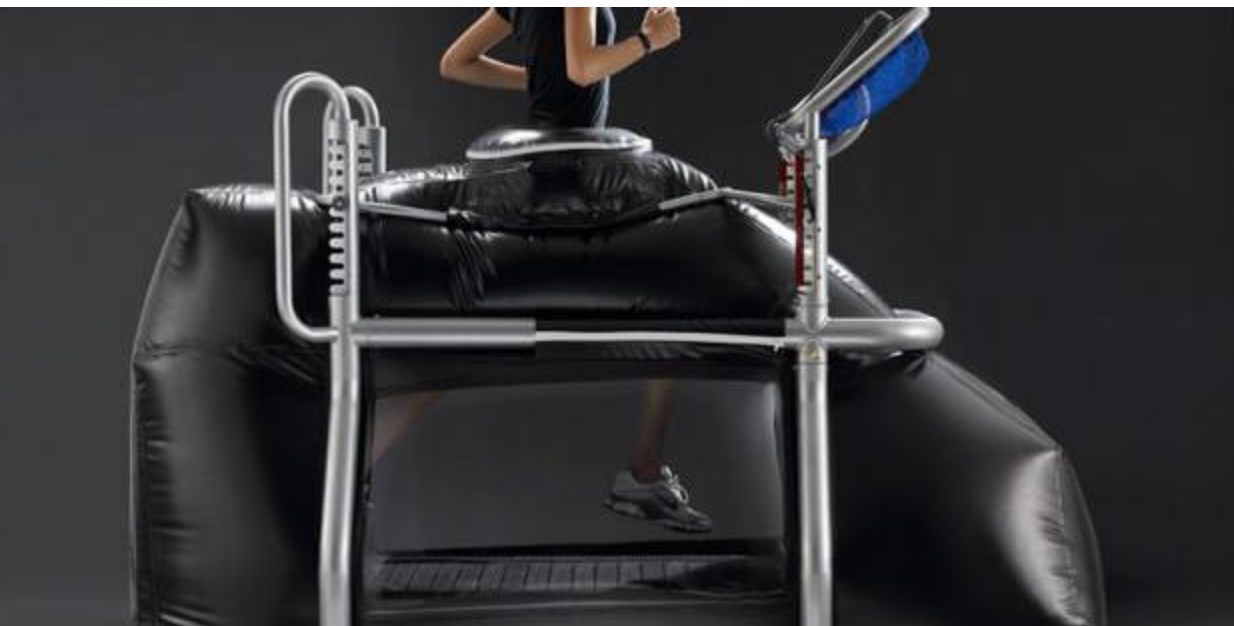
HydroWorx

Some of the benefits of aquatic therapy with a HydroWorx pool include the following:

- Faster recovery from surgery or injury
- Increased flexibility
- Better range of motion
- Improved cardiovascular stamina
- Lessening of symptoms associated with fibromyalgia, osteoarthritis and other chronic conditions.

Results concluded that aquatic therapy is beneficial to achieve threshold-intensity training while **lowering the stress** on the joints that is caused by land running.

AlterG – Anti Gravity Treadmill Pro 200 Plus



AlterG's Precision Unweighting Helps Your Athletes:

- Undertake more challenging rehab programs, achieving better results and return to competition in a shorter time-frame
- Increase training volume, without increasing the risk of injury
- Maintain and even gain fitness while they rehab
- Stay engaged and motivated with objective, data-driven feedback

Users can **achieve up to 80% reduction of full body weight impact**, adjustable in as little as 1% increments, providing a truly customized and dialled-in work out and rehab experience.



A Wearable Robotic
Walking Device

The AlterG Bionic Leg

The AlterG Bionic Leg enables:

- Advanced mobility training with more repetitions of higher-level exercises
- Rebuilding of the communication pathways between the brain and the body
- More focus by the therapist on the patient's quality of movement
- Greater stability for the patient, protecting them from potential falls and injury
- The patient to build confidence in their physical therapy program and recovery

From increasing your overall function to improving your walking and balance, the Bionic Leg is an effective tool to **keep you moving on the road towards your recovery and general wellness.**



Inflatable Concept:
Can be used in anti gravity proposal.

Concept Development

- a) How can we lift the elderly up?
- b) How can we prevent the bones from rubbing against each other?
- c) How can we cushion the impact?



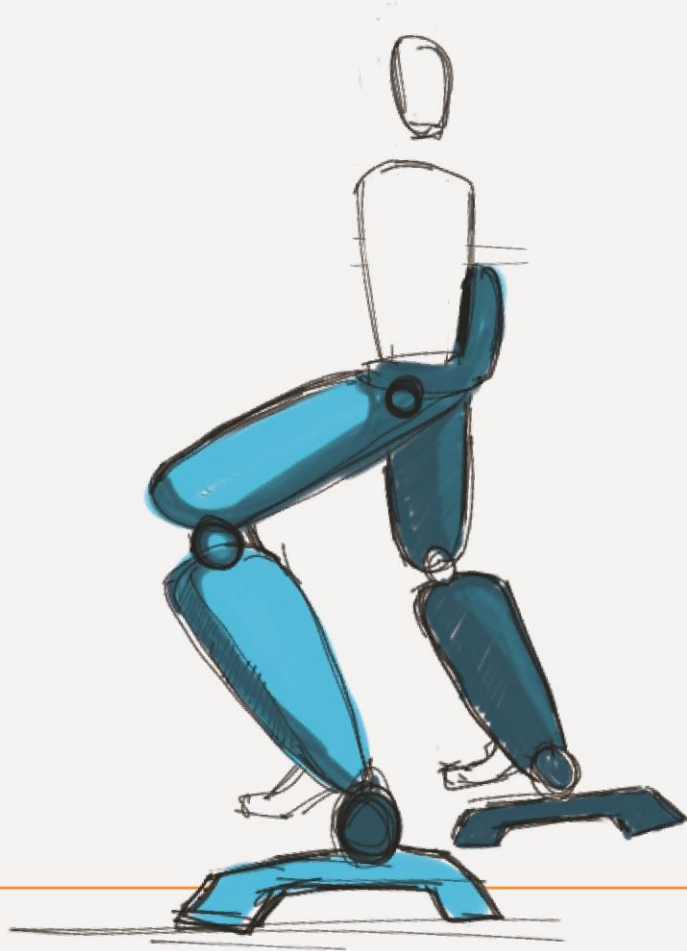
Observation Sketches

Leg Mock-up is created to experiment the joint connection.

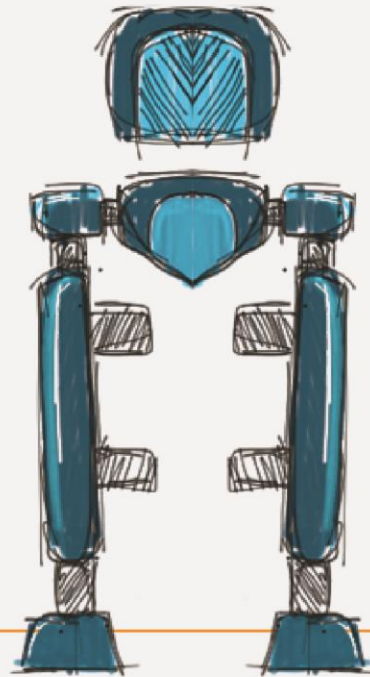


ENVISIONING THE FUTURE

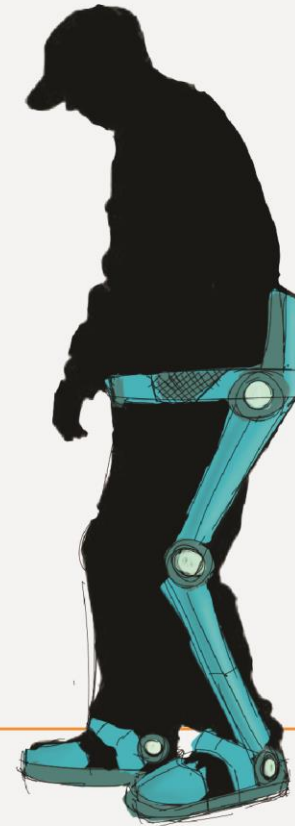
This is how I visualise my mobility device to be like.



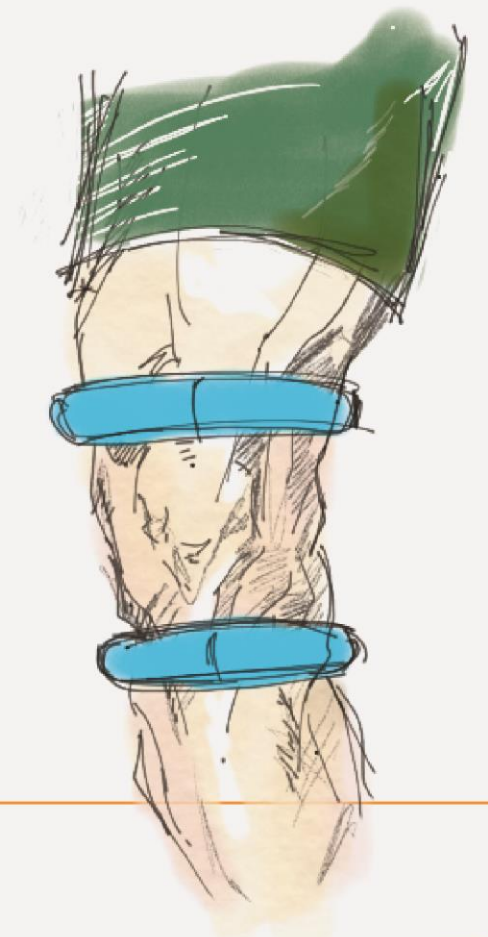
Function



Usability

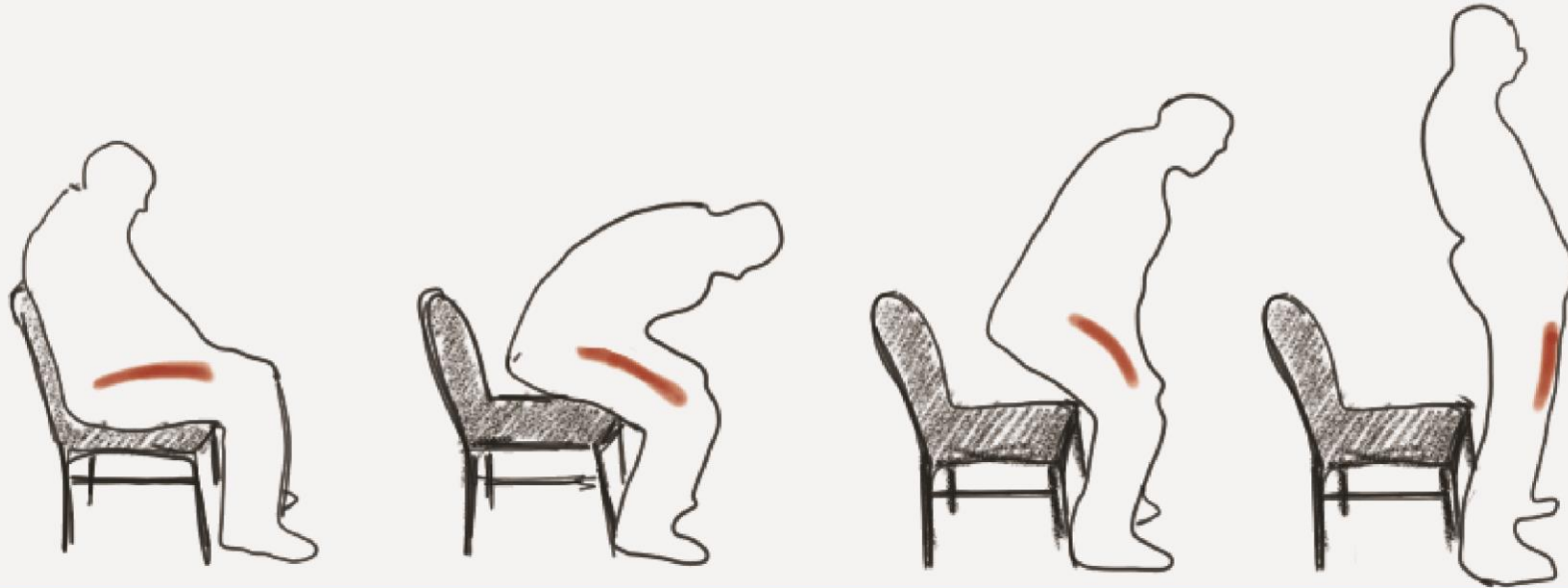


Aesthetic



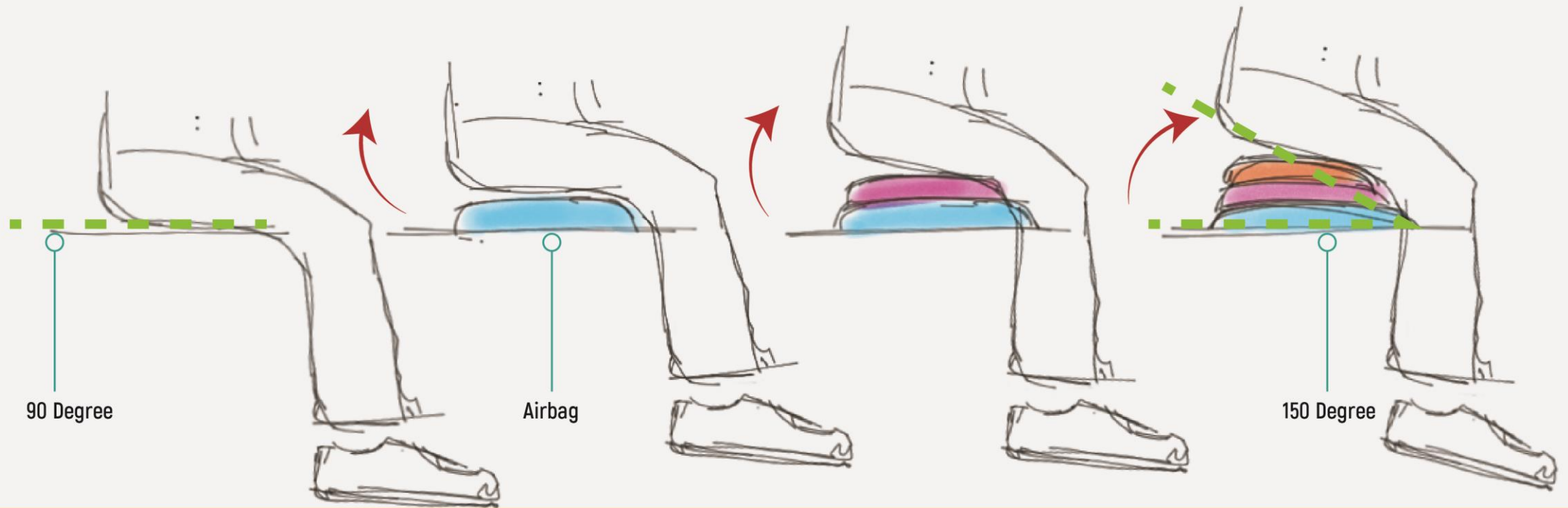
MUSCLES DETERIORATION

They spent more of their time on the chair and be comfortable instead of moving around.
Eventually, this lead to weaker muscles group due to deterioration of their muscles
as they use their muscles lesser than usual.



INFLATABLE CONCEPT

When the user wants to stand up from the sitting position, the device will pump in air into the airbag and elevate the user.



Step 1:

The user lift himself up, the weight sensor detects this motion. Air starts to pump into the air bags.

Step 2:

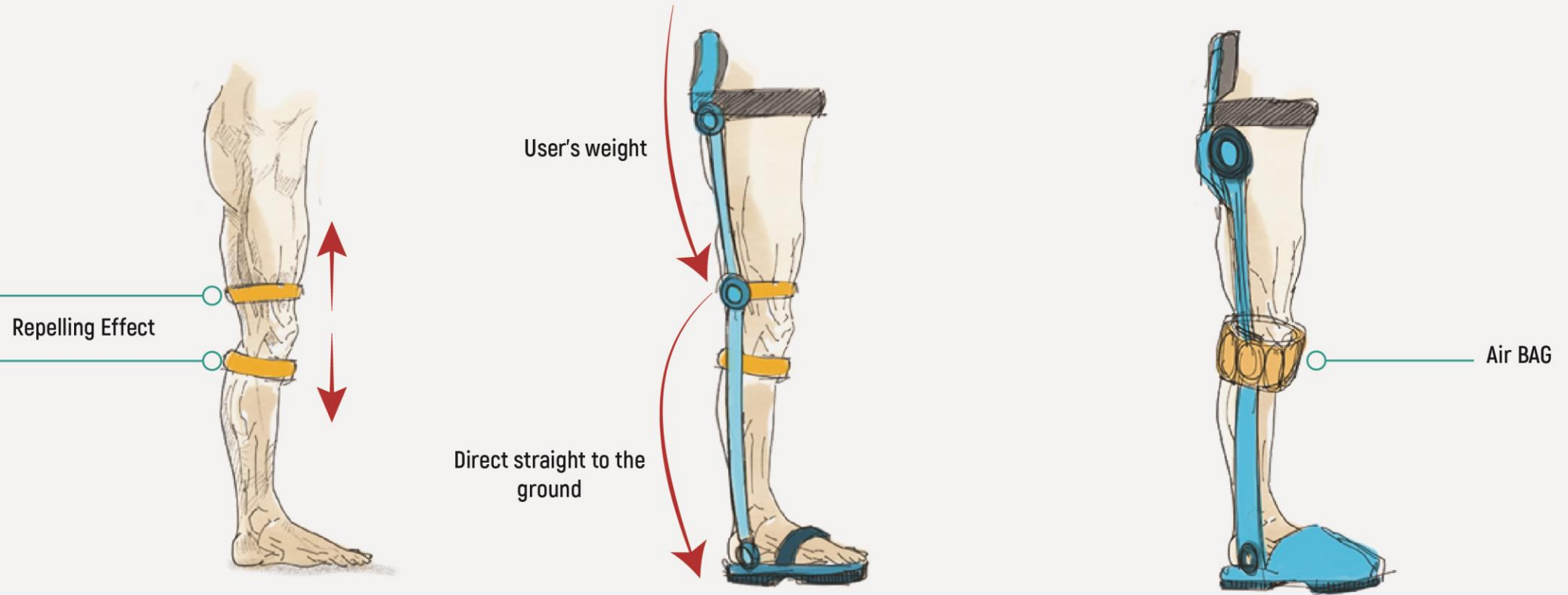
The tilting degree will be up to **60degree** so as to allow the user to have enough strength to pick himself up.

Step 3:

The user body is tilt forward which relieved him from using strength to lift up his entire weight

MAGNETIC CONCEPT

To prevent the bones from rubbing against each other, the magnetic field is used to repel the joints away from each other.



Repelling Effect

The magnets are placed in same direction to create the repelling effect.

Impact

The user's weight will be directed straight to the ground.

AIRBAG:

To create anti-gravity effect, the air bags are compressed the knees which lift the user weight.



Magnet experiment is conducted.

Observation:

Magnet tends to attract each other even having the repelling effect.

Comment:

Can be adjusted if it is electromagnetic.

Desired Direction

So what is missing?:

- a. Mobility Level Chart
- b. Detailed Aspiration to generate storyline
(Missing persona image, More detailed desires)
- c. Graphic information of the Environment.
(Understanding the context and constraint)

Problem Statements:

- a. How can we make mobility easier for the target group? (General)
- b. How can we prevent the bones from rubbing on each other?
(Functional Aspect)
- c. How can we reduce the contact of the floor to the bone?
- d. How can we cushion the impact?
- e. How do you design the device with Dignity?
(Social Aspect)

Desired Direction

Design Objectives:

a. Is to get the user from one point to another point.

Point A to Point B

b. Relieve them from experience pain.

Opportunities:

a. Environment will be changed to cater to the elderly needs.

(Infrastructure, road conditions, Buildings)

b. Integrating functions with the environment.

(Product to environment)