

## Dysphagia Therapy Assisting device

## [Winning Project]

complete & final product could not be shared

# MECHATON INTERNATIONAL PROGRAM 2019, Beer Sheva, Israel



# [Winning Team]

Aisha Anam (G.L.)

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Elijah Asher

Alex Kirilov

*Special Thanks to :*

*To all Respected Professors from Princeton University, Singapore University of Technology & Design & SCE Israel, & Soroka Medical Center, Israel for their constant & valuable feedback and suggestions during Mechaton.....!*



School of Design  
अभियांत्रिकी डिजाइन

IIT Bombay

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# IDC Golden Jubilee

## 1969–2019

### Design Conference and Alumni Meet

#### 2,3,4 January 2020. VMCC, IIT Bombay

IDC Golden Jubilee Design Conference and Alumni Meet on 2nd,3rd,4th January 2020 at VMCC IIT Bombay.

### academics

**Design Program**  
 Admission for M.Des. Programmers for the Academic Year 2019-20  
[http://www.dh-ids.ac.in/admission/m-des-program](#)

**IED 2019:**  
 Undergraduate Common Entrance Examination for Design 2019  
[http://www.ied.ac.in/](#)

**D Program**  
 M.D. Program Admission for the Academic Year 2018-2019

### events

**National Workshop: "Ego Safe Design"**  
 21st to 23rd November 2019 at IDC IIT Bombay

**Designing for Children with focus on "Play and Learn"**  
 8-9 December 2019 at IDC School of Design, IIT Bombay, Mumbai, India

**Typosgraphy Day 2020**  
 25th, 26th February and 1st March 2020 at Belval, Lebanon

### news

**Student News**

**Ms. Alsha Anam, 2ND Year MDes Interaction Design Student of IDC School of Design, and her team won the design challenge in MECHATON International Programme 2019** (1) By Dr. Shree, Israel

.....

**IDC alumna Sumanth Par got the gold medal for his animation film "Crafts of a Father" at the Digipix Asia 2019 in Taipei**

### faculty positions

IDC invites applications for New Faculty Positions  
[http://www.idc.iitb.ac.in/NewFacultyPositions/index.aspx](#)

### IDCians in Places

One in every four graduate alumni from IDC have leadership positions in industry/ firms/ organisations/ institutions.....Read more

### student projects

### publications

IIT Bombay

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September 11

Ms. Alsha Anam, Final Year M Des. Interaction Design Student of IDC School of Design, and her team won the design challenge in MECHATON International Programme 2019 conducted by SCE Shamoon college of Engineering, Be'er Sheva, Israel. Students from various countries & institutions had participated to take the design challenge floated by different companies, organisations and medical centers based in Israel. Her team consisted of engineering students from SCE and UTC, USA and the product was designed for the rehabilitation department, Soroka Medical Centre, Israel. The design solution was much appreciated by the jury and is being listed for further procedures to take it forward.

Anurag Sharma, Snir Barak and 138 others

1 Comment · 11 Shares



# Dysphagic Swallow



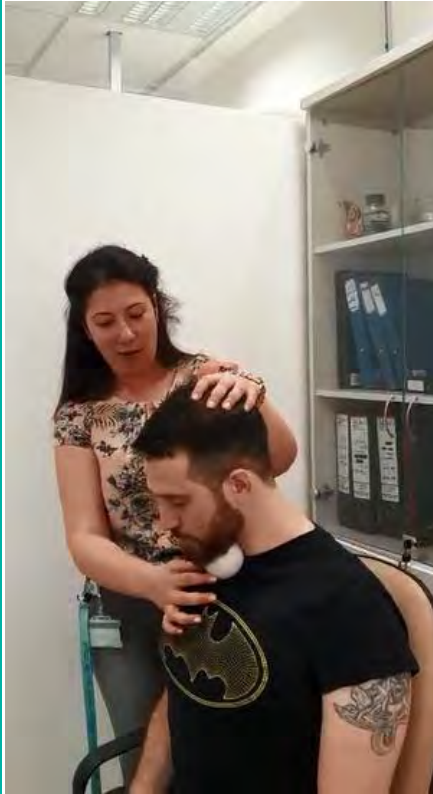
## What is Dysphagia?

Video Source: <https://www.everydayhealth.com/multiple-sclerosis/symptoms/deal-with-dysphagia-when-you-have-ms/>



# Existing method of the Therapy + the Challenge

Ball Therapy



Elastic Strip



Electrical Stimulation



# Primary Research

visit to Soroka Medical Centre

Statements from Mrs. Elona 'speech therapist' -

- *“Allows a constant therapy session” (no need to change equipment)*
- *“Able to do the exercises on their own”*
- *“User friendly and easy to use”*
- *“Allows the patient to stay mobile”*
- *“Easily able to be cleaned and disinfected”*
- *“Lets the patient work from home”*
- *“Lessens the time of rehab”*

# Empathising.....

- Statements from the Patients-
  - *“It hardly matters what thing I use for Therapy, or how it is used, I just want to get well as early as possible..!”*
- Observation - The way the head was held during the therapy, was not appealing.
- Age groups - all ages , no specific gender , mostly adults & senior citizens.

# Existing Products

+

- Pros. & cons

Back Brace



Optimum design to withstand load

Cervical Traction



Independent of external support

Cervical collar + Piston



Pressure distribution

Wheelchair Headrest



machine oriented

CTAR

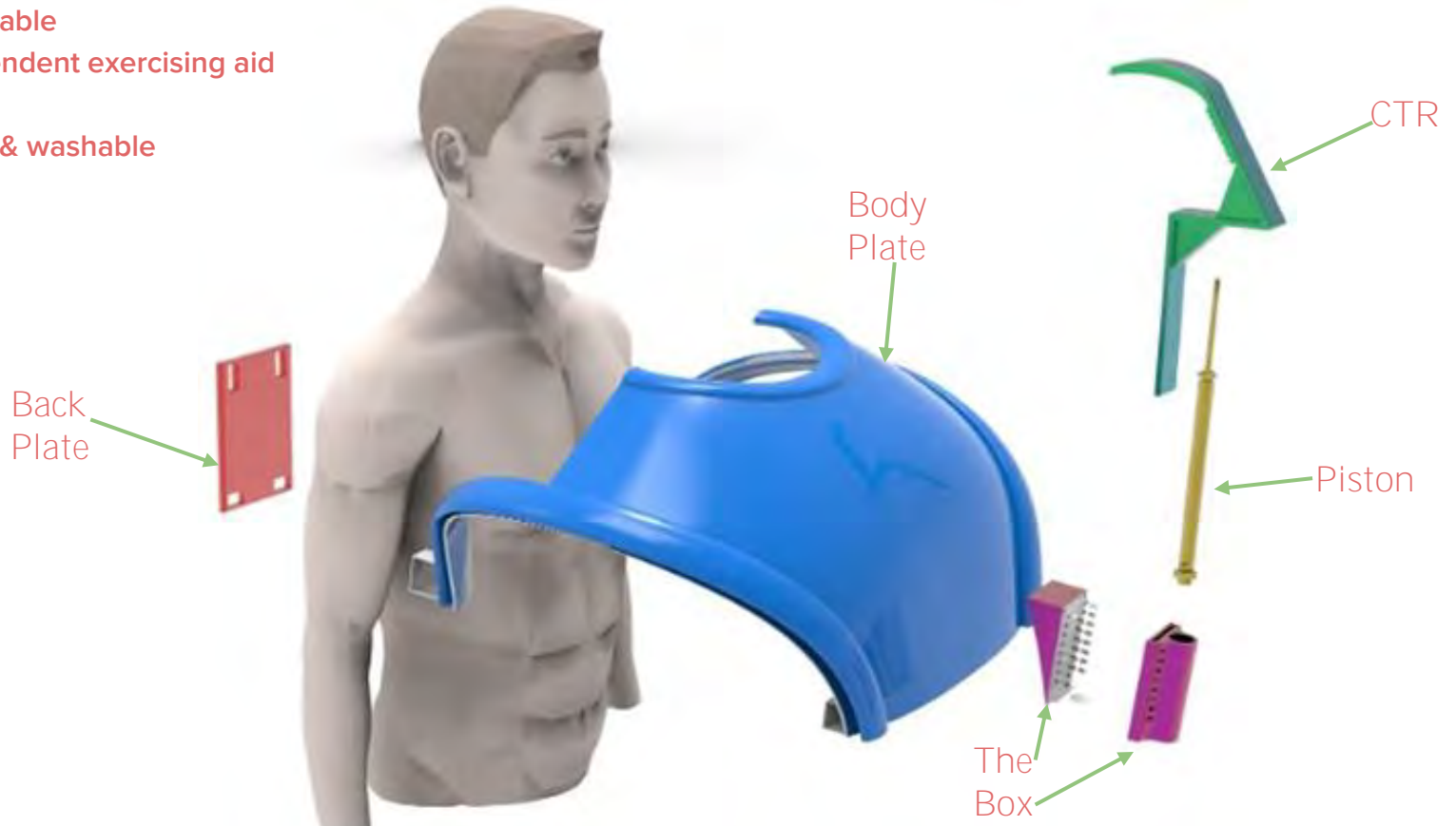


No external support



# Proposal DTAd (Dysphagia Therapy Assisting device)

- Self wearable
- Self dependent exercising aid
- Graceful
- Hygienic & washable



# Details...CTR (chin tuck resistor) after the visit to Soroka Medical Centre



# Process & evolution



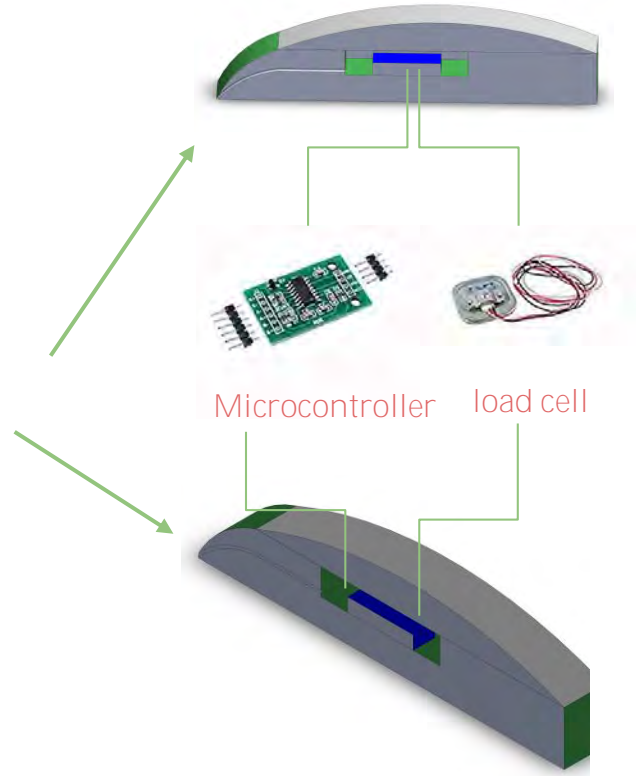
Smaller plate  
&  
Better straps support



Even smaller  
plate



# Bio-feedback system



Patient progression app



Therapist analysis process