

DESIGNING FOR PARKINSONISM

Hiral Parekh | Transformation Design B | Dec 05, 2019

SOCIAL ISSUE

Products for older people are
brown, beige and boring



OBJECTIVE

This project aims at design inclusivity by redesigning a product/activity for the elderly suffering from Parkinson's Disease to ease their day-to-day

AUDIENCE

Parkinson's Disease Patients
Senior Citizens (65 years old and above)

WHAT IS PARKINSON'S DISEASE?

A disorder of the central nervous system that affects movement, often including tremors

CARDINAL FEATURES

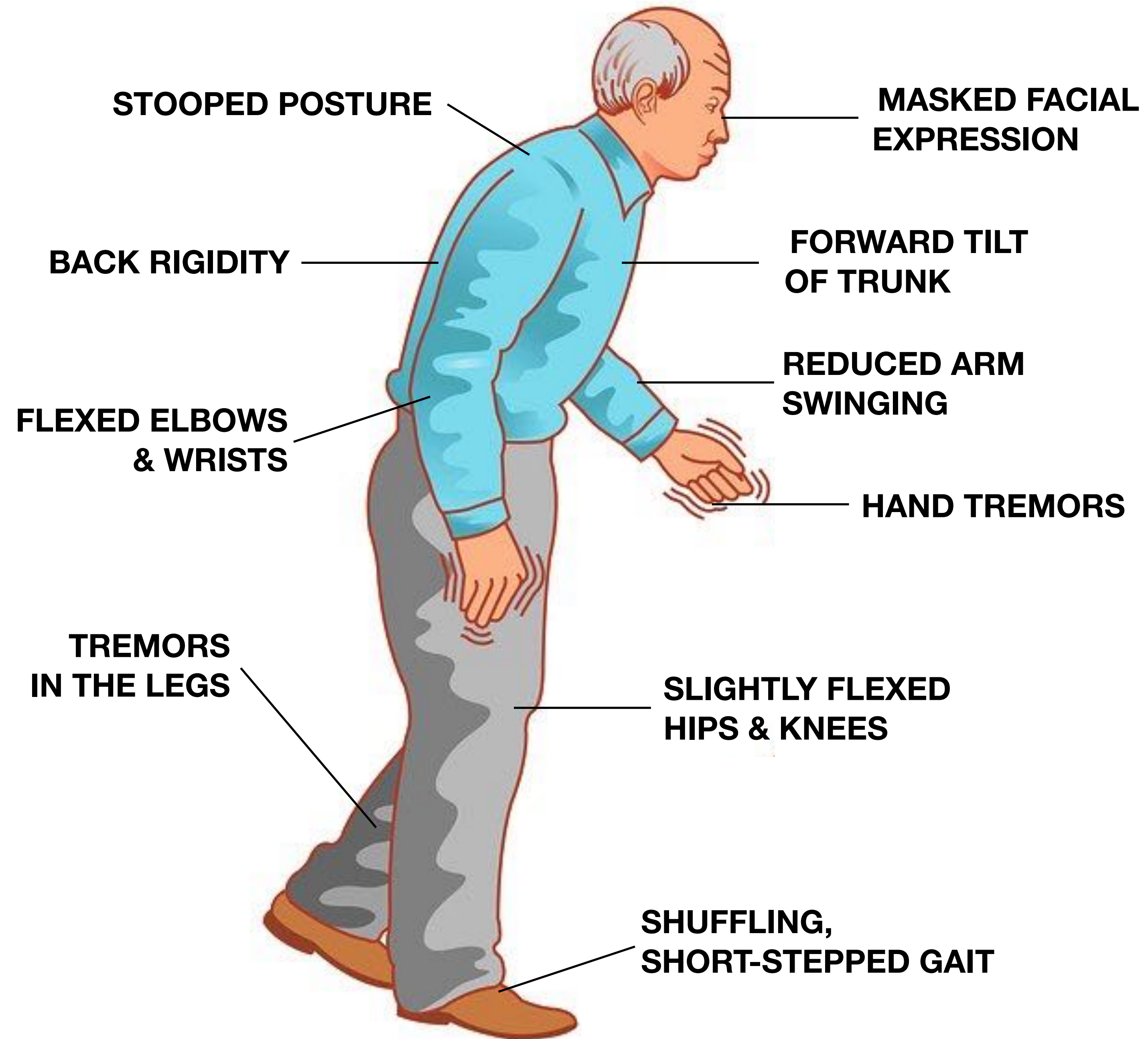
Bradykinesia

Slowness of
Movement

Tremor

Rigidity

Postural
Instability



RAPID ETHNOGRAPHY





INTERVIEWEES

BPth - Neuro Physiotherapist (5)

BPth - Musculoskeletal Physiotherapist (1)

QUESTIONNAIRE

- What is Parkinson's?
- What does the day of a PD patient look like?
- In what way does a PD patient's experience differ from another PD patient?
- What are the stages of Parkinsonism?
- What medications do PD patients have to take? What are their side effects if any?
- What kind of exercises are suggested? How often?
- Which is the toughest hurdle for a PD patient?
- Which is the one product/activity that should be targeted for modification in PD patients?
- Which is that one product/activity that if designed differently would make their life easier and how?

Non motor skills training can be done by Counselling should be done -always making then positive,improve sleep pattern ,break after any activity because they get fatigue easily,supportive family And motor skill improvement can be done by proper bed hight as there is difficulty in getting up.no slipry floor, walking in narrow surrounding or beside wall,light should be bright ,modification in eating like holder to grasp as they have fine movement affection. Laughter therapy work for them.Group traing works for them best.

Thu, Oct 17

Messages to this chat and calls are now secured with end-to-end encryption. Tap for more info.

Hi Priyanka! Hiral here...a friend of Kinjal's

Thank you for agreeing to participate in my research on Parkinson's.

A little bit about me and my project. I am doing my Master's in Communications Design at Pratt Institute, NY. For my Transformation Design class, I am looking into how I can design/improve a product/activity to improve the day to day or senior citizens (65 and above) with

senior citizens (65 and above) with PD.

Hello

Hey

Please do let me know a good time to talk :)

I might be free tommorow in the evening

Around what time?

I will inform you

You

A little bit about me and my project. I am doing my Mester's in Communications Design at Pratt Institute, NY. For my Trans

Motor is if you are sitting person is moving his hand fast which a normal person does not perform and while walking he walk fast like if some one going coming to catch them from behind and no balance issue's.

Scrry balance issue

Achaa

Unable to stand steadily

Understood.

Are you understanding

Yes yes 🙌

It answers some of the questions I had like 1. What is Parkinson's? 2. What are the cardinal features of PD?

Can you explain a little bit about motor and non-motor skills?

May i know your exact degree which you are doing

Communications design

MFA

Okay so you are non doctor

In simple words, I do graphic

Just what you mean by motor and non-motor symptoms

See motor symptoms the action which a body performs.

You see in a Patient while he is moving from place to place or is in resting position.

Its controled by the Brain.

okay

If brain have any disorder it will lead to poor performace in motor activity.

So motor symptoms are related to movement

Motor i simple team is a bike which you are driving if there is any problem it wont move or may lead some abnormal function

And non-motor one will be the ones without movement? Like pain and all?

Priyanka Khatri

Motor i simple team is a bike which you are driving if there is any problem it wont move or may lead some abnormal function

Non motor are behavior changes, hallucinations, mood swings, cognition.

Short team memory

Long team memory

Got it. And Parkinsons includes both motor and non-motor?

Yes both

Okay

6. What medications do PD patients have to take? What are their side effects if any?

ARKINSON DISEASE

Parkinson's disease - causes, symptoms, diagnosis, treatment & pathology

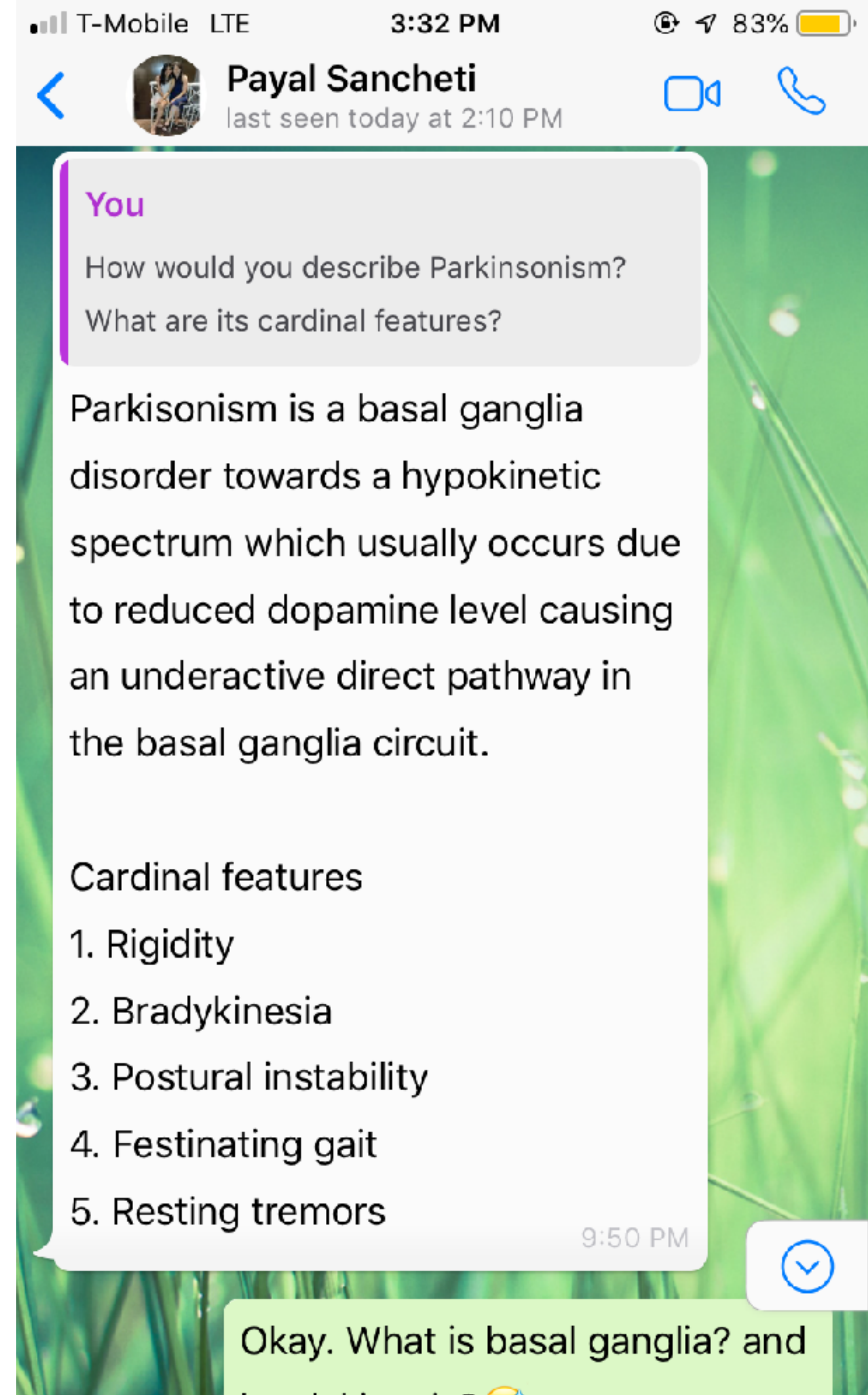
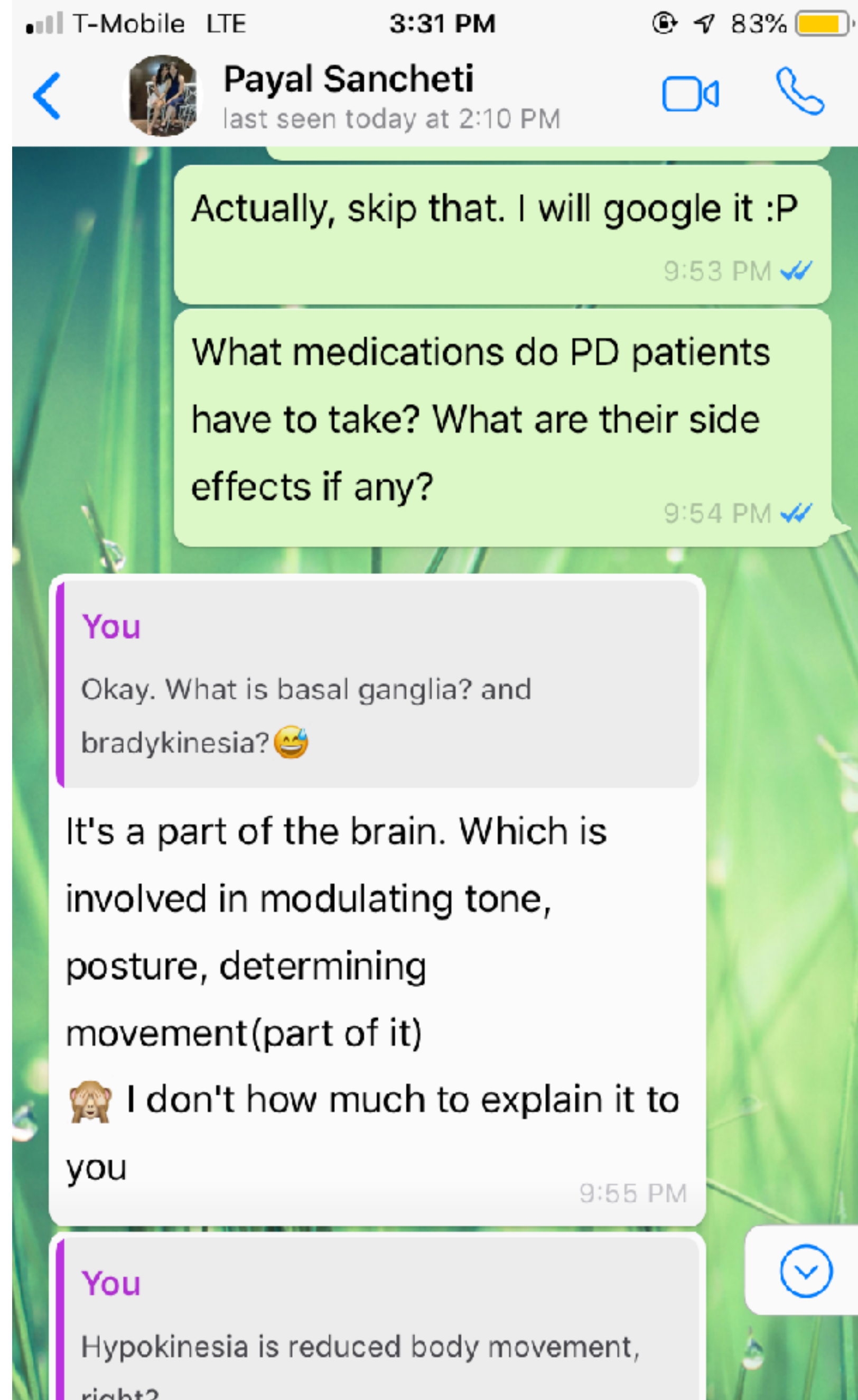
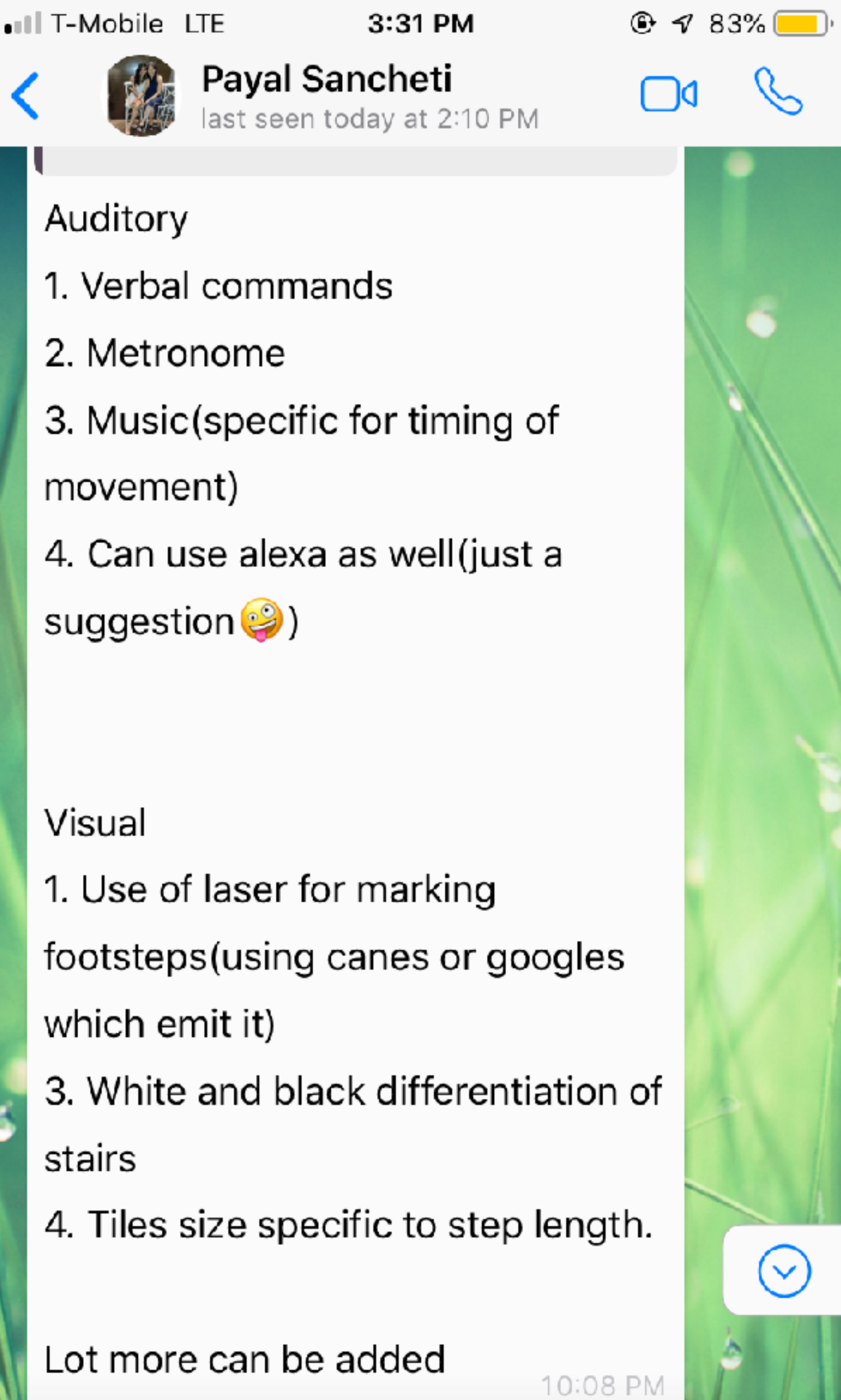
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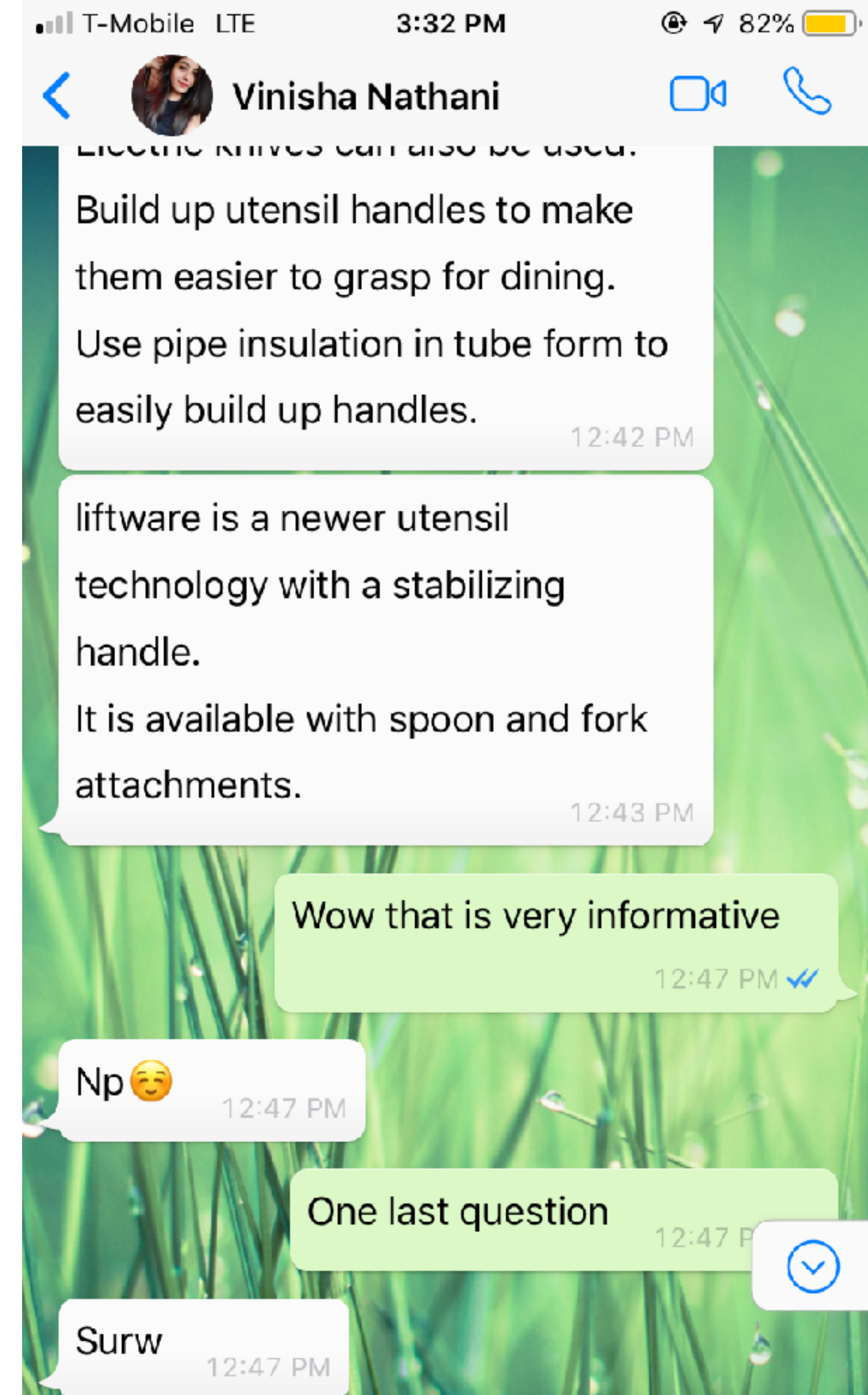
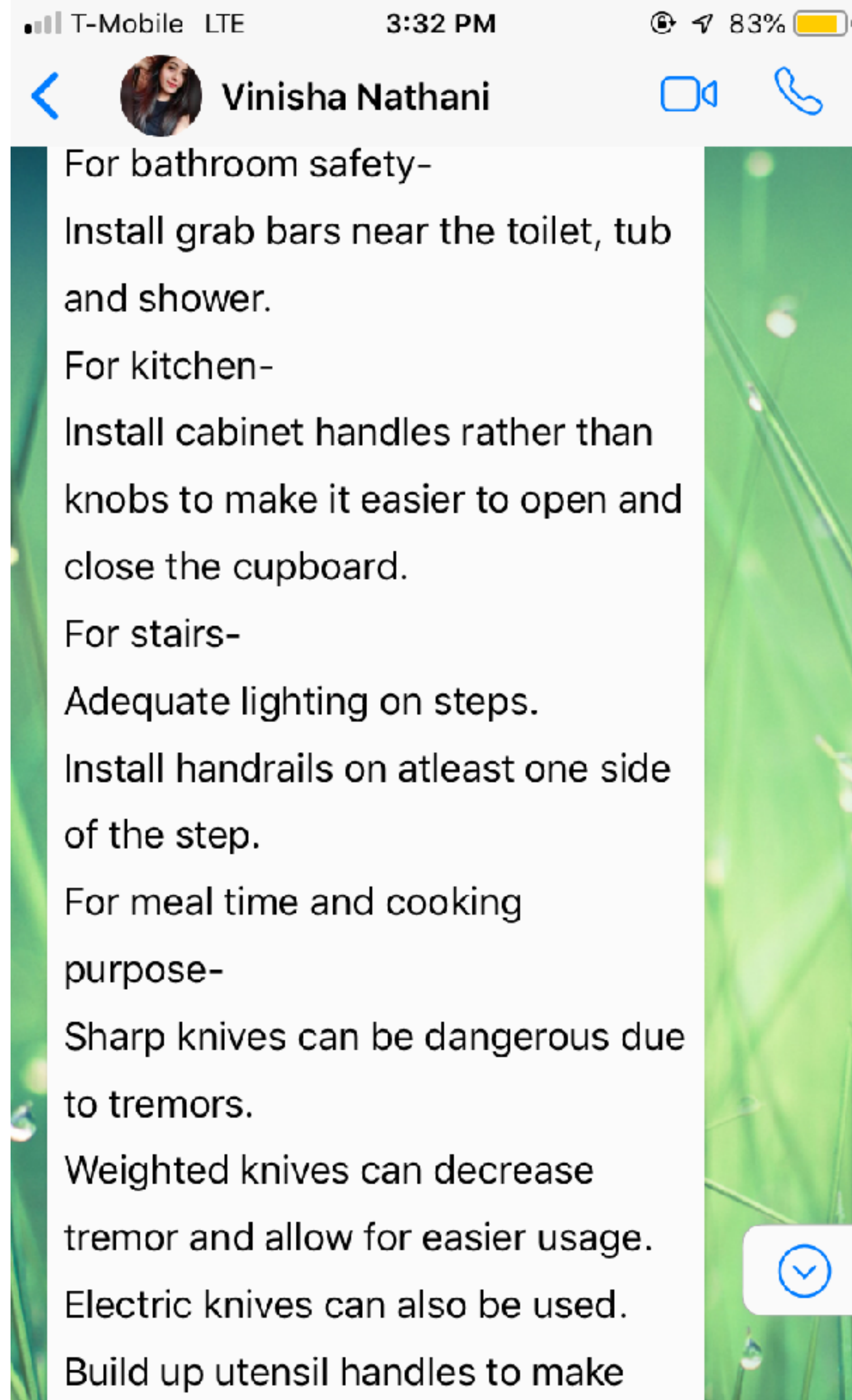
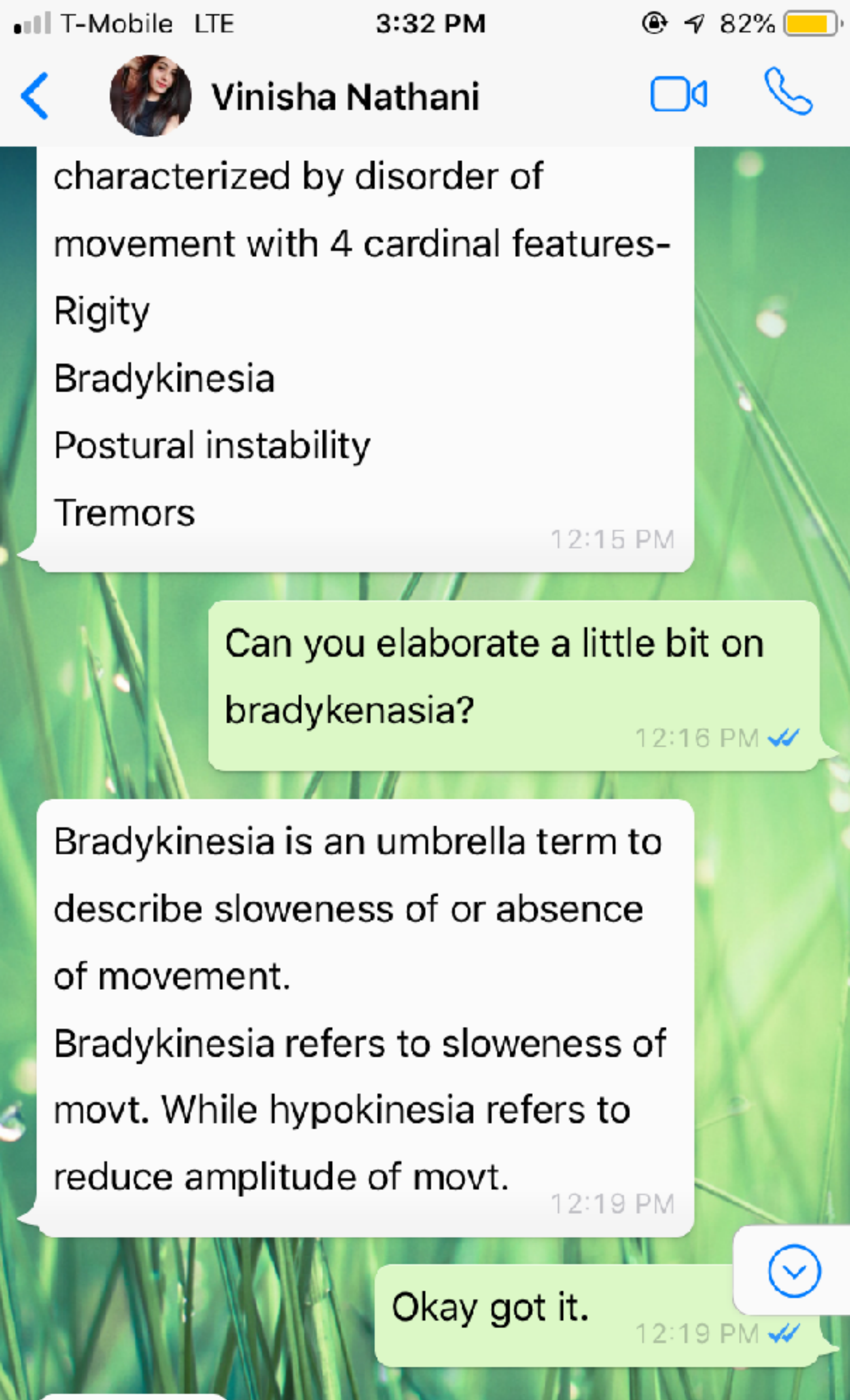
thanks for sharing

<https://mobilephysiotherapyclinic.in/parkinsonism/>

Anything else you want to ask

WHATSAPP CHAT





Research on Parkinsons'

Inbox x



Hiral Parekh <hparekh@pratt.edu>

to mehtakinjal.km45 ▾

Sat, Oct 19, 4:07 PM



Hello Dr. Kinjal,

I hope this email finds you well.

Thank you for agreeing to participate in my research on Parkinsonism.

A little bit about me and my project. I am doing my Master's in Communications Design at Pratt Institute, NY. For my Transformation Design class, I am looking into how I can design/improve a product/activity to ease the day to day of senior citizens (65 and above) with PD.

Below are a few questions for you:

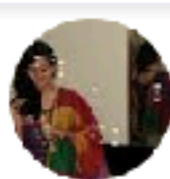
1. What is Parkinson's?
2. What are the cardinal features of PD?
3. What does the day of a PD patient look like?
4. In what way does a PD patient's experience differ from another?
5. What are the stages of Parkinsonism? What are the complications at each of those stages?
6. What medications do PD patients have to take? What are their side effects if any?
7. Which is the toughest hurdle for a PD patient?
8. Which is the one thing that should be targeted for modification in PD patients?
9. Which is that one product/activity that, if designed differently, would make their life easier? How?
10. Do doctors often prescribe/suggest a certain service/product/tool?

Thank you for your time.

Regards,

Hiral

EMAIL

**Kinjal Mehta**

to me ▾

Hi Hiral.

The following are the answers to your questions:

1. Parkinsonism is a condition in which there is a decrease in the level of dopamine in the basal ganglia of the brain, leading to various complications in function.
2. It basically comprises of 4 stages with the cardinal features increasing in level of severity; which are, bradykinesia, mask face, tremors, rigidity, festinant gait, postural disturbances etc.
3. If on medication, the severity of the features is reduced when the effect is at its peak and gradually the symptoms start to aggravate again. Limitation in terms of activities of daily living gradually increases.
4. They have difficulty in holding small objects, need some aid to walk, have freezing episodes etc.
5. There are 4 stages with the features being same, but increasing in terms of severity.
6. Levodopa,
Dopamine agonists
COMT inhibitors
MAO B inhibitors
Antidepressants are the few classes of drugs to be given to a Parkinson's patient.
7. Fine motor functions are majorly affected, long with ambulation.
8. Gait training and ambulation aid or an equipment to aid common ADLs like eating or drinking water which they need to do more often.
9. Due to tremors and rigidity, the patients have difficulty in eating and drinking water, hence making them dependant on someone also leading to low self esteem and other psychological effects.
For them to be independent in their work is needed to motivate them to do better.
Any equipment which can tackle the tremors, rigidity, reduce the fine motor activity and function as a multipurpose tool can be of benefit.
10. Most common one is a walking aid. Need further research to establish standard aids for these patients. Also need something which can be used by the bed ridden or wheelchair bound patients.

Thank you for making me be a part of your project. All the best with it!

Manasa

→ neuro degenerative disorder

4 cardinal

- postural instability

- tremors

- bradykinesia - slowness of movement

- rigidity - tightness of muscles

→ not same for 2 ppl

→ 5 stages - Hoan & yost

neuropsychiatric

→ on-period
off-period

→ physical exercise

- early stages - exercise with mobility
maintain their ability to walk
dance therapy / zumba - early

- later stages - breathing

- rigidity:

- early stages - group therapy

- dependent

- fearful

- falls as disease

pr

- stiffen

- India

- aid in the

mobility

- ballroom

dancing

- environmental

structure

- quick movements

- weighted plates

- broader grip

- walker cane

higher rates of fall

- more falls

tremors

change

not with

therapy

- round the

bottom of the

plate

- micrographia

- size of the letters

decreases

Neha

strategy

- Masters in Neurophysiotherapy
Not so common

- Tremors

→ pen/spoon - oscillates at the same frequency of the hand

- Bradykinesia

slowness, freeze

mask-faced - expressing is difficult

- rigidity - stoop posture

while walking - small small steps

changing centre of gravity

- micrographia

- Stage

Hoan & yost

stage 1 - unilateral symptoms

2 - balance, walking

degenerative

middle age - elderly pop

eldopa

treat when medicine is taken

- dependent on someone - self care

tremor

ambulation

later stages

* dual tasking - talk & walk
water & walk

tremor - glove

reduce the tremor - use hand for something

Neuro Rehab
by Davi Ambred

- balance training

- strategies

glasses → visual auditory cues

for constant lines - colored tape - visual

simulation

- parallel lines

* space between lines

- care to provide

visual cues

PHONE
CALL

OTHER RESOURCES

Michael J. Fox Foundation

Daily Strength - Parkinson's Disease Support Online Group

a day
in the life
of a
parkinson's
patient —

a day
in the life
of a
parkinson's
patient —

05 activities
12 mins each
instructions enclosed inside

CULTURAL
PROBE

a day in the life of a parkinson's patient

the whats, whys, and hows

what is the project about?

This project aims at design inclusivity by redesigning a product/activity for the elderly suffering from Parkinson's Disease to ease their day-to-day

what is parkinson's?

Parkinson's is a condition in which there is a decrease in the level of dopamine in the basal ganglia of the brain, leading to various complications in function

what are the symptoms?

The common symptoms are tremor, slow movement, and festinant gait disturbances

what are you doing?

You will be given 4 daily activities with one hurdle each and 1 writing task. You are asked to perform those 4 activities with using a work-around. Each activity will take 15 - 20 minutes to perform. Please remember to document your process. It is very significant for this research.

how are you contributing?

The documentation will showcase the work-around you used while performing those twisted activities. This will direct the research towards that particular activity or product that could be targeted for modification for Parkinson's patients and how. The writing response will reflect patient emotions.

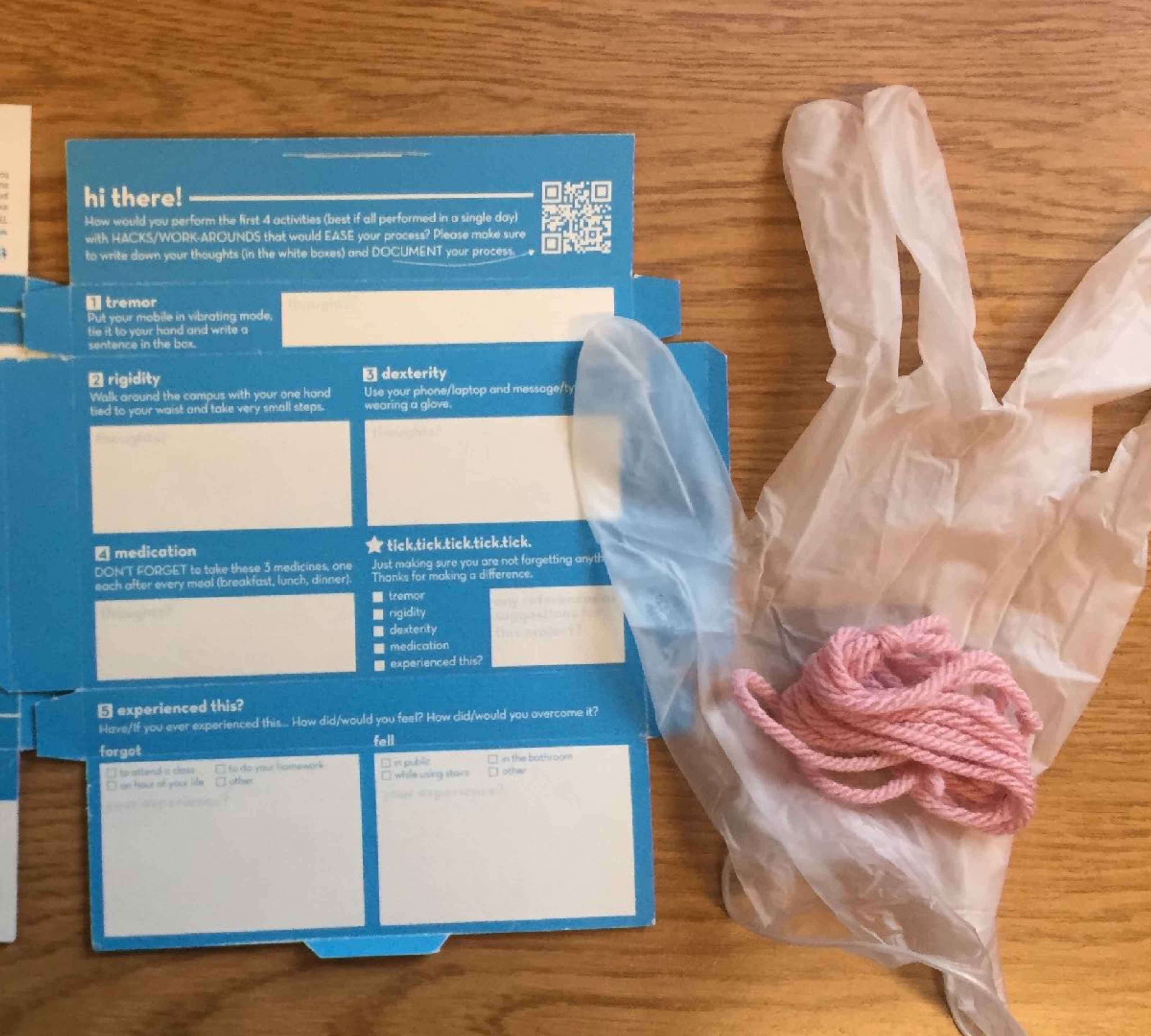
what can you do to help?

If you know or come across Parkinson's patients at any point throughout the semester or next semester, please do let me know. The same goes for any neurologists or physiotherapists you happen to know. This will provide first hand knowledge to this project and fuel it better.

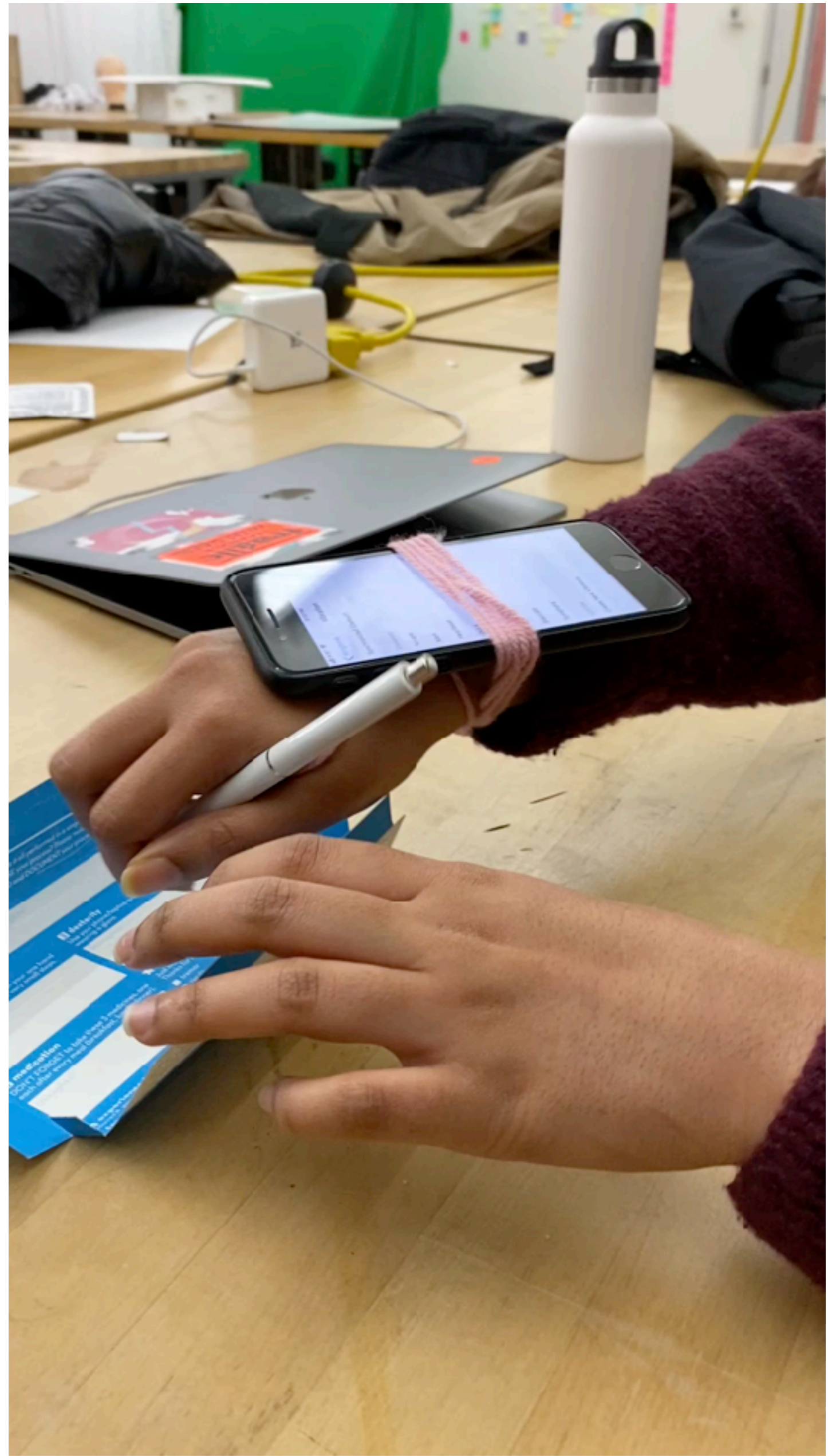
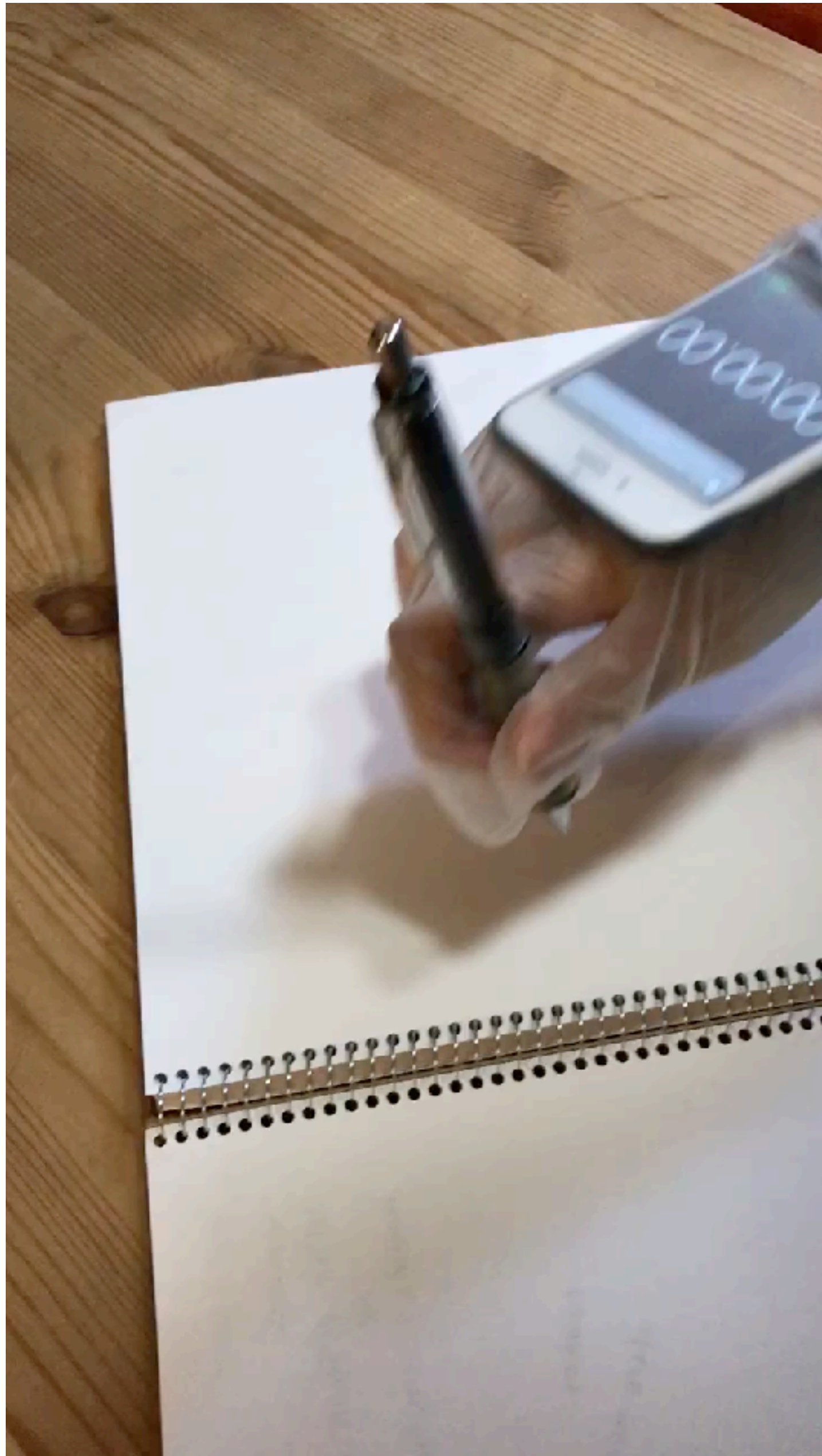
thank you for taking interest and investing your time for this research

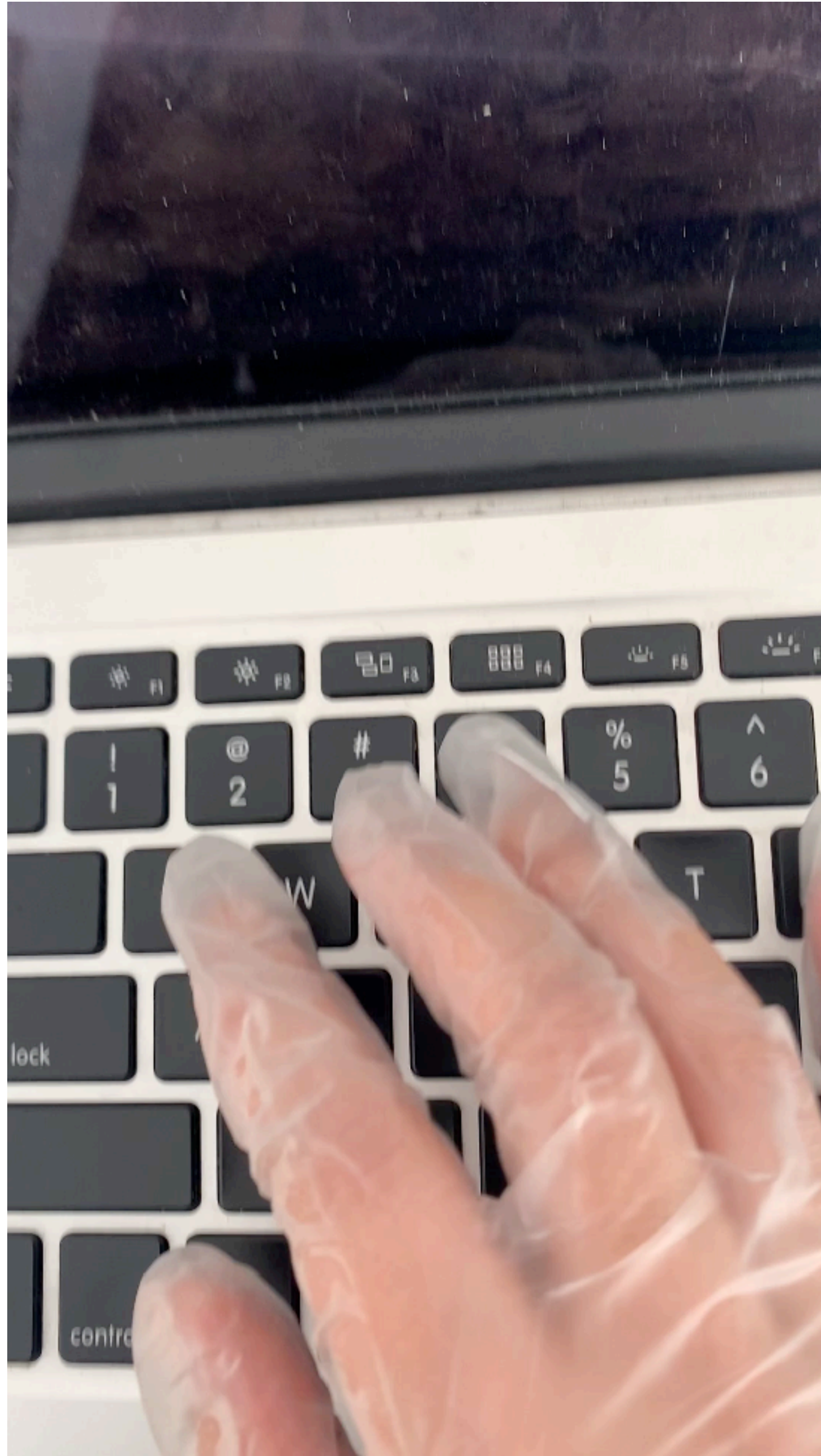
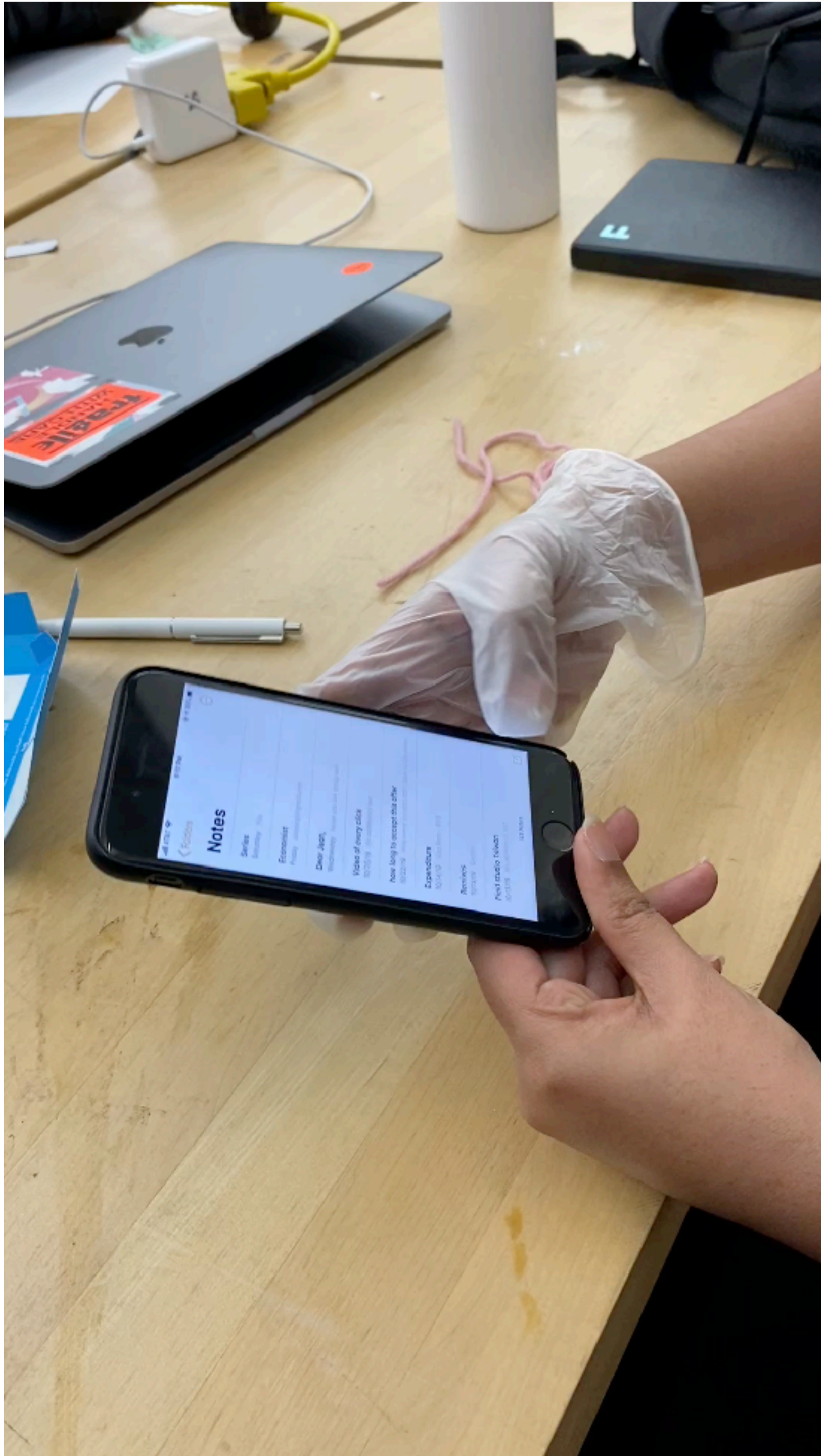
05 activities
12 mins each
instructions enclosed inside

Introduction and explanation of the project



- 4 everyday tasks to be done using empathy tools
- Use hacks/work-arounds to ease the process while performing the tasks
- Document entire process (thinking before/after, feeling during) using different appropriate medium (video, photo, drawing, writing, GIFs, social media post).
- Have/If you ever experienced this problem... How did/would you feel? How did/would you overcome it? (2 questions)







1 tremor

Put your mobile in vibrating mode, tie it to your hand and write a sentence in the box.

normal: shaking hands make it longer to tremor: Shaking hands make it longer to

2 rigidity

Walk around the campus with your one hand tied to your waist and take very small steps.

thoughts:
Can not keep the balance
Look weird.

3 dexterity

Use your phone/laptop and wearing a glove.

thoughts:
Hard to type
Can not control the area

4 medication

DON'T FORGET to take these 3 medicines, one each after every meal (breakfast, lunch, dinner).

Hand to remember meal time became more suffering

★ tick.tick.tick.tick.tick.

Just making sure you are not forgetting. Thanks for making a difference.

- tremor
- rigidity
- dexterity
- medication
- experienced this?

I remember spoon for

5 experienced this?

Have/If you ever experienced this... How did/would you feel? How did/would you overcome it?

forgot

- to attend a class
- to do your homework
- on hour of your life
- other

your experience?
I forgot to do my homework one. It was awkward to tell the professor, but I really ignore the task. I don't want to experience it again.

fell

- in public
- while using stairs
- in the bathroom
- other

your experience?
It was hurt they might think. However, for me, I escape that place.

forgot to text / call people I promised to text / call.

I do it all the time! I try to laugh it off but it is embarrassing most of the time.

2 rigidity

Walk around the campus with your one hand tied to your waist and take very small steps.

I had my friend walk with me to give me company - It was tiring but doable

4 medication

DON'T FORGET to take these 3 medicines, one each after every meal (breakfast, lunch, dinner).

I asked my husband to remind me. Also kept a reminder on my phone

5 experienced this?

Have/If you ever experienced this... How did/would you feel? How did/would you overcome it?

forgot

- to attend a class
- on hour of your life
- to do your homework
- other

your experience?
to attend a meeting with my professor for work. I realized it late + sent him an email but felt embarrassed for forgetting

fell

- in public
- while using stairs
- in the bathroom
- other

your experience?
I have fell while using the subway stairs. Strangers helped me and I felt silly + hurt, but moved on immediately.

3 dexterity

Use your phone/laptop and message/type wearing a glove.

My phone did not pick up the touches immediately so I kept trying. The touch was to be patient + press

★ tick.tick.tick.tick.tick.

Just making sure you are not forgetting anything. Thanks for making a difference.

- tremor
- rigidity
- dexterity
- medication
- experienced this?

your experience?
It's hard to write. Harder because hand feels heavy.



Best if all performed in a single day) should EASE your process? Please make sure to EASE (write in white boxes) and DOCUMENT your process.

CRITERIA FOR SUCCESS

- Parkinson's last stage
- Rigidity
- Slowness
- Dependence
- Embarrassment
- ON time
- Physical activity
- Multitask

'ON' TIME

1

**THE WALK &
TALK STICK**

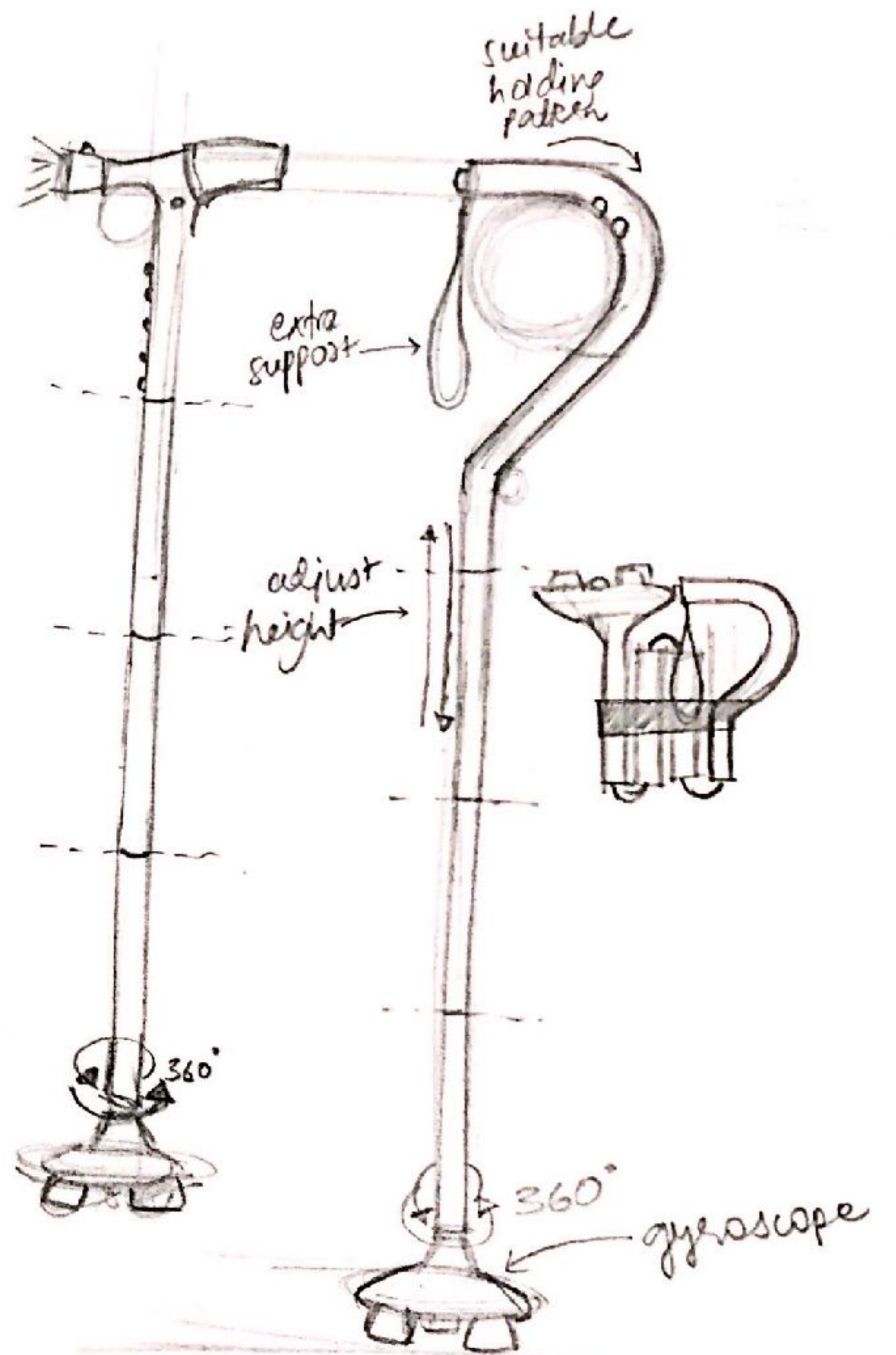
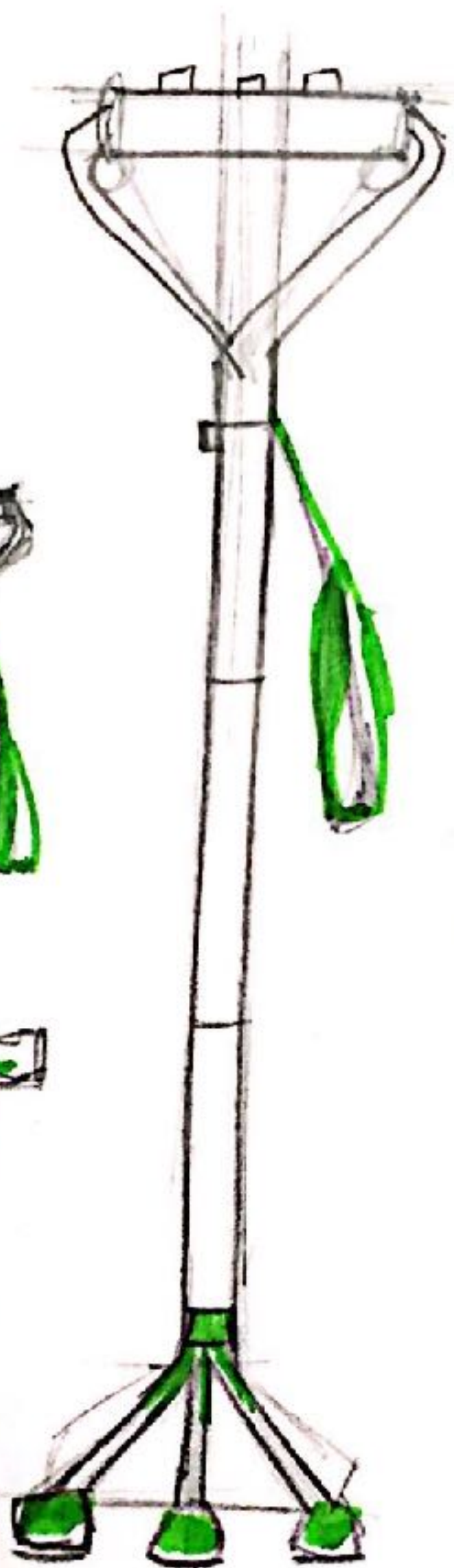
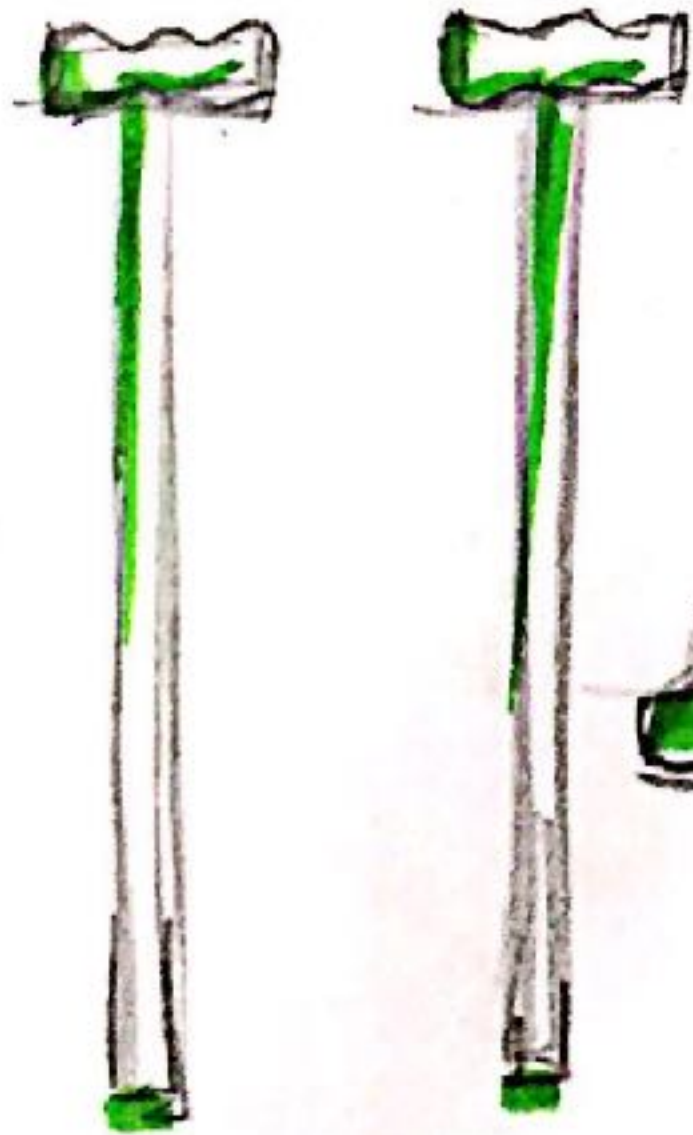
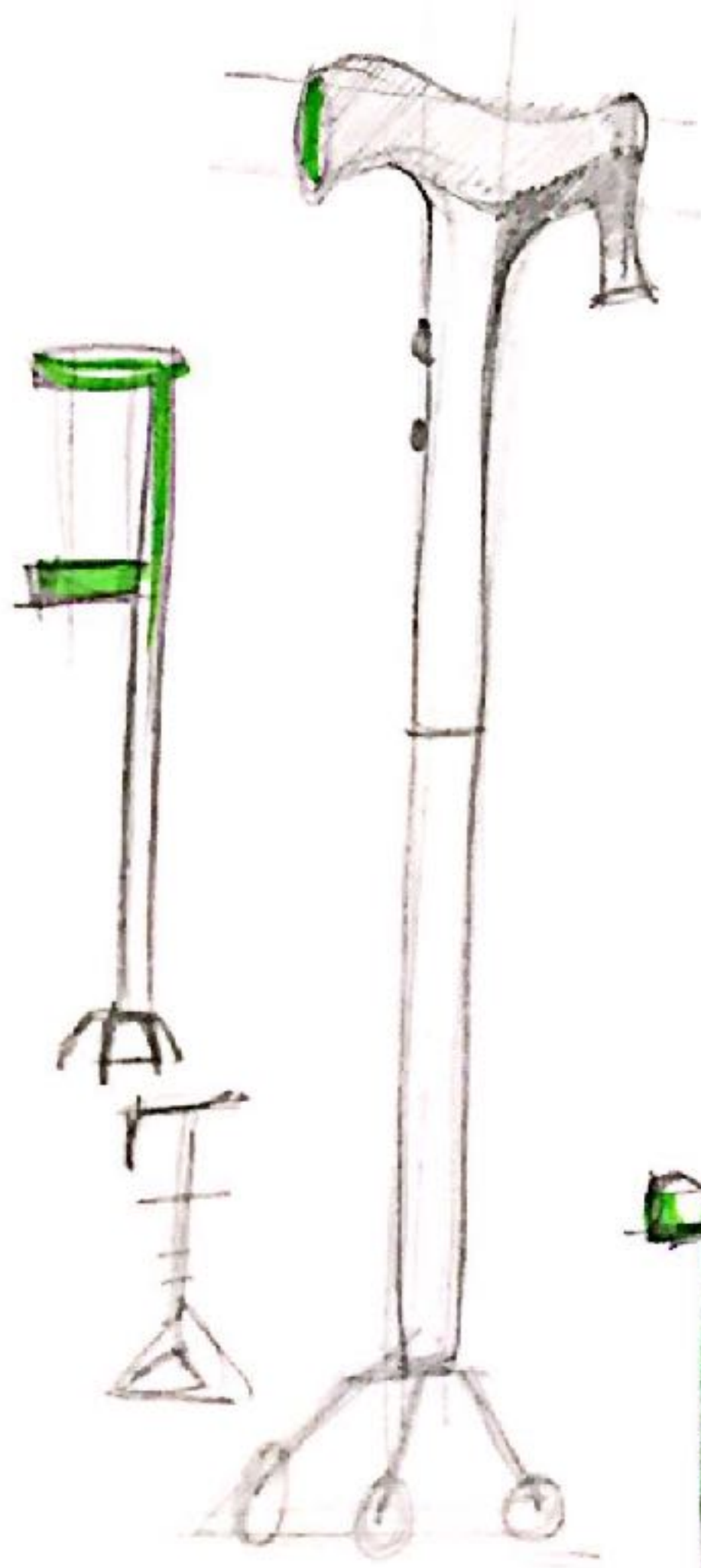
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**THE
FLEXI GRIP**

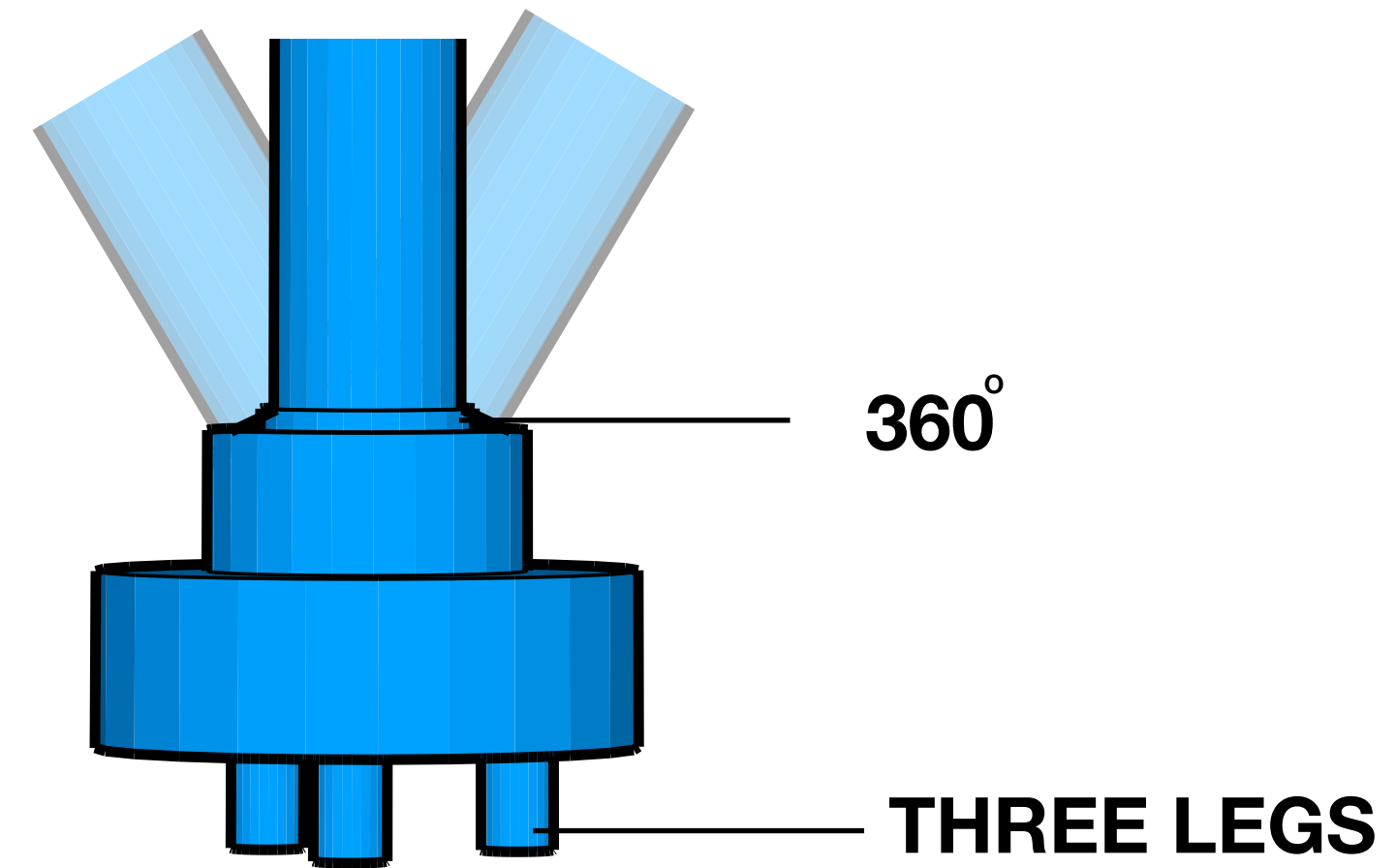
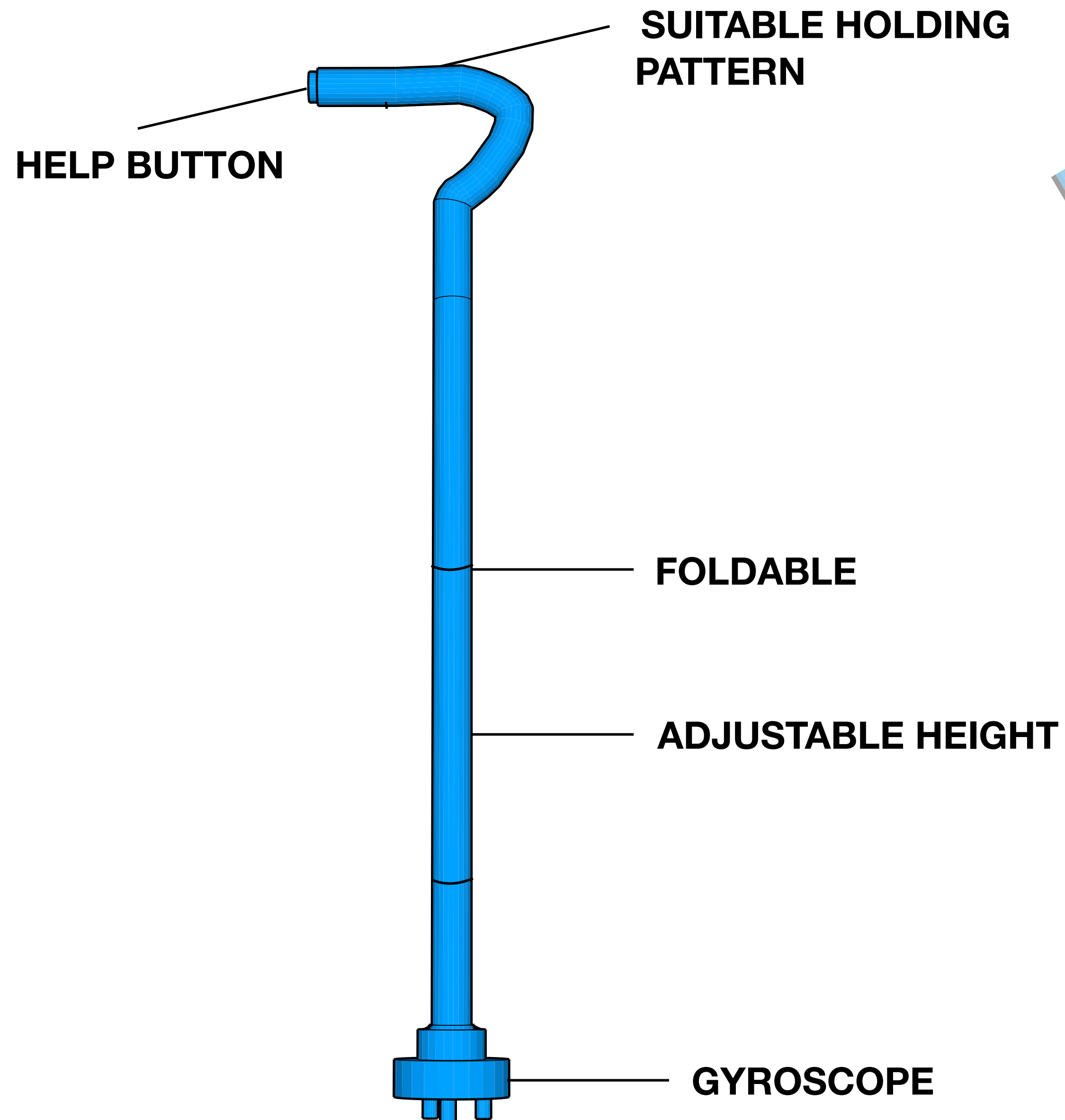
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**THE
POWER KIT**

THE WALK & TALK STICK

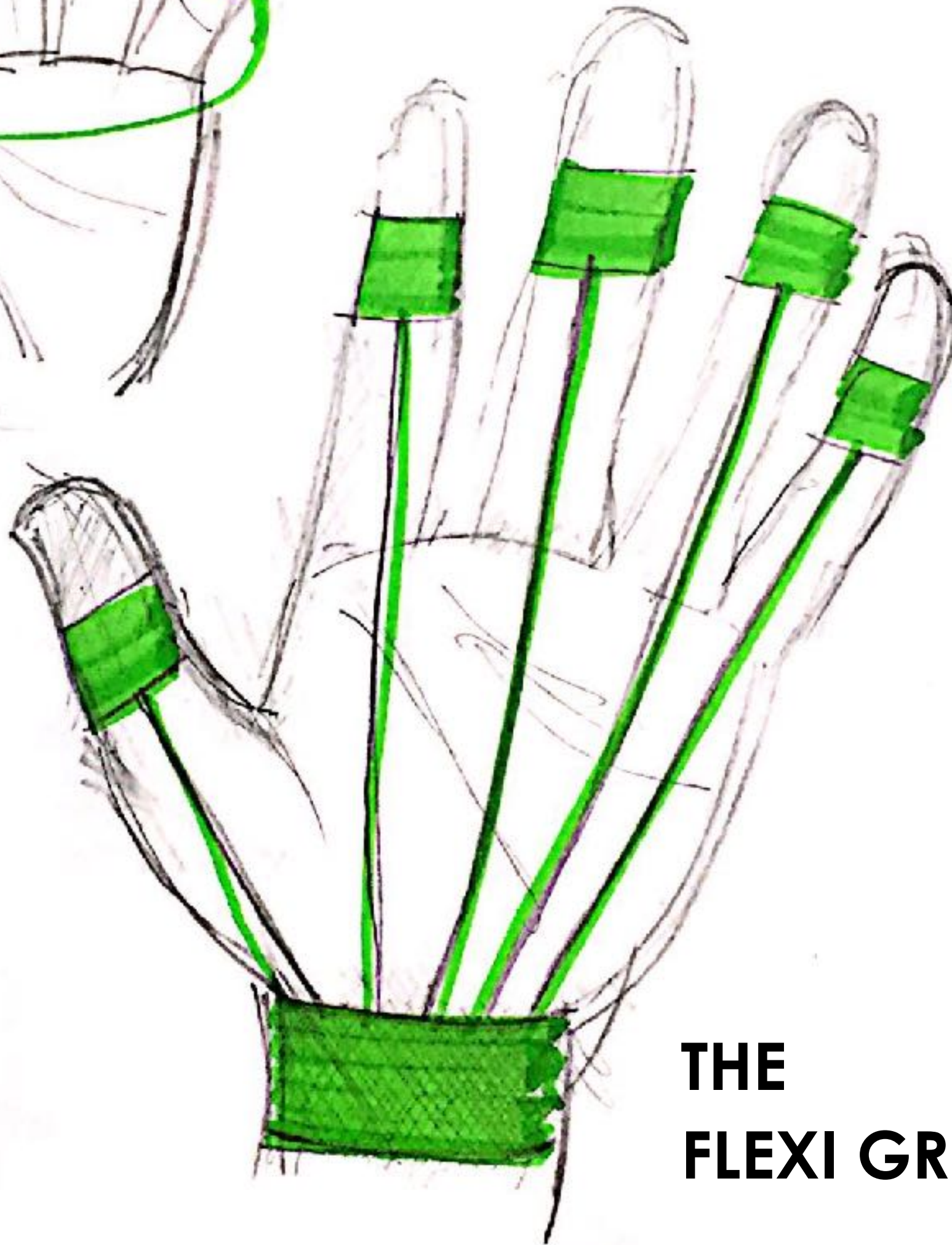
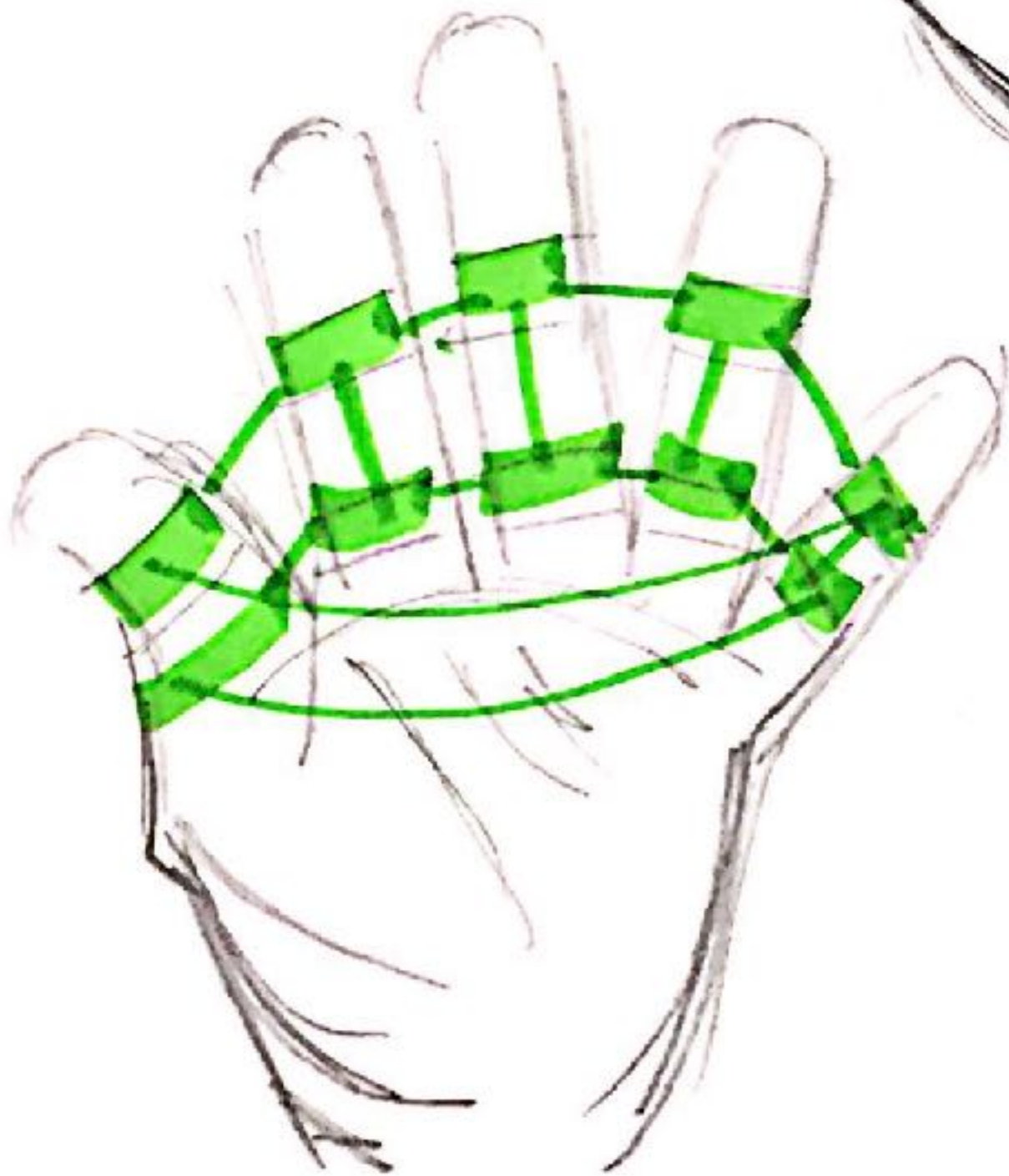
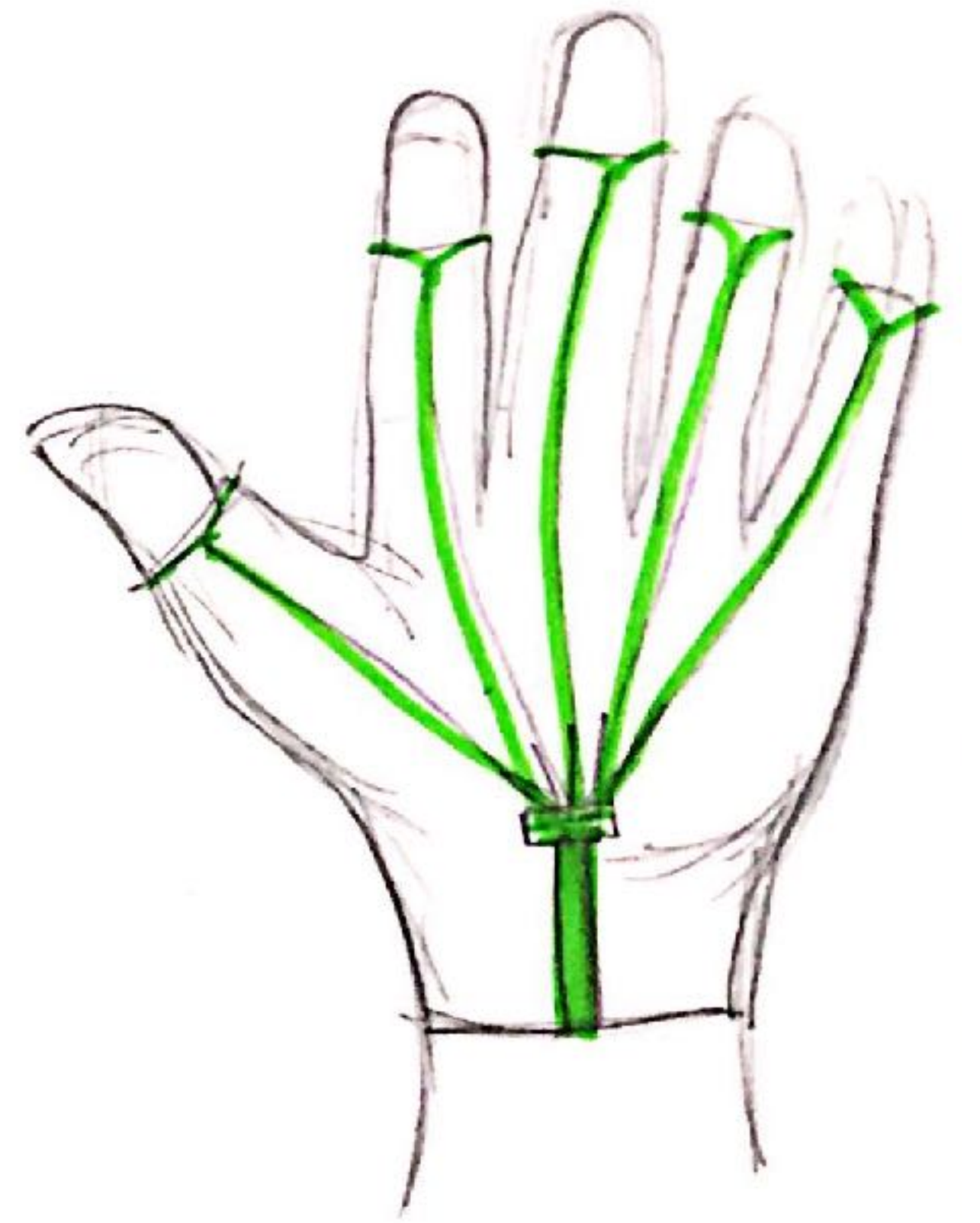
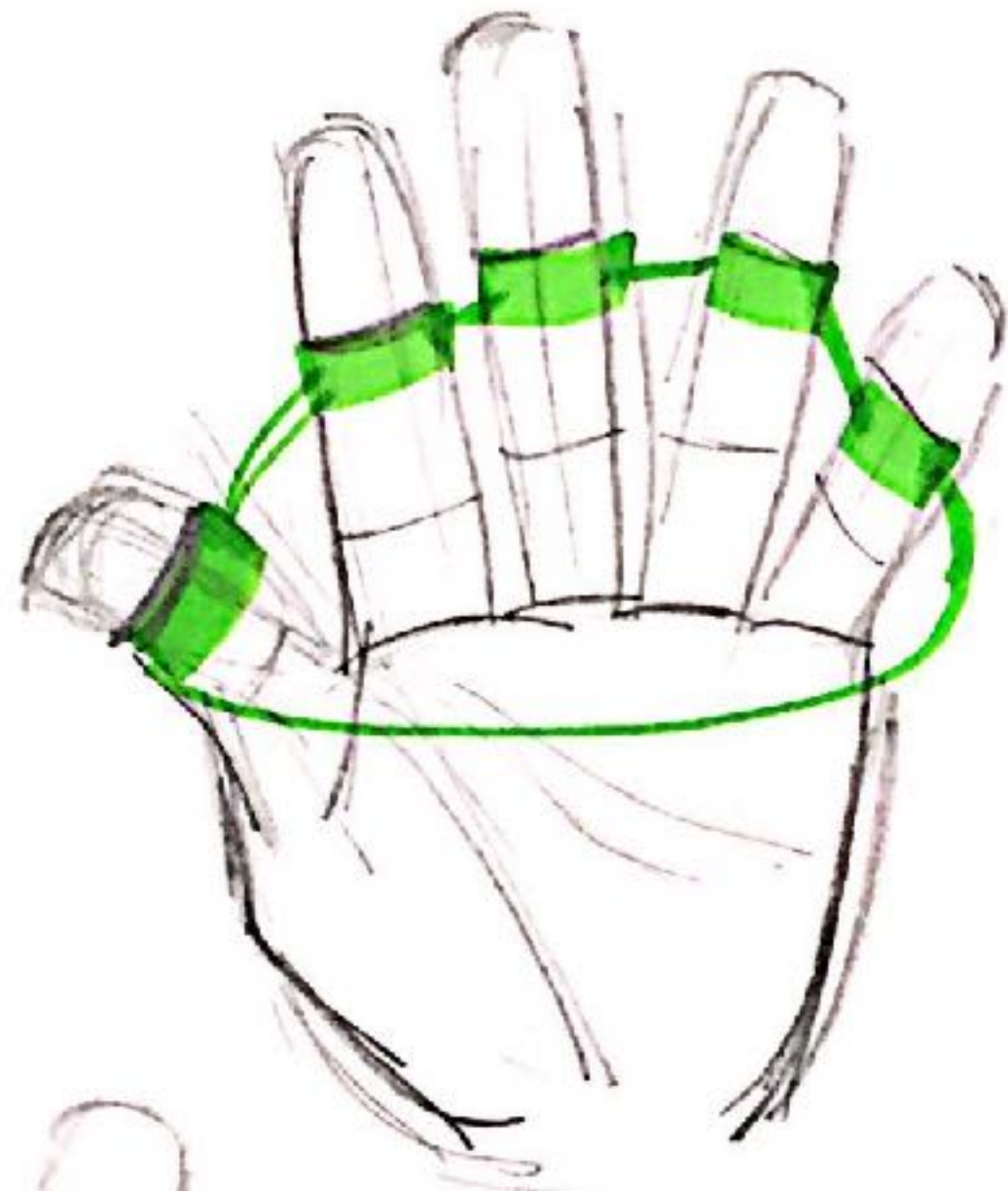


THE WALK & TALK STICK

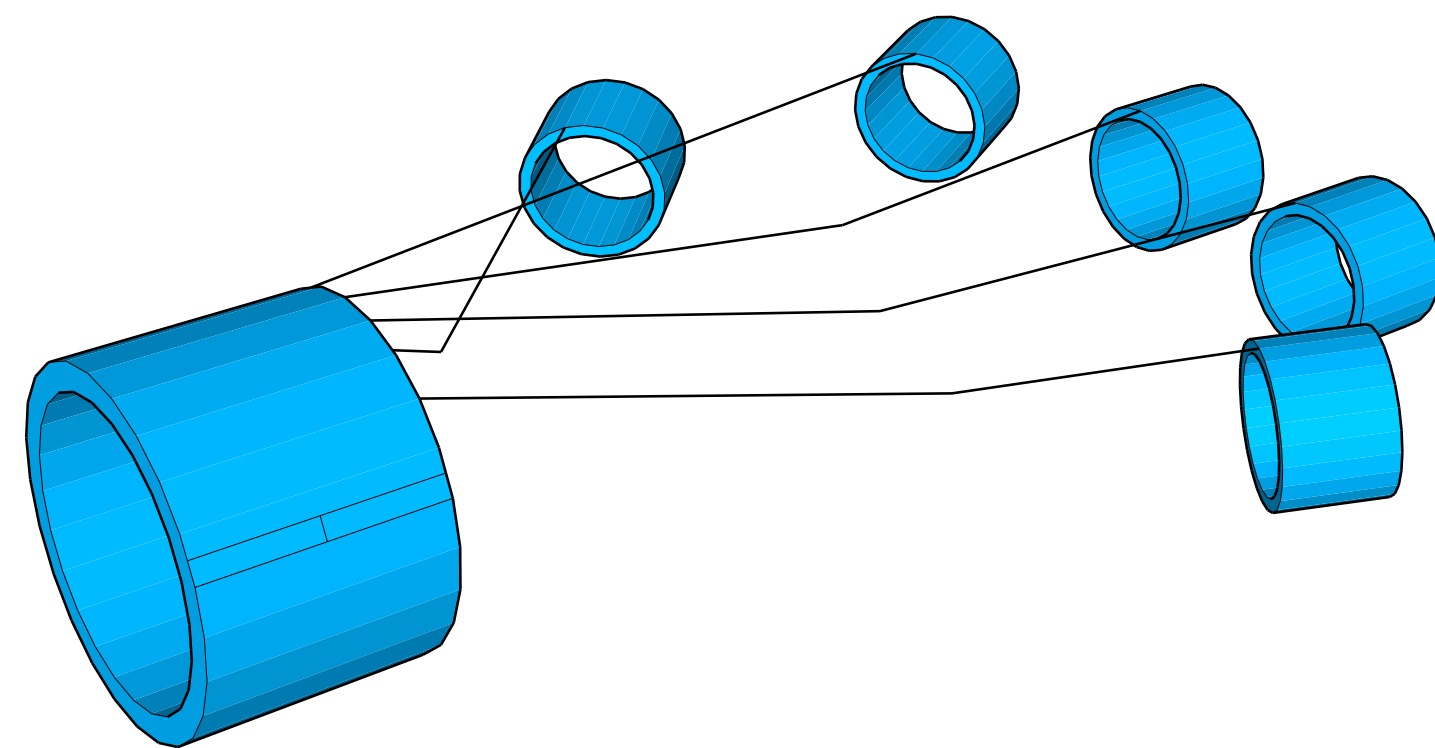
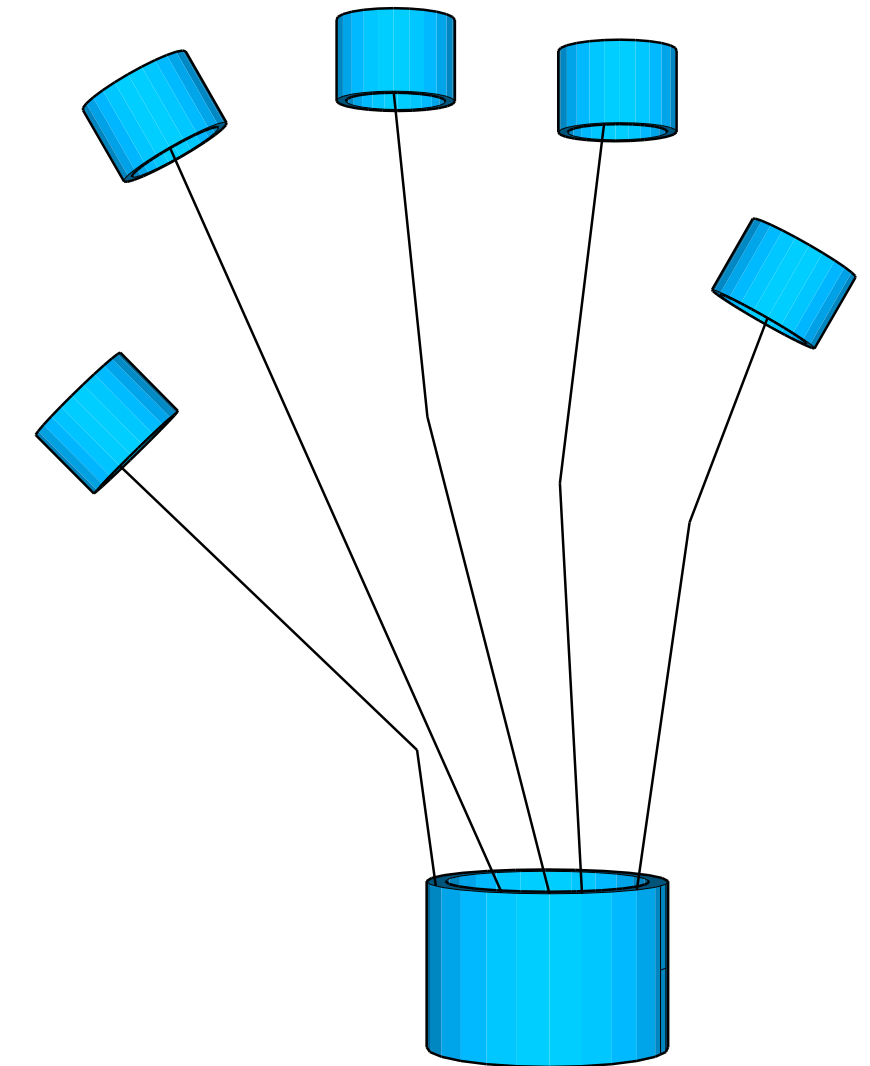
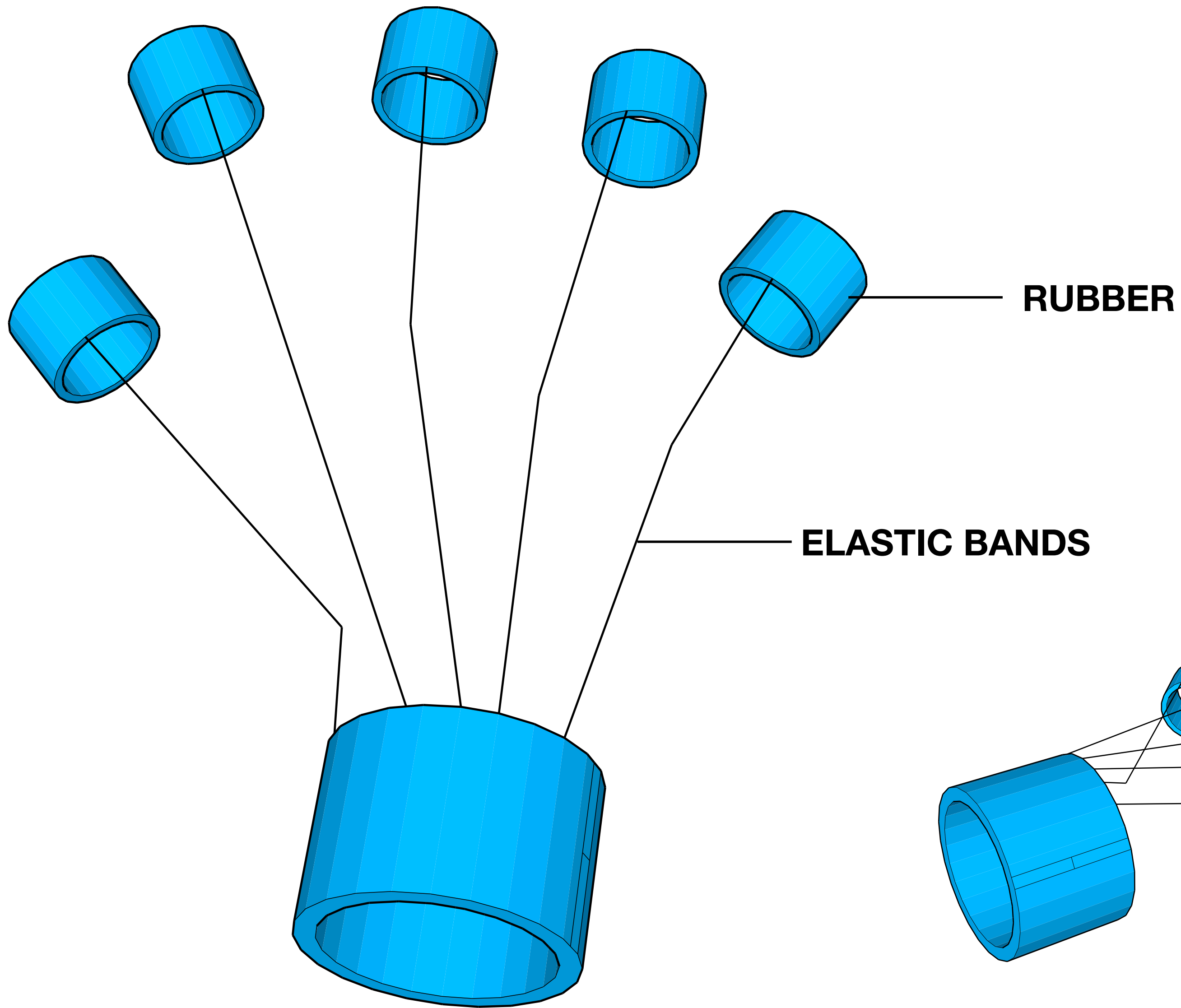


- A smart cane
- Sturdy
- Gyroscope - 360
- Safety
- Adjustable height
- Multitask
- Comfortable to hold
- Folding/Portable
- Motion sensors

THE FLEXI GRIP

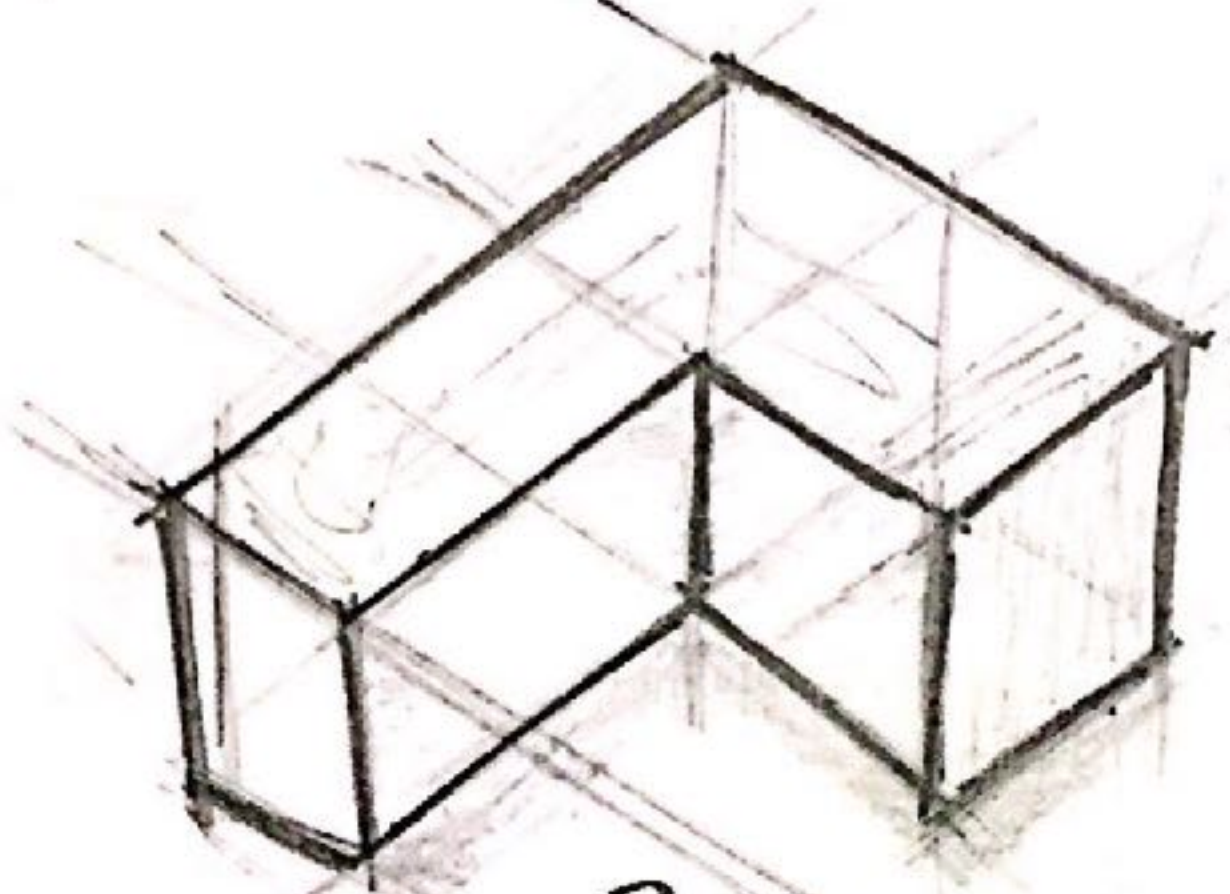
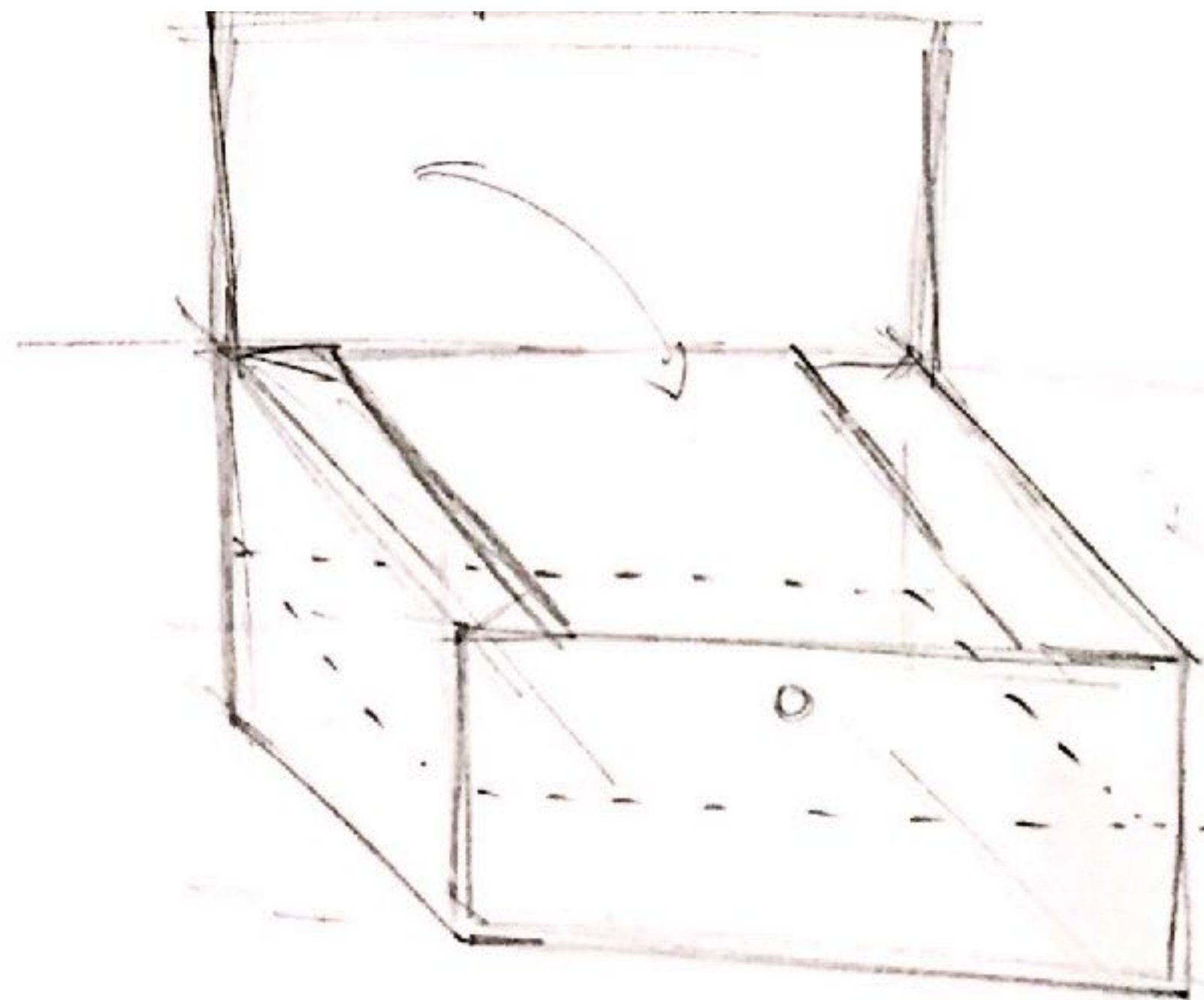


**THE
FLEXI GRIP**

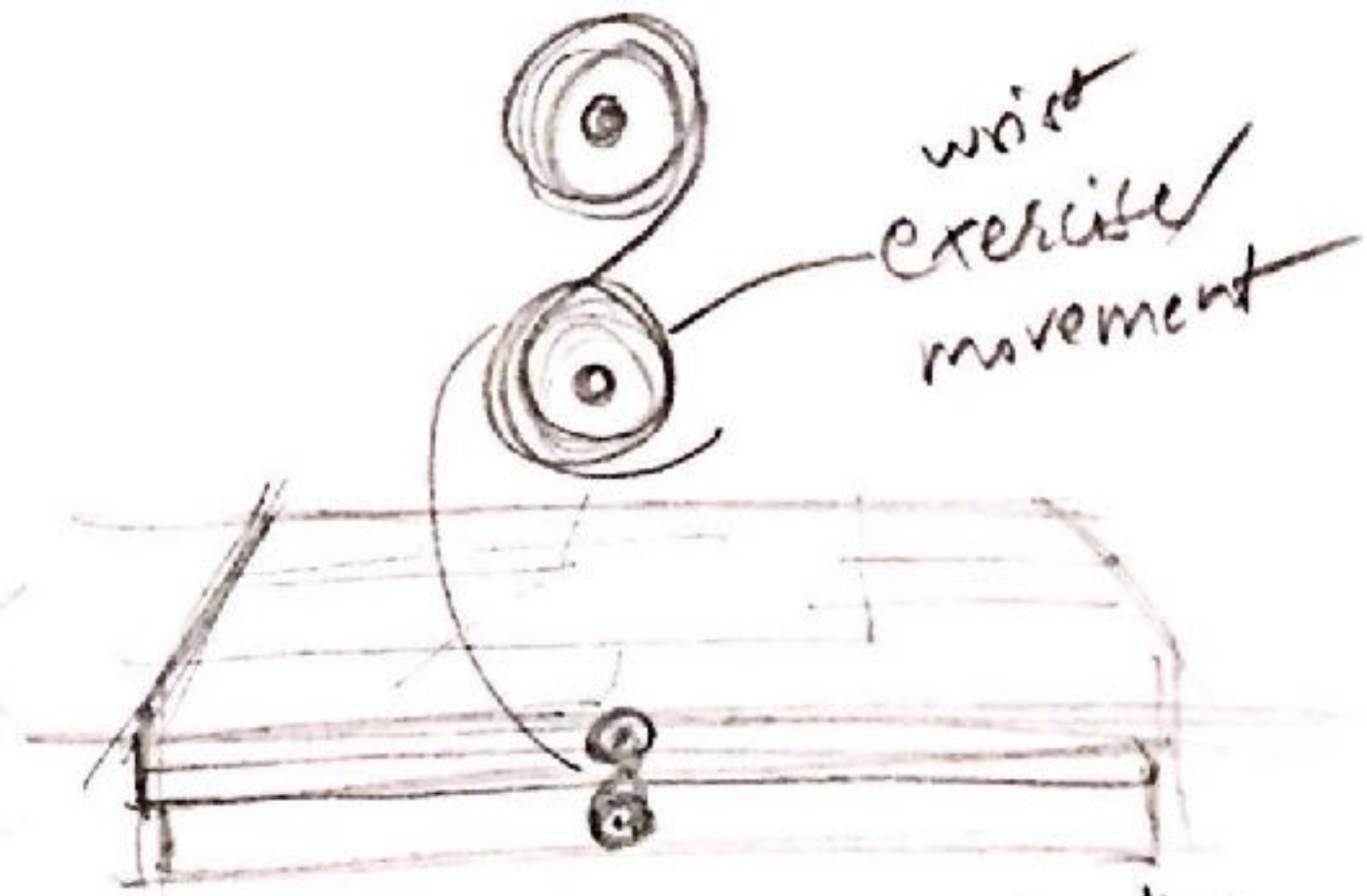


- Sturdy
- Strengthens hand muscles
- Flexible
- Comfortable to wear

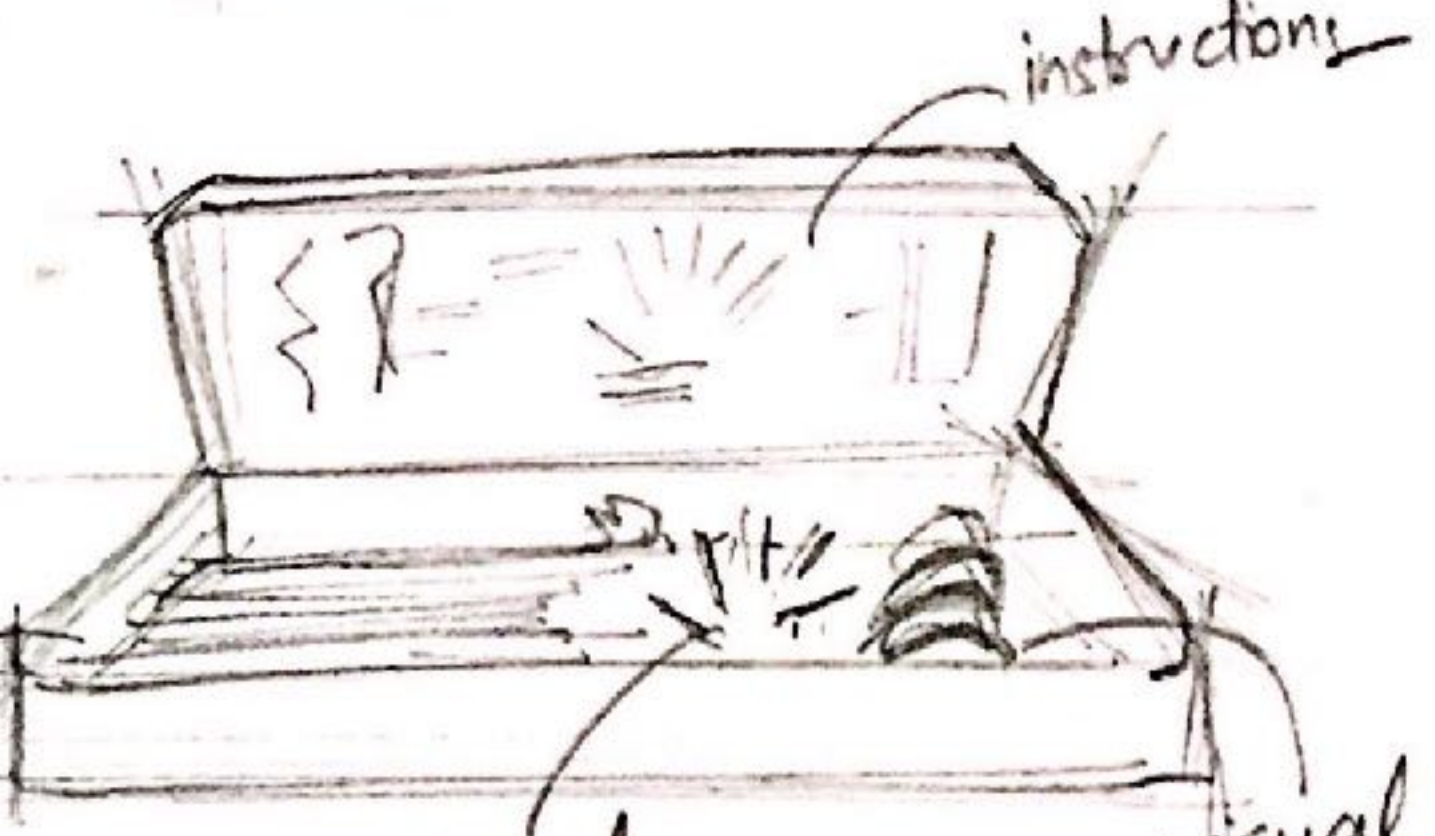
THE POWER KIT



Power Kit



wrist exercise movement

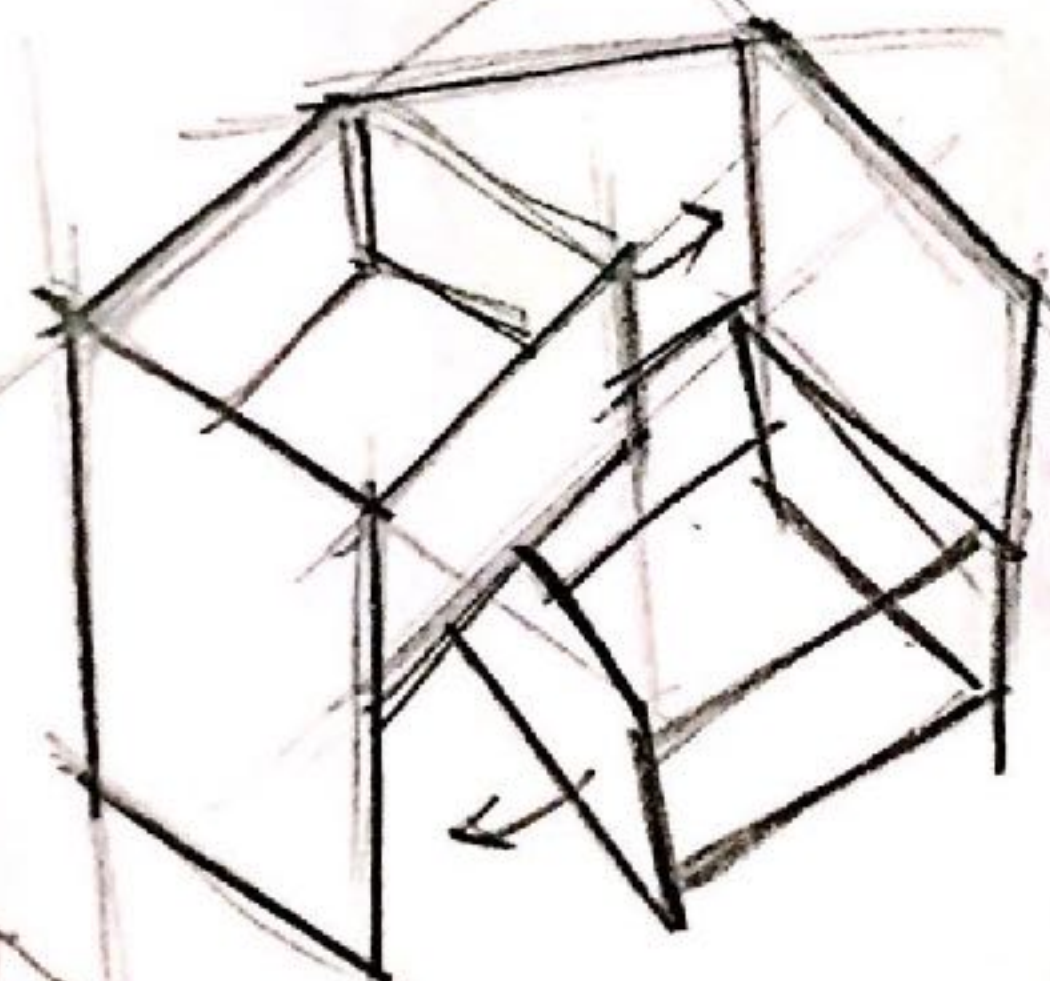
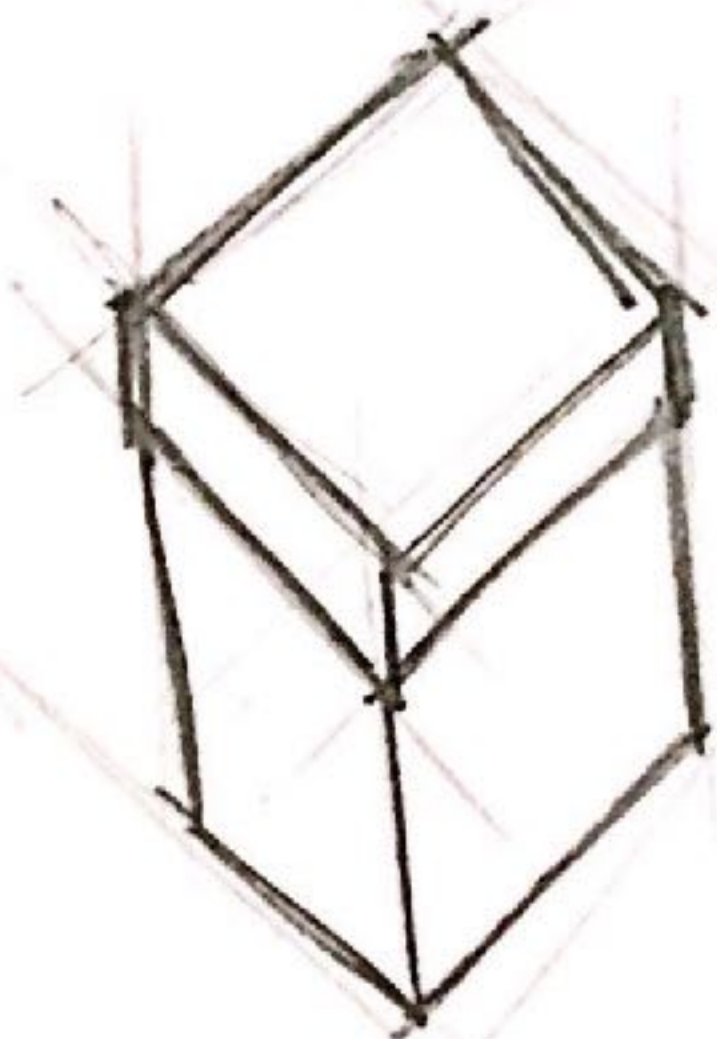


instructions

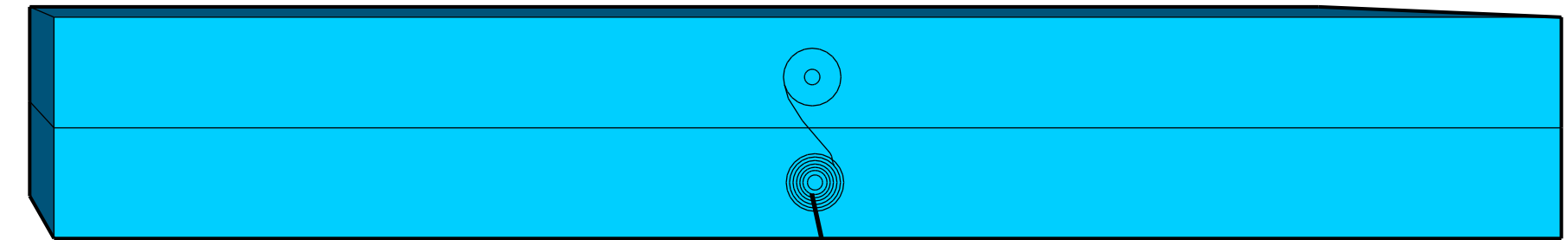
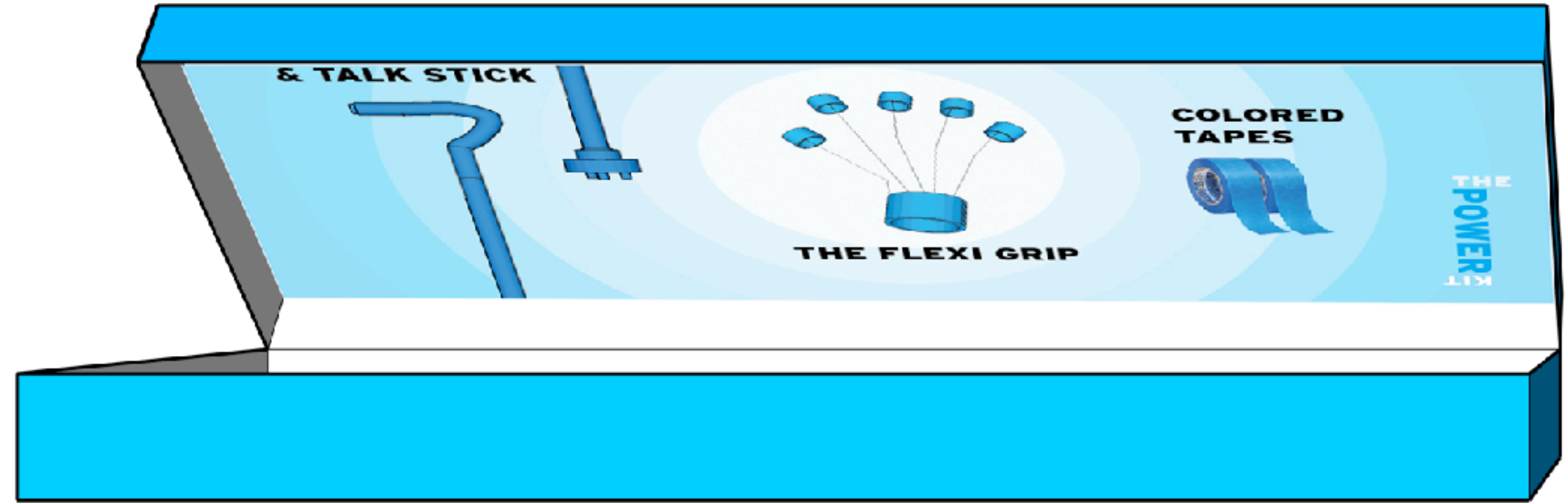
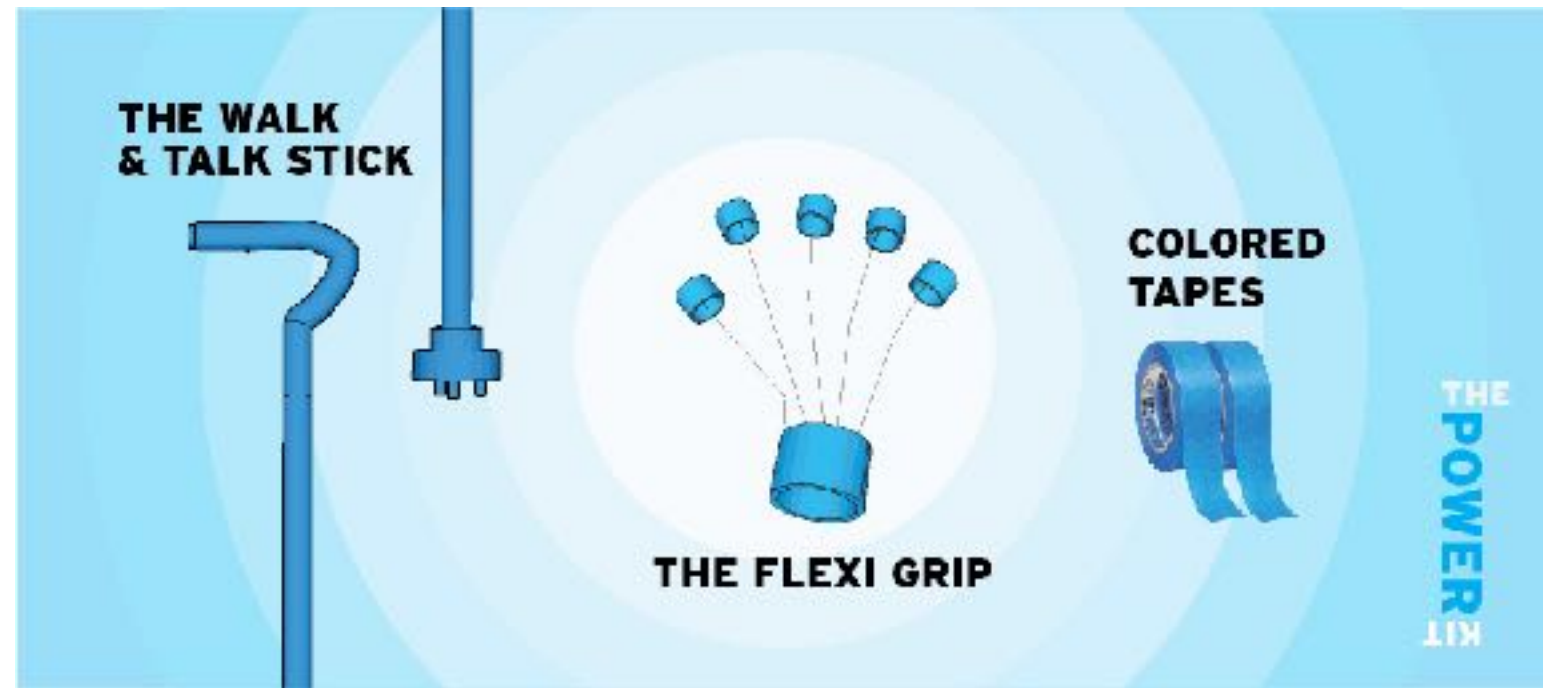
walking cane

hand grip

visual cue



THE POWER KIT



**EXERCISE WHILE
OPENING THE BOX**

- 3-IN-ONE
- Folded cane + Grip + Colored Tapes
- Portable

TO SUMMARIZE...

1

**THE WALK &
TALK STICK**

2

**THE
FLEXI GRIP**

3

**THE
POWER KIT**

THANK YOU!
