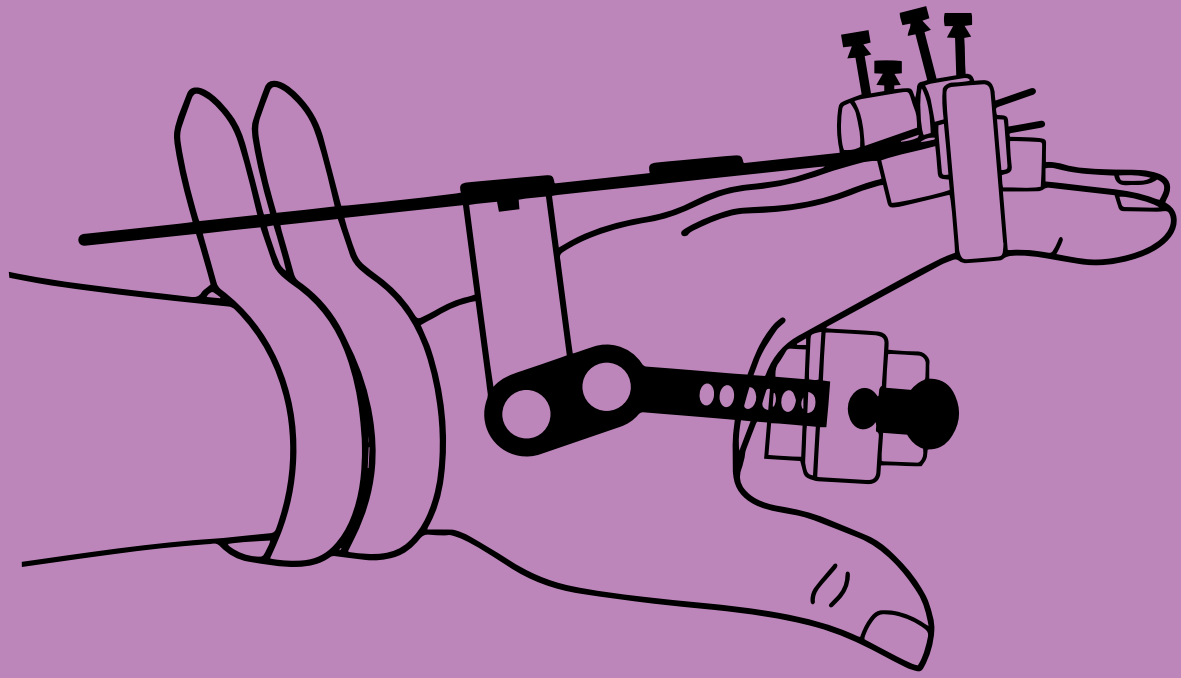
Empathy Tool Manual

Geriatric Arthritis Simulator



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Welcome

to the Geriatric Arthritis Simulator
Empathy Tool Manual

Manufacturer Manual [1]

Please carefully read this **Empathy Tool Manual** before using the assisted tools or simulators.

This manual is designed to help you understand the challenges of individuals facing old age and arthritis through the use of the Geriatric Arthritis Simulator. Please note that you can access manufacturer's user manual via the QR codes above.

The Empathy Library is exhibited within the Material Resource Centre, Room V510, 5/F, Jockey Club Innovation Tower, The Hong Kong Polytechnic University.

Visit **http://empathylibrary.design** or scan the QR codes on the last page of this manual to access the digital version and for more resources.

Warning:

The Geriatric Arthritis Simulator is an educational tool designed to simulate symptoms of old age and arthritis for enhanced empathy and understanding. While it simulates some physical limitations, it does not fully replicate the experiences of individuals with arthritis. Exercise caution to prevent accidents, injuries, or discomfort. Avoid risky activities beyond the simulator's capabilities.

Disclaimer:

The use of empathy tools does not equal the full experiences of having a disability. It is best to aim to engage with your target audience, using the tools to prepare better. The Geriatric Arthritis Simulator is not a substitute for professional advice or comprehensive knowledge of ageing and arthritis. Consult a qualified healthcare professional for proper medical management and therapy if you have arthritis or any medical condition. Use it responsibly, acknowledging limitations and potential risks. The School of Design, the Material Resource Centre, and the creators of this simulator and manual are not liable for any injuries, damages, or misuse of the simulator.

Citation:

If you wish to cite this empathy tools manual, you may insert the reference as follows:
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Contents

1. Description of the Simulator 06

2. Use & operation 08

3. DOs & DON’Ts 14

4. Suggested exercises/scenarios 16

5. References 22

6. Acknowledgement 23

1. Description of the Simulator

What disability or impairment does this simulate?

The Arthritis Simulator is a wearable, one-size-fits-all simulator set (one to be worn on each hand) which allows you to experience moderate to severe arthritis.

Arthritis refers to the inflammation and stiffness of joints, leading to pain and restricted movement. It can affect people of all ages, but it is more prevalent among the elderly.

Arthritis can be caused by various factors, including age-related wear and tear, autoimmune disorders, injuries, or genetic predisposition. The symptoms can vary but often include joint pain, swelling, reduced range of motion, and difficulty with daily activities. The Geriatric Arthritis Simulator aims to provide a glimpse into the challenges faced by individuals living with arthritis, fostering empathy and informing the design of inclusive solutions.

The following list shows some of the effects that you should experience while wearing the Arthritis Simulator:

- **Reduced grip strength:** harder to hold objects and open/close things
- **Reduced dexterity:** difficulty to grip, pinch, turn, lift, and twist objects
- **Restricted range of motion:** reduction in opening hand and closing the hand
- **Tactile sensation:** reduced tactile sensation or feeling at the fingertips
- **Discomfort or mild pain**

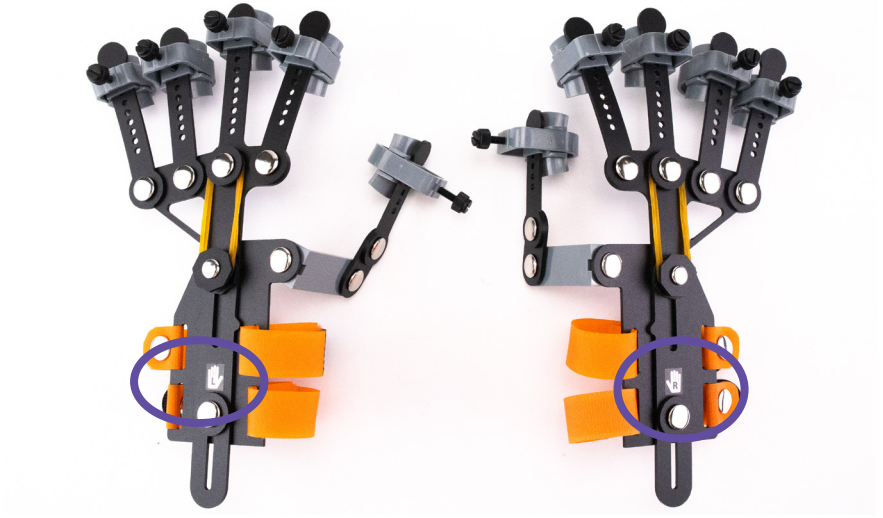
At first, this simulator can look pretty complicated, but we assure you it's all quite simple. The figure below illustrates all the parts and features:

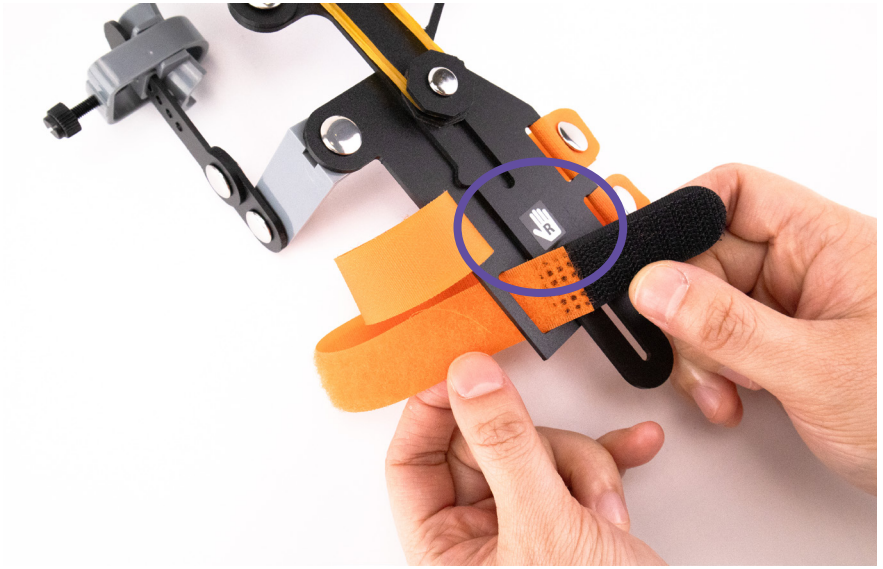
Note: Hand Indication stickers can be found on the top side of each arthritis simulator.

2. Use & Operation

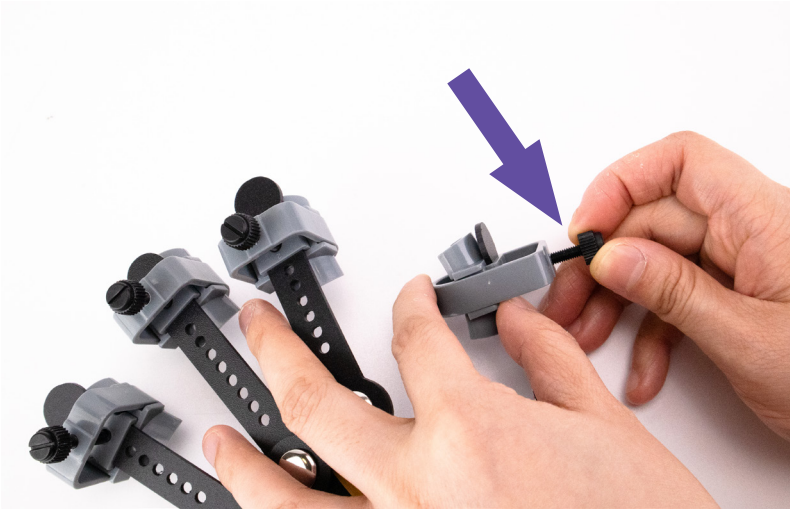
How to put it on?

1. Locate the hand indication sticker to determine which arthritic hand is intended for each of your hands.





2 Loosen each **finger joint**, five total for each hand, by twisting the **black screw** counterclockwise; twist until the joint moves freely up and down the plastic finger.

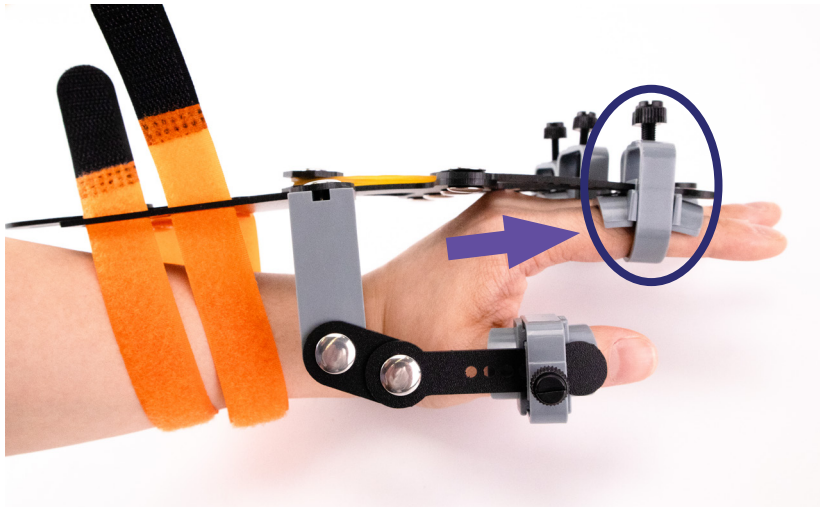


3 Slide the hand through the **velcro straps**; the arthritic hand will be on top of the user's hand.

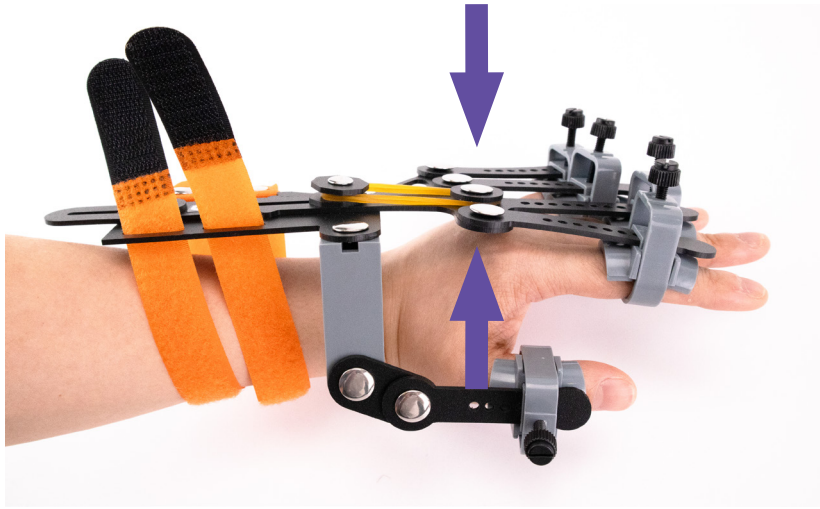
2. Use & Operation

How to put it on?

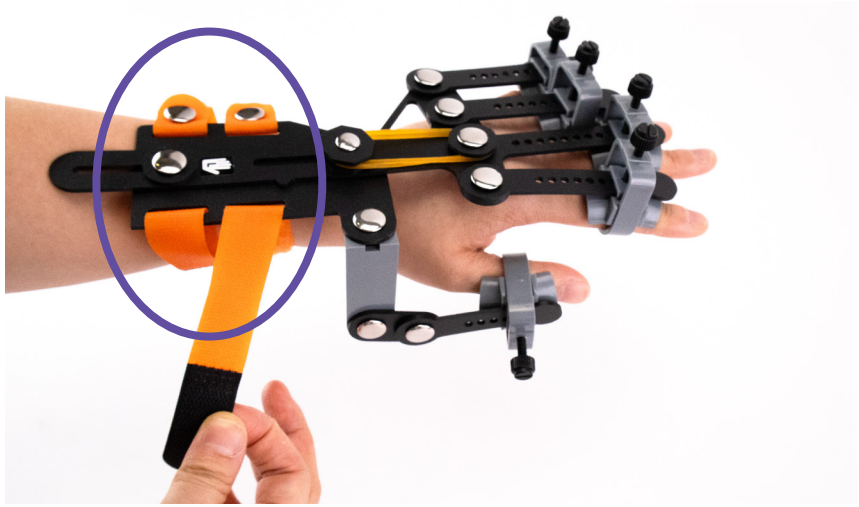
4 Slide fingers into the **finger loops**.



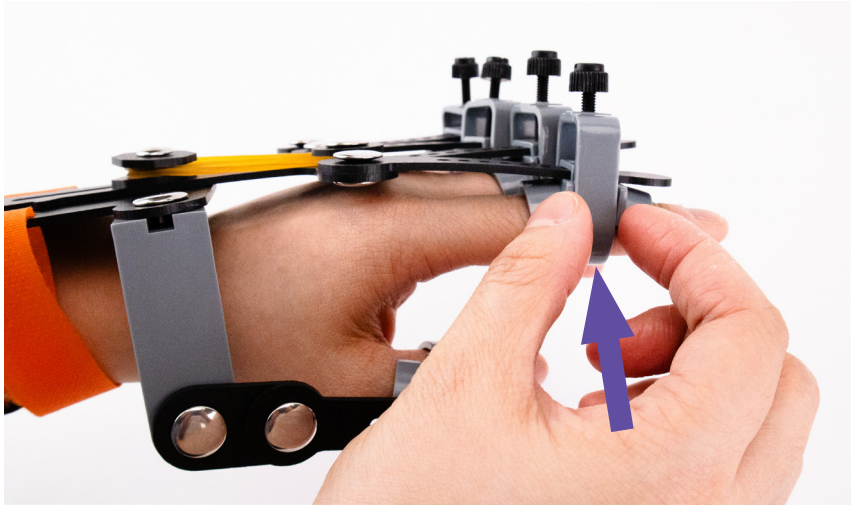
5 Position the four **silver rivets** directly over the user's knuckles.



6 Tighten the **Velcro straps** on the forearm, making sure the straps are secure on the wrist.



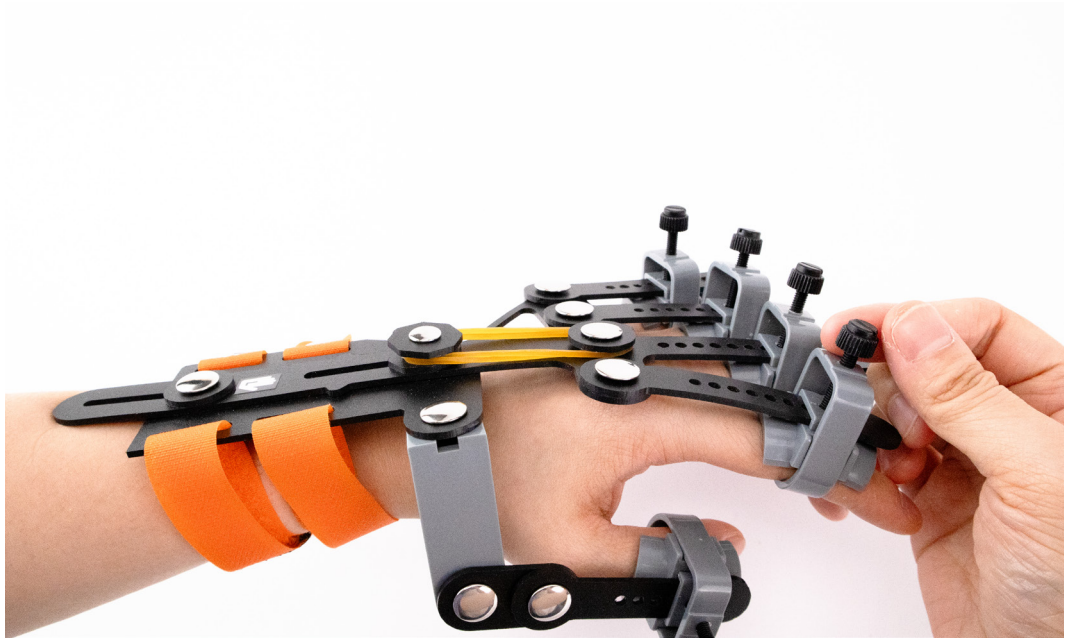
7 Position the **arthritic finger joints** over the human finger joints.



2. Use & Operation

How to put it on?

8 Tighten **all five finger joints** by twisting the **black screw** clockwise. Twist until slightly uncomfortable on your knuckles.



NOTE: It's important to have the finger joint placed directly on or slightly above the knuckle.

9 Repeat these instructions for the other hand.

10 **Now, you should be ready to start your empathy exercises!**

Refer to section ***4. Suggested Exercises and Scenarios*** for some ideas and guidance.

3. DOs & DON'Ts

How to embrace and avoid?

DOs

- **DO** ensure that the simulator fits properly on your hands before starting any activities.
- **DO** wear them for at least 5 minutes to feel the effects.
- **DO** start with simple tasks and gradually progress to more complex activities to get a better understanding of the user experience.
- **DO** immediately discontinue using this product if you feel any sharp pain, dizziness or tingling in your fingers.
- **DO** communicate and collaborate with other students or instructors to share insights and experiences gained from using the simulator.
- **DO** take breaks if you experience discomfort or fatigue while wearing the simulator.
- **DO** follow proper hand hygiene practices, including washing your hands before and after use to maintain cleanliness and prevent the spread of germs.
- **DO** handle the simulator with care to prevent any damage or wear that may affect its effectiveness.
- **DO** consult with individuals who have firsthand experience with arthritis to better understand their needs and challenges.

DON'Ts

DON'T use for activities that require a high level of precision or that could potentially cause harm to yourself or others, for example driving a car or operating heavy machinery.

DON'T use if you have any open wounds, cuts, or skin conditions that may be aggravated by wearing them.

DON'T share the simulator with others without sanitising your hands with alcohol gel, as it may transfer germs or compromise hygiene.

DON'T use excessive force or strain while wearing the simulator, as it may lead to injury or cause damage to the simulator.

DON'T assume that the simulator fully replicates the experience of arthritis for all individuals; each person may have unique symptoms and limitations.

DON'T use the simulator as a substitute for consulting healthcare professionals or seeking medical advice for arthritis-related concerns.

DON'T use the simulator if you have any preexisting impairments to hands.

DON'T forget to approach the usage of this simulator with empathy and respect for individuals living with arthritis, focusing on understanding their needs rather than simply mimicking their limitations.

4. Suggested Exercises & Scenarios

How to build empathy with the users?

Before you try a complex scenario, you should get used to the simulator and adjust the tightness of finger joints and or velcro straps required. Here are some suggestions of a few basic tasks to get started:

- **Open and close your hands**
- **Grip onto a handle, open and close a door**
- **Fill a cup full of water and have a drink**
- **Hold a pen and write your name**

Here are some suggestions for creating your own empathy scenarios:

1. **Daily Tasks Challenge:**
   Wear the simulator gloves and attempt to complete various daily tasks. This could include tasks like **tying shoelaces, using utensils, or signing a signature**. The goal is to experience the limitations and difficulties that individuals with arthritis face when performing these routine activities.

2 Fine Motor Skills Activity:

Engage in an activity that requires precise and delicate hand movements, such as **threading a needle, buttoning shirts, assembling a small model, or doing intricate artwork**. The gloves will restrict dexterity and simulate the challenges faced by individuals with arthritis in performing tasks that require fine motor skills.

3 Mobility and Navigation Exercise:

Put on the arthritis simulator gloves and **use a mobility aid** (like an assistive cane or wheelchair) to simulate mobility limitations. Attempt to navigate through a busy environment or an obstacle course that includes **ramps, stairs, and tight spaces**. This exercise aims to provide insights into the mobility challenges faced by individuals with arthritis.

4 Communication and Interaction Simulation:

Wear the gloves during a social gathering or group activity. Experience the difficulties in **communicating, gesturing, and interacting with others** when hand and finger movements are restricted. This can help develop empathy for individuals with arthritis who struggle with expressing themselves through hand motions.

4. Suggested Exercises & Scenarios

How to build empathy with the users?

5 **Eating Challenges:**

With the arthritis simulator gloves on, try eating a full meal using various utensils, such as **chopsticks, a knife, a fork, or a spoon**. Use different types of containers like **a bowl, a plate, a cup or a water bottle.** Also, attempt to hold and use **a glass or a mug with handle** to simulate the difficulties faced by individuals with arthritis in gripping and manipulating objects while eating.

6 **Technology Interaction:**

Wear the gloves while using a **phone or laptop**. Try typing, texting, and navigating through applications with limited dexterity and restricted finger movements. This exercise can help understand the challenges individuals with arthritis face when using digital interfaces.

7 **Public Utility Interaction:**

Visit a public utility, such as **a vending machine or a self-service kiosk**, and attempt to operate it while wearing the arthritis simulator gloves. Experience the challenges of pressing buttons, inserting coins or cards, and navigating the interface with limited hand mobility.

8 **Exercise and Fitness:**

Engage in an exercise activity, either in a park or a gym, while wearing the arthritis simulator gloves. This could include activities like **weightlifting, using exercise machines, or participating in a group fitness class**. The gloves will simulate the difficulties individuals with arthritis encounter when performing physical activities and highlight the impact on their range of motion and grip strength.

Remember, these scenarios are intended to promote empathy and understanding. It's important to approach them with respect, patience, and an open mind to gain a better appreciation for the challenges faced by individuals with disabilities like arthritis.

5. Designing for Intersectionality by Combining Empathy Tools

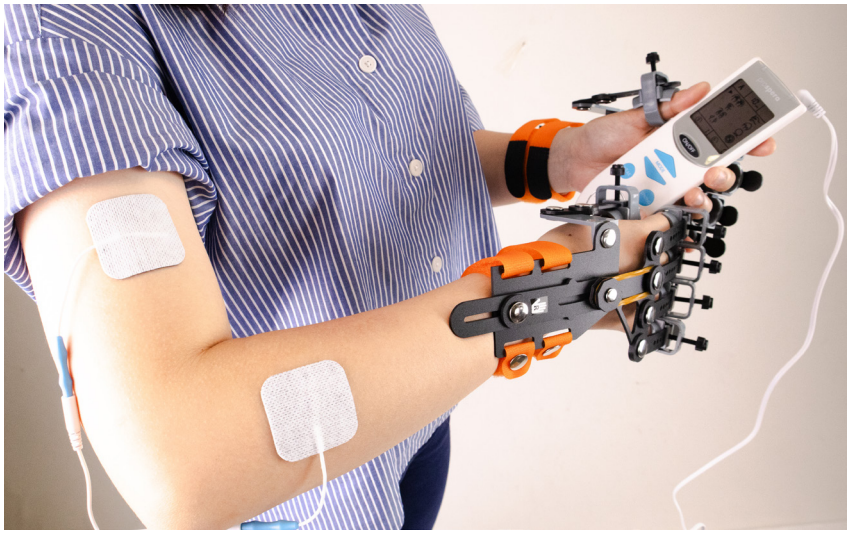
How to build empathy with the users?

As design students, it is essential to recognise that the individuals we are designing for may often have more than one impairment or condition. While the simulators provided in this manual offer valuable insights into specific aspects of the user's experience, it is important to remember that real-life situations can be complex and multifaceted.

To deepen your empathetic design methods and create more inclusive, innovative and original solutions, we encourage you to consider using **a combination of empathy tools** together. By combining simulators, such as wearing the **Geriatric Arthritis Simulator** along with **Geriatric Tremor Simulator**, you can gain a more comprehensive understanding of the challenges faced by individuals with multiple impairments or conditions.

By embracing this holistic approach, you will be better equipped to develop designs that address the diverse needs and experiences of your target users. Remember, empathy is at the core of meaningful design, and by continually expanding your understanding and perspectives, you can create truly inclusive and impactful solutions.

Have you thought about using this simulator along with:



Geriatric Tremor Simulator

These are just some suggestions; you can get creative and try to create any combination of empathy simulators, including your own DIY simulators.

Reference

1. Reality Works. (19 June 2020). *Product Support - Geriatric Arthritis Simulator* [Video]. YouTube. https://www.youtube.com/watch?v=E6D6pudwVxA

Acknowledgement

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