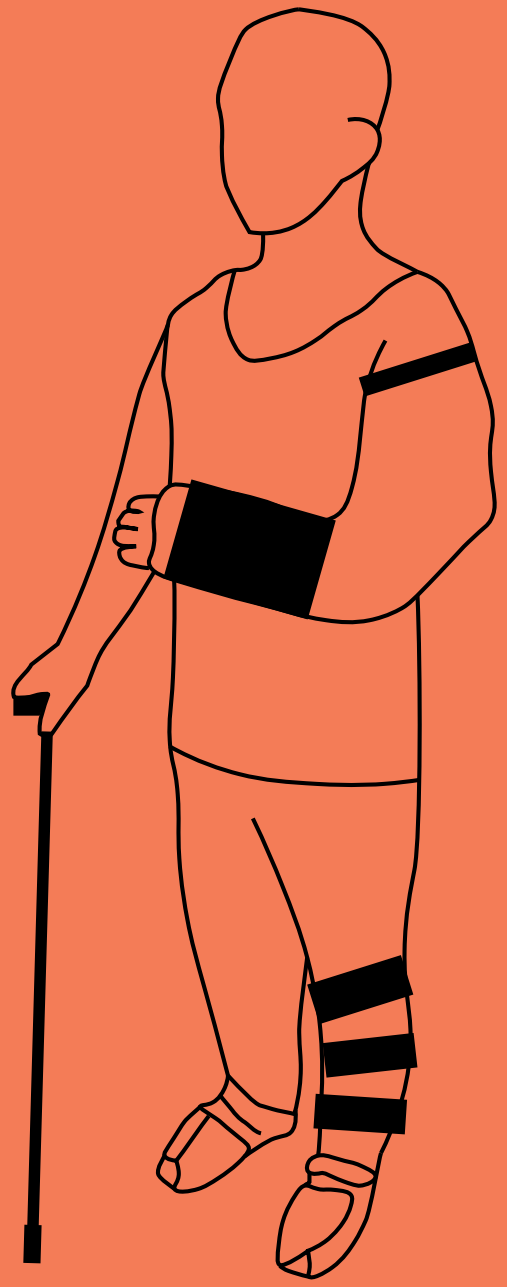
Empathy Tool Manual

Hemiplegic Simulation Suit



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Welcome

to the Hemiplegic Simulation Suit
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 physical challenges faced by individuals with hemiplegia through the use of the Hemiplegic Simulation Suit. 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 Hemiplegic Suit Tool Manual is for educational purposes and aims to foster empathy for individuals with hemiplegia. While it simulates some physical limitations, it does not fully replicate the experiences of individuals with hemiplegia. Use caution to prevent accidents, falls, or strain, and consult a healthcare professional before using the suit, especially if you have pre-existing health conditions. Have a support person present during the simulation.

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 Hemiplegic Simulation Suit is not a substitute for professional medical advice, therapy, or rehabilitation. Consult a qualified healthcare professional for proper medical management and therapy if you have hemiplegia or any medical condition. 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:

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Contents

1. Description of the Simulator

What disability or impairment does this simulate?

The Hemiplegic Suit, alternatively known as the Side Paralysis Simulator, is designed to simulate the physical limitations and challenges faced by individuals with hemiplegia. Hemiplegia refers to the paralysis or weakness that affects one side of the body, typically resulting from a:

- **Stroke,**
- **Brain injury** or a
- **Neurological condition.**

By wearing the Hemiplegic Suit, design students can gain a unique insight into the difficulties faced by individuals with hemiplegia, such as

- **Limited mobility,**
- **Impaired coordination** and / or
- **Reduced strength on one side of the body.**

This simulation experience aims to promote empathy, understanding, and inspire innovative designs that cater to the needs of individuals living with hemiplegia.

The Hemiplegic Suit includes several parts, and to help you out, here is a list and image of all the components.

1. Simulation suit
2. Arm sleeve
3. Wrist brace
4. Knee brace
5. Ankle brace
6. Pair of shoes
7. Folding cane

Before you start, remember that this simulation exercise should be completed with a friend or classmate who can act as your assistant.

2. Use & Operation

How to put it on?

1 Attach the sleeve

It's simple; it just zips on and off. Attach the sleeve to the simulation suit on the side that you wish to simulate the paralysis, left or right.

Hold up. Don't put on the suit yet!

2 Shoes and ankle brace

- Insert the ankle brace into the heel of the left or right shoe and secure it to the shoe
- Put on the shoe with the brace and secure the brace to your leg using the Velcro belt
- Don’t forget to slip on the opposite shoe

Remember: *you are simulating side paralysis. Hence, the sleeve, the ankle brace and the knee brace should all be on the same side.*

3 Knee brace

Fit the knee brace to the back of your knee and secure it with the top and bottom Velcro belts.

Note: *The hard plastic brace should be attached behind the knee, and the Velcro straps should wrap around the front of the leg.*

2. Use & Operation

How to put it on?

4 Wrist brace

Fit the wrist brace onto your wrist and secure it with the Velcro belt.

Note: *The Velcro strips on the arm sleeve and the chest area of the suit are strong, so detach them slowly, starting from the end of the strip.*

5 Jacket

- Put on the jacket of the simulation suit, ensuring the Velcro is on your front side
- Ask your friend or classmate to fasten the Velcro straps on your back
- Your arm with the sleeve and wrist brace should attach to your chest with the Velcro

6 Walking Cane

- Take out the folding cane from its package, and the cane will unfold and extend into a straight line. Loosen the cap at the top of the cane and press on the round button to adjust cane height. Tighten the cap again before use.
- Be careful of the folding cane's spring action when it extends itself the moment you take it out from its package.

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** wear the suit properly, following the provided instructions, to ensure an accurate simulation of the symptoms associated with hemiplegia.
- **DO** carry out simulation and empathy exercises with a friend or classmate who can act as your assistant.
- **DO** take extra care when walking on steps or uneven surfaces.
- **DO** engage in conversations and seek input from individuals with hemiplegia or other disabilities to gain deeper insights into their experiences, needs, and preferences.
- **DO** engage in activities that mimic daily tasks, such as eating, dressing, and writing, to understand the impact of hemiplegia on functional abilities.
- **DO** observe and document your experiences, noting the frustrations, limitations, and barriers you encounter during the simulation.
- **DO** design solutions involving individuals with disabilities in the design process. Embrace co-design and participatory approaches to ensure that your solutions meet their actual needs and preferences.

DON'Ts

DON'T attempt to drive a car or operate any heavy machinery while wearing the Hemiplegic Simulation Suit.

DON'T push yourself beyond your physical limits or engage in activities that may cause harm or injury. Always prioritise your safety and well-being.

DON'T assume that your experience with the Hemiplegic Simulation Suit fully captures the diverse experiences of individuals with hemiplegia or other disabilities. Recognise that everyone's experience is unique, and there is a wide range of abilities and individual differences within the disability community.

DON'T overlook the social and environmental factors that can impact the experiences of individuals with disabilities. Consider accessibility, inclusivity, and the removal of barriers in your design solutions.

DON'T approach disabilities from a deficit perspective. Instead, focus on empowering individuals, promoting independence, and enhancing their overall quality of life through your design solutions.

4. Suggested Exercises & Scenarios

How to build empathy with the users?

Here are some suggestions of basic tasks.

Before you try a complex scenario, you should get used to the suit and adjust the suit accordingly.

- **Sit down in a chair and stand up from the seated position**
- **Walk up and down some stairs**
- **Walk up and down a ramp or a hill**
- **Step up onto a chair or a high step**

Now, here are some suggestions for helping you to create your own empathy scenarios:

1 Everyday Tasks:

Attempt to perform everyday tasks using only one side of your body while wearing the Hemiplegic Simulation Suit. Examples include **brushing your teeth, opening a jar, or tying shoelaces**. Experience the challenges and limitations of hemiplegia in these activities and reflect on how to design inclusive solutions that assist with one-handed operations.

2 Meal Preparation:

Prepare a meal or snack while wearing the Hemiplegic Simulation Suit, limiting the use of one side of the body. This exercise will help you understand the difficulties faced by individuals with hemiplegia in cutting, chopping, and handling utensils. Consider adaptive tools or alternative techniques that can enhance independence and safety in the kitchen.

3 **Writing and Drawing:**

Attempt to write or draw using only one hand while wearing the Hemiplegic Simulation Suit. Notice the impact on fine motor control, precision, and legibility. Reflect on how to design ergonomic writing instruments or digital interfaces that accommodate individuals with hemiplegia.

4 **Getting Dressed:**

Practice getting dressed, including **putting on clothes, fastening buttons or zippers, and tying shoelaces**. Use one hand or limit the mobility of one side while wearing the Hemiplegic Simulation Suit. Explore adaptive clothing designs or assistive devices that facilitate independent dressing for individuals with hemiplegia.

5 **Using Technology:**

Interact with various technological devices, such as **smartphones, tablets, or keyboards**, while wearing the Hemiplegic Simulation Suit. Observe the challenges of typing, navigating touch screens, or using small buttons. Consider inclusive design principles and alternative input methods to ensure accessibility for individuals with hemiplegia.

6 **Public Transportation:**

Simulate using public transportation while wearing the Hemiplegic Simulation Suit. Experience the difficulties of **boarding buses or trains, navigating turnstiles, and finding seating** that accommodates limited mobility. Reflect on design solutions that improve accessibility, wayfinding, and seating arrangements in public transportation systems.

7 **Recreational Activities:**

Engage in recreational activities such as **playing sports, musical instruments, or gaming consoles** while wearing the Hemiplegic Simulation Suit. Notice the challenges of coordination, dexterity, or balance. Explore adaptive equipment, modified interfaces, or inclusive game design to enable individuals with hemiplegia to participate fully in recreational pursuits.

These suggested tasks and scenarios aim to provide you with firsthand experiences of the challenges faced by aged individuals in various aspects of daily life. By immersing yourself in these scenarios, you will gain valuable insights and inspiration to create more inclusive and empathetic designs.

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 **Hemiplegic Simulation Suit** along with **Hearing Impairment Simulator** or **Vision Impairment Simulation Glasses**, 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:

Hearing Impairment Simulator

Vision Impairment Simulator

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

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Reference

1. Sakamoto Model. (n.d.). *Hemiplegic Simulation Suit*. https://www.sakamoto-model.com/product/simulation/m165/index.html

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