

Principles and Practice of Assistive Technology: Final Documentation

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Final Documentation:

Final Video Link: <https://drive.google.com/drive/folders/1tK0YZLMjBkXitx14IAk3jZGq-R7qVhKL>

Instructables Link: <https://www.instructables.com/id/Plate-Stabilizer/>

Final Success Metrics:

Design Specification	Quantitative Requirement	Rationale	Status of Current Device on Requirement
Can carry different plate sizes	Radius = 8.25cm - 10.25cm	When searching for plate sizes this covered several different areas.	Achieved
Can carry different bowl sizes	Radius = 6 cm - 12.5cm	Covers searched sizes	Achieved: Extension range is 10cm - 28cm
Can carry mugs and cups	Radius = 2.25cm - 4.5cm	Covers searched sizes	Achieved (if using optional extension pieces)
Can carry utensils	3 simultaneously	The Client said that she uses knives, forks, spoons, and chopsticks (max 3 at a time)	Achieved
Collapsible and storable	Collapsed dimensions of 28cm x 20cm x 2cm	Average laptop size used as benchmark	Length and width achieved, depth (2 cm) not achieved
Light-weight, distributed	Total weight less than 5lbs	The Client's initial preference; needs additional user testing	Achieved
Does not limit maneuverability	Protrudes out from crutches less than	Width of a larger sized lunch tray	Achieved

	35cm		
Dull and rounded edges	Radius > 2cm	Based on personal estimates; needs additional research	Achieved
Adjustable	N/A	The device should alter to hold the different plate sizes.	Achieved
Simple to attach and remove	N/A	The Client will likely need to remove the device during the day.	Achieved
Hands-free	N/A	The mobility of the client will be impacted with non Hands-free choices.	Achieved
Does not require backpack	N/A	Direct client request. The backpack is already currently heavy.	Achieved
Long-lasting	Lasts more than 1 year	Typical lifespan of one set of crutches, good benchmark	Has not been tested
Waterproof	N/A	In case of spills the device still functions	Achieved
Weatherproof	N/A	The device should still function in various outdoor weather conditions	Achieved
Resistant to collisions	Can withstand lateral force greater than 20lbs	Based on personal estimates; needs additional research	Has not been tested