



Power Adjustable Seat Height:

How High and WHY?

HYATT REGENCY DENVER & COLORADO CONVENTION CENTER · SEPTEMBER 3-6, 2017

1. Name at least four clinical benefits of a power adjustable seat height system.
2. Discuss and utilize evidenced-based research and apply it to the clinical decision-making process in the selection of a power adjustable seat height system.
3. Identify at least 2 third-party payors that will consider a highly functional power seat elevation system for coverage and reimbursement.



LEARNING OBJECTIVES

Disclosure

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Power Seat Elevation



Evidence Based Clinical Criteria?

A power seat elevation feature is **non-covered** because it is **not primarily medical in nature**.

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~~Power Seat Elevation~~

Power
Adjustabl
e Seat
Height
(PASH)



Position Paper



The Application of Seat-Elevation Devices for Wheelchair Users (2009)

[http://www.resna.org/sites/default/files/legacy/resources/position-papers/
RESNAPositionontheApplicationofSeat-ElevatingDevices.pdf](http://www.resna.org/sites/default/files/legacy/resources/position-papers/RESNAPositionontheApplicationofSeat-ElevatingDevices.pdf)

Seat Elevation Device

- Transfers
- Reach
- Psychological
 - Eye-to-eye contact
 - Communication
 - Social engagement
- Physiological
 - Decrease hyperlordotic cervical curvature



RESNA – Transfers



RESNA – Transfers



FMA Study – UPMC

· Seat Elevators:
· How to Utilize the
· Functional Mobility
· Assessment (FMA) to Track
· Function and Justify Medical
· Necessity

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Academic Chief Resident
Department of Physical Medicine and
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University of Pittsburgh Medical Center

Functional Mobility Assessment

6. My current means of mobility allows me to transfer from one surface to another:
(e.g., bed, toilet, chair)

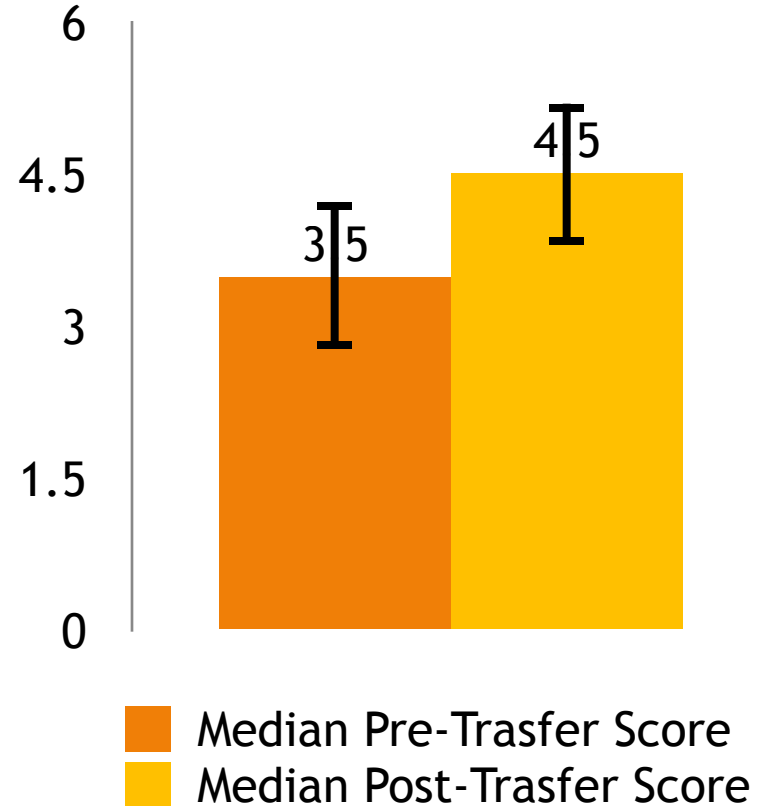
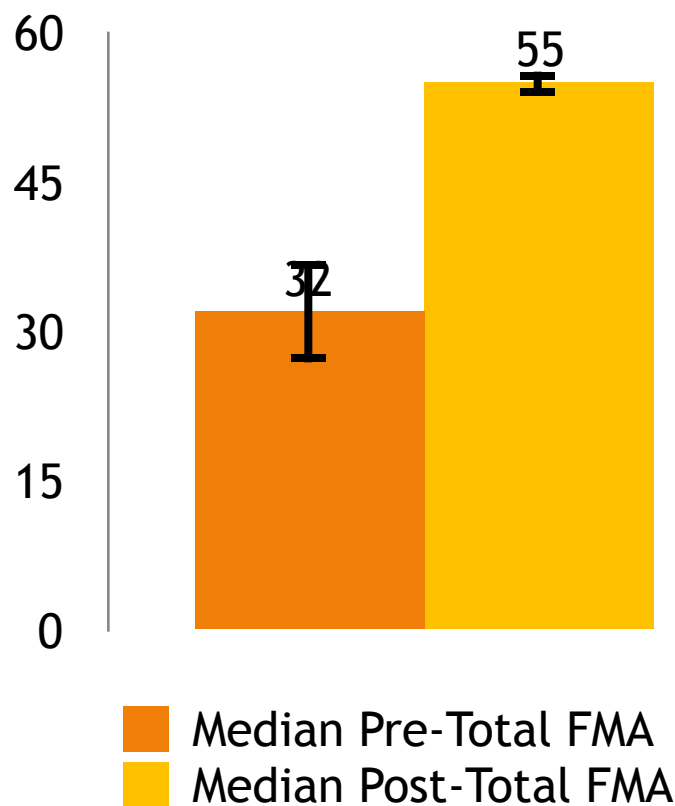
Comments: Ask HOW they transfer, observe WHAT the challenges to transferring are, and WRITE IT

Completely Agree	Mostly Agree	Slightly Agree	*Slightly Disagree	DOWN! Mostly Disagree	*Completely Disagree	Does not apply	Rating priority
6	5	4	3	2	1		

Would the addition of a power adjustable seat height system have a positive impact such that the response could be “completely agree”?

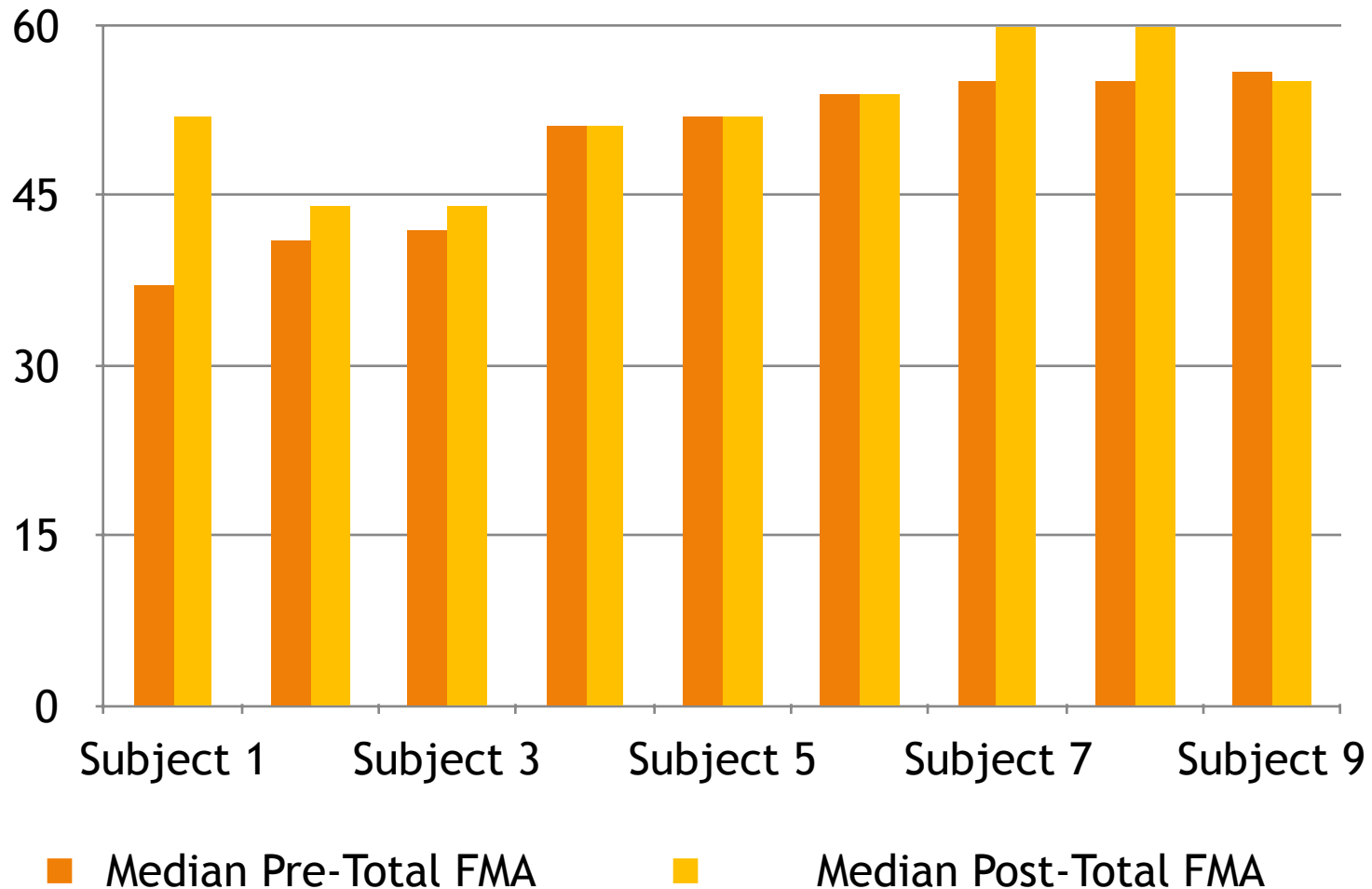
FMA Study – UPMC

No SE at baseline – Received one (n=8)



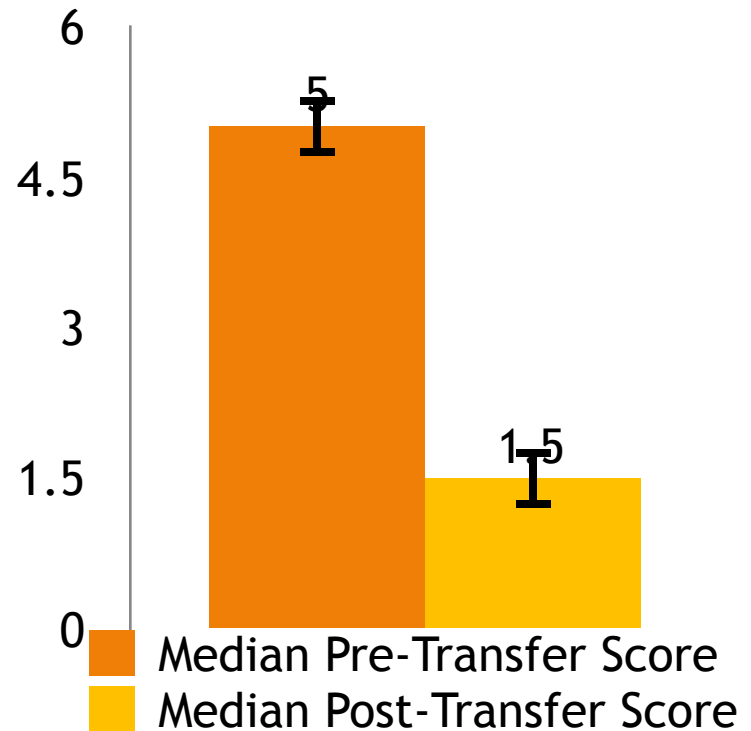
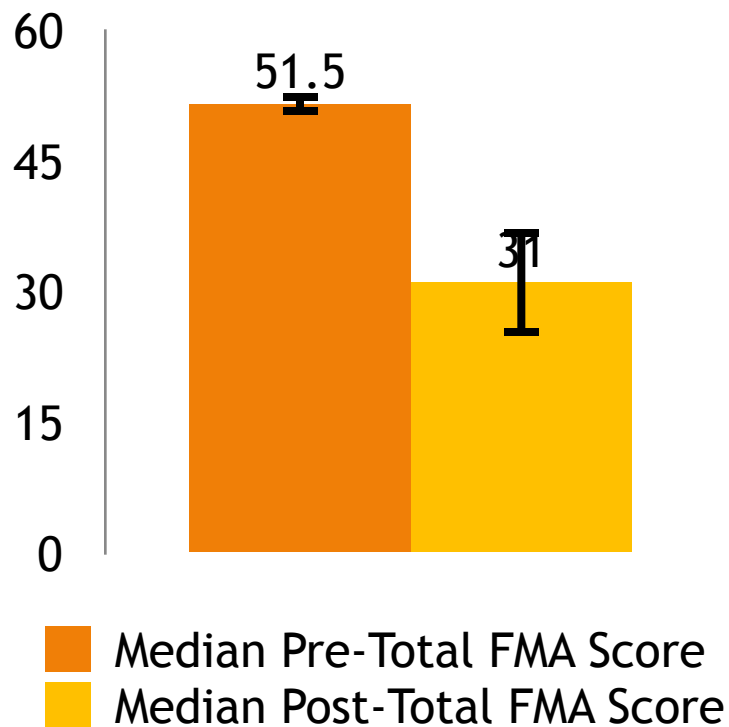
FMA Study – UPMC

SE at baseline – Retained it (n=9)



FMA Study – UPMC

SE at baseline – Lost it (n=5)



FMA Study – UPMC

Conclusion

- PWC with SE are associated with **improved mobility**:
 - ✓ For those receiving one for the first time
 - ✓ Continued improvements for those who retain a SE
- Once the SE is removed, there is a **decrease in transfer ability**

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RESNA – Functional Reach



RESNA – Functional Reach



FMA Study – UPMC

Assessment of Seat Elevator User Satisfaction

Vince Schiappa, MS
Geoffrey Henderson, MD
Corey Hickey, DO
Richard Schein, PhD, MPH
Mark Schmeler, PhD, OTR/L, ATP
Brad Dicianno, MD

Functional Mobility Assessment

5. My current means of mobility allows me to reach and carry out tasks at different surface heights as independently, safely and efficiently as possible:
(e.g., table, counters, floors, shelves)

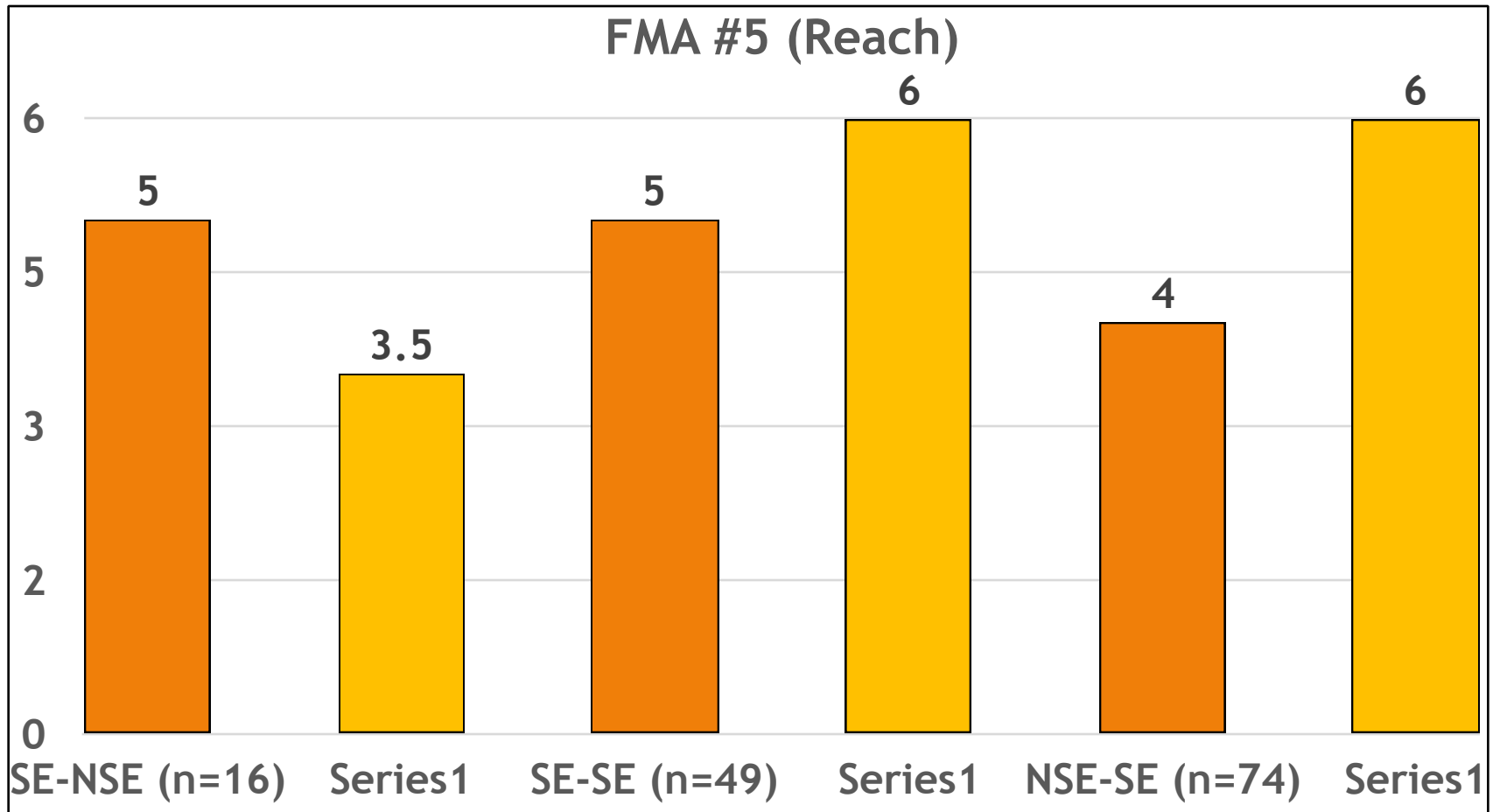
Comments:

Ask/observe WHAT surfaces/heights cannot be reached/what tasks cannot be preformed safely/timely/efficiently and WRITE IT DOWN!

Completely Agree	Mostly Agree	Slightly Agree	*Slightly Disagree	*Mostly Disagree	*Completely Disagree	Does not apply	Rating priority
6	5	4	3	2	1		

Would the addition of a power adjustable seat height system have a positive impact such that the response could be “completely agree”?

Assessment of Seat Elevator User Satisfaction (N = 139)



Overhead Reach Comparison

- A study comparing the frequency and duration of overhead arm activity between wheelchair users and occupationally matched non-wheelchair users during an 8-hour workday found that:
 - Wheelchair users performed an average of **297** episodes of overhead arm activity
 - Non-wheelchair users performed an average of **53** episodes of overhead arm activity
- The total time spent in an overhead position was **five times greater** for wheelchair users as compared with standing adults.

Newsam, C. J., Requejo, P. S., Isaacs, J., Balikian, T., Hall, S., & Valenzuela, S. (2007, May). *Comparison of overhead arm activity in wheelchair users and non-wheelchair users during an 8 hour workday*. Proceedings from American Spinal Injury Association

Overhead Reach Comparison

297/day x 365 days/yr. x 5
yrs. = **542,025** reaches
overhead during the reasonable
useful lifetime (RUL) of the
feature

VS.

53/day x 365 days/yr. x 5
yrs. = **96,725** reaches overhead



RESNA – Psychological and Physiological

- Reduce trunk and/or neck strain
- Promote “eye to eye” communication
- Fully interact with the environment



RESNA – Psychological and Physiological

- When talking at eye level with others, **typical hyperlordotic cervical curvatures of the spine can be reduced**. This relieves stress on the neck and may help enhance vision, thus helping to prevent secondary complications.
- An elevating seat may also allow a person in a wheelchair to **hear and engage in conversations** within a noisy environment, as well as to **see and navigate** more safely through a crowd of people.





Postural Control

In a w/c with a static seat height of **21"** vertical height is limited to **??"** _____

In a w/c with power adjustable seat height vertical height ranges from **??"** to **!!"** _____



Line of Sight



Line of Sight



RESNA – Social Interaction



RESNA Position



“It is RESNA’s position that seat elevators are often medically necessary for wheelchair users by enabling them to reach, improving MRADL abilities, facilitating or enabling transfers, providing peer height at different ages, enhancing independence and productivity, and delaying or preventing pain and secondary complications of the upper extremities.”

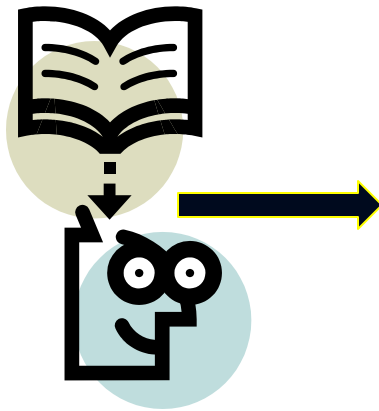
“My” Position is –



n

“Evidenced Based Practice”

Clinical research and **solid documentation**



1
N =



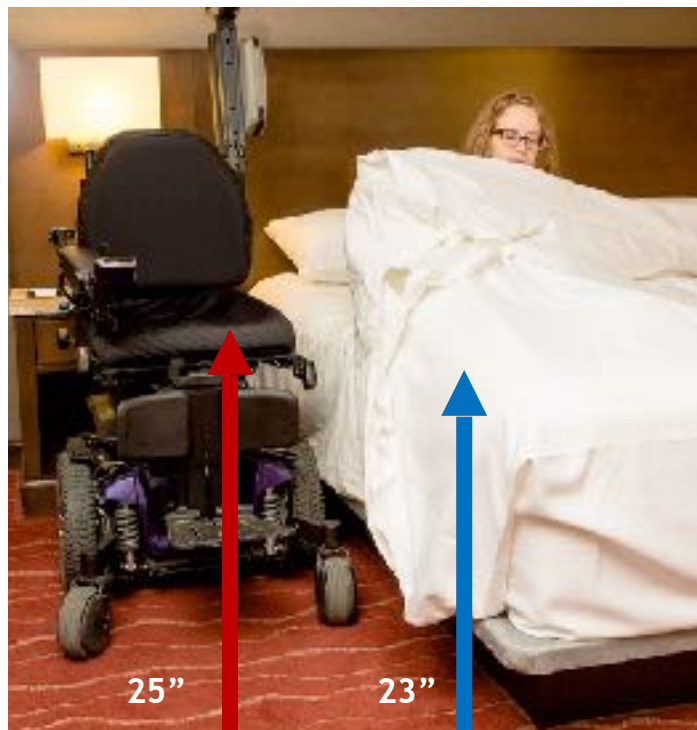
“Evidenced Based Practice”

How HIGH and WHY?



A “Day in the Life” of Stephanie

Unable to Transfer TO the W/C at a height of **25"** from **Bed** the **23"** at a height of **23"**



Able to Transfer TO the W/C at a height of **21"** from the **Bed** at a height of **23"** using a **Sit** method **Pivot**



Transfers

Stephanie is unable to / requires assist to reach the “ ”
 at a height of (list all) and perform/
 participate in ADLs:

- Dresser drawers; clothes rod; washer and dryer
- Medicine cabinet; bathroom sink / faucet; mirror; shower head/faucet
- Freezer/refrigerator; oven/stove; microwave; drawers/cupboards/shelves; counter; sink/faucet
- Light switches; thermostat; fire alarm; phone; door eye hole/viewer; elevator buttons
- **OTHER**

Augment / Facilitate Reach

In a w/c with a static seat height of 21" vertical reach is limited to ??"

In a w/c with power adjustable seat height vertical reach ranges ??" from !!" to "

Kitchen counter top height = 30"

Kitchen upper cabinet height = 54"
at the bottom, 84" at the top

Freezer height = 50" - 72"

Stove top height = 36"

Over stove microwave height = 48"
at the bottom, 60" at the top

Height for a closet rod = 65" - 68"

Height of a light switch = 48"

Height for a thermostat = 48"

Fire alarm pull height = 42" - 48"

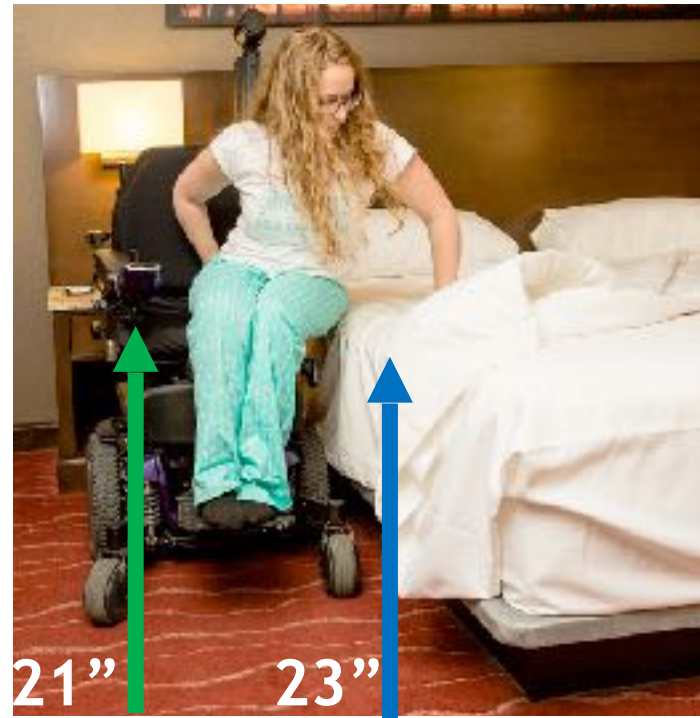


Augment / Facilitate Reach

Unable to Transfer FROM the W/C at a height of **21"** to the **Bed** at a height **23"** of _____



Able to Transfer FROM the W/C at a height of **25"** to the **Bed** at a height **23"** of _____ using a **Sit** _____ method **Pivot**



Transfers

Funding

The VA, Workman's Comp., Vocational Rehab Programs, Medicaid and Commercial Payors (including Medicare and Medicaid replacement plans) will consider it on a case by case basis when it is shown to be essential for:

- Transfers;
- Reach;
- Access;
- Safety;
- Communication;
- Support of identified vocational or educational goals





QUANTUM[®]

The Rehab Power Chair Solutions Company

Thank you for your time –
any questions?