

Manipulating weight-maximizing efficiency: improving function with manual wheelchairs

Summary

Clinical practice guidelines recommend adjustable wheelchairs of the “lightest material available” for manually propelling individuals for maximum function and safety. A study found the primary reason for wheelchair non-use is weight. Attendees will learn how to select, accessorise and set up a manual wheelchair to minimise weight, maximise efficiency.

Aims & Objectives

Attendees will learn through a review of the research and clinical practice guidelines how to select, accessorise and set up a manual wheelchair to minimise weight and maximise efficiency. Overall weight is important but will depend on the accessories, as the frame itself weighs only 20% of the total. If set up poorly, a light weight chair could be less efficient than a well set up heavier wheelchair.

Background

This is not a research paper but rather a clinical/practical presentation.

Discussion

Decisions you make when ordering and setting up wheelchairs will impact wheelchair weight and efficiency and can have a significant effect on function, independence and safety. Common problems including wheelchairs that are difficult to propel, injuries to the upper extremities and even wheelchair abandonment can be avoided or minimised by following some simple evidence-based recommendations. Knowing and understanding these evidence-based recommendations regarding wheelchair weight, configuration and set-up is essential to anyone using, prescribing or selling wheelchairs.

Wheelchair manufacturers often promote having the lightest wheelchairs made of the lightest materials. Does this matter and if so how much? There is research evidence that suggests that a lighter wheelchair will be easier to propel. Clinical practice guidelines support the use of the lightest adjustable wheelchair available for upper limb function preservation. There is also evidence indicating that wheelchair non-use among older adults is linked to wheelchair weight. Wheelchair weight will impact the user or caregiver who must lift the wheelchair in and out of the car. Even an ultra-lightweight wheelchair can be difficult to propel if it's not set up properly. This workshop will examine how choice of frame style, frame materials and components will affect the overall weight of the wheelchair, and the evidence regarding wheelchair weight and propulsion efficiency will be presented and discussed. Attendees will be encouraged to share their own strategies.

References

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2. Rehabilitation Engineering & Assistive Technology Society of North America (RESNA). 2012. Position on the Application of Ultralight Manual Wheelchairs [position paper]. Retrieved from: RESNA: www.resna.org/resources/position_papers.dot. (2011). Position on the Application of Ultralight Manual Wheelchairs [position paper].
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