

Can powered wheelchairs really support 24-hour positioning?

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Summary

The concept of 24-hour positioning for individuals who cannot change position independently for comfort, pressure relief or function is well-established. Powered wheelchairs are becoming more advanced, but can they really support a 24-hour posture management approach? This paper explores the technologies being developed to assist clinicians and end-users.

Aims & Objectives

- 1) To define what is a 24-hour posture management approach, when is it required, and what is involved
- 2) To explore the clinical guidelines and recommendations that support the concept of 24-hour positioning
- 3) To analyse specific powered actuator functions in relation to the key requirements of position change
- 4) Explain how 'assignable' buttons may be used to move to different pre-programmable end positions

Background

Gericke (2006) defines a 24-hour posture management (PM) approach as a planned strategy, involving all activities and treatments which affect an individual's posture or function. However, for PM to be effective, symmetrical sitting, lying and standing (as able) must be promoted, along with maintaining or increasing of mobility, and a regular change in position throughout the day (Good Practice Guidelines to 24 hour Postural Management 2007). RESNA's (2015) guidelines for application of tilt, recline and elevating leg rests for wheelchairs list the multiple benefits of altered body position within powered wheelchairs, and stress the importance of ultimately focussing upon promoting independent change of position to encourage dynamic movement.

Discussion

This paper explores the ability of advanced powered wheelchairs such as the JIVE M2 Sedeo Ergo to move the body into different positions which support a 24-hour PM approach. It details how advanced programming technology can be used to control multiple actuators in programmed sequences at the touch of a button in order to change the body position into a range of pre-determined end positions, including seat tilt, recline, supine, plus specific transfer and pressure relief positions. It also has the ability to set precise end positions which can be easily and quickly programmed by the prescriber to accommodate the users' specific joint range limitations, or enable a more functionally independent position. The clinical significance of these will be discussed in relation to common position changes for users as part of a 24-hour PM approach.

References

Gericke, T (2006). *Postural management for children with cerebral palsy: consensus statement*. Developmental Medicine & Child Neurology 48 (04), 244-244.
Good Practice Guidelines to 24 hour Postural Management (2007). The Northwest Group of Paediatric Physiotherapists & Children's Occupational Therapists
http://www.manchester.nhs.uk/document_uploads/CP%20Network/24_hour_postural_management_draft_27.04.pdf

RESNA 2015 *RESNA Position on the Application of Tilt, Recline, and Elevating Legrests for Wheelchairs Literature Update*. http://www.resna.org/sites/default/files/legacy/resources/position-papers/RESNA%20PP%20on%20Tilt%20Recline_2015.pdf

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