

PATHOKINESIOLOGY LABORATORY
RANCHO LOS AMIGOS NATIONAL REHABILITATION CENTER

ABSTRACTS FROM CONFERENCE PRESENTATIONS (2003 – 2005)

Energy Expenditure and Propulsion Characteristics when Propelling a Standard and Three Pushrim-Activated Power-Assisted Wheelchairs.

Requejo PS, Lighthall Haubert L, Newsam CJ, Mulroy SJ. Rehabilitation Engineering Society of North America conference: June 2005, Atlanta, GA

Abstract

Pushrim-activated power-assisted wheelchairs (PAPAWs) offer marginal users an alternative mode of manual propulsion. The purpose of this study was to evaluate the energy expenditure and propulsion characteristics in a user with tetraplegia propelling a standard wheelchair (WC) and 3 commercially available PAPAW designs (i-GLIDE, Xtender and e.motion). We hypothesized that reduction in energy expenditure and propulsion velocity during PAPAW propulsion would depend upon the particular method of power-assist delivery. Xtender propulsion demonstrated increased velocity and reduced oxygen cost, likely by providing a stable and coordinated response to variations in force applied to each pushrim.

Acknowledgments

Funded by the National Institute of Disability and Rehabilitation Research
#H133E020732
