WEIGHING THE OPTIONS
MANIPULATING WEIGHT - MAXIMIZING EFFICIENCY - IMPROVING FUNCTION
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Does wheelchair weight matter? It makes common sense that a lighter wheelchair should be easier to propel but in fact it’s hard to tease this out when you look at the research. Cowan (2009) found an increase in propulsion velocity with a lighter chair but the difference was 4% between chairs that varied in weight by 20 pounds. Would the difference in propulsion efficiency in wheelchairs that vary in weight by 5-10 pounds be significant enough to impact function? Energy expenditure studies have determined that light weight wheelchairs improve performance compared to standard wheelchairs but have had difficulty isolating which feature (weight, axle position, manufacturing) resulted in the improvements. Clinical practice guidelines and research studies support the use of the lightest adjustable wheelchair available for upper limb function preservation. This is significant considering the high rates of upper limb pain and injury amongst manual wheelchair users. There is also evidence indicating that wheelchair non-use among older adults is linked to wheelchair weight. And it is well known that the caregivers responsible for maneuvering and lifting the wheelchair are often limited in strength themselves. This workshop will examine how choice of frame style, frame materials and accessories will affect the overall weight of the wheelchair and the evidence regarding weight and efficiency will be presented and discussed.

Even an ultra-lightweight wheelchair can be difficult to propel if it’s not set up properly for the user. Clinical practice guidelines provide general set up recommendations to maximize efficiency. For example, moving the rear axle as far forward as possible without compromising the stability of the user is recommended to increase propulsion efficiency and decrease the incidence of shoulder injury. For bariatric wheelchair users and users with lower extremity amputations, achieving ideal weight distribution and ergonomics for propulsion can be especially difficult. This workshop will present set up recommendations, based on research and clinical practice guidelines, for ideal user weight distribution and maximum efficiency regardless of the user’s clinical presentation. Attendees will be encouraged to share their own strategies.

References


**Speaker Bio**

Sarah Matson is an Occupational Therapist who joined Motion Composites in February 2013 as the full-time Clinical Educator. As Clinical Educator, Sarah provides inservices and consultation to clinicians and vendors. Sarah graduated from the McMaster University Occupational Therapy Program in 2000. She has extensive clinical experience working in a variety of treatment settings including outpatient treatment, home and school care. Sarah came to Motion Composites from Ottobock Healthcare Canada where she worked as the Clinical Product Specialist on the Mobility Team. Sarah has also worked as a National Presenter since 2008 providing clinical product training workshops for therapists across Canada.

Jane Fontein, OT, has been an Occupational Therapist for 30 years, working in a variety of areas including long-term care and rehab, as a manufacturer educator and as a supplier. She worked at GFStrong Rehab Centre on the spinal cord unit and coordinated the out-patient seating programme. Jane has provided education seminars and in-services across North America and internationally for both a wheelchair manufacturer, and also for seating companies. She has spoken at many conferences including ISS, RESNA, Medtrade and CSMC. Jane is currently self employed and working as an independent manufacturer educator for Dynamic Health Care Solutions and Motion Composites.