Wheelchair Seating
Is it time you were reassessed?

Over the past 10 years, technological and rehab improvements have enhanced the lives of people with spinal cord injuries. Wheelchair assessments and seating products are among those improvements. More attention has been given to recognizing the importance of early seating intervention on maximizing life long function, comfort and independence.

Seating and spinal cord injury

With a spinal cord injury, some of your muscles can no longer support your body as they were meant to. Your seating system must therefore provide the support. If the body is not well supported, pelvic obliquity (one side higher than the other), kyphosis (slouching) and scoliosis (leaning) can occur because gravity is pulling on the head, shoulders and body.

Balance is also frequently altered in persons with spinal cord injury. To gain a sense of balance, individuals may pull their buttocks forward in their seat and curve their shoulders over their thighs. This is a short-term solution for every-day stability and functioning but this posture may lead to long-term problems that are difficult to remedy.

Everyone ages and as they do their bodies change. Skin becomes thinner and loses its elasticity, joints become more worn and with less physical activity, muscles atrophy and become weaker.

Pain in the back or neck, sitting crooked in your chair, difficulties getting a full breath, and pressure sores may be some of the consequences of poor posture in sitting. Through a proper seating assessment, postural and age related changes can be addressed and with provision of appropriate equipment it is possible to prevent problems from occurring in the future.

Prevention beats treatment…

If you remember life in the rehab with halos, spasticity without Botox or if you have ever said to yourself, “Where will I ever find another Bye Bye Decubitis cushion?” then it is probably time that your seating be reassessed.

Individuals with spinal cord injuries often have their first wheelchair prescribed to them shortly following their initial diagnosis so they can begin to be independently mobile and learn to function at wheelchair level. We know that within a year or two after injury, weight changes as the body adapts to the injury, lifestyles change as the individual adapts to their new functional skills and a more permanent living environment established. This would be a good time for a seating and mobility reassessment.

As you may know, once problems such as pressure sores, pain and postural deformities occur, they can be very inconvenient to the individual and can be very costly to the medical system. In order to prevent problems *before* they begin, we recommended that a reassessment occur approximately every five years or when obvious concerns arise. Seating reassessments allow existing seating equipment to be assessed for wear and tear, ensures that discussion of technological seating advances occurs with a therapist and allows seating issues to be discussed and remedied sooner, rather than later.

Seating Myths

Backrests are uncool
Au contraire, monsieur…Do you think it is cool to be sitting with a curved back and a chin that pokes forward over your knees? Individuals who are supported by firm backrests are often sitting taller and can push themselves more efficiently. They often have less pain and fatigue at the end

of the day. Because they sit taller, they may also breathe better and digest their food easier .You can sit more upright, too!

If I get a power wheelchair it means I'm getting weaker!
Many people with spinal cord injuries have resisted the use of a power wheelchair because of the stigma associated with their use. People avoid power wheelchairs despite the fact that their shoulders are so sore that they can hardly transfer anymore or after a long wheel, they are fatigued for the rest of the day. Others have made the switch to a power wheelchair on a part time or full time basis to save their shoulders and their energy for the skills that help them maintain their community independence such as transferring into their bed, van or tub. Contrary to popular belief, individuals who choose power wheelchairs often have more community independence, have less pain and are more satisfied with their functional abilities and quality of life.

Some people also avoid power chairs because they want to get the exercise benefits of wheeling manually.

"Fitness is important for wheelchair users' mobility and cardio respiratory health. However, the risk of developing a degenerative joint disorder and the apparent lack of cardio respiratory benefits suggests than an alternative to standard wheelchair propulsion should be used for exercise." Cooper, R. and Boninger, M. (2003)

Arm pain cannot be prevented
Arms were meant to lift and carry but were not meant to move us. Studies show that around 31-73% (Cooper et al., 1998) of wheelchair users suffer some sort of repetitive strain injury to their shoulders or wrists. Proper wheelchair set up, appropriate wheelchair selection and mobility training can help reduce the risk of repetitive strain among wheelchair users. Proper positioning in the wheelchair also places your body in a more efficient position for wheeling and can improve speed and performance.

We don't just use a measuring tape anymore…

In the past, your therapist may have measured how wide your hips were and how long your legs were and sent you to your local vendor with a wheelchair prescription. These days, a seating assessment should be much more comprehensive. In Manitoba, Occupational Therapists are usually the ones to conduct seating assessments. In other provinces, physiotherapists may be the main assessors. Therapists work closely with the client, physician, rehab engineers, medical equipment suppliers, wound care nurses and other health care professionals as required. People with spinal cord injuries have unique seating needs and it is your responsibility to seek out a therapist who is able to complete this thorough assessment.

The assessment should include an evaluation of your functional abilities at home, work and fun; your environmental situation; as well as a detailed assessment of your medical history, physical status and postural issues. The physical portion of the assessment usually takes an hour or two to complete and involves an assessment of:

- How you sit in your wheelchair at present
- How your body responds when you are laying on a plinthe (a firm mat) or bed (so gravity is not making you slouch) and
- How you sit when you are unsupported or supported only by a plinthe and the therapists' hands.

This will tell the therapist whether your pelvis, trunk and lower extremities are in flexible or fixed positions to help the therapist decide which types of equipment would best suit your needs. For further information about your seating needs, the therapist may do a visit to your home or work, trial a variety of equipment with you; use a computerized pressure mapping system or other assessments specific to your particular needs.

If you are considering having a seating assessment done, ask yourself these questions…

When I view myself from the side, do my ear lobe, shoulder and hip joint form a straight vertical line?	If you answered no, you may need a more supportive seating system.
Is this cushion right for me?	There may be new technology out there that may be more appropriate and may level out our pelvis and better reduce pressure on your skin.
Is my back or neck sore at the end of the day?	A firm, padded backrest or a new sitting position may lessen the pain and strain.
Is my axle position ideal for wheeling?	You may have a more efficient push and less shoulder pain if the axle position is changed.
Is it time to consider a power wheelchair?	A therapist can help you to identify the pros and cons and assist you in selecting the most appropriate equipment.
Do I hook on the back of my wheelchair to maintain balance?	Alternate solutions can be explored to help prevent permanent muscle tightening and pain.
Is my seating negatively affecting my function in my home and/or work?	A therapist can help you maximize your function through seating intervention and other related suggestions.
Does my skin get red more quickly that when I was young?	A therapist can help assess your current cushion and backrest to reduce the risk of pressure sores from occurring.
Am I slouching or leaning more as I age?	Kyphosis and scoliosis may intensify as you age but early intervention can prevent further problems.

Corinna Klassen, OTM and Angie Maidment, OTM have over 20 years of seating and mobility experience. They have both worked at the Health Sciences Centre on the Spinal Cord Injury Unit and the Adult Seating Clinic. Therapy First offers in home occupational therapy, physiotherapy, massage therapy and recreation services. Along with their private practice, Corinna and Angie work as O.T.s at SMD – Wheelchair Services and the HSC Adult Seating Clinic, respectively. Feel free to contact Therapy First with seating questions or for further information on options for seating assessments in your area.
E-mail us at TherapyFirst@shaw.ca or contact us by phone at Corinna (p) 204-612-0399 or Angie (p) 204-612-0398.

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