

## **Back support: Keystone to seated function and physiology**

**Stephanie Tanguay Clinical Education Specialist Motion Concepts**

**Rhona Fiskien Clinical Education Specialist Invacare (presenting)**

### **Summary**

Understanding the relationship between the pelvis and spine is the basis for comprehending the asymmetries and orthopaedic changes which can occur in seated posture. In addition, seated positions also influence physiological systems such as respiration, digestion, circulation, bowel and bladder function, skin integrity and active range of movement.

### **Aims and Objectives**

The relationship between posture, pressure, skin integrity, function activities and the correlation to physiological systems will be presented.

This course is designed for basic to intermediate level clinicians and equipment providers who want to revisit the interlocking components of seated posture and mobility.

Case studies will illustrate the relationship between posture, pressure, skin integrity, function activities and the correlation to physiological systems.

### **Background**

A keystone is something on which interrelated things depend for support. In any seating system, the back support is the keystone on which posture, pressure, physiology and function depend. Understanding the relationship between the pelvis and spine is the basis for comprehending the asymmetries and orthopaedic changes which can occur in seated posture. But there is much more going on than structural changes. Seated posture influences physiological systems; respiration; digestion; circulation; bowel and bladder function; skin integrity and active range of motion are all affected by seated posture. Research has identified the importance of seated posture to all of these bodily functions.

### **Discussion**

Case studies will illustrate the relationship between posture, pressure, skin integrity, function activities and the correlation to physiological systems.

### **References**

Hetzel, T. Destructive Postural Tendencies: Identification and Treatment. Proceedings of the 23<sup>rd</sup> International Seating Symposium, p. 89-91. March 8-10, 2007.

Nwaobi, O. M. Seating Orientations and Upper Extremity Function in Children with Cerebral Palsy. The Journal of American Physical Therapy Association, p.1209 – 1212, Vol. 67, No. 8, August 1987.

Nwaobi, O. M. Adaptive seating and pulmonary function in adults with muscular disease. Clinical Rehabilitation 1987; 1: 283-286.

Lin, F., Parthasarathy, S., Taylor, S. J., Pucci, D., Hendrix, R., Makhsous, M. Effect of Different Sitting Postures on Lung Capacity, Expiratory Flow, and Lumbar Lordosis. Archives of Physical Medicine & Rehabilitation p 504 – 509, Vol. 87, April 2008.

Bolin, I., Bodin, P., Kreuter, M. Sitting Position – Posture and Performance in C5-C6 Tetraplegia. Spinal Cord (2000) 38, p. 425-434.