

## **Balancing stability and pressure care in complex custom seating – a case study**

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### **Summary**

Case study of a 40-year old female wheelchair user with multiple pressure injuries, limited activities of daily living (ADL) and socialisation. A custom moulded seating system was manufactured and incorporated with custom air support system to achieve pressure care and stability. This supported the client's sitting tolerance and comfort with enhanced ADL and socialisation.

### **Aims and objectives**

1. to maintain stability in seating while achieving higher level of pressure care
2. to increase seating tolerance and seating balance
3. improve social participation, and enhance ADL

### **Background**

Michelle, a 40-year old weighing 36 Kgs (underweight) had presented to SeatTech with a primary concern associated with multiple pressure injuries over the last four years which restricted her daily activities and social life. She finds her present seating unstable.

Michelle lived independently, and wanted to socialise as much as possible; however, she was dependent on hoisting all the time and found her current seating unstable. She was referred to SeatTech with an aim to:

- manage pressure injuries
- improve pressure care, positioning, seating tolerance, seating balance
- enhance mobility and, ultimately
- improve socialisation.

Michelle's pressure injuries were at the ischial tuberosity (IT), sacrum and thoraco-lumbar spinal area which had progressed to grade 2 and early stages of grade 3. She also had a grade 1 pressure injury at the left-hand side rib cage. These pressure injuries restricted Michelle's independent living, daily functioning and social life. At the time of presenting at SeatTech, she was using a rear wheel drive power wheelchair with ROHO seat cushion and moulded backrest for mobility and seating.

Michelle's pressure injury started four years previously, and had progressed to grade 3 at the sacral area, and grade 2 over the IT and spinal region. Following an initial review, thorough physical examination, and functional assessment, the main problems and concerning issues were identified.

One of the most concerning issues was that Michelle was mostly home bound with limited socialisation. Her involvement at home and in the community had decreased drastically. Overall, her self-esteem was poor because of her increased level of pressure injury and decreased overall mobility. Other problems were related to unstable seating, increased scoliosis and kyphosis. Identification of the concerns and problems helped to fill out a wheelchair outcome measure (WhOM) to measure the changes or improvements post-intervention.

The following measures were taken to manage the identified problems.

A one-piece foam-in-place custom contoured moulded seating system was manufactured. A customised ROHO 4-valve single piece was manufactured with assistance from the manufacturer,

with varied cell heights from 1" and 2" ordered to accommodate pressure care needs and to insert it into the moulded seating system. The foam-in-place moulded seating system was modified to fit the specialised custom ROHO pad, aiming to off-load weight at pressure injury areas, and to increase body contact surface areas on the seating system for stability. Modifications to the foam-in-place seating system were made to maintain the customised seating system staying firm onto the wheelchair.

### **Discussion**

Michelle's immediate reaction was that her seating was very stable and comfortable. After 2 weeks on a follow-up telephone call, Michelle expressed she was able to stay longer in her wheelchair, finding it easy to travel up to some distance without getting tired. This helped her achieve some degree of ability to manage her ADL, and improved her socialisation. Her seating posture and functional activity had improved to a great extent on the WhOM scale.

Long term seating was aimed at 4 months review going forward for next year to find out any changes or modifications required for pressure care and mobility needs. The goal for Michelle's improved seating tolerance and mobility is on target.

ROHO Inc. was approached through Irish supplier as they were proactive during discussion stage and were supportive through the process.

### **References**

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