

# Addressing Shear and Friction in a Client with Chronic Illness

## Clinical Case Study

### Introduction

**P**revention and early detection of pressure ulcers are important in the care of every client who is seated dependent or has a chronic disease. There are four extrinsic risk factors that cause pressure ulcers. These factors include: pressure, shear, friction and moisture. There is a 40% ratio of "pressure" ulcers which are actually shear-induced injury<sup>1</sup>. Any force that has the propensity to deform the vascular bed and cut off blood flow can cause a pressure ulcer.

The following case study involves the management of chronic shear and friction injury in a seated patient with cerebral palsy.

### Background

**M**s. L.W. is a 39-year-old female with spastic athetoid cerebral palsy. She was ambulatory and used crutches until 1989. She began falling and became progressively weaker and now uses a power wheelchair for mobility.

Ms. L.W. lives alone with her support dog, Tucker, who came to live with her in 1999 (Figure 1). She is assisted by caregivers who provide her help with activities of daily living. She works full-time and is independent in driving a motor vehicle.



Figure 1. L.W. with "Tucker".

### Management of Care

**M**s. L.W. experiences frequent spasms despite use of muscle relaxants. She complains of chronic stage II ischemic pressure ulcers on her bilateral elbows secondary to shear and friction from spasms. She additionally exhibits stage I (non-blanchable reddened area) pressure ulcers where her body comes in contact with the lateral trunk supports of her seating system. Despite meticulous skin care and frequent observation, the shear and friction injury remains constant. Her Braden Scale pressure ulcer risk assessment score is only 15.

<sup>1</sup> Bennet LM, Lee BY. Vertical Shear Existence in Animal Pressure Threshold Experiments. *Decubitus* 1:18, 1988.



Figure 2. ROHO ADAPTOR PAD applied to arm rests.



Figure 3. ROHO ADAPTOR PAD applied to lateral trunk support.

The clinician applied the ROHO® ADAPTOR® Pad to Ms. L.W.'s armrests (Figure 2) and lateral trunk supports (Figure 3) to address pressure, shear, and friction. Within weeks, Ms. L.W.'s chronic pressure ulcers healed to closure and have not broken down despite continued spasms. (Figure 4).

## Conclusion

Ms. L.W.'s movement and spasms are now cushioned and protected by the gentle shear-free surface of the ROHO ADAPTOR Pad. She no longer suffers from chronic skin breakdown.



Figure 4. Chronic pressure ulcer healed to closure.

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The unique, flexible ADAPTOR Pad can be cut to fit any flat or contoured surface and may be attached using fasteners or velcro. The pre-adjusted, pre-inflated air cells were easy to apply and use. The small size (one inch square cells) provided an unobtrusive, clean looking appearance that protect skin from friction and shear.

Clients with chronic illness and spasms need protection and shock absorption. The ROHO ADAPTOR Pad provided L.W. with light-weight, quick customized grid of protection from further pressure, shear, and friction.

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