Shear Reducing Mattress Overlay

LiquiCell® is a medical technology that helps prevent skin tissues from being stretched or torn resulting in optimized blood flow. The ultra-thin cells contain a liquid that is in constant motion allowing the body to glide or float with an object both reducing shear and friction of the skin and improving blood perfusion to the tissues.

The LiquiCell Shear Reducing Mattress Overlay is designed for key areas of the body most susceptible to skin breakdown due to the presence of a bony prominence along with shear and friction. Superior to other products such as gel and foam at addressing the leading risk factors associated with skin breakdown, the LiquiCell Shear Reducing Mattress Overlay provides a convenient and easily positioned tool for the reduction of shear and friction.

The 36" x 18" overlay with a soft, pliable surface and non-slip bottom fits most standard mattresses, does not interfere with patient stability and may be placed directly under the patient or beneath the bottom sheet.

Waterproof | Washable | Latex-Free | Mercury-Free

ITEM NO. 94211
Summary of LiquiCell Study & Research Work

“Long Term Blood Perfusion When Sitting on Three Different Cushioning Materials”
Goossens, Delft University of Technology, March 2006

Delft University conducted a study to determine the affect of various cushioning materials on blood perfusion (flow) over time. The purpose of the study was to compare blood perfusion of the tissue in a live setting rather than a laboratory to get a more accurate reflection of real life conditions. The results of the study show that from the initial point of contact to sixty (60) minutes later, LiquiCell improves blood perfusion by 150% and both visco-elastic (memory) foam and gel show a decrease in blood perfusion.

“Shear Stress Measured on Three Different Cushioning Materials”
Goossens, Delft University of Technology, March 2001

Research at Delft University has shown that pressure and soft tissue shear stress are leading sources of pain and discomfort in the human body. Increased shear force leads to occlusion (blockage) of blood flow, which is one of the most important factors behind pressure sores and discomfort. In this study conducted at Delft University, it was proven that LiquiCell is superior to other forms of padding in reducing the effects of pressure and shear stress. The study shows LiquiCell produces a significantly lower shear stress (up to 39% better) than gel and/or visco-elastic (memory) foam.

“Long Term Influence of LiquiCell on Discomfort”
Goossens, Delft University of Technology, March 2005

A blind randomized test was performed to measure long-term discomfort using two types of cushions: LiquiCell and visco-elastic (memory) foam. Discomfort was measured on a Visual Analogue Scale (VAS). The two cushions were identical on the outside. The results showed that the initial feeling of discomfort was not significantly different. After two hours, however, the individuals using the foam pad had a significant increase in discomfort versus the individuals using LiquiCell. This test shows that over time, LiquiCell is more comfortable than just visco-elastic (memory) foam.

Whitepaper: Fundamentals of Body Support – The bursa-like interface
Goossens, Delft University of Technology, January 2004

This paper investigates the effects of shear stress on the body. In the human body, at places where the mechanical load (shear and pressure) can become too high on bone, muscle tissue or other tissue, bursae are found. Dr. Richard Goossens has written a whitepaper detailing how a bursa-like device (LiquiCell) actually is the preferred embodiment to improving comfort where the body is being supported. His research and study is additional proof to the claims that LiquiCell is superior to foams, gels and air for improving comfort by equalizing pressure at the point of contact.