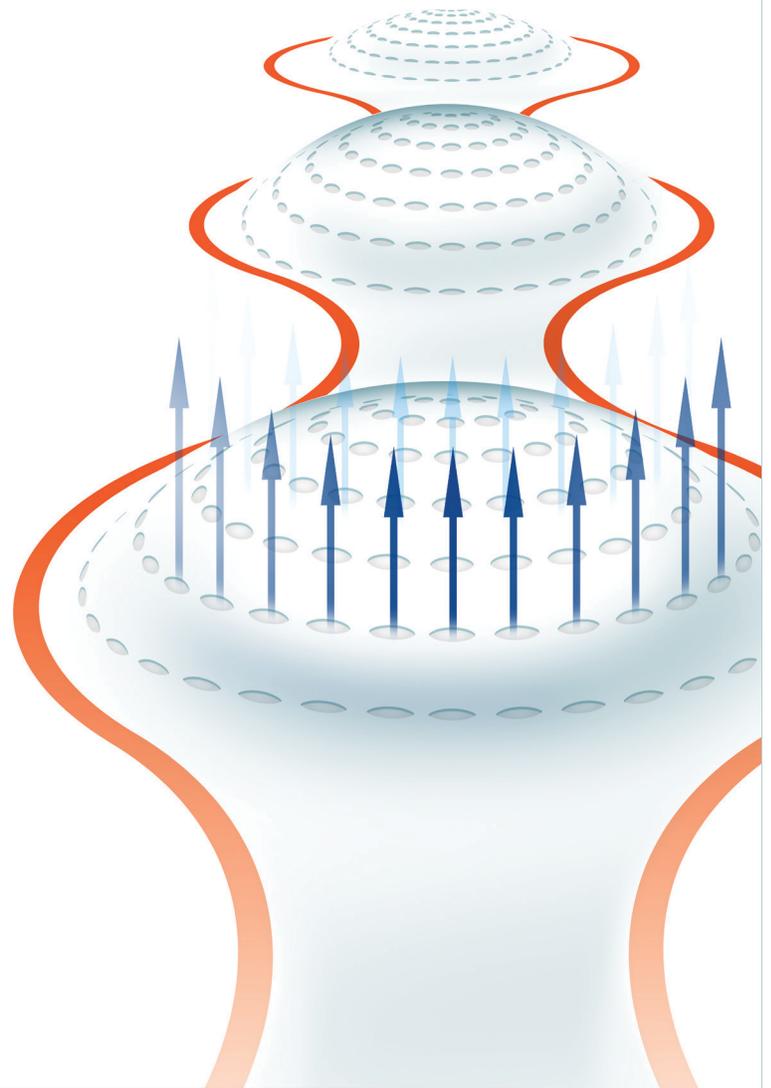


Moisture Vapor Transfer Rate (MVTR) evaluation of DabirAIR™ Overlay - Microclimate version

DabirAIR™ overlay is a low profile dynamic alternating pressure overlay developed to provide periodic pressure relief during prolonged immobilization. The microclimate feature of the DabirAIR™ overlay facilitates removal of moisture accumulation on the skin due to sweating, as well as from body fluids and chemical irritants from fecal and urinary incontinence. Excessive moisture on the skin softens the stratum corneum (maceration), reduces the cross linking of the collagen molecules, and reduces the stiffness and the strength of the connective tissue leading to tissue breakdown. The flowing air evaporates skin moisture and keeps a stable, dry environment with reduced temperatures. With air movement, low-humidity air is brought near the skin, evaporation increases, and effective cooling occurs. Absent airflow, absorptive moisture removal (or wicking) will not cause temperature reduction at the support interface. The effectiveness of air-loss surfaces is evaluated by their ability to evaporate moisture and to reduce temperature build up at the support surface. The Rehabilitation Engineering laboratory at the Cleveland Clinic evaluated DabirAIR™ overlay for its ability to evaporate moisture using validated Moisture Vapor Transfer (MVT) test procedures (Reger SI et al., Arch Phys Med Rehabil. 2001 May;82(5):597-603).

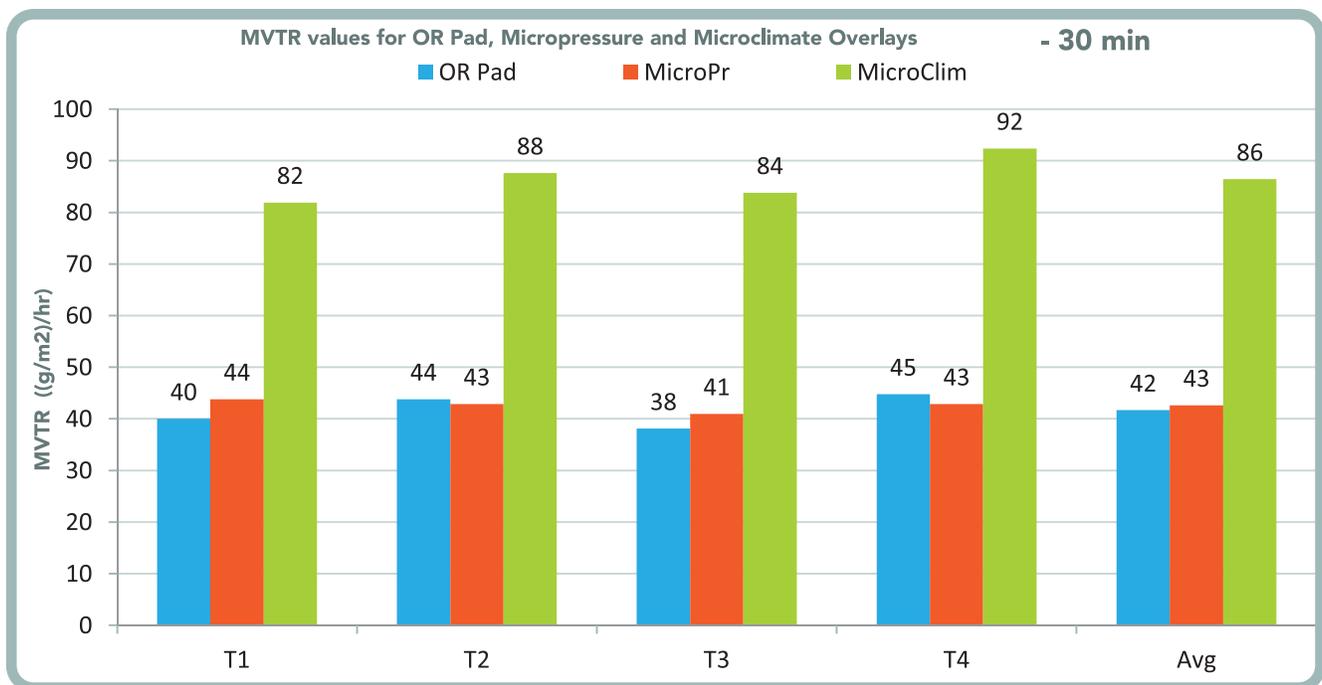


“The flowing air evaporates skin moisture and keeps a stable, dry environment with reduced temperatures.”

PROCEDURE:

DabirAIR™ overlay is a low profile dynamic alternating pressure overlay developed to provide periodic pressure relief during prolonged immobilization. The microclimate feature of the DabirAIR™ overlay facilitates removal of moisture accumulation on the skin due to sweating, as well as from body fluids and chemical irritants from fecal and urinary incontinence. Excessive moisture on the skin softens the stratum corneum (maceration), reduces the cross linking of the collagen molecules, and reduces the stiffness and the strength of the connective tissue leading to tissue breakdown. The flowing air evaporates skin moisture and keeps a stable, dry environment with reduced temperatures. With air movement, low-humidity air is brought near the skin, evaporation increases, and

effective cooling occurs. Absent airflow, absorptive moisture removal (or wicking) will not cause temperature reduction at the support interface. The effectiveness of air-loss surfaces is evaluated by their ability to evaporate moisture and to reduce temperature build up at the support surface. The Rehabilitation Engineering laboratory at the Cleveland Clinic evaluated DabirAIR™ overlay for its ability to evaporate moisture using validated Moisture Vapor Transfer (MVT) test procedures (Reger SI et al., Arch Phys Med Rehabil. 2001 May;82(5):597-603).



Four 30-minute trials (T1, T2, T3 and T4) were conducted for each test surface. The graph above illustrates the MVTR performance of the three test surfaces. The OR pad and micropressure version of the DabirAIR™ overlay had MVTR rates similar to those observed for non-microclimate support surfaces while the microclimate version of the DabirAIR™ had MVTR values that represent low-air-loss support surfaces. Additional evaluations are

being conducted to further investigate the efficacy of the DabirAIR™ overlays for managing microclimate at the support surface - patient interface. Preliminary findings indicate that DabirAIR™ microclimate overlays, in addition to providing periodic pressure redistribution, have the potential to provide low-air-loss benefits similar to other commercially available low-air-loss support surfaces.