HOVERTECH International

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TECHNICAL STUDY

Q2ROLLER™ LATERAL TURNING DEVICE

Technical Study for Wound Care Management

Situation

A need to understand how the Q2Roller will affect skin care management

Wound care and prevention are critical for the vast majority of patients in acute care, long term care and home care settings. The prevalence of pressure ulcers is a major concern and can lead to additional healthcare costs and a decline in a patient's health. Two of the most significant concerns in prevention and care of patients at risk or with existing wounds are pressure and managing the microclimate of the skin.

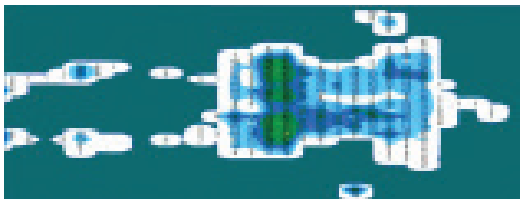
Technical Data-Pressure Studies

Pressure studies conducted to determine safety of leaving device under patient

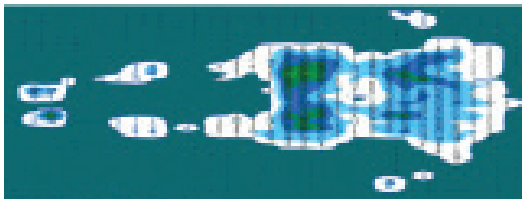
It is common practice to minimize the use of any product under the patient that would reduce the pressure reduction of a standard or low air loss mattress. Therefore, the effect of adding products under the patient should be determined prior to use.

STUDY #1- Q2ROLLER UNDER PATIENT

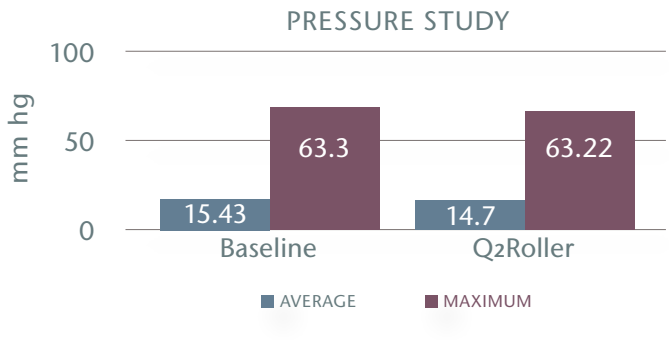
Pressure mapping studies were conducted with a low air loss mattress (Sizewise Low Air Loss Mattress) and the Q2Roller. Whole body distributions were recorded using a computer-based pressure measurement system (Vista Medical, Winnipeg, Canada). A 200 pound male patient was used for all recordings, first taking a baseline measurement with the low air loss mattress and then a second recording with the patient lying on the Q2Roller.



Low air loss mattress, sheet, pressure sensing device, supine 200 lb patient



Low air loss mattress, sheet, Q2Roller, pressure sensing device, supine 200 lb patient



CONCLUSION

Q2Roller does not adversely affect pressure when left under the patient

The use of a deflated Q2Roller under the patient did not provide any significant difference in pressure. In actuality, the pressures decreased slightly due to a slight redistribution of the patient's weight.

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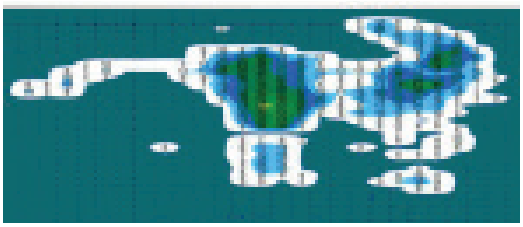
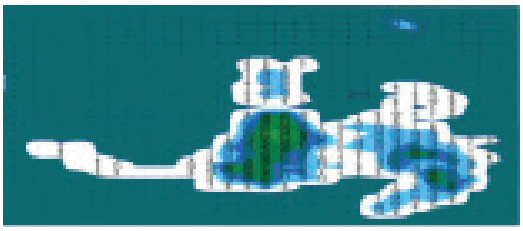
STUDY #2- Q2ROLLER INFLATED WITH PATIENT LYING AT 30 DEGREES

A second study was conducted using a standard hospital mattress (Sizewise Low Air Loss Mattress) and the Q2Roller inflated with the patient positioned at approximately 30 degrees of rotation. The Q2Roller was placed under the shoulder supporting the entire torso area. Whole body distributions were recorded using a computer-based pressure measurement system (Vista Medical, Winnipeg, Canada). A 200 pound male patient was used for all recordings.



Standard mattress, Q2Roller, pressure sensing device, 200 lb patient, 30 deg on left



Standard mattress, Q2Roller, pressure sensing device, 200 lb patient, 30 deg on right

CONCLUSION

The Q2Roller is effective at relieving pressure on the sacrum and inflated chamber side.

The Q2Roller with the patient positioned at 30 degrees completely eliminated pressure on the sacrum. Additionally, pressures on the shoulder and buttock of the inflated side were significantly reduced. Pressure readings in these areas ranged from 10 – 20 mmhg.

Technical Data-Moisture Vapor Transmission Rate (MVTR) Data

Analysis conducted to compare MVTR of Q2Roller fabric to specialty bed surfaces

Managing the level of moisture on the patient's skin is critical to mitigating the risk of yeast growth and maceration. Selecting a product that allows appropriate moisture vapor transmission is critical in mitigating skin issues.

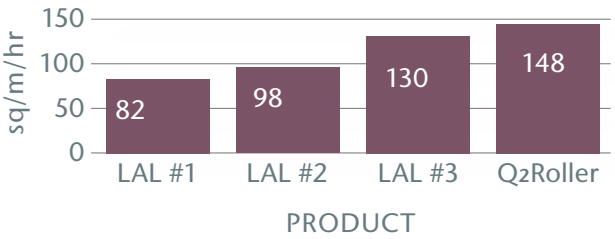
Moisture vapor transmission rate (MVTR) is measured by the rate at which water vapor passes through, in grams of water vapor per square meter of fabric per hour (g/m2/h). The Q2Roller is made of a breathable non-woven polypropylene fiber. This material has a high moisture vapor transmission rate of 148 g/m2/hr, well above the industry breathability threshold of 125 g/m2/hr[1]. The breathability of this fabric helps prevent moisture and heat build-up under the patient as it allows water to evaporate from the surface area and facilitates air exchange.

CONCLUSION

Q2Roller fabric has greater evaporation rates than the leading specialty bed surfaces

The fabric of the Q2Roller has between 14%-80% greater MVTR than the surface of leading specialty low air loss beds[2]. In any case, the use of any device between the patient and the mattress surface should be reviewed by the clinician to consider all factors related to patient care.

MVTR COMPARISON:
Q2ROLLER FABRIC VS. THREE LEADING LOW AIR LOSS THERAPEUTIC BEDS



Sources:
[1]Cathay Consolidated, Inc.
[2]Hill-Rom, KCI