

# Clinical Benefits of Frequent and Timely Patient Repositioning

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## INTRODUCTION

When the head of a bed is elevated, the patient's support surface literally becomes a ramp and gravity causes the patient to slide down in bed. Sliding down was shown to lead to a significant increase in pressure on the sacral area, heels, as well as other susceptible areas on the body.

When do you reposition patients today?

PHASE 1 UP-IN-BED



PHASE 2 3" DOWN



PHASE 3 6" DOWN



PHASE 4 9" DOWN



PHASE 5 12" DOWN



Findings show most caregivers reposition at Phase 4 or 5.

## THE CHRIST HOSPITAL IRB STUDY

- IRB – 2012 to 2013
- 500 Bed Acute Care Facility – Cincinnati, OH
- 6 Automated Patient Repositioners
- 21 Patients – Heart Failure, Rehab & Kidney Transplant
- 146 Patient Days – LOS = 2 to 11 days (average 4.8)
- 144 Caregiver Surveys Completed



IRB Principal Investigator: Caroline Pritchard, MSN, ND, RN – The Christ Hospital

## THE CHRIST HOSPITAL IRB STUDY RESULTS

	TRADITIONAL	AUTOMATED
Average # of Caregivers	2.3	1.0
Time to Reposition	8.3 minutes	1.7 minutes

**80% REDUCTION OF TIME DOWN IN BED** HOSPITAL PROJECTION  
PER DAY: 196 HOURS  
PER YEAR: 71,668 HOURS

96% of caregivers surveyed would reposition more frequently with the Automated Repositioner because it was 'easy to use' and 'always under the patient'

## TRADITIONAL VS. AUTOMATED REPOSITIONING

	TRADITIONAL	AUTOMATED
CLINICAL	Higher risk for pressure ulcers Can cause shear	Lower risk for pressure ulcers Reduces shear
NON-CLINICAL	Tugging and pulling Unsafe 2-4 caregivers 10:00+ minutes	Press of a button Safe 1 caregiver 0:10 seconds

## WEBER STATE UNIVERSITY STUDY

Pressure mapping study to analyze the effects on pressure as volunteers slide down in bed

- 3 Different Surfaces – on a hospital bed
  - Powered integrated air surface
  - Non-powered air surface
  - Viscoelastic memory foam surface
- 4 Volunteers – 2 male and 2 female
  - Weight: 145 – 220 pounds
  - Height: 67" – 74"
  - BMI: 21.6 – 29.0
- 5 Discrete Positions Measured – sliding down in bed
  - 0", 3", 6", 9" and 12"



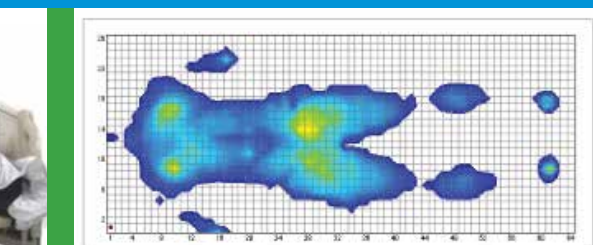
Study by: Evan Call, MS, CSM - Weber State University

## WEBER STATE UNIVERSITY STUDY FINDINGS

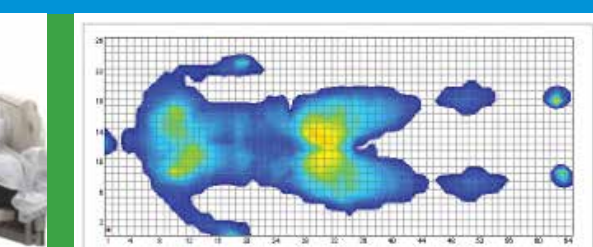
- Interface pressures increase in the sacrum & heels as the patient slides down in bed
- Pressures increase with all patients and on all tested surfaces
- Rate of pressure increase accelerates when the patient moves beyond 6" down in bed
- As the patient's feet contact the footboard, their knees bend, resulting in significant pressure increase on their heels

## WHEN SHOULD YOU REPOSITION PATIENTS?

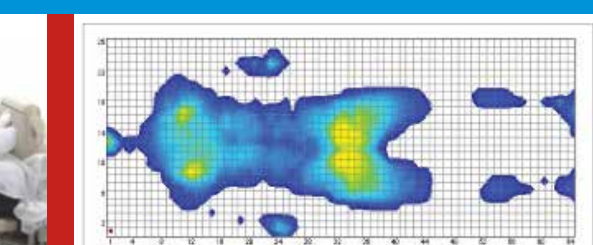
IDEAL UP-IN-BED



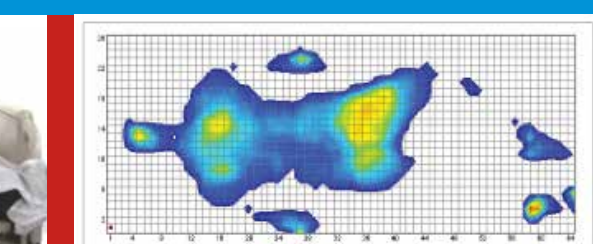
GOOD 3" DOWN



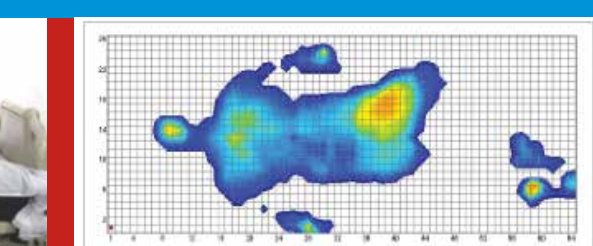
AVOID 6" DOWN



AVOID 9" DOWN



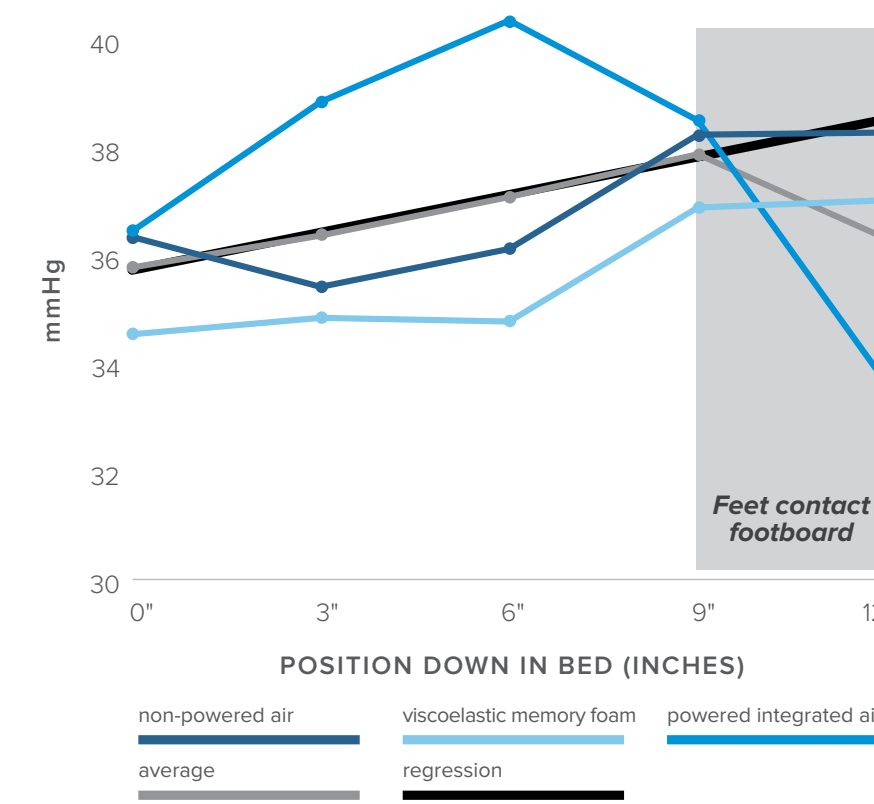
AVOID 12" DOWN



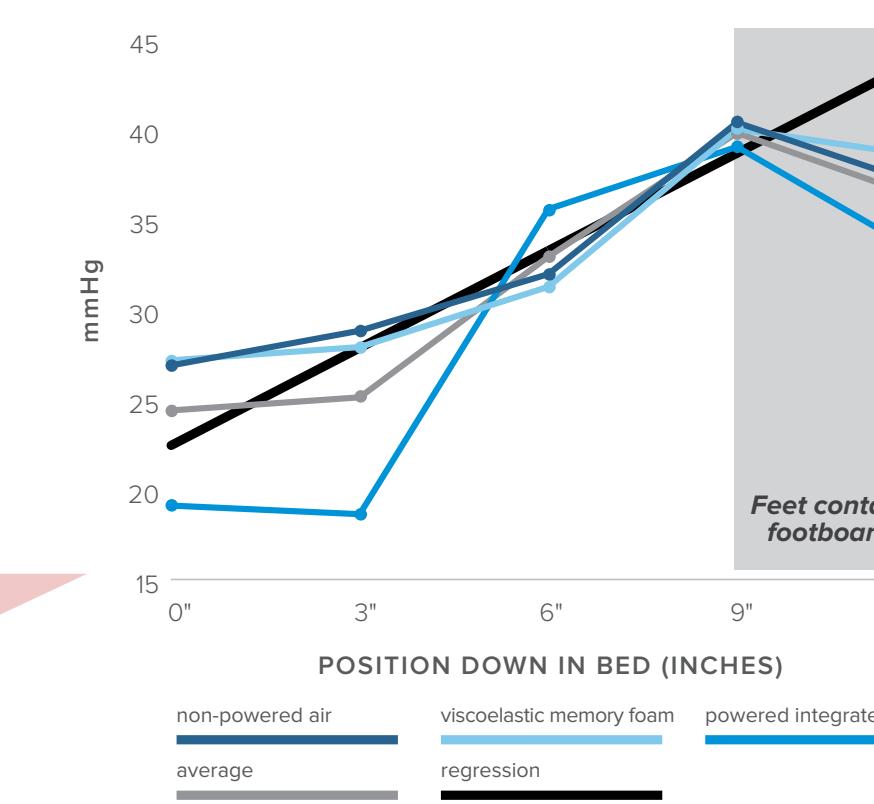
## TRADITIONAL REPOSITIONING VS. AUTOMATED REPOSITIONING

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| <ul style="list-style-type: none"> <li>• <b>Unsafe</b> – #1 Cause of Caregiver Injuries</li> <li>• <b>Requires 2-4 Caregivers</b> – Creates Distractions</li> <li>• <b>Time-Consuming</b> – Finding Caregivers / Equipment</li> <li>• <b>Impacts Patient Health</b> – Causes Shear / Tears</li> <li>• <b>Impacts Patient Experience</b> – Dignity</li> </ul> | <ul style="list-style-type: none"> <li>• <b>Safe</b> – Press a Button / No Lifting Injuries</li> <li>• <b>1 Caregiver</b> – No Assistance Needed / No Distractions</li> <li>• <b>Easy</b> – Less than 10 Seconds</li> <li>• <b>Supports Clinical Outcomes</b> – Reduces Shear &amp; Tears</li> <li>• <b>Enhances Patient Experience</b> – Comfort / Dignity</li> </ul> |
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## SACRUM PRESSURES INCREASE AS PATIENTS SLIDE



## HEEL PRESSURES INCREASE AS PATIENTS SLIDE



## CONCLUSIONS AND RECOMMENDATIONS

Automated repositioning allows a single caregiver to reposition a patient every time they walk into the room.

**Frequent and timely** repositioning should be an integral part of every pressure ulcer prevention and management program.