



Mattress Replacement Project

Utilizing the S3I Principles

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Background

- Support Surface Standards Initiative (S3I)
 - Tasked with development of uniform terminology, test methods and reporting standards for support surfaces.
 - Official standards body for the United States
 - November 2014, published first testing protocols which repeatedly, reliably, & accurately report characteristics common to mattress & are associated with pressure injury formation
 - The protocols make it possible for hospitals to reliably compare certain characteristics of surfaces for the first time

Mattress Testing Protocols

1. Standard Protocol for Measuring Immersion in Full Body Support Surfaces

- Measures how deep a body can sink into a support surface

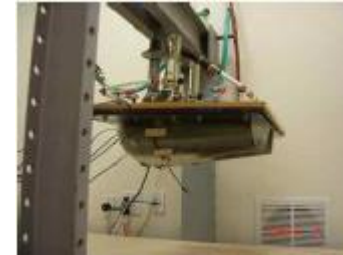


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Mattress Testing Protocols- Measuring Microclimate

2. Standard Protocol for Measuring Heat and Water Vapor Dissipation Characteristics of Full Body Support Surfaces-Body Analog Method

- Measures skin humidity and temperature at specific times



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3. Standard Protocol for Measuring Heat and Moisture Dissipation Characteristics of Full Body Support Surfaces-Sweating Guarded Hot Plate (SGHP) Method

- Measures resistances of surface to flows of heat and humidity from skin, evaporative capacity



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Mattress Testing Protocols- Measuring Friction

4. Method A. Flat bed method

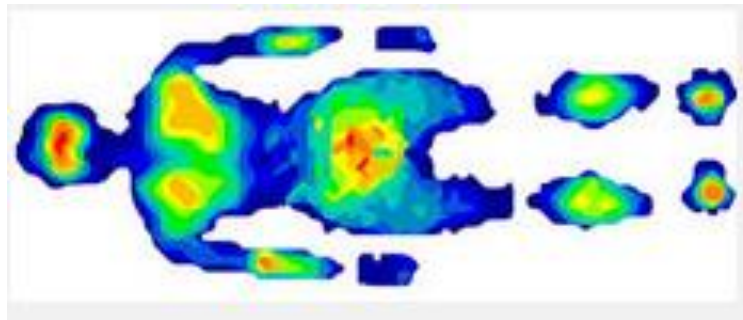
5. Method B. Inclined plane method



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Why Not Pressure Mapping?

- Testing is not reliable- inconsistent in measuring what is intended to measure
- Results vary
 - Among each individual
 - Among different testing times
- The pressure mapping device changes the mattresses performance



Process

- Determine which mattresses to include
 - Enterprise use
 - General Care
 - ICU
- Send a request for information to the manufacturers asking them to provide the results to the testing protocols
 - Most major manufacturers participate in S3I
 - Provide a timeline for receiving the information

What is the Benefit of Having the Testing Results?

- Clinicians will have performance data presented in a consistent manner
- No evidence is yet available to associate a specific test value with any level of clinical outcomes, safety expectations, or indication of acceptability for any given purpose.
- S3I is aware of “clinician’s desire for tools to assess the appropriateness of a given surface in meeting a patient’s needs. The standards provide comparable performance data to aid in the selection process and should not be used in isolation.”

What to do with the Results?

- External surface consultant
- Shared patient population and nursing care information
 - Patient characteristics
 - Guidelines/protocols
 - Patient care products
- Results based on testing results, nursing care, and patient population characteristics
- Mattresses were ranked in comparison to one another

Mattress	A	B	C	D
Hospital Area	General	General	General	General care
Max Temp (°C)	2	2	4	1
Temp Diff (°C)	1	2	4	3
Max RH (%)	3	1	4	2
RH Diff (%)	2	3	4	1
EvapCap (gm ² /hr)	3	1	4	2
Q dry (W/m ²)	2	3	1	4
Immersion (mm)	4	1	3	2
Peak Temp (°C)	3	2	4	1
TPMRF	2	4	3	1
Peak RH (%)	3	1	4	2
HPMRF	4	2	3	1
Total	30	22	40	26