



SUB-EPIDERMAL MOISTURE LEVEL OF EVIDENCE AND USAGE OUTCOMES SYNTHESIS TABLES

PRESENTED BY COLLEEN O'LEARY, DNP, RN, AOCNS, EBP-C

PRESENTED AT NPIAP WINTER 2024 CONFERENCE

SUB-EPIDERMAL MOISTURE (SEM) SCANNER LEVEL OF EVIDENCE SYNTHESIS TABLE (2009-9/203)

PICOT QUESTION: IN PATIENTS HOW DOES THE USE OF A SUB-EPIDERMAL MOISTURE SCANNER COMPARED TO VISUAL SKIN ASSESSMENT AFFECT PRESSURE INJURY DEVELOPMENT AND TREATMENT?

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26
Level I: Systematic review or meta-analysis																										
Level II: Randomized controlled trial																										
Level III: Controlled trial without randomization																						X				
Level IV: Case-control or cohort study		X	X			X	X	X	X	X	X	X	X	X	X			X		X	X		X			X
Level V: Systematic review of qualitative or descriptive studies																										
Level VI: Qualitative or descriptive study, CPG, Lit Review, QI or EBP project				X	X											X	X			X				X	X	
Level VII: Expert opinion	X																									

LEGEND: 1. Gefen, 2018 2. Padula, et al., 2020 3. Musa, L., et al., 2021 4. Moore, Z. et al., 2017 5. Peko Cohen & Gefen, 2019 6. Bates-Jensen, B.M., et al., 2009 7. Okonkwo, H., et al., 2020 8. Raizman, R., et al., 2018 9. Raine, G. 2021 10. Ore, N., & Carver, T., 2020 11. Ousey, K., et al., 2022 12. Ousey, K., et al., 2022a 13. Martins de Oliveira, A. L., et al., 2022 14. Nightingale, P., & Musa, L., 2021 15. Bryant, R. A., et al., 2021 16. O'Brien, G., et al., 2018 17. Tobiano, G., et al, 2023 18. Smith G., 2019 19. EPUAP/NPIAP/PPPIA, 2019 20. Gershon, S., & Okonkwo, H., 2021 21. Raine, G., 2021 22. Ropper, R., 2021 23. Gefen, A., et al., 2020 24. Moore, Z., et al., 2022 25. Scafide, K. N., et al., 2020 26. Lustig, M., et al., 2022.

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SUB-EPIDERMAL MOISTURE (SEM) SCANNER SEM USE OUTCOMES SYNTHESIS TABLE

EBP RECOMMENDATION: USE SUB-EPIDERMAL MOISTURE (SEM) SCANNER TO REDUCE PI INCIDENCE

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26
Detection of deep tissue injury	↑		↑	↑		↑													↑	↑	↑	↑	↑	↑	↑	↑
Prediction of visual skin injury prior to being seen	↑		↑	↑		↑	↑		↑			↑	↑	↑		↑		↑	↑	↑	↑	↑	↑	↑	↑	↑
Distinguish between Stage 1 and DTI	↑					↑														↑						
Detection of small water changes in tissue	↑		↑			↑												↑					↑		↑	
Detection of microscopic edema	↑		↑																							
Cost Savings/ROI		↑													↑							↑	↑			
HAPI		↓	↓	↓		↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓			↓	↓	↓	↓	↓	↓	↓	↓
Pressure injury related deaths		↓																								
Readmission		↓																					↓			

PART 1

SYMBOL KEY:

- positive increase ↑
- negative increase ↑
- positive decrease ↓
- negative decrease ↓
- no difference —

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	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26
Clinical decision change *			↑				↑	↑	↑	↑		↑		↑	↑		↑	↑		↑	↑	↑	↑	↑		
Anatomically targeted care plans			↑									↑														
Time treating HAPI			↓				—			—			↓					↓								
Inter-device reliability				↑										↑	↑					↑						
Inter-operator reliability				↑																↑						
Instrument sensitivity					↑							↑				↑	↑		↑				↑		↑	
Instrument precision					↑										↑				↑				↑		↑	
Ease of use													↑				↑	↑				↑				
Staff satisfaction																	↑					↑				
Patient satisfaction																	↑									

PART 2

SYMBOL KEY:

- positive increase ↑
- negative increase ↑
- positive decrease ↓
- negative decrease ↓
- no difference —

*increased turning, specialty mattress, heel support introduced, prophylactic dressing or barrier cream introduced

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