

Pressure-Reducing Support Surfaces

Disclaimer

Clinical guidelines are developed and adopted to establish evidence-based clinical criteria for utilization management decisions. Clinical guidelines are applicable according to policy and plan type. The Plan may delegate utilization management decisions of certain services to third parties who may develop and adopt their own clinical criteria.

Coverage of services is subject to the terms, conditions, and limitations of a member's policy, as well as applicable state and federal law. Clinical guidelines are also subject to in-force criteria such as the Centers for Medicare & Medicaid Services (CMS) national coverage determination (NCD) or local coverage determination (LCD) for Medicare Advantage plans. Please refer to the member's policy documents (e.g., Certificate/Evidence of Coverage, Schedule of Benefits, Plan Formulary) or contact the Plan to confirm coverage.

Pressure-Reducing Support Surfaces	1
Summary	2
Definitions	2
Medical Necessity Criteria for Clinical Review	5
General Medical Necessity Criteria	5
Indication-Specific Criteria	5
Group 1 Support Surfaces	5
Group 2 Support Surfaces	6
Group 2 Support Surface Treatment Duration	6
Group 3 Support Surfaces	6
Group 3 Support Surface Treatment Duration	7
Repair or Replacement of Pressure-Reducing Support Surfaces	7
Experimental or Investigational / Not Medically Necessary	7
Ordinary or Conventional (Non-Medical) Mattresses and Overlays	7
Group 3 Support Surfaces	8
Applicable Billing Codes	8
References	10
Clinical Guideline Revision / History Information	12

Summary

Pressure injuries (pressure ulcers, pressure sores) are areas of skin and tissue damage that form in regions with unrelieved and/or increased pressure. Pressure injuries are often associated with prolonged immobility, poor nutrition, and/or comorbid medical conditions. Pressure-reducing support surfaces should be prescribed as a part of a comprehensive preventative or treatment plan to include proper skin and tissue care, repositioning and mobilization, and nutrition interventions.

There are many pressure-reducing support surfaces used to care for and prevent the development of pressure injuries, including specialized mattresses and mattress overlays. The primary function of these support surfaces is to prevent focal areas of pressure and to better distribute the body surface over a larger area. Pressure-reducing support surfaces are categorized into three groups based on their features, such as the type of material and whether they are powered by electricity or not.

Definitions

"Pressure-reducing overlay" is a support surface designed to be placed directly on an existing support surface (either an ordinary mattress or hospital bed).

"Pressure-reducing mattress" is a support surface designed to be placed directly on a hospital bed frame.

"Integrated bed system" is a support surface and bed frame are combined into a single unit, where the integrated support surface is not capable of functioning separately.

"Non-powered support surface" is a passive support surface not requiring external energy for operation.

"Powered support surface" is a support surface which requires A/C or D/C electrical power for operation.

"Alternating pressure" is powered pressure redistribution via cyclic changes in loading/unloading.

"Low air loss" provides airflow to better manage the heat and humidity of the skin surface.

"Group 1 support surfaces" are pressure-reducing mattress overlays or mattresses that can be placed on top of a hospital bed, hospital bed frame or home mattress. They can be powered or non-powered.

Group 1 support surfaces include the following:

- *Non-powered or passive pressure-reducing mattress*
 - Include foam, air, water, or gel mattress having ALL of the following:
 1. Material height of 5 inches or greater
 2. Durable, waterproof cover
 3. Ability to be placed directly on hospital bed frame

4. *For foam mattresses only:* properties that provides adequate pressure reduction (i.e., appropriate foam density)
 - *Non-powered or passive pressure-reducing mattress overlays*
 - Gel overlay: gel or gel-like layer height is 2 inches or greater
 - Air mattress overlay: interconnected air cells have height of 3 inches or greater when inflated
 - Water mattress overlay: filled height is 3 inches or greater
 - Foam mattress overlay: must have ALL of the following
 1. If convoluted overlay (e.g., eggcrate): thickness 2 inches or greater plus peak height 3 inches or greater; if non-convoluted: overall height of 3 inches or greater
 2. Foam with properties that provide adequate pressure reduction (i.e., appropriate foam density)
 3. Durable, waterproof cover
 - *Powered pressure-reducing mattress overlay*
 - Alternating pressure or low air loss overlay having ALL of the following:
 1. Air pump or blowing that provides sequential inflation/deflation of air cells or a low interface pressure throughout the overlay
 2. A height of 2.5 inches or greater when inflated
 3. Air chamber height, frequency of air cycling (for alternating pressure overlays), proximity of the air chambers to one another, and air pressure provide adequate member lift and pressure reduction

“Group 2 support surfaces” are pressure-reducing mattress overlays or mattresses (alternating pressure or low air loss). They can be powered or advanced non-powered. These surfaces work by inflating tubes or cells with air. Group 2 support surfaces include the following:

- *Powered pressure-reducing mattress or overlay*
 - Alternating pressure or low air loss mattress/overlay having ALL of the following:
 1. Air pump or blowing that provides sequential inflation/deflation of air cells or a low interface pressure throughout the overlay
 2. Inflated height of 3.5 inches or greater (for overlay); inflated height of 5 inches or greater (for mattress)
 3. Air chamber height, frequency of air cycling (for alternating pressure overlays), proximity of the air chambers to one another, and air pressure provide adequate member lift and pressure reduction
 4. Surface designed to reduce friction and shear
 5. *For mattress only:* ability to be placed directly on hospital bed frame
- *Semi-electric hospital bed with powered pressure-reducing mattress:*
 - Mattress must meet powered pressure-reducing mattress criteria above; *and*
 - The bed must function as an integrated bed-mattress system

- *Advanced non-powered passive pressure-reducing mattress or mattress overlay*, which has ALL the following:
 - Height and design of individual cells provide a substantial improvement in the pressure reduction compared to Group 1
 - Height of the air chambers, proximity of the air chambers to one another, frequency of air cycling (for alternating pressure overlays), and air pressure provide adequate member lift, reduce pressure, and prevent bottoming out
 - Total height 3 inches or greater (for overlay); total height 5 inches or greater (for mattress)
 - A surface designed to reduce friction/shearing forces
 - Substantiated evidence of the effectiveness of the specific pressure relieving surface for treating conditions requiring a Group 2 support surface
 - *For mattress only*: ability to be placed directly on hospital bed frame

“Group 3 support surfaces” are air-fluidized beds, which use warm air, under pressure, to set silicone coated ceramic beads in motion to simulate the movement of fluid. When the patient is placed in bed, body weight is evenly distributed over a large surface area, creating a floating sensation.

“Ordinary or conventional (non-medical) mattresses and overlays” are typical furniture items that are normally of use to people who do not have an illness or injury. Although they may be air-filled, water-filled, gel-like or foam, ordinary mattresses and overlays are not primarily medical in nature.

“Pressure injury staging” is a method of classifying tissue damage resulting from a pressure-induced wound. Stages are defined in this guideline as follows:

Stage	Description
Stage I	Localized area of non-blanching erythema with intact skin. May be more painful, a different texture or a different temperature compared to adjacent tissue.
Stage II	Partial-thickness skin loss with exposed dermis and a moist pink or red wound bed. May also present as an intact or ruptured serum-filled blister.
Stage III	Full-thickness skin loss. Subcutaneous fat and rolled wound edges may be visible, but bone, tendon and muscle should NOT be exposed. Slough or eschar may be present. Ulcer depth will vary by anatomical location.
Stage IV	Full-thickness skin and tissue loss with exposed bone, tendon, ligament, cartilage, and/or muscle. Rolled wound edges, tunneling, and undermining are often present. Slough or eschar may be present. Ulcer depth may vary by anatomical location. Can extend into muscle and/or supporting structures.

Unstageable	Full-thickness skin/tissue loss with overlying slough or eschar that prevents full evaluation of the depth and involvement of underlying structures.
-------------	--

“Deep-tissue pressure injuries” are localized regions of intact or non-intact skin with non-blanching deep red or purple discoloration. Most often due to damage of the underlying soft tissue due to pressure or shearing forces.

Medical Necessity Criteria for Clinical Review

General Medical Necessity Criteria

The Plan considers pressure-reducing support surfaces medically necessary when ALL of the following criteria are met:

1. A signed and dated order (prescription) is submitted by the provider documenting the medical necessity for the support surface; *and*
2. Medical records are submitted by the provider documenting the expected duration of the injury or condition. Equipment is medically necessary only for the duration of the injury or condition, and the Plan may determine whether a rental or purchase is appropriate based on the duration of medical necessity; *and*
3. Requested support surface is provided by an in-network DME provider (unless the member has out-of-network benefits); *and*
4. Requested support surface subtype meets the appropriate Group criteria.

Indication-Specific Criteria

Group 1 Support Surfaces

The Plan considers Group 1 support surfaces medically necessary when General Medical Necessity Criteria are met AND ONE of the following criteria is met:

1. Member is completely immobile (i.e., cannot change body position without assistance); *or*
2. Member has limited mobility (i.e., cannot independently change body position meaningfully enough to alleviate pressure) and has one or more of the following:
 - a. Impaired nutritional status; *or*
 - b. Fecal or urinary incontinence; *or*
 - c. Altered sensory perception; *or*
 - d. Compromised circulatory status.
3. Member has a pressure injury of any stage on the trunk or pelvis and has one or more of the following:
 - a. Impaired nutritional status; *or*
 - b. Fecal or urinary incontinence; *or*
 - c. Altered sensory perception; *or*
 - d. Compromised circulatory status.

Group 2 Support Surfaces

The Plan considers Group 2 support surfaces medically necessary when General Medical Necessity Criteria are met AND ONE of the following criteria is met:

1. Member meets ALL of the following:
 - a. Has several Stage II pressure injuries on the trunk or pelvis; *and*
 - b. The injuries have worsened or not changed for at least the past 30 days; *and*
 - c. Has been on a comprehensive ulcer treatment program for at least the past 30 days, which must have included the use of an appropriate Group 1 support surface.
2. Member has large or multiple Stage III or IV pressure injuries on the trunk or pelvis; *or*
3. Member meets BOTH of the following:
 - a. Has had myocutaneous flap or skin graft performed in the last 60 days for a pressure injury on the trunk or pelvis; *and*
 - b. Has been on a Group 2 or Group 3 support surface immediately prior to a recent discharge from a hospital or nursing facility (within the past 30 days); *and*
4. Member has tried and failed (worsening of disease), or had no clinical improvement with a Group 1 mattress.

Group 2 Support Surface Treatment Duration

The Plan considers the duration for Group 2 support surfaces medically necessary when ONE of the following criteria is met:

1. Group 2 support surfaces for members meeting the criteria for Group 2 Support Surfaces above are generally medically necessary for up to 60 days from the date of the surgery; *or*
2. Continued use of a Group 2 support surface is generally medically necessary until the injury is healed. If healing fails to occur, documentation in the medical record should demonstrate ALL of the following:
 - a. Continued need for a Group 2 support surface for wound management; *and*
 - b. Modifications in the care plan are being implemented to promote further healing.

Group 3 Support Surfaces

The Plan considers Group 3 support surfaces medically necessary when General Medical Necessity Criteria are met AND ALL of the following criteria are met:

1. Support surface is being used as part of a comprehensive, documented pressure injury treatment plan; *and*
2. Member has a Stage III or IV pressure injury; *and*
3. Member is bedridden or chair bound as a result of severely limited mobility; *and*
4. Member would require institutionalization in the absence of an air-fluidized bed (i.e., placement in a skilled nursing facility or hospitalization); *and*
5. The necessity for the air-fluidized bed is based on a comprehensive assessment and evaluation of the member after conservative treatment has been attempted without success for at least 30 days. The evaluation generally must be performed within 1 week of initiation of therapy with the

air-fluidized bed. Documentation should generally specify that ALL of the following components have been attempted as part of the conservative treatment plan:

- a. Education of member and caregiver on prevention and management of pressure injuries; *and*
 - b. Appropriate frequency of turning and repositioning; *and*
 - c. Appropriate management of moisture/incontinence; *and*
 - d. Wound care appropriate to Injury stage, including debridement if applicable; *and*
 - e. Use of a Group 2 support surface, when appropriate; *and*
 - f. Nutritional assessment and intervention consistent with overall care plan; *and*
 - g. Assessment by a nurse, physician, or other licensed health care practitioner at least weekly
6. A trained, adult caregiver available to assist with activities of daily living, fluid balance, dry skin care, repositioning, recognition and management of altered mental, dietary needs, prescribed treatments and medications, and management and support of the air-fluidized bed system and any potential problems with its maintenance and operation; *and*
 7. A licensed physician directs the home treatment regimen, and re-evaluates and re-certifies the medical necessity for the air-fluidized bed on a monthly basis; *and*
 8. All other alternative equipment options have been appropriately considered and ruled out.

Group 3 Support Surface Treatment Duration

Continued use of a Group 3 support surface is generally considered medically necessary until the injury is healed. If healing fails to occur, documentation in the medical record should demonstrate BOTH of the following:

1. Continued need for a Group 3 support surface for wound management, *and*
2. Modifications in the care plan are being implemented to promote further healing.

Repair or Replacement of Pressure-Reducing Support Surfaces

The Plan considers the repair or replacement of a mattress or overlay medically necessary when BOTH of the following criteria are met:

1. Treating physician must document that the item being repaired continues to be reasonable and necessary; *and*
2. Treating physician or supplier must document that the repair is reasonable and necessary.

Experimental or Investigational / Not Medically Necessary

Ordinary or Conventional (Non-Medical) Mattresses and Overlays

Ordinary or conventional (non-medical) mattresses and overlays are NOT considered medically necessary by the Plan. They are not considered medically necessary as they are not within the scope of the definition of durable medical equipment (DME) because of the following reasons: They are not primarily medical in nature, are not primarily used in the treatment of disease or injury, and are normally of use to people who do not have an illness or injury. This applies to ordinary or conventional (non-medical) mattresses and overlays, regardless of their composition or design.

Group 3 Support Surfaces

Group 3 Support Surfaces are NOT considered medically necessary by the Plan in the following circumstances:

1. Stage III or IV pressure injuries of the foot because the foot can be elevated to relieve pressure without the use of a specialized air-fluidized bed; *or*
2. The member has coexisting pulmonary disease - lack of an adequate back support prevents effective coughing and dry air inhalation may thicken pulmonary secretions; *or*
3. The member requires treatment with wet soaks or moist wound dressings that are not protected by an impervious covering, such as plastic wrap or other occlusive material; *or*
4. Structural support of the home in which the bed is to be installed cannot safely support the weight of the air-fluidized system (generally weighs 1600+ pounds); *or*
5. Home electrical system is unreliable or cannot support the required increase in electrical energy consumption; *or*
6. Caregiver is unwilling or unable to provide the level of care required for the member to use of an air-fluidized bed; *or*
7. Other known contraindications are present.

Applicable Billing Codes

Table 1	
Group 1 Support Surfaces	
CPT/HCPCS codes considered medically necessary if criteria are met:	
<i>Code</i>	<i>Description</i>
A4640	Replacement pad for use with medically necessary alternating pressure pad owned by patient
E0181	Powered pressure reducing mattress overlay/pad, alternating, with pump, includes heavy duty
E0182	Pump for alternating pressure pad, for replacement only
E0184	Dry pressure mattress
E0185	Gel or gel-like pressure pad for mattress, standard mattress length and width
E0186	Air pressure mattress
E0187	Water pressure mattress
E0188	Synthetic sheepskin pad
E0189	Lambswool sheepskin pad, any size
E0196	Gel pressure mattress

Table 1	
Group 1 Support Surfaces	
CPT/HCPCS codes considered medically necessary if criteria are met:	
<i>Code</i>	<i>Description</i>
E0197	Air pressure pad for mattress, standard mattress length and width
E0198	Water pressure pad for mattress, standard mattress length and width
E0199	Dry pressure pad for mattress, standard mattress length and width
E0272	Mattress, foam rubber

Table 2	
Group 2 Support Surfaces	
CPT/HCPCS codes considered medically necessary if criteria are met:	
<i>Code</i>	<i>Description</i>
E0193	Powered air flotation bed (low air loss therapy)
E0277	Powered pressure-reducing air mattress
E0371	Nonpowered advanced pressure reducing overlay for mattress, standard mattress length and width
E0372	Powered air overlay for mattress, standard mattress length and width
E0373	Nonpowered advanced pressure reducing mattress

Table 3	
Group 3 Support Surfaces	
CPT/HCPCS codes considered medically necessary if criteria are met:	
<i>Code</i>	<i>Description</i>
E0194	Air fluidized bed

Table 4	
Accessories/Components	
CPT/HCPCS codes considered medically necessary if criteria are met:	
<i>Code</i>	<i>Description</i>
E0191	Heel or elbow protector, each
E0280	Bed cradle, any type
E0370	Air pressure elevator for heel

Table 5	
CPT/HCPCS codes <u>not considered medically necessary</u> for indications in this guideline:	
<i>Code</i>	<i>Description</i>
E1399	Durable medical equipment, miscellaneous

References

1. Armstrong, D.G., & Meyr, A.J. (2025). *Clinical assessment of chronic wounds*. UpToDate. <https://www.uptodate.com/contents/clinical-assessment-of-chronic-wounds>
2. Anrys, C., Van Tiggelen, H., Verhaeghe, S., Van Hecke, A., & Beeckman, D. (2019). Independent risk factors for pressure ulcer development in a high-risk nursing home population receiving evidence-based pressure ulcer prevention: Results from a study in 26 nursing homes in Belgium. *International Wound Journal*, 16(2), 325–333. <https://doi.org/10.1111/iwj.13032>
3. Beeckman, D., Serraes, B., Anrys, C., Van Tiggelen, H., Van Hecke, A., & Verhaeghe, S. (2019). A multicentre prospective randomised controlled clinical trial comparing the effectiveness and cost of a static air mattress and alternating air pressure mattress to prevent pressure ulcers in nursing home residents. *International Journal of Nursing Studies*, 97, 105–113. <https://doi.org/10.1016/j.ijnurstu.2019.05.015>
4. Berlowitz, D. (2025). *Clinical staging and general management of pressure-induced skin and soft tissue injury*. UpToDate. <https://www.uptodate.com/contents/clinical-staging-and-general-management-of-pressure-induced-skin-and-soft-tissue-injury>
5. Berlowitz, D. (2023). *Prevention of pressure-induced skin and soft tissue injury*. UpToDate. <https://www.uptodate.com/contents/prevention-of-pressure-induced-skin-and-soft-tissue-injury>
6. Centers for Medicare and Medicaid Services (CMS). (n.d.). <https://www.cms.gov/medicare-coverage-database/search.aspx>

- Local Coverage Determination for Pressure Reducing Support Surfaces – Group 1 (A52489). Updated 05/01/2021.
 - Local Coverage Determination for Pressure Reducing Support Surfaces – Group 2 (A52490). Updated 05/01/2021.
 - Local Coverage Determination for Pressure Reducing Support Surfaces – Group 3 (A52468). Updated 05/01/2021
7. Edsberg, L. E., Black, J. M., Goldberg, M., McNichol, L., Moore, L., & Sieggreen, M. (2016). Revised National Pressure Ulcer Advisory Panel pressure injury staging system: Revised pressure injury staging system. *Journal of Wound, Ostomy, and Continence Nursing*, 43(6), 585–597. <https://doi.org/10.1097/WON.0000000000000281>
 8. Gaspar, S., Peralta, M., Marques, A., Budri, A., & Gaspar de Matos, M. (2019). Effectiveness on hospital-acquired pressure ulcers prevention: A systematic review. *International Wound Journal*, 16(5), 1087–1102. <https://doi.org/10.1111/iwj.13147>
 9. Gillespie, B. M., Walker, R. M., Latimer, S. L., Thalib, L., Whitty, J. A., McInnes, E., & Chaboyer, W. P. (2020). Repositioning for pressure injury prevention in adults. *Cochrane Database of Systematic Reviews*, 6(6), CD009958. <https://doi.org/10.1002/14651858.CD009958.pub3>
 10. Gould, L. J., Alderden, J., Aslam, R., Barbul, A., Bogie, K. M., El Masry, M., Graves, L. Y., White-Chu, E. F., Ahmed, A., Boanca, K., Brash, J., Brooks, K. R., Cockron, W., Kennerly, S. M., Livingston, A. K., Page, J., Stephens, C., West, V., & Yap, T. L. (2024). WHS guidelines for the treatment of pressure ulcers-2023 update. *Wound Repair and Regeneration*, 32(1), 6–33. <https://doi.org/10.1111/wrr.13130>
 11. Gupta, S., Andersen, C., Black, J., de Leon, J., Fife, C., Lantis li, J. C., Niezgoda, J., Snyder, R., Sumpio, B., Tettelbach, W., Treadwell, T., Weir, D., & Silverman, R. P. (2017). Management of chronic wounds: Diagnosis, preparation, treatment, and follow-up. *Wounds*, 29(9), S19–S36.
 12. Huang, C., Ma, Y., Wang, C., Jiang, M., Yuet Foon, L., Lv, L., & Han, L. (2021). Predictive validity of the braden scale for pressure injury risk assessment in adults: A systematic review and meta-analysis. *Nursing Open*, 8(5), 2194–2207. <https://doi.org/10.1002/nop.2.792>
 13. Kottner, J., Cuddigan, J., Carville, K., Balzer, K., Berlowitz, D., Law, S., Litchford, M., Mitchell, P., Moore, Z., Pittman, J., Sigaudo-Roussel, D., Yee, C. Y., & Haesler, E. (2019). Prevention and treatment of pressure ulcers/injuries: The protocol for the second update of the international Clinical Practice Guideline 2019. *Journal of Tissue Viability*, 28(2), 51–58. <https://doi.org/10.1016/j.jtv.2019.01.001>
 14. Lozano, V. M., Denny, D. L., Owens, R. A., Sandhu, S., Fakir, M. H., Molani, M., Labuhn, M., Vetsch, C., Tavakolian, K., Hanson, D., Jean, K. L., & Tavakolian, P. (2025). Comparative evaluation of pressure distribution of three support surfaces used for pressure injury prevention during prolonged surgeries. *Critical Care Nursing Clinics of North America*, 37(2), 231–244. <https://doi.org/10.1016/j.cnc.2025.02.003>
 15. Marvaki, A., Kourlaba, G., Kadda, O., Vasilopoulos, G., Rovina, N., Koutsoukou, A., & Kotanidou, A. (2020). A comparative study between two support surfaces for pressure ulcer prevention and healing in ICU patients. *Cureus*, 12(6), e8785. <https://doi.org/10.7759/cureus.8785>

16. Moore, Z. E., & Patton, D. (2019). Risk assessment tools for the prevention of pressure ulcers. *Cochrane Database of Systematic Reviews*, 1(1), CD006471. <https://doi.org/10.1002/14651858.CD006471.pub4>
17. Moore, Z., Patton, D., Avsar, P., McEvoy, N. L., Curley, G., Budri, A., Nugent, L., Walsh, S., & O'Connor, T. (2020). Prevention of pressure ulcers among individuals cared for in the prone position: lessons for the COVID-19 emergency. *Journal of Wound Care*, 29(6), 312–320. <https://doi.org/10.12968/jowc.2020.29.6.312>
18. Nixon, J., Brown, S., Smith, I. L., McGinnis, E., Vargas-Palacios, A., Nelson, E. A., Brown, J., Coleman, S., Collier, H., Fernandez, C., Gilberts, R., Henderson, V., McCabe, C., Muir, D., Rutherford, C., Stubbs, N., Thorpe, B., Wallner, K., Walker, K., Wilson, L., ... Hulme, C. (2019). Comparing alternating pressure mattresses and high-specification foam mattresses to prevent pressure ulcers in high-risk patients: the PRESSURE 2 RCT. *Health Technology Assessment* (Winchester, England), 23(52), 1–176. <https://doi.org/10.3310/hta23520>
19. Oe, M., Sasaki, S., Shimura, T., Takaki, Y., & Sanada, H. (2020). Effects of multilayer silicone foam dressings for the prevention of pressure ulcers in high-risk patients: A randomized clinical trial. *Advances in Wound Care*, 9(12), 649–656. <https://doi.org/10.1089/wound.2019.1002>
20. Serraes, B., van Leen, M., Schols, J., Van Hecke, A., Verhaeghe, S., & Beeckman, D. (2018). Prevention of pressure ulcers with a static air support surface: A systematic review. *International Wound Journal*, 15(3), 333–343. <https://doi.org/10.1111/iwj.12870>
21. Shi, C., Dumville, J. C., & Cullum, N. (2018). Support surfaces for pressure ulcer prevention: A network meta-analysis. *PloS One*, 13(2), e0192707. <https://doi.org/10.1371/journal.pone.0192707>
22. Shi, C., Dumville, J. C., Cullum, N., Rhodes, S., Jammali-Blasi, A., & McInnes, E. (2021). Alternating pressure (active) air surfaces for preventing pressure ulcers. *Cochrane Database of Systematic Reviews*, 5(5), CD013620. <https://doi.org/10.1002/14651858.CD013620.pub2>
23. Shi, C., Dumville, J. C., Cullum, N., Rhodes, S., Leung, V., & McInnes, E. (2021). Reactive air surfaces for preventing pressure ulcers. *Cochrane Database of Systematic Reviews*, 5(5), CD013622. <https://doi.org/10.1002/14651858.CD013622.pub2>
24. Stansby, G., Avital, L., Jones, K., Marsden, G., & Guideline Development Group (2014). Prevention and management of pressure ulcers in primary and secondary care: Summary of NICE guidance. *BMJ*, 348, g2592. <https://doi.org/10.1136/bmj.g2592>
25. Wu, F. L., Zheng, Z., Ma, Y., Weng, K., Liao, F., & Jan, Y. K. (2020). Effects of cycle periods and pressure amplitudes of alternating pressure on sacral skin blood flow responses. *Journal of Tissue Viability*, 29(4), 264–268. <https://doi.org/10.1016/j.jtv.2020.09.004>

Clinical Guideline Revision / History Information

Original Date: 1/26/2017

Reviewed/Revised: 4/11/2017, 1/18/2018, 2/5/2019, 1/27/2020, 1/21/2021, 12/1/2021, 01/26/2022, 01/31/2023, 01/23/2024, 02/14/2025, 05/01/2026