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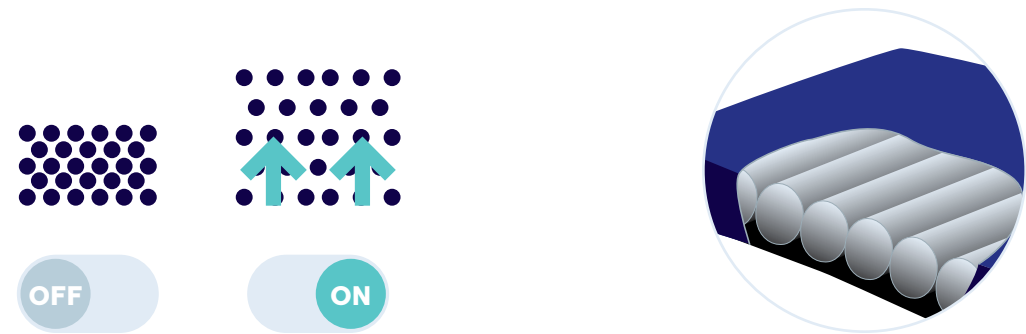
Envella® Air Fluidized Therapy Bed

Clinical and Financial Evidence

PATIENTS WITH COMPLEX WOUNDS NEED ELEVATED CARE

THE AIR FLUIDIZED THERAPY DIFFERENCE

Air fluidized therapy (AFT) uses differentiated technology to create a superior wound healing environment—helping you prevent and treat advanced wounds.



AIR FLUIDIZED THERAPY

pushes air flow through a bed of millions of tiny beads. It creates a unique fluid-like environment that results in a sensation similar to floating on water—maximizing immersion and envelopment, minimizing shear and pressure, and controlling the skin's microclimate.¹

POWERED AIR SURFACES

are made of conventional air bladders connected together. These connected air bladders do not achieve the same level of immersion and envelopment or microclimate management as AFT's fluid-like environment.²

Proven Performance

Based on test methods developed by the NPIAP Support Surface Standards Initiative, the Envella® bed performs better than other powered air surfaces like the Dolphin FIS® mattress.¹

↑

33%

BETTER PRESSURE REDISTRIBUTION*

↑

92%

BETTER SHEAR PERFORMANCE*

61X↑

6,100% GREATER EVAPORATIVE CAPACITY*

The Center for Medicare Services (CMS) and many other professional organizations in wound care recognize Air Fluidized Therapy (AFT) as a separate surface category due to its unique therapeutic capabilities.³⁻⁶

CMS TERM ³	CMS DEFINITION ³
Group I	Usually non-powered surfaces
Group II	Usually powered surfaces
Group III	Air fluidized therapy

NPIAP TERM ⁴	NPIAP DEFINITION ⁴
Constant Low Pressure (CLP) or Reactive	A powered or non-powered support surface with the capability to change its load distribution properties only in response to applied load
Active Support Surfaces	A powered support surface with the capability to change its load distribution properties, with or without applied load
Low Air Loss (LAL)	Provides a flow of air to assist in managing the heat and humidity (microclimate) of the skin
Air Fluidized (AF)	Provides pressure redistribution via a fluid-like medium created by forcing air through beads as characterized by immersion and envelopment

CLINICAL EVIDENCE SHOWS ENVELLA BED CREATES A BETTER HEALING ENVIRONMENT

The clinical data supporting AFT is substantial—and has been for many years. The following are some of the highlights, organized by clinical application. It was true then and it’s true now: AFT creates an ideal healing environment for your most complex wound care patients.

High-Risk Pressure Injury Prevention

Pressure Ulcer Prevention in High Risk Cardiovascular Patients

- *Critical Care Nurse*, 2012.
- Pre/post cohort with 25 pre- and 28 post-intervention, high-risk ICU patients (>24 hours on vasopressors and >24 hours of mechanical ventilation post operatively).

KEY FINDINGS

Only one pressure injury occurred in the 28 patients placed on AFT, while 40 pressure injuries developed on patients on the standard care surface.

The cost of renting an AFT bed was far less than treating even one patient who developed a stage 3 or 4 pressure injury in the pre-intervention group.⁹

Air-Fluidized Therapy in Patients with Suspected Deep Tissue Injury: A Case Series

- *Journal of Wound, Ostomy and Continence Nursing*, 2012.
- Case series with 5 patients with 10 sDTIs with multiple comorbidities. Majority were malnourished and anemic.

KEY FINDINGS

None of the 10 DTIs on AFT became stage 3 or 4 pressure injuries—despite the very high likelihood given the patients’ overall complexities.

The cost to rent an AFT bed (\$700/patient) was much lower than the ancillary cost of treating one pressure injury patient (>\$10,000).¹⁰

Advanced Pressure Injury Healing

Comparison of Air-Fluidized Therapy with Other Support Surfaces Used to Treat Pressure Ulcers in Nursing Home Residents

- *Ostomy Wound Management*, 2005.
- Retrospective analysis of 664 nursing home patients with 14 days or longer lengths of stay.

KEY FINDINGS

Stage 3 & 4 pressure injuries healed 4.4x faster on AFT (3.1 cm²/week) vs. Group II surfaces (0.7 cm²/week).⁷

Wound Healing in the Long-Term Acute Care Setting Using an Air Fluidized Therapy/Continuous Low-Pressure Therapeutic Bed

- *Journal of Wound, Ostomy and Continence Nursing*, 2020.
- Case Series with 10 medically complex patients with 25 wounds (23 pressure injuries and two large surgical excisions).

KEY FINDINGS

88% of all wounds shrank, with an average area reduction of 59%. Five of the patients started on a LAL surface, on which their wounds worsened—but improved when moved to AFT.⁸

Pressure Ulcers: One Bed or Another?

- *Geriatric Nursing*, 1989.
- Randomized control trial with 40 acute care stage II/III pressure injury patients.

KEY FINDINGS

Over 15 days, pressure injury surface area decreased by 56% for patients on AFT, while the pressure injuries of patients placed on standard mattresses increased in size by 40%.¹¹

Air Fluidized Beds or Conventional Therapy for Pressure Sores

- *Annals of Internal Medicine*, 1987.
- Randomized control trial with 65 pressure injury patients.

KEY FINDINGS

Large pressure injuries (7.8 cm² or greater) healed at a median total area of 5.3 cm², while those on alternating air grew 4 cm.² Estimated relative odds of showing improvement were 5.6x greater with AFT.¹²

Pain Management

Clinitron Therapy and Pain Management in Advanced Cancer Patients

- *Journal of Pain and Symptom Management*, 1990.
- Case series with 25 patients with advanced malignancy and bone metastases.

KEY FINDINGS

Patients with boney metastases and fractures were more comfortable and required less narcotic pain medication on AFT than on the previous standard of care.¹³

Wound Healing in the Long-Term Acute Care Setting Using an Air Fluidized Therapy/Continuous Low-Pressure Therapeutic Bed

- *Journal of Wound, Ostomy and Continence Nursing*, 2020.
- Case Series with 10 medically complex patients with 25 wounds (23 pressure injuries and two large surgical excisions).

KEY FINDINGS

Compared to the LAL surface, many patients on AFT reported greater comfort for pressure injury pain management, easier sleeping and a more ideal environment for healing.⁸

Post-Op Flap and Graft Healing

A Prospective, Randomized Controlled Trial Evaluating the Effectiveness of the Fluid Immersion Simulation System vs. an Air-Fluidised Bed System in the Acute Postoperative Management of Pressure Ulcers: A Midpoint Study Analysis

- *International Wound Journal*, 2019.
- Randomized control trial with 40 post-operative flap patients.

KEY FINDINGS

Flap patients placed on AFT developed no dehiscence or maceration complications as compared to 40% of patients placed on the Dolphin FIS mattress.¹⁴

The Use of Clinitron Therapy Unit in the Immediate Postoperative Care of Pressure Ulcers

- *Annals of Plastic Surgery*, 1985.
- Case Series of 16 postoperative flap patients. 13 had spinal cord injuries.

KEY FINDINGS

94% of flap patients placed on AFT immediately after surgery developed no complications.¹⁵



Burn Treatment

Air-fluidized Therapy in the Treatment of Severe Burns: A Retrospective Study from a Burn Intensive Care Unit in Austria

- *Journal of the International Society for Burn Injuries*, 2019.
- Retrospective analysis with 75 AFT patients compared to 35 non-AFT conventional mattress patients.

KEY FINDINGS

Survival rates for AFT patients were much higher than predicted by ABSI score (actual 73% vs 20-40% predicted, $p<.0001$), while survival rates for patients not on AFT were the same as predicted (actual 66% vs. 50-70% predicted). Importantly, total burn surface area was 50% for AFT patients and 30% for non-AFT patients ($p<0.0001$).¹⁶

Air-Fluidized Therapy: Physical Properties and Clinical Uses

- *Annals of Plastic Surgery*, 2010.
- Literature review focused on burn patients.

KEY FINDINGS

AFT reduces bacterial growth, allows for targeted grafting and promotes healing of donor sites, which allows for more grafting in a single surgical procedure.²





Elevating your standard of care with the Envella® bed is good for your patients—and your bottom line. Learn more at hillrom.com.

ABOUT HILLROM

Hillrom is a global medical technology leader whose 10,000 employees have a single purpose: enhancing outcomes for patients and their caregivers by advancing connected care. Around the world, our innovations touch over 7 million patients each day. They help enable earlier diagnosis and treatment, optimize surgical efficiency and accelerate patient recovery while simplifying clinical communication and shifting care closer to home. We make these outcomes possible through connected smart beds, patient lifts, patient assessment and monitoring technologies, caregiver collaboration tools, respiratory care devices, advanced operating room equipment and more, delivering actionable, real-time insights at the point of care. Learn more at hillrom.com.

References

- ¹ Lachenbruch C. Surface Performance Comparison: Envella Bed vs. Dolphin Surface 2017. Hill-Rom Services. 201004r2.
- ² VanGilder CA, Lachenbruch C. Air-Fluidized Therapy: Physical Properties and Clinical Uses. *Annals Plastic Surgery*. 2010;65:364-370.
- ³ Center for Medicare and Medicaid Services (CMS) Medicare policy regarding pressure reducing support surfaces – JA1014. Available at: <https://www.cms.gov/medicare/medicare-contracting/contractorlearningresources/downloads/ja1014.pdf>
- ⁴ National Pressure Injury Advisory Panel: Support Surface Standards Initiative (S3I) Terms and Definitions Related to Support Surfaces: Revised: 12/27/2018; 11/19/2019. Available at: https://cdn.ymaws.com/npiap.com/resource/resmgr/website_version_terms_and_de.pdf
- ⁵ McNichol L, Watts C, Mackey D, Beitz JM, Gray M. Identifying the Right Surface for the Right Patient at the Right Time: Generation and Content Validation of an Algorithm for Support Surface Selection. *Wound Ostomy Continence Nurs*. 2015;42(1):19-37.
- ⁶ European Pressure Ulcer Advisory Panel, National Pressure Injury Advisory Panel and Pan Pacific Pressure Injury Alliance. 2019; Prevention and Treatment of Pressure Ulcers/Injuries: Clinical Practice Guideline: The International Guideline 2019. Pp 171. Chapter 10, Support Surfaces.
- ⁷ Ochs RF, Horn SD, van Rijswijk L, et al. Comparison of Air-Fluidized Therapy with Other Support Surfaces Used to Treat Pressure Ulcers in Nursing Home Residents. *Ostomy Wound Management*. 2005;51(2):38-68.
- ⁸ Arnold M, Yanez C, Yanez B. Wound Healing in the Long-Term Acute Care Setting Using an Air Fluidized Therapy/Continuous Low-Pressure Therapeutic Bed. *J Wound Ostomy Continence Nurs*. 2020;47(3):284-290.
- ⁹ Jackson M, McKenney T, Drumm J, et al. Pressure Ulcer Prevention in High Risk Cardiovascular Patients. *Critical Care Nurse*. 2012;31(4):44-53.
- ¹⁰ Allen L, McGarrah B, Barrett D, et al. Air-Fluidized Therapy in Patients With Suspected Deep Tissue Injury: A Case Series. *J Wound Ostomy Continence Nurs*. 2012;39(5):555-561.
- ¹¹ Munro BH, Brown L, Heitman BB. Pressure Ulcers: One Bed or Another? *Geriatric Nursing*. July/August 1989;10(4):190-192.
- ¹² Allman RM, Walker JM, Hart MK, et al. Air Fluidized beds or conventional therapy for pressure sores. *Ann Int Med*. 1987;107:641-648.
- ¹³ Walsh M, Brescia FJ. Clinitron therapy and pain management in advanced cancer patients. *J Pain Symptom Management*. 1990;5(1):46-50.
- ¹⁴ Mendoza R, Lorusso G, Ferrer D, et al. A prospective, randomized controlled trial evaluating the effectiveness of the fluid immersion simulation system vs. an air-fluidised bed system in the acute postoperative management of pressure ulcers: A midpoint study analysis. *International Wound Journal*. 2019;16:989-999.
- ¹⁵ Dolezal R, Cohen M, Schultz R. The Use of Clinitron Therapy Unit in the Immediate Postoperative Care of Pressure Ulcers. *Annals of Plastic Surgery*. 1985;14(1):33-36.
- ¹⁶ Nickl S, Fochtmann-Frana, A, Nedomansky, J, et al. Air-fluidized therapy in the treatment of severe burns: A retrospective study from a burn intensive care unit in Austria. *Journal of the Int Society for Burn Injuries*. 2019;46:136-142.

For more information, please contact your local Hillrom sales representative at 1-800-445-3730.

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