# Reduced weekly dressing changes with a five-layer foam dressing\*† compared with other previously used dressings in wounds of mixed aetiology: Results of a systematic literature review and meta-analysis of clinical studies

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### Background

- It is now recognized that wound bed preparation followed by a period of undisturbed wound healing is key for achieving optimal wound outcomes<sup>1–4</sup>
- Dressings that minimize clinically unnecessary changes and avoid disrupting the healing environment are recommended by the World Union of Wound Healing Societies<sup>3</sup>
- A recent study found switching to a five-layer hydrocellular polyurethane foam dressing (HPFD\*) with unique features (Figure 3) significantly reduced mean weekly dressing changes compared with the previous dressing<sup>5</sup>

### Aim

The aim was to investigate the collective evidence for the impact of the HPFD\* on dressing changes compared with other dressings, including other foam dressings

# Methods

- A systematic literature review using "ALLEVYN" or "HYDROSITE" search terms in Pubmed, Embase and the Cochrane Library to identify published articles (any date range) was conducted in April 2021; additional articles were sourced by searching reference lists and internal databases
- Clinical studies comparing the HPFD\* with other dressings that reported objective data for an outcome related to dressing change frequency, used on any type of wound, were included
- Meta-analyses were performed to determine mean differences (MD)
- The primary outcome was mean weekly dressing changes

## **Study characteristics**

- Of the 418 studies identified, four met the inclusion criteria: One randomized controlled trial (RCT) and three comparative observational studies,<sup>5–8</sup> including 174 patients (220 wounds of mixed aetiology) in total; the most common wounds were pressure or lower extremity ulcers (mean 75.5% wounds)
- The observational studies investigated switching from using previous dressings to the HPFD\* $^{5-7}$ ; two included an accompanying education program. $^{6,7}$ The RCT had a cross-over design comparing three foam dressings<sup>8</sup>
- Previous dressings included other foams, superabsorbers, gelling fibres, protease-modulating dressings, alginates, hydrocolloids, and antimicrobials (used alone or in combination)
- Where it was not possible to identify standard deviation or which previous dressings were foams from the publication, authors were contacted

# Meta-analysis results

### Dressing changes with the HPFD\*<sup>†</sup> versus previous dressings

– Significant reduction of 1.05 mean dressing changes per week with the HPFD\*<sup>+</sup> versus previous dressings (MD of -1.05 changes per week; 95% CI: -1.94 to -0.16; p=0.021; Figure 1)

Figure 1. Forest plot of mean weekly dressing changes with the HPFD\* $^{\dagger}$  versus other previously used dressings

Study	HPFD* <sup>†</sup>		Previous dressings		Mean difference in weekly ch
	n	Mean ±SD	n	Mean ±SD	(95% CI)
Tiscar-González Η, et αl. (2021)	128	1.66 ±0.87	128	3.14 ±1.77	-1.48
Joy H, et al. (2015)	37	1.78 ±0.85	37	3.57 ±2.39	-1.79 of 1.0 dressin
Krönert G, et al. (2016)	31	3.34 ±0.75	31	4.59 ±2.19	-1.25 with HF previou
Álvarez OM, et αl. (2021)	18	1.66 ±0.48	17	1.49 ±0.51	
Meta analysis (random effects)	214		213		-1.05
					-3 $-2$ $-1$ $0$ $1$

### Dressing changes with the HPFD\*<sup>+</sup> versus previous foam dressings

– Significant reduction of 0.85 mean dressing changes per week with the HPFD\*<sup>†</sup> versus previous foam dressings (MD of -0.85 change per week; 95% CI: -1.62 to -0.09; p=0.029; Figure 2)

Figure 2. Forest plot of mean weekly dressing changes with the HPFD\*<sup>+</sup> versus other previously used foam dressings

Study	HPFD* <sup>†</sup>		Previous foam dressings		Mean difference in weekly ch
	n	Mean ±SD	n	Mean ±SD	(95% CI)
Tiscar-González Η, et αl. (2021)	85	1.68 ±0.73	85	3.07 ±1.64	-1.39
Joy H, et al. (2015)	27	1.56 ±0.75	27	3.04 ±1.51	-1.48 Mean red weekly dr
Krönert G, et al. (2016)	24	3.39 ± 0.75	24	4.18 ±1.19	-0.79 previous f
Álvarez OM, et al. (2021)	18	1.66 ± 0.48	17	1.49 ±0.51	0.17
Meta analysis (random effects)	154		153		-0.85
					-3 -2 -1 0 1
					Favors HDFD* <sup>†</sup> Favors previous f



Figure 3. Unique structure and features of the HPFD\*





**16.** S+N Data on file. CE/047/ALF. 2016.

Favors HPFD\*<sup>+</sup>

# Conclusions

- Mean weekly dressing changes were significantly reduced with the HPFD\*<sup>+</sup>; by a relative reduction of 34% compared with other previous dressings generally (3.12 vs 2.07; p=0.021), and 29% compared with other previous foam dressings (2.91 vs 2.06; p=0.029)
- The HPFD\* maintains a moist wound environment<sup>9-11</sup> and has unique features that may help enhance dressing wear times beyond those of other dressings, including other foam dressings (Figures 2 and 3)
  - The EXUMASK<sup>\(\chi)</sup> Change Indicator helps patients feel confident by minimizing the visual impact of exudate strikethrough whilst providing a clear visual guide for when it needs changing<sup>10,12–15</sup>
  - The hyper-absorbent EXULOCK<sup>\lambda</sup> core minimises dressing leakage and provides wound odor control<sup>9,10,16</sup>
- Use of the HPFD\* promotes wound healing by allowing undisturbed wound healing; the avoidance of clinically unnecessary dressing changes can also help to free up nurse time during visits or reduce visit frequency and save costs<sup>5-7</sup>

\*ALLEVYN<sup>\ophi</sup> LIFE Dressing; <sup>+</sup>When used with or without an education program.

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