

# Competitive Matrix

Wound Healing Using Pulsed Electromagnetic Field Therapy (PEMF) vs Negative Pressure Wound Therapy (NPWT)

## CLINICAL CONSIDERATIONS:

ITEM	NPWT	PEMF	PEMF ADVANTAGE
Treatment description	Mechanical suction	PEMF works at the cellular level to promote the calcium/calmodulin ion ligand binding process. This creates a cascade of natural physiological events including nitric oxide synthase production, blood vessel dilation, growth factor release, angiogenesis and ultimately tissue remodelling.	<ul style="list-style-type: none"> <li>- Natural treatment</li> <li>- No pain</li> <li>- No contraindications</li> <li>- Non-pharmacological</li> </ul>
Type of treatment	Invasive	Non-invasive	Faster, simpler, safer, more cost effective
Contraindications	<ul style="list-style-type: none"> <li>- Unexplored fistulas</li> <li>- Necrotic tissue with eschar</li> <li>- Osteomyelitis (untreated)</li> <li>- Malignancy in the wound</li> <li>- Exposed blood vessels or organs</li> <li>- Some patients on anti-coagulants</li> </ul>	None	Can be used on all types of wounds
Pain associated with dressing changes	Yes, common	No	Significantly more comfortable
Bleeding associated with dressing changes	Yes, common	No	Significantly safer
Possibility of fill material left in wound	Yes, many documented incidents. Fill material left in wound hinders healing and causes infection	No	Significantly safer
Possibility of fatal hemorrhage and/or exsanguination	Yes, documented incidents	None	Significantly safer
Pain associated with therapy	Yes, Vacuum suction of 60 to 120 mm/Hg on open wounds creates pain for many patients	None	Much more comfortable
Treatment duration	Daily 24 hours / day	Daily 2 X 30 minutes	<ul style="list-style-type: none"> <li>- Easier to use</li> <li>- Better quality of life for patient, patient is free of therapy 23 hours/day</li> </ul>
Complete Wound Closure	No	Yes	More effective. Brings wounds to complete closer vs. cycle of partial healing then re-opening of the wound.

Maintenance / Malfunctions	<p>High Maintenance</p> <ul style="list-style-type: none"> <li>- Lengthy dressing changes often requiring multiple staff members</li> <li>- Often requires pre-medication and pre-irrigation (20 mins before actual dressing change) to help with associated pain <ul style="list-style-type: none"> <li>- Drain becomes occluded</li> <li>- Dressing develops leak and loses seal <ul style="list-style-type: none"> <li>- High pressure alarms</li> <li>- Low pressure alarms</li> </ul> </li> </ul> </li> <li>- With foam based NPWT devices, all foam pieces must be counted and documented for each dressing change</li> </ul>	Zero maintenance	Eliminates labour hours and inconvenience associated with high maintenance therapy.
Clinical Efficacy	Fair	Excellent	* Electrotherapy is the "only" documented effective adjunctive wound care therapy." Source: AHCPR guidelines, health and human services - US.
Number of wounds treated simultaneously	Maximum 2 - Must be in close proximity and similar in size	Up to 3, anywhere, any size	More versatile. More cost effective
Therapy indicated for pain and edema	No	Yes	Additional clinical benefits. Multiple uses, one device
Effective in treating venous stasis ulcer	No, very difficult to obtain seal	Yes	More versatile
Effective in treating heel ulcers	No, very difficult to obtain seal	Yes	More versatile
Patient Compliance	Moderate, Due to associated pain and 24 hour/day therapy	High	Better clinical outcomes
Home care use	Difficult, costly. Dressing changes require registered caregiver to attend. Time consuming	Simple, inexpensive, quick	- Better compliance - Better clinical outcomes - Much more cost effective

## FINANCIAL CONSIDERATIONS

ITEM	NPWT	PEMF	PEMF ADVANTAGE
Daily Equipment Rental Cost	\$105/avg	\$79/day	Lower daily rental cost
Consumables	Dressings, fill material, drains, drapes and canister changes every two days @ \$60/avg, per wound (= avg \$30/day)	One time \$299 applicator	Lower consumables cost
Labour hours cost  Assumptions: Registered Staff: \$30/hr Non-registered Staff: \$16/hr	1.5 hours every 2 days by registered staff + 1 hour every two days by non-registered staff to assist with patient positioning and dressing changes + daily maintenance = \$35.50 / day	5 minutes 2 X Day by non-registered staff = \$2.60 / day	Significantly lower overall cost
Total treatment cost per patient (one month)	\$170.50 x 30 = <b>\$5,115.00</b>	\$91.50 X 30 = <b>\$2,748.80</b>	<b>47% savings</b>
Total treatment cost per patient with three wounds (one month)	\$315.00 X 30 = <b>\$9,465.00</b>	\$111.43 X 30 = <b>\$3,342.90</b>	<b>65% savings</b>