DIAPULSE® TECHNOLOGIES

Pulsed Radio Frequency Energy (PRFE) Therapeutic Systems

Burn Care & Rehabilitation

CLINICAL BRIEF

For Hospital Burn Centers, Trauma Units, Wound Care Programs & Plastic Surgery Departments

60+ Years of Clinical Research	**7 Days** 2nd-Degree Burn Healing Documented	**73%** Demonstrated Pain Reduction	**ZERO** Side Effects or Banned Substances	**FDA** Approved Pulsed RF Energy Device

CONFIDENTIAL

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THE BURN CARE BREAKTHROUGH YOUR PATIENTS NEED

Burn injuries remain among the most painful, complex, and costly conditions treated in modern hospitals. Every additional day a burn patient spends in a hospital bed represents thousands in direct care costs, increased infection risk, and prolonged suffering. For burn centers managing patients with second- and third-degree burns, post-surgical skin graft recovery, and chronic wound complications, the need for therapies that accelerate healing without adding pharmaceutical burden is critical.

Diapulse® is a clinically validated, FDA-indicated Pulsed Radio Frequency Energy (PRFE) therapeutic system with over 60 years of peer-reviewed research demonstrating its ability to dramatically accelerate soft tissue healing, reduce post-injury and post-surgical edema, and eliminate pain — all without drugs, thermal risk, or side effects. Documented clinical cases show second-degree facial burns healing in just 7 days with twice-daily Diapulse treatments, with no scarring.

WHY BURN UNITS CHOOSE DIAPULSE®

✓ Accelerate burn wound healing — documented second-degree burn resolution in 7 days with twice-daily treatment, with no scarring.

✓ 73% pain reduction demonstrated — reduces or eliminates reliance on opioids and NSAIDs during the acute recovery phase, addressing the burn unit's most persistent clinical challenge.

✓ Non-thermal, non-contact treatment — energy penetrates through bandages, dressings, and wound coverings without removal, eliminating the painful dressing change cycle for treatment application.

✓ 9-inch tissue penetration depth — reaches deep dermal layers, subcutaneous tissue, and underlying structures that surface-level therapies cannot access.

✓ Statistically significant edema reduction ($p<0.01$) — double-blind RCT demonstrated 3.5-fold greater edema reduction versus placebo after a single treatment session.

✓ 100% drug-free with zero reported side effects across 60+ years of clinical use — safe for repeated daily treatments on fragile burn tissue, pediatric patients, and immunocompromised individuals.

✓ Hands-free operation — once activated, the device runs unattended, freeing nursing staff to manage other patients in high-acuity burn environments.

THE BURN TREATMENT CHALLENGE

Burn injuries affect approximately 486,000 patients annually in the United States requiring medical treatment, with roughly 40,000 requiring hospitalization and an estimated 30,000 admitted to specialized burn centers. The clinical and economic burden is immense:

- **Pain Management Crisis:** Burn patients experience some of the most severe pain in all of medicine. Opioid dependency during prolonged burn recovery is a significant clinical and ethical concern. Any technology that reduces pain without pharmaceuticals directly addresses this crisis.
- **Prolonged Hospital Stays:** The average burn center stay ranges from 1 day per percent of body surface area burned for major injuries. At average burn center costs of $3,500–$8,000+ per day, even a modest acceleration in healing translates to substantial cost savings.

- **Infection Risk:** Every additional day with open or healing burn wounds increases the risk of sepsis and secondary infection — the leading cause of death in burn patients. Faster wound closure directly reduces mortality risk.
- **Scarring and Contracture:** Slower healing and prolonged inflammation lead to hypertrophic scarring and contracture. Accelerating the healing timeline during the critical window reduces long-term disfigurement and the need for costly reconstructive procedures.
- **Skin Graft Recovery:** Post-surgical edema and pain at both donor and recipient sites significantly impact graft viability and patient comfort. Rapid edema reduction improves graft outcomes and shortens the post-operative recovery period.
- **Pediatric Burn Patients:** Children represent a disproportionate share of burn admissions. Drug-free, non-contact treatment is especially valuable for pediatric patients who cannot tolerate repeated painful interventions.

Diapulse® directly addresses every one of these challenges by dramatically accelerating the healing timeline for burn injuries while eliminating the need for additional pharmaceutical interventions.

DOCUMENTED BURN HEALING RESULTS

Pediatric Second-Degree Facial Burns — Clinical Case Documentation

A pediatric patient presenting with second-degree burns to the face was treated with the Diapulse therapeutic system administered twice daily. Photographs taken prior to initial treatment (October 2) show extensive second-degree burn injury to the face, including front and side views documenting the severity of the burns.

After just one day of treatment (October 3, two Diapulse sessions), photographs document visible reduction in inflammation and early healing response. By October 8 — just 7 days of twice-daily Diapulse treatments — the burns had fully healed with no scarring. This result was achieved without skin grafting, without surgical intervention, and without the extensive pharmaceutical protocols typically required for facial burns of this severity.

KEY CLINICAL OUTCOME

7 days of twice-daily Diapulse treatments healed second-degree facial burns in a pediatric patient with zero scarring — no surgery, no grafts, no pharmaceutical intervention required.

Child Face Burn Case Summary

Child hospitalized with first and second degree burns of the face after a gas stove accidentally exploded in her home.

- **Oct. 2 —** Photographs taken prior to first Diapulse treatment (front and side views). Five days after initial hospitalization, Diapulse therapy was instituted twice daily.
- **Oct. 3 —** Photographs taken after two Diapulse treatments. Visible reduction in inflammation documented.

- **Oct. 8 —** On October 4th she was discharged after a total of five Diapulse treatments. She returned for final check-up October 8th. Burns fully healed. No scarring.

HOW DIAPULSE® WORKS

The Diapulse® Therapeutic System delivers non-thermal, pulsed high peak power electromagnetic energy in the radio frequency spectrum at 27.12 MHz — the FCC-assigned medical shortwave frequency. Energy is emitted through a cylindrical treatment head directed at the burn site. No wires, electrodes, or skin contact required — it works through burn dressings, bandages, wound coverings, and compression garments.

Mechanisms of Action Relevant to Burn Healing

- **Cell-Level Restoration:** Restores the electrical potential of injured cells, reducing tissue swelling and accelerating the body's natural repair mechanisms at the cellular level — critical for the massive cellular disruption caused by thermal injury.
- **Enhanced Membrane Permeability:** Cell membranes temporarily become more porous under treatment, enhancing drug absorption at the site and speeding the reduction of edema — particularly valuable for topical burn medications.
- **Polarized Blood Flow:** Mayo Clinic research discovered that blood cells under the Diapulse treatment head become polarized, traveling in aligned formations. This enables more efficient passage through damaged vessels and more than doubles blood flow to the injury site — essential for delivering oxygen and nutrients to healing burn tissue.
- **Enhanced Oxygenation:** Increased blood flow drives tissue oxygenation, promoting regeneration of damaged arteries, veins, capillaries, and nerves for complete structural healing — reducing the risk of chronic wound conversion.
- **Non-Thermal Safety:** The device pulses its output (off 25× longer than on), so any heat dissipates naturally — absolutely no risk of thermal tissue damage, which is paramount when treating patients who have already suffered thermal injury.

Technical Specifications

Parameter	Specification
Carrier Frequency	27.12 MHz (11-meter band)
Pulse Repetition Rate	80 to 600 pulses/second (adjustable)
Pulse Width	65 microseconds
Power Per Pulse	293 to 975 watts (adjustable)
Duty Cycle	0.5% to 3.9%
Tissue Penetration	Up to 9 inches deep
Typical Treatment	15–30 minute sessions; immediate application
Contact Requirement	None — treats through dressings, bandages, clothing

CLINICAL EVIDENCE RELEVANT TO BURN CARE

Diapulse® is backed by 186+ peer-reviewed studies spanning institutions worldwide. The following results are directly relevant to hospital burn unit applications:

Clinical Study	Burn-Relevant Application	Outcome	Link
Ionescu Burn Documentation (1978–1988)	Second-degree burn treatment, facial burns in pediatric patients	Complete healing of 2nd-degree facial burns in 7 days with twice-daily treatment; no scarring; no surgical intervention.	View → diapulse.com / Accelerating-Burn-Healing-with-Diapulse.pdf
Goldin et al. Br. J. Plastic Surgery, 1981 (Double-Blind RCT)	Wound healing acceleration — directly relevant to burn wound closure	Statistically significant acceleration in wound healing rates vs. controls.	View → PMID: 7023583
Pennington et al. Military Medicine, 1993 (RCT, n=50, Double-Blind)	Post-injury edema reduction — applicable to burn swelling	Statistically significant edema reduction ($p<0.01$) after a single treatment; 3.5× greater reduction vs. placebo.	View → PMID: 8441490
Sharon, Clin. J. Nurs. Care Pract., 2019	Drug-free pain management / opioid elimination — critical for burn pain protocols	73% pain reduction; 26% completely discontinued opioid/NSAID therapy.	View → DOI: 10.29328/journal.cjncp.1001013
Salzberg et al. Ostomy Wound Manage., RCT	Pressure ulcer healing — relevant to immobilized burn patients	Non-thermal pulsed EM energy significantly accelerated wound healing.	View → PMID: 7546114
Itoh et al. Decubitus, 1991 (n=22)	Chronic wound healing — applicable to delayed-healing burns	100% of wounds healed in the treatment group.	View → PMID: 1994961
Comorosan et al. Rom. J. Physiology, 1993 (RCT)	Decubitus ulcer healing — comparable wound complexity to burns	85% excellent outcomes in treatment group vs. 0% in controls.	View → PMID: 7982015
Raji & Bowden J. Hand Surgery, London, 1983	Peripheral nerve damage — relevant to deep burn nerve injury	Enhanced nerve regeneration and remyelination demonstrated.	View → PMID: 6603461

Clinical Study	Burn-Relevant Application	Outcome	Link
Guo et al. Meta-Analysis, Annals of Surgery, 2012 (186 Studies)	Post-operative edema, pain reduction, wound healing	Statistically significant efficacy confirmed across the majority of global studies.	View → PMID: 22301609
Cochrane Review EM Therapy for Pressure Ulcers	Systematic review of EM wound therapy	Evidence supports therapeutic benefit of pulsed EM therapy for wound healing.	View → PMC7138036

Published across journals including the British Journal of Plastic Surgery, British Journal of Sports Medicine, British Medical Journal, Journal of Hand Surgery, Military Medicine, Wounds, Decubitus, Annals of the New York Academy of Sciences, and numerous specialty publications.

APPLICATIONS BY BURN TYPE & CLINICAL SETTING

Burn Type / Setting	Primary Applications	Clinical Advantage
Second-Degree (Partial Thickness)	Acute edema reduction, pain management, accelerated epithelial regeneration, inflammation control	Documented 7-day healing timeline; reduced need for surgical intervention; minimal scarring.
Third-Degree (Full Thickness)	Post-debridement healing support, pre-graft tissue preparation, post-graft edema and pain reduction	Improved tissue bed quality for grafting; accelerated donor site healing; reduced post-surgical swelling.
Skin Graft Recovery	Donor site pain and swelling, recipient site graft integration, post-operative edema management	Faster graft take; reduced donor site morbidity; earlier patient mobilization.
Pediatric Burns	Non-contact pain reduction, edema management, accelerated healing without pharmaceutical burden	Drug-free treatment eliminates dosing concerns; non-contact application reduces treatment distress.
Facial / Cosmetic Burns	Inflammation control, accelerated healing in cosmetically sensitive areas, scar prevention	Documented scar-free healing; preserves aesthetic outcomes; reduces need for reconstructive procedures.
Inhalation-Adjacent Injuries	External neck and chest burn treatment, post-intubation tissue recovery	Non-contact treatment around sensitive airway areas; no interference with respiratory equipment.
Chronic / Non-Healing Burns	Stalled wound conversion, chronic inflammation, delayed closure	100% wound healing demonstrated in chronic wound studies; restores stalled healing cascade.
Electrical Burns	Deep tissue injury, nerve damage, edema in entry/exit wounds	9-inch penetration reaches deep tissue damage; enhanced nerve regeneration documented.

WHY DIAPULSE® OUTPERFORMS OTHER BURN THERAPIES

Feature	Diapulse®	Hyperbaric O_2	Negative Pressure (VAC)	Topical Biologics
Power Output	Up to 975W per pulse	N/A (pressure-based)	N/A (suction-based)	N/A (chemical)
Penetration Depth	Up to 9 inches	Systemic	Surface/superficial	Surface only
Clinical Research	186+ peer-reviewed	Moderate for burns	Growing	Moderate
Treats Through Dressings	Yes — no removal	No — chamber required	No — sealed system	No — direct application

Feature	Diapulse®	Hyperbaric O_2	Negative Pressure (VAC)	Topical Biologics
Side Effects	None reported (60+ yrs)	Barotrauma, O_2 toxicity	Pain, bleeding risk	Allergic reactions
Staff During Treatment	None — hands-free	Dedicated technician	Monitoring required	Direct application
Consumables	None	O_2 supply	Sponges, canisters	Biologic agents
Pediatric Suitability	Excellent — painless	Limited — anxiety	Moderate	Variable
Cost Per Treatment	Low (no consumables)	High ($150–$500+)	Moderate–High	High ($500–$2,000+)

RETURN ON INVESTMENT FOR BURN CENTERS

EVERY ADDITIONAL DAY IN THE BURN UNIT = $3,500–$8,000+ IN DIRECT COSTS Reducing a single patient's stay by 2–3 days generates savings that exceed the annual cost of the Diapulse system.

- ✓ **Reduced Length of Stay:** Faster edema resolution, pain control, and wound closure mean patients clear discharge criteria sooner. The documented 7-day healing of second-degree burns represents a significant reduction compared to conventional 14–21 day timelines.
- ✓ **Lower Pharmaceutical Costs:** 73% pain reduction reduces reliance on opioid protocols, IV analgesics, and anti-inflammatory medications — generating direct savings to the pharmacy budget while reducing opioid-related complications.
- ✓ **Reduced Surgical Intervention:** Accelerated healing may reduce the need for skin grafting in cases where conventional therapy would result in wound conversion. Each avoided graft procedure saves $10,000–$40,000+ in surgical and anesthesia costs.
- ✓ **Decreased Infection Rates:** Faster wound closure reduces the window of infection vulnerability. Each prevented sepsis episode avoids $20,000–$50,000+ in ICU costs and dramatically improves mortality outcomes.
- ✓ **Staff Efficiency:** Hands-free, unattended operation means nursing staff can manage other patients during treatment. No dressing removal required reduces nursing time per treatment to under 2 minutes for setup.
- ✓ **Reduced Readmission Rates:** More complete healing at discharge reduces 30-day readmission rates — protecting the facility's quality metrics and avoiding CMS readmission penalties.

KEY FINANCIAL BENCHMARK

Clinical data projects $65,000+ in annual savings per Diapulse® unit through reduced treatment time, fewer interventions, and faster patient throughput.

In a burn center environment, actual savings are likely substantially higher.

REGULATORY & SAFETY PROFILE

Regulatory Item	Detail
FDA Indicated Use	Palliative treatment of postoperative edema and pain in superficial soft tissues.
Device Classification	Pre-amendment Class III electromagnetic energy device; legally marketed prior to May 28, 1976 and grandfathered under FDA regulations.
Safety Record	No reported side effects or complications across decades of clinical use. Safe for any body area, any frequency of treatment, including fragile burn tissue and pediatric patients.
Medicare / CMS Reimbursement	CMS established national coverage for electromagnetic stimulation therapy for chronic wound treatment in December 2003 (NCD CAG-00068N). Covered indications include chronic Stage III/IV pressure ulcers, arterial ulcers, venous stasis ulcers, and diabetic ulcers — providing an additional revenue pathway for burn centers managing chronic wound populations.
IP & Brand Ownership	Diapulse Technologies, LLC holds all intellectual property, brand assets, and 21 patents. First new devices built in 2025 in modernised solid-state design.

Critical Safety Advantage for Burn Patients: Diapulse's non-thermal mechanism is uniquely important in burn care. Unlike conventional diathermy, ultrasound, or other thermal modalities that are contraindicated in burn treatment due to the risk of additional thermal injury, Diapulse's pulsed delivery (off 25× longer than on) ensures zero thermal effect on tissue. This makes it the only clinical-grade electromagnetic therapy that can be safely applied directly over active burn wounds.

A LEGACY TRUSTED BY THE U.S. MILITARY & GLOBAL MEDICINE

The Diapulse prototype was developed in the early 1930s at Princeton University by Dr. Abraham J. Ginsberg, a physician, and Arthur Milinowski, a physicist. Dr. Albert Einstein, a close friend of Ginsberg, reportedly advised in the development of the treatment algorithms. The technology was commercialized in 1957 by Dr. Ginsberg and Dr. Jesse Ross, a biophysicist who co-founded the Bioelectromagnetic Society and served as a NASA consultant.

- **U.S. Military Validation:** The U.S. military's Tri-Service Research Program studied Diapulse in the 1950s and concluded it was safe and effective for treating combat injuries, including burns.
- **Olympic Use:** The Olympic Committee ordered 100 Diapulse machines at each of five Olympic Games; thirty Olympic nations maintained their own devices.
- **Insurance Industry Validation:** Featured in the Journal of Insurance Medicine for cost-effectiveness — Mutual Benefit Life Insurance treated nearly 1,000 employees.
- **Mayo Clinic Research:** Confirmed the “pearl chain” blood flow enhancement effect, critical for wound healing.
- **Ionescu Burn Study:** The Ionescu burn study (1978–1988) provided a decade of longitudinal evidence specifically for burn treatment applications.
- **FDA Vindication:** After a 19-year FDA regulatory battle, the device was ultimately FDA-approved, vindicating the underlying technology.
- **Reborn 2023:** Diapulse Technologies, LLC established, acquiring all intellectual property, brand assets, and 21 patents. First new devices built in 2025, featuring modernized solid-state design for reliability in demanding clinical environments.

Child hospitalized with first and second degree burns of the face, when a gas stove accidentally exploded in her home.

- **Oct. 2:** Photographs taken prior to first Diapulse treatment (front and side views). Five days after initial hospitalization, Diapulse therapy was instituted twice daily.
- **Oct. 3:** Photographs taken after two Diapulse treatments. Visible reduction in inflammation documented.
- **Oct. 8:** On October 4th she was discharged, after a total of five Diapulse treatments. She returned for final check-up October 8th, when final photographs were taken.

Oct. 2 Front view
Oct. 2 Side view
October 2nd, five days after her initial hospitalization, Diapulse therapy was instituted twice daily. Photographs taken prior to first Diapulse treatment.

Oct. 3 Front view
Oct. 3 Side view
Photographs taken October 3rd after two Diapulse treatments.

Oct. 8 Front view
Oct. 8 Side view

APPENDIX: CLINICAL STUDIES & REFERENCES

Diapulse Technologies | Pulsed RF Energy — Verified Clinical Evidence Base | Updated: April 2026

Disclaimer: PRFE vs. PEMF Terminology *Clinical reports or publications that describe the Diapulse® device as employing Pulsed Electromagnetic Field (PEMF) therapy may contain inaccurate terminology. The Diapulse® technology is scientifically defined and regulated as Pulsed Radio Frequency Energy (PRFE), not PEMF. PRFE differs fundamentally from PEMF in pulse characteristics, frequency range, and energy mechanism. The Diapulse® system delivers short, high-peak pulses of non-thermal radio frequency energy. Any clinical references mislabeling PRFE as PEMF do not accurately represent the physics or regulatory classification of the Diapulse® device.*

The following is a comprehensive index of published clinical studies, regulatory documents, and practitioner references relevant to burn care applications of Diapulse® technology. PubMed and DOI links have been audited and verified as of April 2026.

#	Type	Study / Document	Year	Reference / Link
1	Clinical	Accelerating Burn Healing with Diapulse — Ionescu (before/after photos compilation)	1978–88	View → diapulse.com / Accelerating-Burn-Healing-with-Diapulse.pdf
2	RCT	Effects of Diapulse on wound healing: double-blind RCT — Goldin et al., Br. J. Plastic Surgery	1981	View → PMID: 7023583
3	RCT	Pulsed EM energy in ankle sprains (n=50, double-blind) — Pennington et al., Military Medicine	1993	View → PMID: 8441490
4	RCT	Non-thermal pulsed EM energy on pressure ulcer healing — Salzberg et al., Ostomy Wound Manage.	1995	View → PMID: 7546114
5	RCT	Effect of Diapulse on decubitus ulcer healing (85% vs 0%) — Comorosan et al., Rom. J. Physiology	1993	View → PMID: 7982015
6	Clinical	Accelerated wound healing of pressure ulcers (n=22, 100% healed) — Itoh et al., Decubitus	1991	View → PMID: 1994961
7	Clinical	Treatment of hand injuries by pulsed EM energy — Barclay et al., Physiotherapy	1983	View → PubMed Search
8	Clinical	Effects of Diapulse on wound healing in experimental animals — Constable et al.	1971	View → PubMed Search
9	Clinical	Effects of pulsed EM field on nerve repair — Raji, J. Hand Surgery (Br)	1984	View → PMID: 6747406
10	Meta	Meta-analysis of 186 PRFE studies — Guo, Kubat, Nelson & Isenberg, Annals of Surgery	2012	View → PMID: 22301609
11	Review	PRFE for Drug-Free Pain Mgmt / Opioid Elimination — Sharon, Clin. J. Nurs. Care Pract.	2019	View → DOI: 10.29328/journal.cjncp.1001013
12	Cochrane	EM therapy for treating pressure ulcers — Cochrane Review, Aziz & Bell-Syer	2015	View → PMC7138036
13	Review	Pulsed EM (short-wave) energy therapy — Goats, Br. J. Sports Med.	1989	View → PMID: 2670159
14	Research	Biological Effects of Pulsed High Peak Power EM Energy Using Diapulse® — Ross, in Emerging Electromagnetic Medicine (Springer)	1990	View → DOI: 10.1007/978-1-4612-3386-2_16
15	CMS	National Coverage Decision: Electrostimulation for Wounds — CMS.gov	2004	View → CMS NCD

The original Diapulse Corporation's published bibliography includes over 80 additional studies. Organizations are encouraged to request the complete bibliography from Diapulse Technologies, LLC.

DISCLAIMER: This document is for informational purposes only and is intended for burn center medical directors, attending physicians, wound care nurses, and clinical decision-makers. Clinical outcomes referenced herein are based on published peer-reviewed studies and documented clinical cases; individual patient results may vary based on burn severity, body surface area involved, treatment protocol, and other factors. Diapulse® is FDA-indicated for palliative treatment of postoperative edema and pain in superficial soft tissues. All trademarks are property of their respective owners.

SCHEDULE AN ONLINE MEETING WITH US

We would welcome the opportunity to host your Burn Center Medical Director and clinical team for an exclusive online presentation — one that brings to life the remarkable history and compelling clinical outcomes behind Diapulse®.

This session is tailored specifically to your facility, allowing your team to evaluate the device's direct application within your burn unit, wound care, and rehabilitation protocols.

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