# Treatment of Chronic Venous Stasis Ulcer Using Dermabind TL Amniotic Membrane Allograft: A Case Study

## Introduction

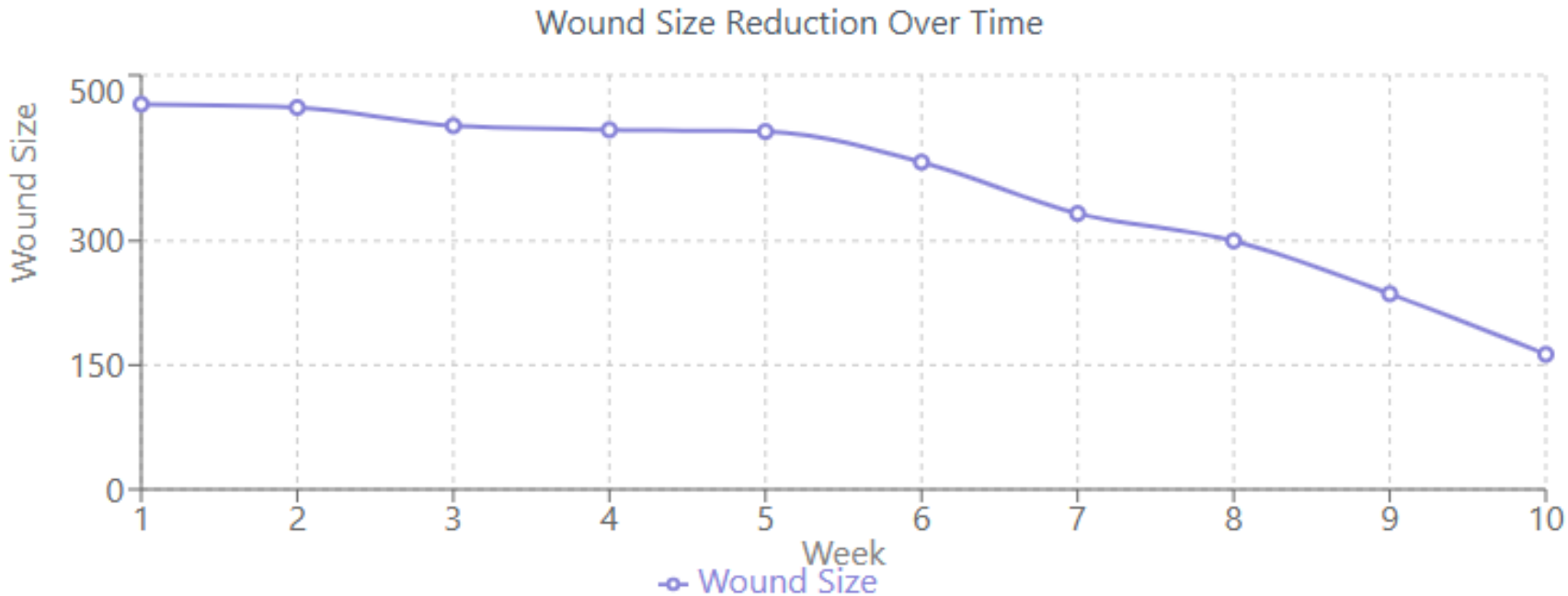
Amniotic membrane allografts have demonstrated significant efficacy in promoting wound healing through their unique biological properties, including anti-inflammatory effects, promotion of epithelialization, and modulation of fibrosis. Dermabind TL is a novel amniotic membrane allograft designed for the management of complex, non-healing wounds.

This case study demonstrates the clinical efficacy of Dermabind TL in the management of a treatment-resistant chronic venous stasis ulcer. The patient presented with a large-scale wound measuring 465 $cm^2$ that had persisted despite multiple standard therapeutic interventions over several years.

Following a structured 10-week treatment protocol with Dermabind TL, significant healing was observed with ~65% reduction in wound surface area.

This marked improvement in a previously refractory case suggests Dermabind TL may offer a promising alternative for patients with challenging venous stasis ulcers who have exhausted conventional treatment options.

# Dermabind TL 10-Week Treatment Progress




| | |
|---|---|
| **Initial wound size:** | **465** |
| **Final wound size:** | **163** |
| **Total reduction:** | **302 (64.9%)** |

## Initial Assessment

**Objective Findings:**

- **Wound Location:** Right lower extremity
- **Wound Measurements:** 20 cm × 23 cm with a depth of 1 cm (~ 465 units standardized measurement)
- **Wound Bed:** 75% slough present
- **Wound Edges:** Hard and dry
- **Peri-Wound Area:** Tenderness and minimal swelling noted
- **Signs of Infection:** None observed

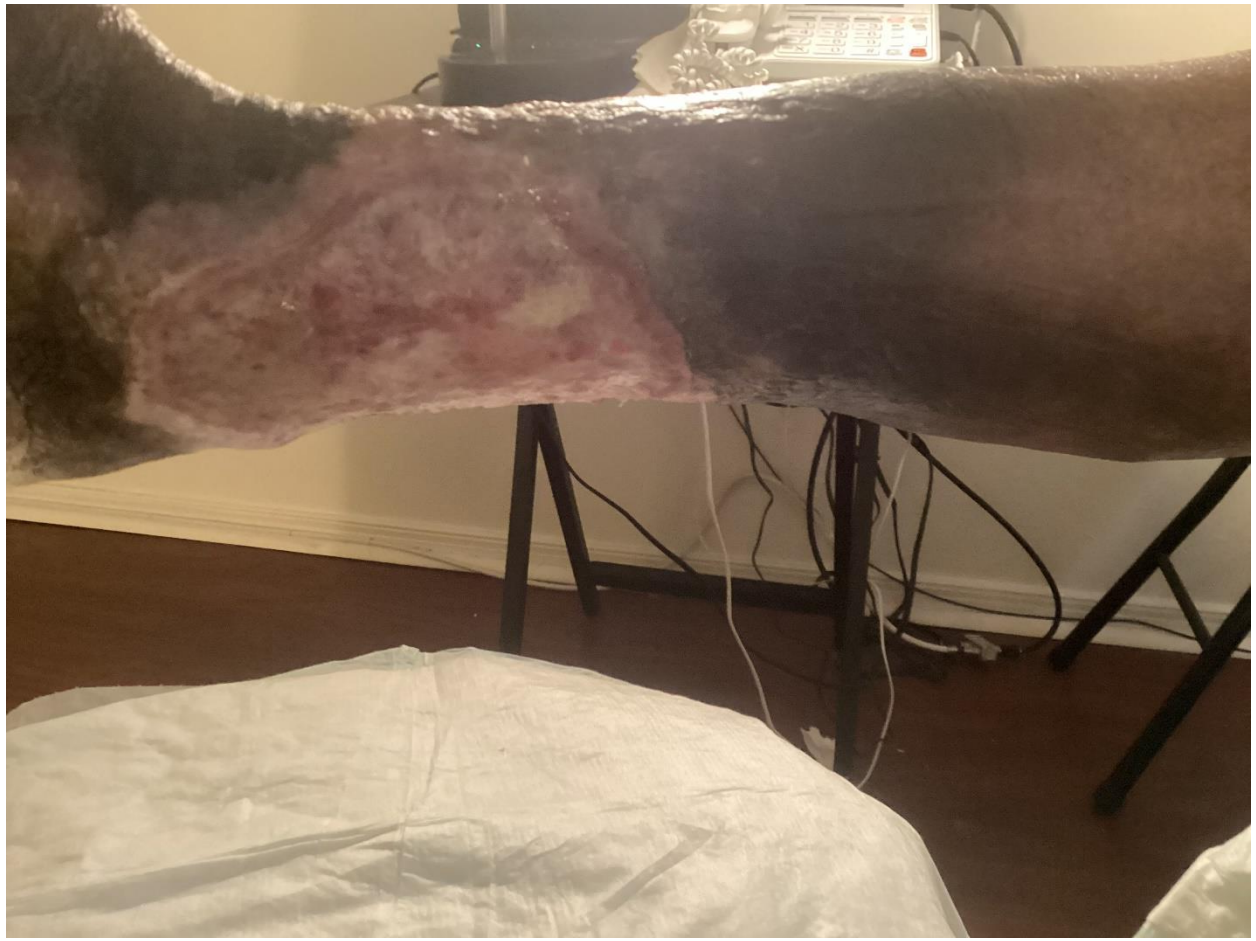
**Diagnostic Studies:**

- **X-ray of ankle (07/12/2024):** Normal findings, no significant osteophytes or joint space loss, talar dome within normal limits, no acute fracture, no effusion

- **Bilateral venous duplex (07/12/2024):** No evidence of DVT

- **ABI Test:** 0.9

## Initial Assessment



## Methods

Given the chronicity of the wound and failure of previous treatment modalities, a decision was made to initiate treatment with Dermabind TL amniotic membrane allograft. Prior to application, the wound was debrided to remove slough and establish a clean wound bed.

The Dermabind TL allograft was applied according to manufacturer's protocol, with secondary dressings consisting of non-adherent contact layer, absorbent padding, and compression wrapping appropriate for a patient with venous insufficiency.

The patient's wound was measured weekly to track progression, with measurements recorded at baseline and for 10 consecutive weeks of treatment.

Pain levels were also monitored using a visual analog scale (0-10).

The patient continued her standard medications throughout the treatment period.

## Results

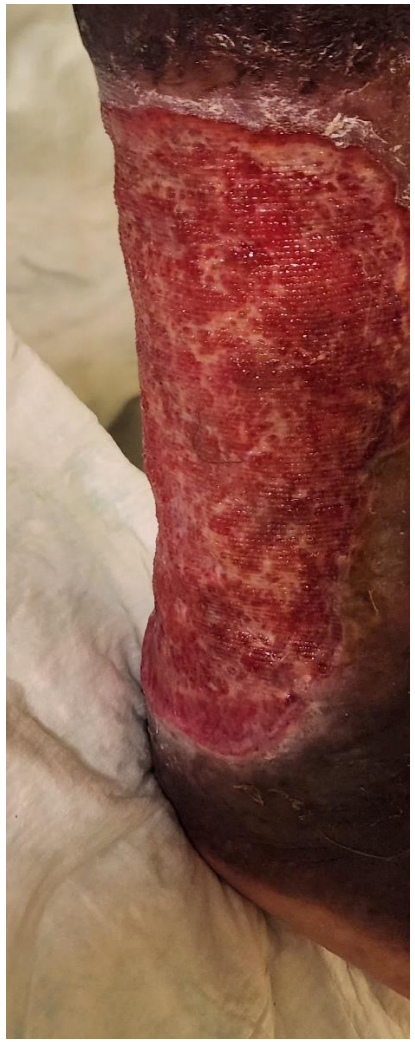
Upon initiation of Dermabind TL treatment, the following measurements were recorded:

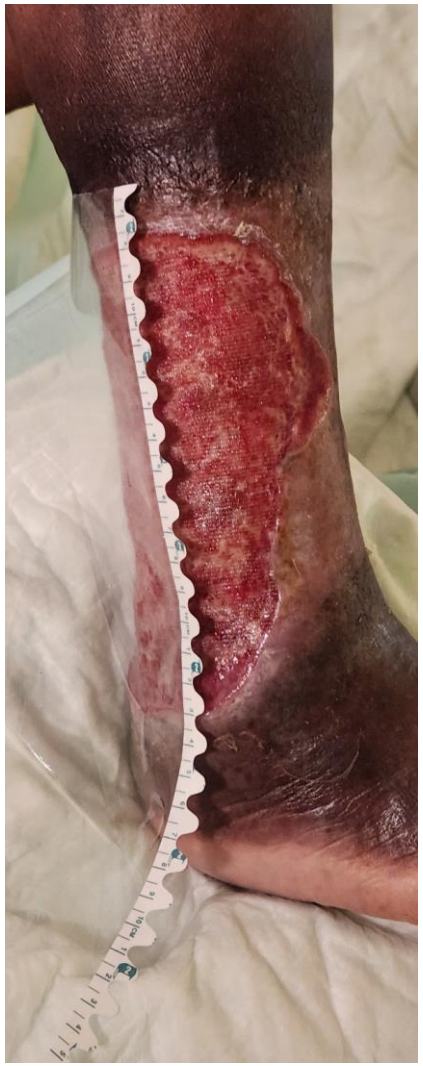
| Week | Wound Size | Reduction from Baseline | Weekly Reduction Rate |
|---|---|---|---|
| 1 | 465 | 0% | - |
| 2 | 461 | 0.9% | 0.9% |
| 3 | 439 | 5.6% | 4.8% |
| 4 | 434 | 6.7% | 1.1% |
| 5 | 432 | 7.1% | 0.5% |
| 6 | 395 | 15.1% | 8.6% |
| 7 | 333 | 28.4% | 15.7% |
| 8 | 300 | 35.5% | 9.9% |
| 9 | 236 | 49.2% | 21.3% |
| 10 | 163 | 65.0% | 30.9% |

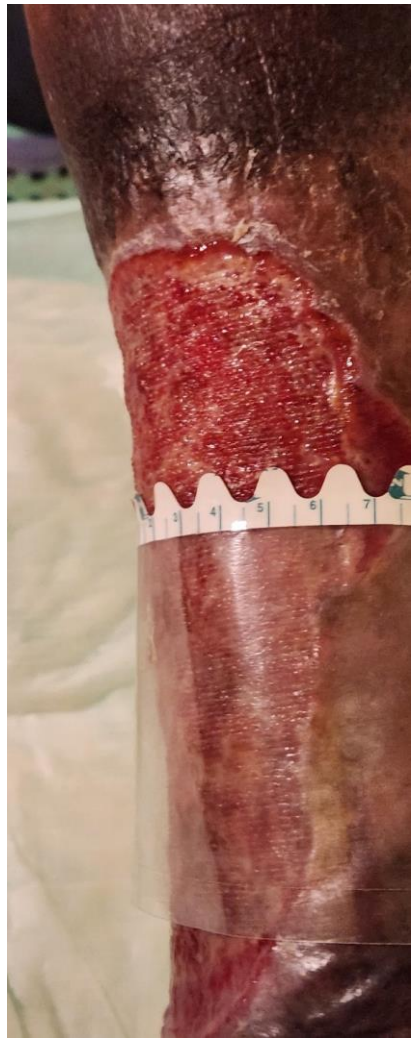
**The wound demonstrated two distinct healing phases:**
**Initial Phase (Weeks 1-5):** Modest reduction of only 33 units (7.1%)Acceleration
**Phase (Weeks 6-10):** Significant reduction of 269 units (62.3%)

## Results

Week 5

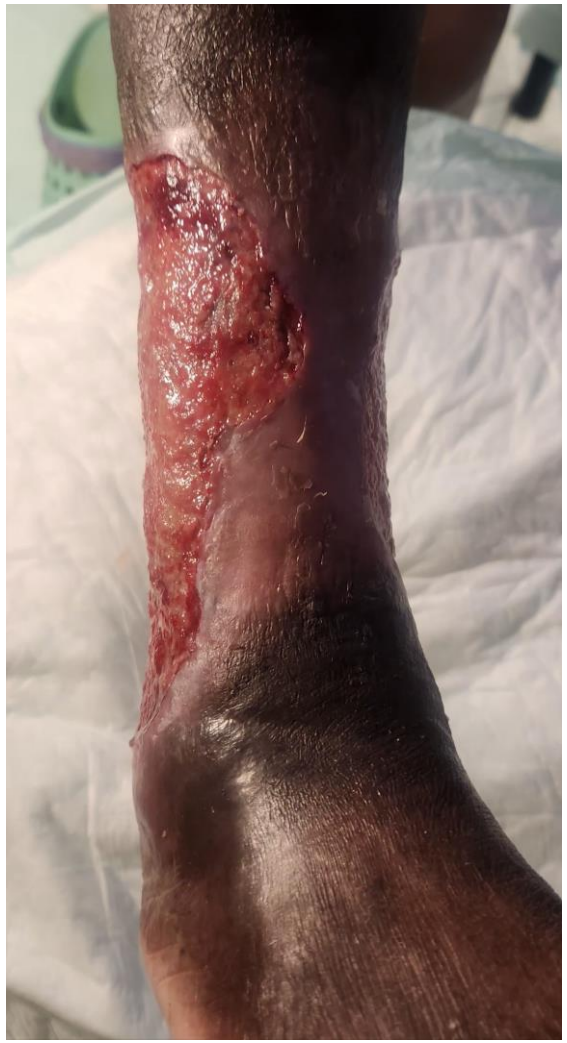


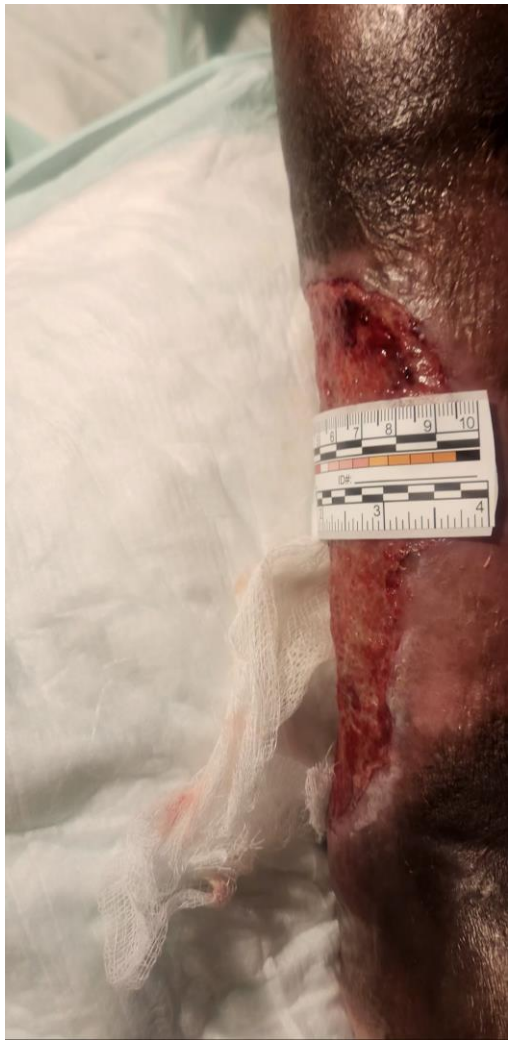




## Results

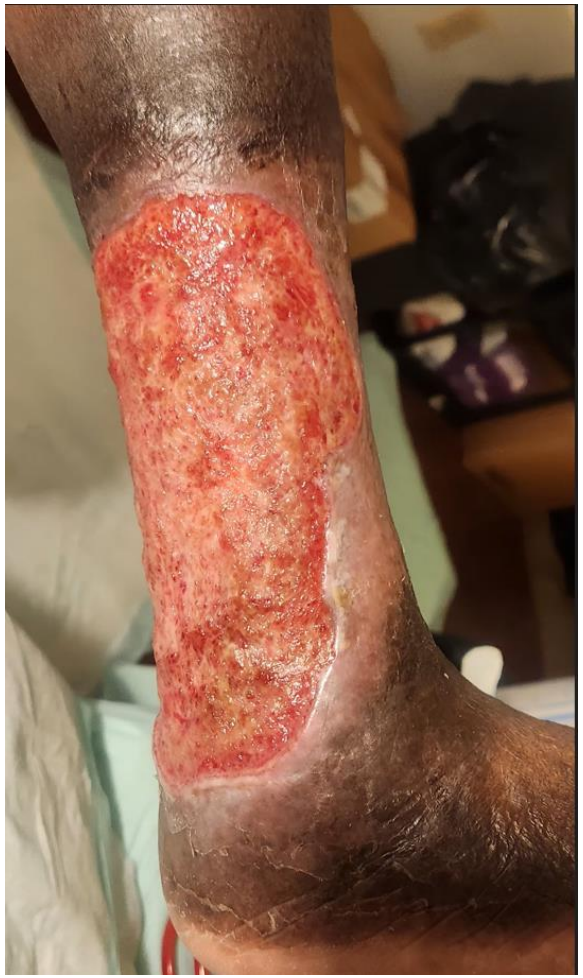
Week 9

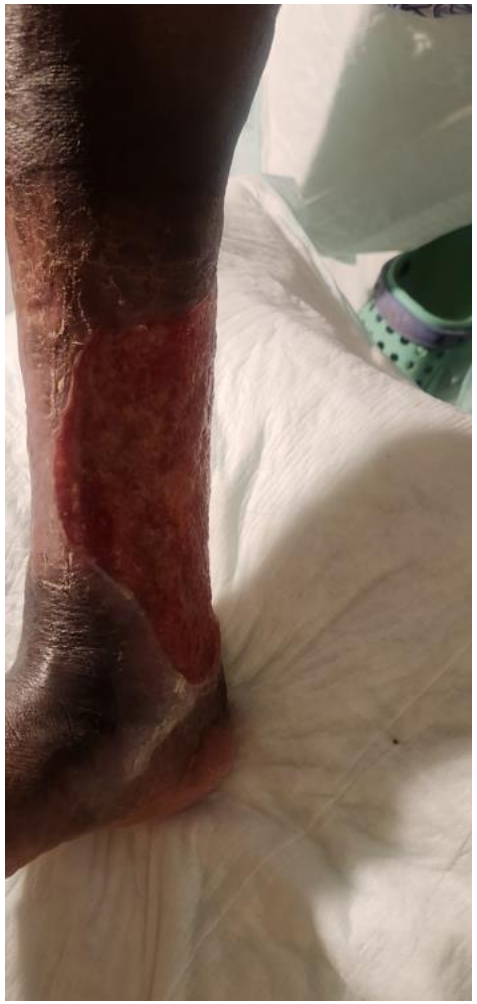




## Results

Week 10

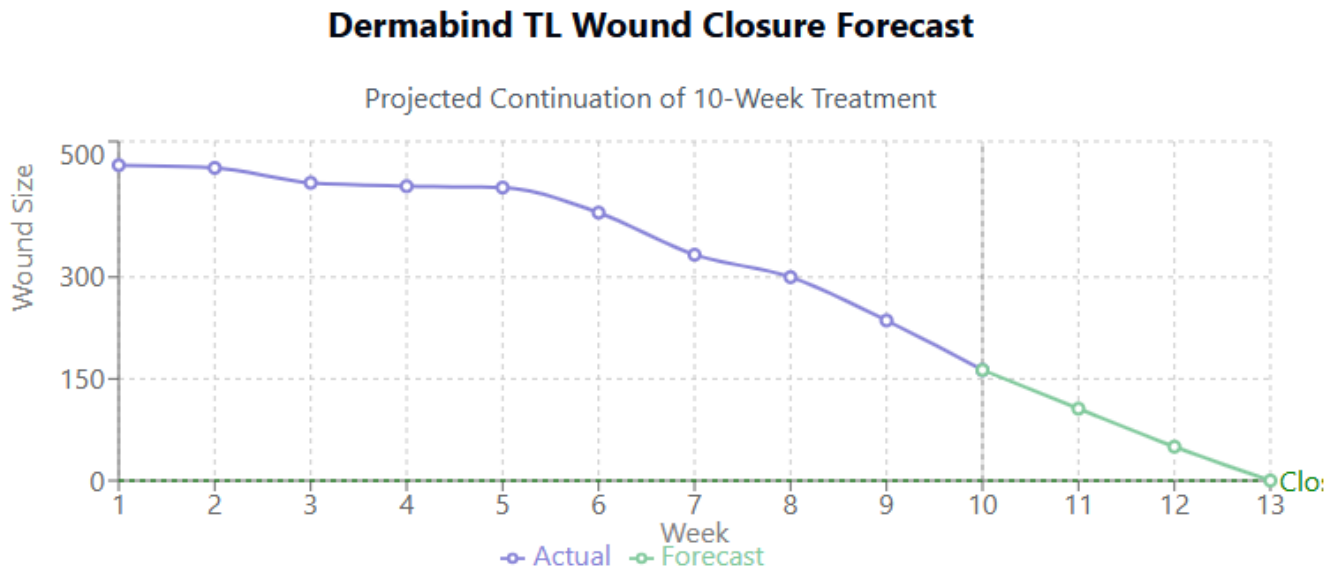




## Additional Clinical Observations

- The peri-wound inflammation decreased notably by Week 4
- Wound edges began to demonstrate epithelialization by Week 6
- The patient reported decreased pain during dressing changes by Week 5, with pain scores decreasing from 8/10 to 4/10
- No adverse reactions or complications were observed during the treatment period
- The treatment with Dermabind TL demonstrated a biphasic healing response. The initial slower phase (Weeks 1-5) may represent the period needed for the therapeutic components of the allograft to establish within the wound bed and initiate cellular recruitment. The marked acceleration in healing observed after Week 5 suggests activation of robust tissue regeneration mechanisms.
- The dramatic increase in weekly reduction rates in the later weeks of treatment (reaching 30.9% weekly reduction by Week 10) indicates progressive enhancement of the wound healing environment. This pattern of accelerated closure in later treatment weeks is consistent with other amniotic membrane allograft studies.
- Of particular note in this case is the significant improvement in a wound that had remained recalcitrant to treatment for over seven years. While the wound did not completely close during the 10-week observation period, the consistent and accelerating healing trajectory suggests that continued treatment would likely result in complete closure, with mathematical modeling predicting closure by Week 13.

# Dermabind TL Wound Closure Forecast




## Forecast Summary

| | |
|---|---|
| Current treatment progress: | **Week 10 (wound size: 163)** |
| Average recent weekly reduction: | **57 units/week** |
| Estimated time until complete closure: | **3 more weeks** |
| Projected closure: | **Week 13** |

**Dermabind TL Wound Closure Forecast Rationale**

**Data Analysis Approach:** The forecast for complete wound closure is based on an analysis of the 10-week treatment data provided.

**1. Pattern Recognition in Healing Trajectory:** The original 10-week wound size measurements show a size reduction from 465 to 163 cm2

**This data reveals two distinct phases:**
- **Initial phase (Weeks 1-5)**: Relatively slow healing rate with only a 33-unit reduction (7.1%)
- **Acceleration phase (Weeks 6-10)**: Significantly faster healing with a 269-unit reduction (62.3%)

**2. Calculation Method for Projection**
The forecast prioritizes recent data as it's more representative of current healing dynamics.
- **Focus on recent weeks**: The calculation uses data from Weeks 7-10, where the healing rate appears most consistent and representative of the current biological response to treatment
- **Average weekly reduction**: (333 - 163) ÷ 3 = 56.67 units/week
- **Extrapolation**: Starting from Week 10 (163 units), apply the calculated reduction rate to project forward

**3. Mathematical Justification:**
The calculation follows a linear extrapolation model:

- Week 11 projected size = 163 - 56.67 = 106.33 ≈ 106
- Week 12 projected size = 106.33 - 56.67 = 49.66 ≈ 50
- Week 13 projected size = 49.66 - 56.67 = -7.01 ≈ 0

Since wound size cannot be negative, the forecast predicts complete closure by Week 13.

**Limitations and Considerations**
1. **Healing may not remain linear**: Biological healing often slows in the final stages
2. **Individual factors**: Patient-specific factors may accelerate or decelerate healing
3. **Confidence level**: The projection becomes less certain the further it extends from known data
4. **Alternative models**: Non-linear or logarithmic models might provide different closure estimates

**Final Assessment**
Based on the acceleration in healing rate during Weeks 6-10, and assuming this trend continues, **Week 13** represents the most likely point of complete wound closure. This estimate should be reviewed and adjusted as additional measurements become available.