Continuous External Tissue Expander

Facilitates rapid tissue movement to automatically reduce or re-approximate wounds

Never needs re-tightening after initial application!
Potential Annual Hospital Cost Savings Provided by DermaClose with *Five* Cases per Month

- >$279,000 versus NPWT (VAC) Therapy
- >$559,000 versus Vessel Loops
- >$671,000 versus Skin Grafting
Example of Potential Hospital Cost Savings

<table>
<thead>
<tr>
<th></th>
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<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>DermaClose Continuous External Tissue Expander</td>
<td>5</td>
<td>$11,650</td>
<td>$58,250</td>
<td>$699,000</td>
<td>$55,920</td>
<td>$671,040</td>
<td>$3,355,200</td>
</tr>
<tr>
<td>Skin Grafting</td>
<td>9.8</td>
<td>$22,834</td>
<td>$114,170</td>
<td>$1,370,040</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NPWT (VAC) Therapy</td>
<td>7</td>
<td>$16,310</td>
<td>$81,550</td>
<td>$978,600</td>
<td>$23,300</td>
<td>$279,600</td>
<td>$1,398,000</td>
</tr>
<tr>
<td>Vessel Loops</td>
<td>9</td>
<td>$20,970</td>
<td>$104,850</td>
<td>$1,258,200</td>
<td>$46,600</td>
<td>$559,200</td>
<td>$2,796,000</td>
</tr>
</tbody>
</table>

**Assumptions:**
Total complex wound cases treated with DermaClose per month as alternative to other approaches: 5

Hospital expenses for a patient floor day (non-ICU): $2,330

Product cost for DermaClose External Tissue Expander Kit: $999

Model and cost savings scalable to your institution

**Additional DermaClose cost benefits that were not included:**
- Increase in DRG reimbursement typically covers product costs
- Reduction in the cost of nursing care versus what is needed for VAC dressing changes
- Time and cost to tighten vessel loops eliminated
- Potential for reduced infection rate savings on closed wound versus open wound

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Independent Study
Presented at NESPS 2013 Meeting

Conclusion
DermaClose enabled a rapid aesthetic delayed primary closure in 93% of fasciotomy wounds. The use of DermaClose at Albany Medical Center demonstrated cost savings (per wound) of $4,622 versus NPWT (VAC) treatment and $9,117 versus the use of vessel loops.
Additional DermaClose Cost Savings

• Reduces
  – trips to the OR for VAC changes and I&D procedures
  – number of NPWT VAC dressings used
  – use of expensive biologic grafts
  – time to closure for open wound patients, which may reduce the risk of infection
  – may reduce risk of wound dehiscence
  – overall cost of treating complex wound patients
Peer Reviewed Journal Articles

- More than a 20 publications, presentations and posters published on DermaClose.

- A published cost analysis shows DermaClose saves an average of $9,000 and four days in the hospital when treating fasciotomy wounds.

October 2015
Henry Ford Health System
Management of Sternal Wound Dehiscence

August 5th, 2015 Duke University Medical Center
External Tissue Expander in Total Ankle Arthroplasty

September 2014
Mayo Clinic, Albany Medical & Walter Reed
ALT Flap Donor Site Closure
Peer Reviewed Journal Articles

August 2014
Walter Reed
External tissue expander is included in the decision matrix for amputations

March 2014
Walter Reed
External tissue expansion is shown in the hybrid reconstructive ladder

February 2013
Walter Reed Fracture Coverage with External Tissue Expander
Peer Reviewed Journal Articles

October 2012
Walter Reed
Soft Tissue Injury Management with External Tissue Expander

September 2012
Mayo Clinic
Scalp Closure and Forehead Defects

March 2012
Walter Reed
Fasciotomy Wound Management
DermaClose Benefits

• Reduced Time to Closure
  – DermaClose expands the tissue to re-approximate the wound edges
  – Average time to closure 4.4 days on wounds averaging 262 cm²
    (Walter Reed Study in Annals of Plastic Surgery October, 2012)
  – Wounds can be sutured closed in less than 7 days for most procedures

• Is a simpler, faster, cheaper alternative to skin grafts and flaps

• Better cosmetic results than skin grafts

• Has a broad application for multiple specialties
## 2016 Hospital Inpatient Reimbursement

**ICD-10 Code OJHXXNZ***: Insertion of Tissue Expander

### Examples of ICD-10 Procedure Code Impact on DRG Grouping:

<table>
<thead>
<tr>
<th>ICD-10-CM Code</th>
<th>Description</th>
<th>Payment Without Code OJHXXNZ</th>
<th>Payment With Code OJHXXNZ</th>
<th>Increase in Payment</th>
</tr>
</thead>
<tbody>
<tr>
<td>T79.A29A</td>
<td>Traumatic compartment syndrome of lower extremity</td>
<td>$4,793</td>
<td>$8,404</td>
<td>$3,611</td>
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<tr>
<td>S31.102A</td>
<td>Open wound of abdominal wall, anterior, without mention of complication</td>
<td>$4,735</td>
<td>$8,155</td>
<td>$3,420</td>
</tr>
<tr>
<td>M72.6</td>
<td>Necrotizing fasciitis</td>
<td>$4,994</td>
<td>$11,425</td>
<td>$6,431</td>
</tr>
<tr>
<td>T81.89XA</td>
<td>Other complications of procedure</td>
<td>$4,110</td>
<td>$8,404</td>
<td>$4,294</td>
</tr>
<tr>
<td>T87.9</td>
<td>Unspecified complications of amputation stump</td>
<td>$4,227</td>
<td>$11,425</td>
<td>$7,198</td>
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<tr>
<td>C43.4</td>
<td>Malignant melanoma of skin of scalp and neck</td>
<td>$5,536</td>
<td>$8,156</td>
<td>$2,620</td>
</tr>
</tbody>
</table>

* XX is a two digit code that varies depending on the location on the body
### ASC & Outpatient Facility Reimbursement

**Commonly billed codes associated with DermaClose are:**

<table>
<thead>
<tr>
<th>CPT Code</th>
<th>Description</th>
<th>Facility Total RVU</th>
<th>2016 Physician Payment (Facility)</th>
<th>APC</th>
<th>2016 ASC* Payment Group A2</th>
<th>Hospital Outpatient Facility (i.e. Wound Care Center) Payment</th>
</tr>
</thead>
<tbody>
<tr>
<td>11960</td>
<td>Insertion of tissue expander(s) for other than breast, including subsequent expansion</td>
<td>27.27</td>
<td>$977.23</td>
<td>5055</td>
<td>$1,195.26</td>
<td>$2,137.49</td>
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<tr>
<td>11971</td>
<td>Removal of tissue expander(s) without insertion of prosthetic</td>
<td>9.22</td>
<td>$330.33</td>
<td>5074</td>
<td>$790.85</td>
<td>$1,414.28</td>
</tr>
<tr>
<td>13160</td>
<td>Late closure of wound: i.e. repair of dehisced wound, failed flap, etc.</td>
<td>23.27</td>
<td>$833.72</td>
<td>5055</td>
<td>$1,195.26</td>
<td>$2,137.49</td>
</tr>
<tr>
<td>17999</td>
<td>Unlisted skin tissue procedure</td>
<td>None Assigned</td>
<td><strong>Variable</strong></td>
<td>5051</td>
<td>1.59</td>
<td>$117.83</td>
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</tbody>
</table>
Physician Reimbursement

Commonly billed codes associated with DermaClose are:

<table>
<thead>
<tr>
<th>CPT Code</th>
<th>Description</th>
<th>Total RVU</th>
<th>2015 Payment (Facility)</th>
</tr>
</thead>
<tbody>
<tr>
<td>11960</td>
<td><strong>Insertion of tissue expander(s) for other than breast, including subsequent expansion</strong></td>
<td>26.85</td>
<td>$ 961.23</td>
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<tr>
<td>11971</td>
<td><strong>Removal of tissue expander(s) without insertion of prosthetic</strong></td>
<td>9.08</td>
<td>$ 325.06</td>
</tr>
</tbody>
</table>
Clinical Cases

DermaClose indication for use:
The DermaClose® External Tissue Expander is indicated for use in reducing or assisting with the closure of full-thickness wounds of the skin.

Contraindications:
The DermaClose® External Tissue Expander should not be used on ischemic or infected tissue. It should not be used on fragile tissue at the edges of a wound.
Skin Cancer Excision

Patient had Dermatitis

1. Wound just prior to application of DermaClose
2. DermaClose applied
3. 2 days later wound was reapproximated. DermaClose was used to off-load tension on the suture line
4. Follow-up 6 weeks later
Open Abdomen

After 48 hours

After 9 days

4 month follow-up
DermaClose Frequently used with NPWT

When using the DermaClose with NPWT (VAC), place Duoderm not gauze under the tension controller to prevent skin blistering.
Large wound resulting from abscess

Case by Brian C. Reuben, MD, Plastic Surgeon
Necrotizing Fasciitis

40 cm x 12 cm wound caused by necrotizing fasciitis, after debridement.

4 DermaClose devices applied using the shoelace technique.

Wound as it appeared immediately after removal of DermaClose (5 days after application). The wound entirely re-approximated except for a 3 cm x 1 cm gap.

Follow-up 2 months later shows the wound healing well.
Amputation – BKA with VAC

DermaClose helps achieve soft tissue coverage to preserve limb length.