**PICOT**

In diabetic adults (P) with wounds lasting greater than three months, does maggot debridement therapy (I) versus surgical debridement (C) influence wound healing (O) over a year (T)?

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**Case Study**

60 y.o. Female with type II DM, total nephrectomy requiring dialysis, peripheral artery disease, and ischemic heart disease. PMH: coronary heart bypass. She sustained a left lower leg trauma from descending a bus which led to a hematoma for which she received care for 3 days later. The left lower leg developed into a full thickness black necrotic wound over a few weeks.

*(Fenn-Smith, P., 2008)*

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**Evidence Table**

<table>
<thead>
<tr>
<th>Author/Year</th>
<th>Design</th>
<th>Level of Evidence</th>
<th>Variables</th>
<th>Advanced Practice Nurse Implications</th>
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</thead>
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<tr>
<td>Wilnussee, C., Marjoreonrugung, M., Eamkong, S., Attia, J., Poprom, N., Jinisirinthus, S., Thakkinstan, A.</td>
<td>Retrospective Cohort study performed on diabetic foot ulcer patients who underwent Maggot Debridement Therapy (MDT) or conventional wound therapy &amp; Meta-analysis to pool this study with 4 other previous cohort studies on MDT</td>
<td>Level I (Meta-analysis) &amp; II (Cohort study) combined</td>
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<tr>
<td>Tian, X., Liang, X. M., Song, G., Zhao, Y., &amp; Yang, X. L.</td>
<td>Meta-analysis</td>
<td>Of four studies performed on the evidence for maggot debridement therapy compared to standard care of the diabetic foot</td>
<td>MDT is more effective for debridement therapy and wound healing than standard care of the diabetic foot.</td>
<td></td>
</tr>
</tbody>
</table>

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**Advanced Practice Nurse (APN) Implications**

She received radical surgical debridement under general anesthesia, negative pressure wound dressing was applied after surgery, and a split skin graft under general anesthesia. Her skin graft became infected. Maggot debridement therapy was opted due to increased intraoperative risk of two recent anesthesia given. After two applications, the intervention uncovered 80% of her skin graft. Maggot debridement therapy painlessly saved her limp from widespread infection and amputation.

*(Fenn-Smith, 2008)*

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**Results**

Which has better wound healing outcomes maggot therapy or surgical debridement, after a year?

**Answer:** Maggot Debridement Therapy

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**Practice Guidelines for Diabetic Foot Ulcers**

- Frequent evaluations every 1 to 4 weeks to determine healing process
- Wounds with infection should be treated with surgical debridement
- Dressing used should maintain a moist environment
- Type of debridement is up to the discretion of the provider and dependent on:
  - Availability of supplies and expertise, cost, patient preference and availability of supplies and expertise, cost, patient preference and if it fits in the clinical context.
- Failure of improvement by a 50% reduction in wound area after 4 week minimum of wound therapy, it is recommended that other debridement therapies should be implemented. These include: biologics (which include maggot therapy), a negative pressure therapy, extracellular matrix products, hyperbaric oxygen therapy, and living cellular therapy.

*(Hingornani, 2016)*

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**References**


