

Establishing a Limb Salvage Protocol at a Level 1 Trauma Center

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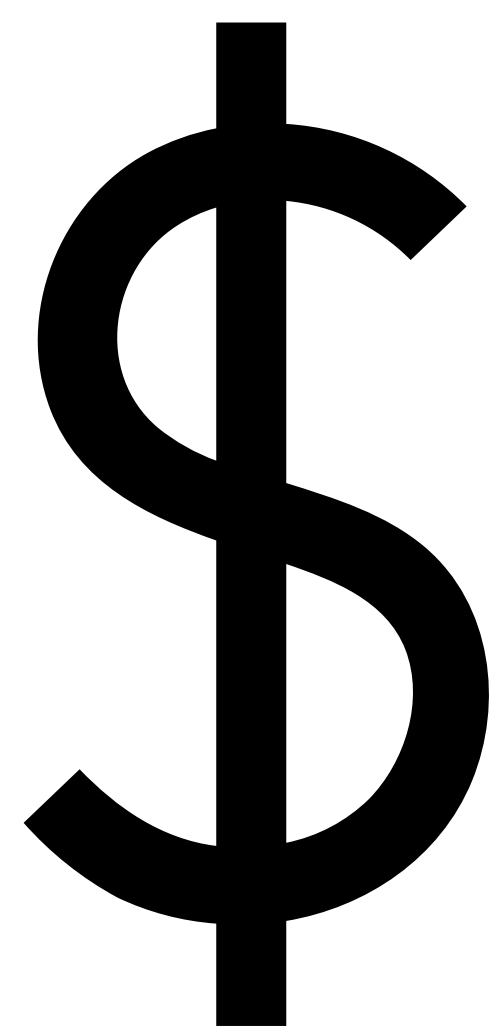
Background

• **Lower extremity mangling injuries** can be devastating, life-altering, and costly

• **Limb salvage vs. amputation** requires **complex** decision-making

• At our **Level 1 trauma center**, extremity trauma is managed by Orthopedics, General Surgery/Trauma, and Plastic Surgery

• Open fractures can be classified using the Gustilo system



Type I	Type II	Type III
≤ 1cm	1-10cm, soft tissue injury	A: > 10cm, soft tissue injury, contaminated B: periosteal stripping, requires soft tissue coverage C: vascular injury requiring repair

Objectives & Study Design

- **Retrospective chart review** over **9 years** (from 2016 to 2024)
- Included patients with **Gustilo III open fractures** involving the **lower extremity**
- **475 patients**

Results

- **414 (87%)** of limbs were **salvaged**

Gustilo Type	IIIA: 209 (50.5%) IIIB: 137 (33.1%) IIIC: 68 (16.4%)
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- **61 (13%)** of limbs were **amputated**

Immediate	37 (61%)
Delayed	24 (39%)

Gustilo IIIC	OR 5.61, p<0.0001
Shock on presentation	OR 3.09, p<0.0005
Plastic surgery consult	OR 2.32, p<0.0049

Conclusion & Future Direction

- **Decision to amputate** impacted by **large zone of injury** and **extensive soft tissue loss** involving **nerves, muscles, tendons**
- **Plastic surgery** plays a role in limb salvage and amputation by assessing **potential for functional recovery**, including evaluation of **tissue loss, reconstructive options, and surgical planning**
- Plastic surgeons should be **involved early** in patients with **complex extremity injuries**