

**VANDERBILT  UNIVERSITY**

**MEDICAL CENTER**

**Protocol:** Early Excision and Grafting Guidelines for Full Thickness Burns >20% TBSA

Category	Clinical Practice
Approval Date:	9/28/2020
Review Date:	9/28/2022

Applicable to							
<input checked="" type="checkbox"/> VUH	<input checked="" type="checkbox"/> VCH	<input type="checkbox"/> DOT	<input type="checkbox"/> VMG Off-site locations	<input type="checkbox"/> VMG	<input type="checkbox"/> VPH	<input type="checkbox"/> Other	
Team Members Performing							
<input type="checkbox"/> All faculty & staff	<input checked="" type="checkbox"/> Faculty & staff providing direct patient care or contact	<input checked="" type="checkbox"/> MD	<input checked="" type="checkbox"/> House Staff	<input type="checkbox"/> APRN/PA	<input type="checkbox"/> RN	<input type="checkbox"/> LPN	
<input type="checkbox"/> Other:							
Content Experts							
Callie Thompson, MD							

**Table of Contents**

---

<b>I. Purpose</b>	2
<b>II. Population</b>	2
<b>III. Intervention/Treatment</b>	2
<b>IV. Exceptions</b>	3
<b>V. References</b>	3

**I. Purpose**

Multiple studies have shown the benefit of Early Excision and Grafting in patients with severe thermal injuries ( $\geq 20\%$  Total Body Surface Area, TBSA). Outcomes affected by early excision and grafting include but are not limited to; improved scarring and mobility, decreased rates of infection, and improved survival rates. Burned skin results in massive systemic inflammatory response due the release of cytokines and growth factors; this inflammatory response is a large contributor to the fluid shifts that are seen in these patients and their fluid resuscitation requirements. This inflammatory response will continue until the burned skin is excised.

Additionally, devitalized skin is a rich medium for microbial overgrowth leading to infection. All burn wounds are colonized by bacteria and invasive wound sepsis has been greatly ameliorated by early excision and grafting, which removes the devitalized tissue before this colonization becomes infection. Early excision and grafting will now be tracked as a quality metric as time in days.

Early excision and grafting have been shown in multiple studies to modulate the systemic inflammatory response, attenuate muscle catabolism, and improve myocardial dysfunction caused by thermal injury. This protocol seeks to standardize our time frames for excision and grafting in our severely burned patients.

**II. Population**

All patients admitted to VUH and VCH with  $\geq 20\%$  TBSA full thickness burns.

**III. Intervention/Treatment**

- Patients without contraindication (see exceptions below) will get their first excision of full thickness burns within the first 24-72 hours of their burn, pediatric patients should be excised within 24-48 hours
- Areas of partial thickness burns that subsequently convert to full thickness should be excised within 48 hours of confirmed conversion.
- Patients will return to OR for excision and grafting (autograft vs. allograft vs. xenograft vs. Integra) every 24-72 hours until all full thickness burns are excised and grafted with autograft
  - If no further donor site is available, this process will stop when all full thickness burns are excised and grafted in skin substitute (allograft/xenograft or Integra)
  - If the patient becomes unstable and is unable to return to the operation room within this timeframe, a discussion between the burn surgeon and burn intensivist will take place and a plan will be made and documented in the medical record.

- Complete excision (>95%) of all full thickness burns should be complete within 7 days
- If no further donor available and patient in xenograft/allograft:
  - Patient will return to the OR every 7-10 days to exchange allograft/xenograft to prevent graft integration
  - Any areas that are non-adherent either due to infection or non-viable wound bed will be excised within 24 hours of identification
- Patient will return to OR for autograft every 24-72 hours once donor sites are available again until grafting is complete

#### IV. Exceptions

In patients that are unstable and cannot tolerate a trip to the operating room, a discussion between the burn surgeon and the burn intensivist will take place and a plan will be formulated and documented in the medical record.

#### V. References

1. Herndon, D.N., *Total burn care*. 4th ed. 2012, Edinburgh ; New York: Saunders Elsevier. xvii, 784 p.
2. Herndon, D.N., et al., *A comparison of conservative versus early excision. Therapies in severely burned patients*. Ann Surg, 1989. **209**(5): p. 547-52; discussion 552-3.
3. Thompson, P., et al., *Effect of early excision on patients with major thermal injury*. J Trauma, 1987. **27**(2): p. 205-7.
4. Herndon, D.N., et al., *Determinants of mortality in pediatric patients with greater than 70% full-thickness total body surface area thermal injury treated by early total excision and grafting*. J Trauma, 1987. **27**(2): p. 208-12.
5. Horton, J.W., et al., *The effects of early excision and grafting on myocardial inflammation and function after burn injury*. J Trauma, 2006. **61**(5): p. 1069- 77.
6. Gibran, N.S., et al., *Summary of the 2012 ABA Burn Quality Consensus conference*. J Burn Care Res, 2013. **34**(4): p. 361-85.
7. Barret, J.P. and D.N. Herndon, *Modulation of inflammatory and catabolic responses in severely burned children by early burn wound excision in the first 24 hours*. Arch Surg, 2003. **138**(2): p. 127-32.