

No conflicts of interest to disclose.

## INTRODUCTION/METHOD

- The wound healing phase of epithelialization can last from weeks to months. A split-thickness skin graft (STSG) is another closure option.
- Potential negative consequences of split thickness skin grafts include painful donor site wound<sup>1</sup>, increased risk of infection<sup>2</sup> and scarring to both donor and grafted sites<sup>3</sup>.
- Case studies of epidermal harvesting highlight a less invasive, rapid healing procedure that creates only a minor donor site wound.
- Epidermal harvesting uses negative pressure and heat to harvest the epidermis into “microdomes”. These epidermal cells are transferred to the wound as an autologous graft.

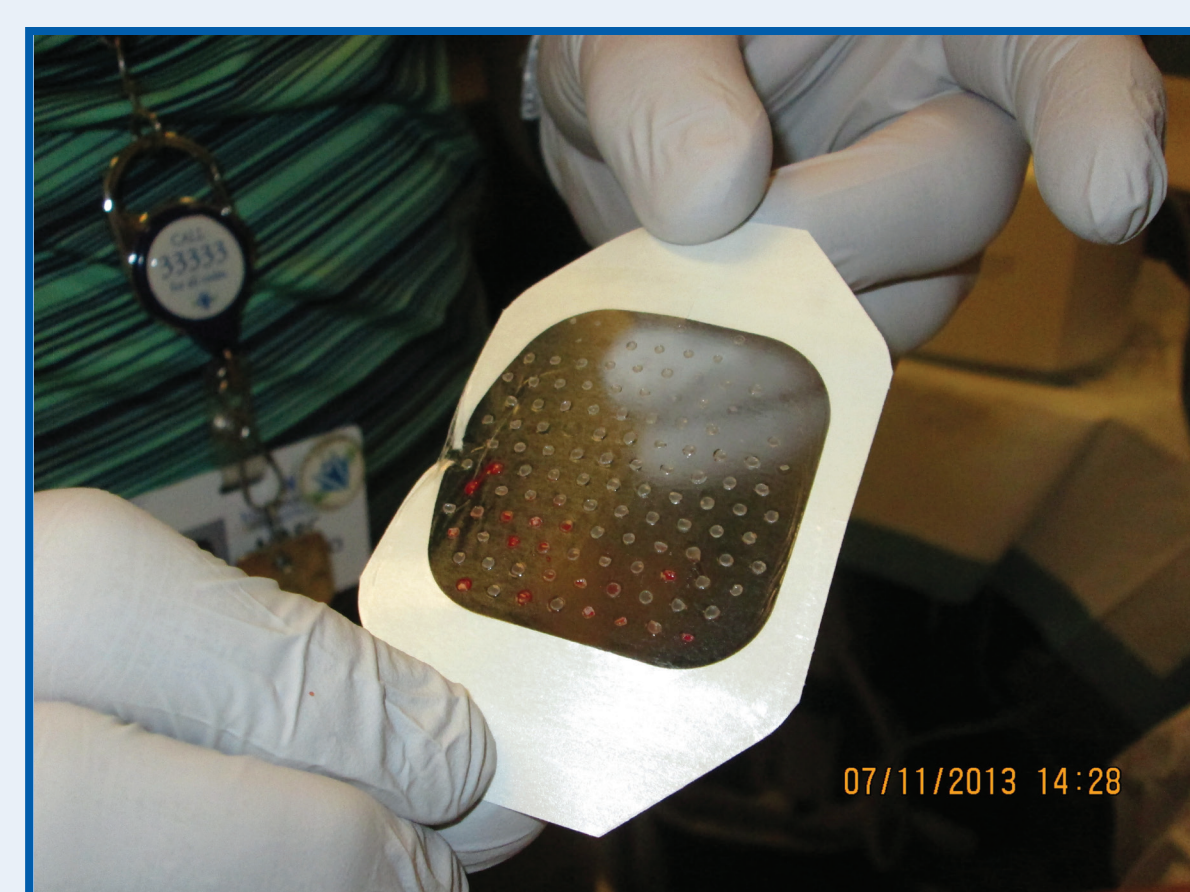
### Epidermal Harvesting



Harvesting appliance



Harvesting epidermal cells



“Microdomes” ready to apply



Donor Site

## CASE STUDY 1

A 16 year-old male sustained metatarsal fractures while rock climbing leading to fracture blisters on his dorsal foot. Debridement of necrotic blisters exposed muscle and tendon. After extensive advanced wound care and hyperbaric oxygen therapy, granulation tissue filled the wound bed with minimal tendon remaining exposed. Split thickness skin graft application was refused by the patient. Epidermal harvesting was performed with minimal discomfort and complete closure was obtained.



Day of  
EH application



Week 4



Week 7



Week 9

## CASE STUDY 2

A 23 year-old woman sustained a crushing foot injury resulting in 4<sup>th</sup> and 5<sup>th</sup> digit amputation and extensive soft tissue injury. Based on the patients active lifestyle and personal preference, the decision was made to use epidermal harvesting instead of split thickness skin grafting. After application, wound epithelialization occurred within three weeks and the donor site healed within one week.



Before  
EH application



Day of  
EH application



Week 1



Week 3

## CASE STUDY 3

A 48 year-old diabetic woman with a post-op 5<sup>th</sup> ray amputation failed to adequately close her incision site. Extensive wound care resulted in complete granulation without epithelialization. The patient refused STSG, she chose epidermal harvesting instead. Wound and donor site healed completely without further complications.



Day of  
EH application



Week 4



Week 6

## REFERENCES

- (1) Lane, J.E & Symington, M (2009). Repair of Large Surgical Defects with a Donor Skin-Sparing Full-Thickness Skin Graft. *Dermatol Surg*, 35, 240-244.
- (2) Higgins L., Wasiak J., Spinks A. & Cleland H. (2012). Split-Thickness Skin Graft Donor Site Management: A Randomized Controlled Trial Comparing Polyurethane with Calcium Alginate Dressings. *International Wound Journal* 9, 126-131.
- (3) Danielsen, P., Jorgensen, L.N., Jorgensen, B., Karlsmark, T. & Agren, M.S. (2013). Erythema Persists Longer than One Year in Split-Thickness Skin Graft Donor Sites. *Acta Derm Venereol* 93, 281-285.

## CONCLUSION

On appropriately selected patients, this procedure can be a rapid, less painful, and more economic alternative to split thickness skin grafts.

Based on our experience and promising results, this modality may prove beneficial to wound closure when STSG is not a viable option or clinically indicated.