

# Fish-Skin Graft Application in Pediatric Deep Partial Thickness & Full Thickness Scald Burn Injury



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## Introduction

Burn care in the pediatric population can present even more complex challenges. Children have thinner skin than adults, predisposing them to a deeper burn for any given temperature. Over 450,000 individuals are hospitalized with burns annually, and roughly 35% are scald burns. Children younger than 5 years of age are at the greatest risk of scald burn injury. The donor site availability is more limited in children, especially in more extensive area burns, with functional and cosmetic results more crucial due to continued growth. The feasibility of fish-skin grafts is an innovative potential solution in pediatric burns is assessed in two scald injury cases.

## Methods & Materials

Fish skin grafts were applied in two pediatric patients presenting with deep partial burn injuries when skin autografting was not a feasible option. The first patient is a 4-year-old female with 18% TBSA mixed partial-thickness scald burn to face, bilateral upper extremities, chest, and abdomen. The patient's parents did not consent to the autograft procedure. The patient received two applications of fish skin graft 16 days apart in conjunction with VAC. The second patient 4-year-old male, scalded by boiling water, suffered full and partial thickness burns over 40% of the body. Fish skin grafts were applied to the chest and abdomen.



## Case 1: Burns 18% TBSA

**Patient History:** 4-year-old girl, 18% TBSA mixed partial-thickness scald burns to face, bilateral upper extremities, chest, and abdomen

**Kerecis Applications:** 2 applications to the upper extremities, chest, and abdomen

**Patient Outcomes:** Kerecis application resulted in accelerated epithelialization without an increase in contracture and excellent repigmentation of the site of burn injury.

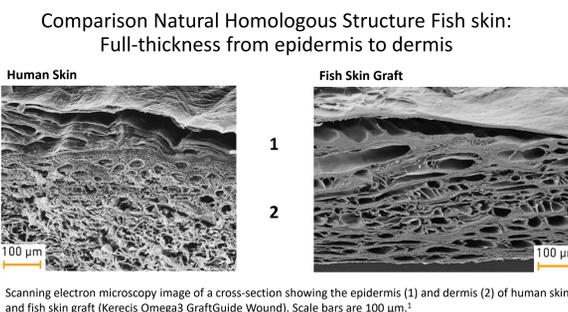


## Case 2: Burns 40% TBSA

**Patient History:** 4-year-old boy, 40% TBSA mixed partial-thickness scald burns to chest and abdomen

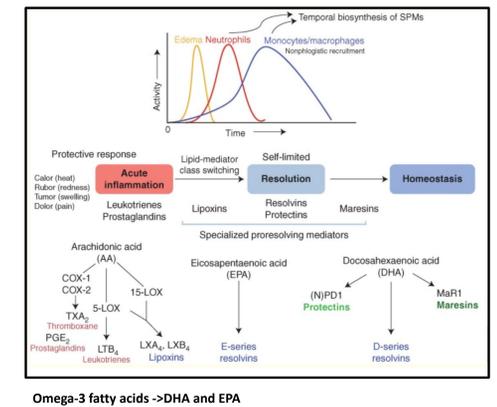
**Kerecis Applications:** 1 application to the chest and abdomen

**Patient Outcomes:** Kerecis application resulted in reactivation of the wound healing process with almost complete coverage within 22 days.



## Results

Fish skin graft showed accelerated healing in both cases results and epithelialization as early as 7 days. Both patients have excellent function and cosmetic results, with evidence of remodeling. In case 1, the patient showed excellent re-pigmentation of the site of burn injury at day 60. Additional observational findings of pain reduction were also noted.



## Conclusion

Fish-skin grafts are a feasible management option in pediatric deep partial burn where the route to healing by secondary intention is considered or where autograft sparing methods need to be applied. The fish-skin graft has structural similarities to human skin with anti-inflammatory, antimicrobial and analgesic effects. The intrinsic omega3 fatty acids can decrease the active inflammatory phase leading to earlier progressive remodeling or decreased time to STSG.

### References

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