



Final programme & abstracts



14TH EUROPEAN BURNS ASSOCIATION CONGRESS

**The Use of Silicone Lined, Low
Temperature Thermoplastics
in the Rehabilitation of
Pediatric Hand Burns**

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The Use of Silicone Lined, Low Temperature Thermoplastics in the Rehabilitation of Pediatric Hand Burns¹.

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Introduction: The management of pediatric hand burns poses unique challenges due to the hand's small surface area and its delicate joints and other underlying structures. Rehabilitation therapists are tasked to maintain hand function and movement while preventing scar hypertrophy and contractures. This paper discusses the utilization of a revolutionary silicone lined thermoplastic splinting material in fabricating various hand splints that combine the principles of scar management and antideformity positioning in their design.

Methods: Five pediatric hand burn cases (10 burned hands) were reviewed. Therapists fabricated burn hand splints for 3 patients and volar wrist extension splints for 2 patients. Each patient received a conventional thermoplastic material splint on one hand and a splint fabricated out of Silon-LTS thermoplastic material on the other hand. The hands splinted with regular thermoplastic material also received a piece of silicone worn underneath the splint to help decrease scar hypertrophy. The Silon-LTS splinting material is manufactured lined with a thin layer of silicone that is intended to aid in scar management thus no additional silicone inserts were required to be worn underneath these splints. Therapists and caregivers were given questionnaires asking them to answer specific questions on the effects of the two splinting methods on the scars and range of motion (ROM) of all hands.

Results: Therapists report that the hands splinted with the Silon-LTS material showed a considerable improvement in the ROM and depression of scar hypertrophy. Additionally, therapists report that the Silon-LTS splints provided uniform contact with the skin, equally distributed pressure on the splinted body surface and an overall increase in ROM due to the increased skin elasticity and pliability. Caregivers report ease of splint application, better material durability and are less likely to misplace the silicone patches that are worn underneath the splints. Patients and their caregivers reported that the Silon-LTS material was warmer during wearing periods as compared to the conventional splinting material.

Discussion: This use of this combination of silicone and thermoplastic material in a single design has many benefits to both the clinician and patient. The material appears to be superior to conventional thermoplastic materials because of its durability, ease of utilization in splint fabrication, great memory that allows for frequent splint modification, transparency during the splint fabrication which translates to appropriate material placement onto the body surface for best scar management and finally because of its property of being lined with silicone it increases compliance with device usage.

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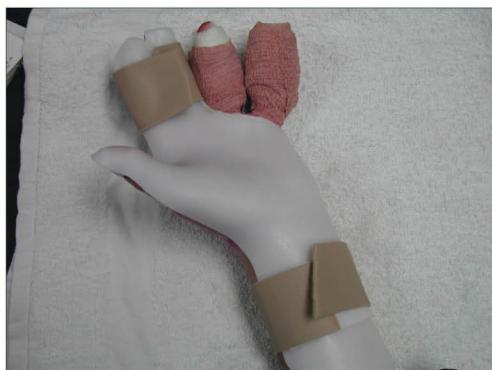
Shriners Hospitals for Children, Galveston, Texas, USA; Temple University Burn Center, Philadelphia, Pennsylvania, USA

Introduction

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Methods

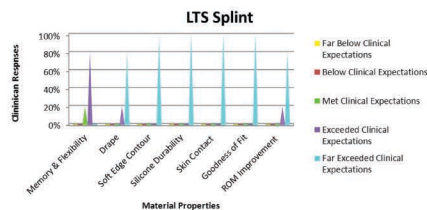
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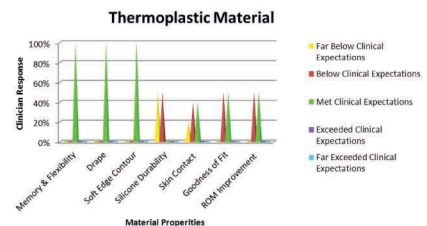
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Characteristics of LTS Material (Silicone Lined) Splint

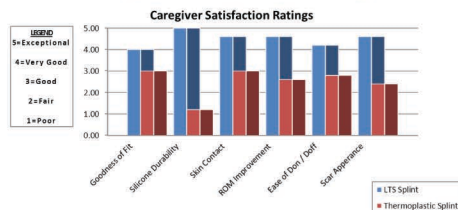


Characteristics of Thermoplastic Material Splint with Silicone Insert



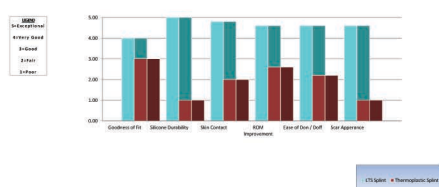
Caregivers report ease of splint application, better material durability and are less likely to misplace the silicone patches that are worn underneath the splints.

Caregiver Satisfaction Ratings



Patients reported that the Silon-LTS material was warmer during wearing periods as compared to the conventional splinting material.

Patient Satisfaction Ratings



Discussion

This use of this combination of silicone and thermoplastic material in a single design has many benefits to both the clinician and patient. The material appears to be superior to conventional thermoplastic materials because of its durability, ease of utilization in splint fabrication, great memory that allows for frequent splint modification, transparency during the splint fabrication which translates to appropriate material placement onto the body surface for best scar management and finally because of its property of being lined with silicone it increases compliance with device usage.