Current Concepts in Burn Rehabilitation

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Etiology of Burn

- Thermal
  - flame
  - scald
  - contact
- Chemical
- Radiation
- Electrical
Depth of Burn

- Superficial thickness – first degree

- Partial thickness – second degree
  - superficial partial thickness
  - deep partial thickness

- Full thickness – third degree
Depth of Burn

- **First degree burn**
- **Second degree burn**
- **Third degree burn**
Size of Burn

\%TBSA

- Rule of Nines
- Lund and Browder Chart
Rule of Nines
# Lund and Browder Chart

<table>
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<tr>
<th>Area</th>
<th>Birth</th>
<th>1-4 yr</th>
<th>5-9 yr</th>
<th>10-14 yr</th>
<th>15+ yr</th>
<th>Adult 2°</th>
<th>2°</th>
<th>Total</th>
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</table>

**TOTAL**

**Burn Diagram**

**Color Code**
- Red = 2°
- Blue = 2°

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The University of Utah
Rehabilitation and Burns
Principles of Burn Rehabilitation

- infection control
- prevention of deformity
- maximal recovery of function
- scar management
- patient education
Rehabilitation Procedures in Burn Care

- Wound care
- Positioning
- Splinting
- Range of Motion Exercises
- Strength and Functional Exercises
- Gait Training
- Scar Control
- Education/Communication
Rehabilitation Procedures in Burn Care

• **Wound care**

  Know the status of the wounds

  Ability to provide wound care
Possible Surgical Options

• Excision and grafting
• Flaps
• Expanders
• Primary closure
• Amputation (for deep tissue injury)
Care of the Burn Wound

Wound Dressing – Second Degree
(The management of the partial thickness burn injury and the split thickness skin graft donor site is very similar.)
• Hydrocolloids, polyurethane films, foams, antimicrobial products such as products containing silver.
• Vaseline gauze
• Antibacterial ointments or creams

Wound Dressing – Third Degree
• Full thickness burn injuries are commonly treated with antimicrobial dressings. The most common dressing used is Silver Sulphadiazine cream or Silver Nitrate Solution covered by gauze
Care of the Burn Wound

Edema Care

- Coban
- Ace Wraps
- other compression wraps
Care of the Burn Wound

Edema Care
Combination of compression, position, and exercise is recommended.
Rehabilitation Procedures in Burn Care

- **Positioning**
  - Protection of wounds and grafts
  - Prevention of contracture
  - Maintenance of joint position
  - Prevention of pressure ulcers
Rehabilitation Procedures in Burn Care

- **Positions of Choice**
  - Neck
  - Shoulders
  - Elbows
  - Wrists and fingers
  - Hips
  - Knees
  - Ankles and toes
Rehabilitation Procedures in Burn Care

• Splinting
  – Protection of wounds and grafts
  – Prevention or reduction of contracture
  – Maintenance of joint position
  – Exercise
Splint Options
Splint Options
Splint Options
Splint Options
Splint Options
Splint Options
Splint Options

Microstomia Prevention Appliance
Rehabilitation Procedures in Burn Care

Exercise

• Range of Motion
• Strength
• Aerobic conditioning
• Mobility and ADL’s
Physical Therapy Procedures in Burn Care

Principles of Care – Skin Stretch
Scar Control
Characteristics of Scar Tissue

• Increased collagen synthesis to degradation ratio

• Increased vascularity

• Increased mast cell count

• Increased myofibroblasts
Examination of Scar

• Vancouver Burn Scar Scale

Pigmentation
Pliability
Vascularity
Height
Pigmentation
Pliability
Vascularity
Height
Interventions for Scar Management

- Exercise and stretching
- Massage
- Silicone gel
- Pressure therapy
- Etc.
Interventions for Scar Management

Massage

• May be useful in affecting pliability
• May increase vascularity
• No changes in scar pigmentation or height
• Massaging moisturizer into an area may help increase comfort of stretching
• Massaging may help desensitize tissue
• Massage may provide temporary relief of itching
Interventions for Scar Management

Silicone gel

• Mechanism not understood

• Few complications
  – If rash develops, remove and wash area, reapply after rash dissipates

• Affects height
Interventions for Scar Management

Pressure Therapy

- Useful in conforming scar
- Does not affect rate of maturation
- Variety of materials
  - Ace wraps, elastic cotton bandages, Coban, pre-fit and custom pressure garments, plastics
- May be enhanced by use of insert materials
  - foams, elastomers, plastics
Interventions for Scar Management
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