

OPERATIONAL GUIDELINES: REHABILITATION SERVICES

- Philosophy of Burn Rehabilitation:

After initial fluid resuscitation, it is important to plan for future functional and mobility restrictions due to burn injury. The goal for every patient admitted for burns should be to return to pre-morbid function, maximize independence for mobility and ADLs, and prevent contractures. These outcomes are impeded by depth of burn, location of burns, large TBSA, prolonged immobility, limited motivation, and high levels of pain. Improved patient outcomes are related to early and consistent education regarding the importance of activity and positioning.

We expect a patient to be near baseline level of function for the first 48-72 hours. There will be a very quick onset of pain and dysfunction after this time. Education is important for patient to understand this process as it can impair motivation and participation with care. Pain management is key.

- TBSA is a combination of measurements for partial and full thickness burns (2nd and 3rd degree). A Lund and Browder Chart always be filled out on admission to assist with planning for exercise and positioning needs. The Lund and Browder will also be updated post-surgical for continues planning of positioning and splinting. There should be special concern regarding burns that cross a joint as this can significantly inhibit function and range of motion.
- If a patient requires skin grafting, they are sometimes on hold for 3-5 days post-operatively, this is attending dependent, (with the exception of positioning and splinting). Except for these post-operative times, therapy will be attempting to mobilize within any physician-ordered restrictions. Because of this, specific orders are required to ensure all disciplines know what's allowed to best protect skin grafting.

Role of Physical and Occupational Therapy

1. Positioning

- "The position of comfort is the position of contracture."
- "Tomorrow may be too late."
- Ideal positioning is similar to anatomical positioning. Neck extension, shoulder abduction to approximately 90 degrees, elbow extension, upper extremity supination (palms up), hip abduction to approximately 20 degrees, knee extension, dorsiflexion of bilateral ankles to neutral. Ideally, maintain a neutral rotation at lower extremities (feet pointing towards ceiling if supine).
- Contractures are most common for the flexor musculature due to strength and frequent use. The most important positions to focus are neck extension, supination, shoulder abduction with palms forward.
- Splinting/positioning is a frequent intervention to keep prolonged stretch to areas at high risk for contracture.
- PILLOWS ARE NOT ALLOWED IF THERE IS A BURN TO THE HEAD, NECK, or EARS. The patient should use a donut pillow to elevate skin off bed.

2. Exercise program – Programs will be created by PT/OT upon evaluation. Print-outs will be provided to the patient. These exercises should be performed with staff or family assistance at least every 2 hours when awake. Education from ALL staff on the importance of exercises with a focus on maximal ROM is key to successful prevention of contracture. Staff should also keep track of number of times the program is performed to ensure patient accountability.
3. Mobility training – Focus of mobility should be on full active ROM of all joints and for endurance training. Use of a device in the beginning is acceptable to improve distance or frequency of ambulation, but gradual return to baseline gait without device should be considered. Patient must be accountable for ambulation and OOB to chair even when therapy is not present, either with staff or family depending on safety.
4. Education
 - Physiology of burn healing
 - Exercise program
 - Expected changes to their body
 - PT and OT prognosis
 - Importance and frequency of stretching
 - Support group/emotional support
 - Reintegration into community
 - Discharge planning
 - Consistency is key to positive outcomes

Role of Speech Language Pathologists

- Collaborate with Registered Dietician and medical team to establish the safest and most appropriate diet consistency and plan of care to maximize caloric intake, especially regarding the increased metabolic needs of burn patients
- Collaborate with the medical team to address limitations with:
 - Treatment and prognosis for inhalation injuries
 - Inhalation, ingestion and intubation can cause irritation to laryngopharyngeal mucosa causing edema, vocal cord paresis and impaired airway protection
 - Severe inhalation and ingestion injury can cause long term damage such as stenosis, contractures, and ossification within pharynx, larynx, trachea, and esophagus
 - Communication
 - Can assist with use communication boards, training with passy muir valves if patient with tracheostomy
 - Swallowing
 - Facial scarring can result in difficulty achieving a full labial seal or being able to chew food
 - Inhalation injuries could cause scarring of the pharyngeal tissue.
 - Range of motion of face, neck, tongue
 - Motor exercises for neck and facial movements
 - Preventing microstomia (shrinking of the mouth), or scarring of the skin surrounding the cheeks, mouth, neck, and face.