

## **CARE OF THE PATIENT WITH POTENTIAL NEUROVASCULAR IMPAIRMENT**

### **OBJECTIVES:**

1. To identify or prevent neurovascular impairment.
2. To promote optimal neurovascular status.

### **PROCESS STANDARDS:**

1. Neurovascular checks will be done at least every 4 hours for the first 24 hours, and a minimum of every 8 hours thereafter unless otherwise ordered by a MD, and compare with the unaffected limb.
2. All replantations and partial replantations will have neurovascular checks done a minimum of every hour for the first 24 hours unless otherwise ordered.
3. The injured or operative extremity will be elevated above the level of the heart, unless otherwise contraindicated.
4. The patient will be instructed regarding neurovascular impairment, including signs/symptoms to be reported to the nurse:
  - Numbness, tingling of the affected limb
  - Decreased function
  - Increased pain that is disproportionate to injury and analgesia administered, especially with passive stretch.
  - Elevated temperature
  - Edema or the sensation of tightness or pressure
  - Signs of decreased perfusion (changes in color or temperature of the affected limb)

### **OUTCOME STANDARDS:**

#### **At the time of discharge:**

1. The injured or operative extremity will have had adequate neurovascular status for the period 24 hours prior to discharge as evidenced in the record.
2. The patient will have incurred no injury due to delay in recognizing changes in neurovascular status.
3. The patient will have indicated the signs/symptoms to be noted post discharge as well as any follow-up care needed.

### **HAVE I DOCUMENTED:**

#### **\* Neurovascular Checks as Ordered**

##### *Sensation*

- Test sensory function by having patient close his/her eyes and lightly touch the area distal to the injury having them differentiate between sharp and dull. For those who can feel pressure but can not differentiate, this is a sign of decreasing neurovascular function and requires physician notification.
- A sensation of tightness or pressure

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### **HAVE I DOCUMENTED continued:**

#### *Temperature*

- Coldness of an extremity distal to the injury, combined with pallor or duskiness indicates pressure on the artery and requires immediate medical intervention

#### *Movement*

- Test motor function by having patient move extremity distal to the injury

#### *Color*

- Pallor suggests poor arterial perfusion and cyanosis suggests venous congestion

#### *Perfusion*

- (Capillary Refill Time) CRT > than 2 seconds suggests decreased arterial capillary perfusion
- Loss of pulse of an extremity distal to the injury: requires immediate medical intervention

#### \* Extremity

##### Pulses

- Palpate pulses distal to extremity, they should be full and strong.

##### Elevation

- Extremity should be elevated unless compartment syndrome is suspected. (In presence of increased compartment pressure, elevation of extremity actually impedes arterial flow, decreasing perfusion).

#### \* Pain assessment

- Should be done on admission and every 4 hours thereafter, unless more frequent assessment is indicated

### **At The Time of Discharge:**

\* Normal neurovascular status for past 24 hours

\* Patient/Family has understanding of home and follow-up care.

### **Reference:**

1. Burke et. al. Medical-Surgical Nursing Care-2<sup>nd</sup> ed. (2007). Chapter 42-*Musculoskeletal Trauma: Fractures*. Accessed 8/19/2009: Mosby's Nursing Consult - Reference Books
2. Doenges, M., Moorhouse, M.F. and Muir, A. Nurse's Pocket Guide: Diagnoses, Prioritized Interventions, and Rationales, 11 ed., (2008). *Risk for Neurovascular Dysfunction*. Philadelphia: F. A. Davis Company.
3. Nursing Policy N-15 Neurovascular Assessment  
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